15th Ottawa Conference

The assessment of competence

KUALA LUMPUR 2012

Assessment of Competence in Medicine and the Healthcare Professions

9-13 March 2012
Kuala Lumpur Convention Centre, Malaysia

ABSTRACTS

OTTAWA 2014

We are pleased to announce that the 16th Ottawa Conference and the 12th Canadian Conference on Medical Education (CCME) will be held conjointly, in Ottawa, April 26-30, 2014. The program will be fully integrated with common plenary sessions and be relevant to medical education across the continuum including assessment. The symposia, workshops, oral presentations and posters will be labeled as either CCME 2014 or Ottawa Conference 2014. Abstracts with a focus on medical education, (medical student and resident training and continuing professional development) should be submitted to CCME. Abstracts with a focus on assessment (including selection for medical and postgraduate studies, and curriculum evaluation) should be submitted to the Ottawa Conference. We look forward to welcoming our colleagues in health professions education to our National Capital and the birth place of the Ottawa Conference!

www.ottawaconference.org

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The Ottawa Conference on the Assessment of Competence in Medicine and the Healthcare Professions is the leading international forum for exchanging ideas and developments in the field, with the aim of improving healthcare and healthcare delivery around the world. The 16th Ottawa Conference will address what is recognised as good practice in the area of assessment. Themes highlighted will include: outcomes/competency-based assessment; assessment for learning rather than assessment of learning; progress testing; technology-enhanced assessment; assessment of professionalism and attitudes; and research on assessment. The Conference will also address methods of selection for admission to medicine and speciality training, and curriculum evaluation.

The Canadian Conference on Medical Education (CCME) is the premier medical education conference in Canada. The Association of Faculties of Medicine, Canadian Association for Medical Education, Medical Council of Canada, Royal College of Physicians and Surgeons and The College of Family Physicians of Canada partner to host the largest annual gathering of medical educators in the country. We also welcome our international colleagues and other partners including students, other health educators, health education researchers, administrators, licensing and credentialing organizations and governments, to come and share their experiences in medical education across the learning continuum (from undergraduate to postgraduate to continuing professional development).

Ottawa Conference 2014 / CCME 2014

Ottawa, Ontario (Canada)
April 26-30, 2014

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SESSION 1   PLENARY
0830-1030 hrs

1A   The future of assessment: Learning to love the collective and the subjective
Professor Brian Hodges (University of Toronto, Canada)

Assessment in the health professions flourished in the twentieth century, giving us an incredible array of new tools, approaches and research. Gains in the quality and fairness of assessment processes resulted, from the deployment of high quality psychometric methods. Many challenges remain however. Whereas yesterday we struggled to find reliability tools to assess individual competence, today we are challenged to find approaches that can capture the collective competence of teams. Yesterday we struggled to render our assessment systems more objective and more standardized, today we seek ways of capturing diversity, complexity, ambiguity, and judgment. Getting to get to the next level in assessment requires attention to the collective and the subjective.

1B   Assessment of teaching performance: The state of the art
Professor Ron Berk (The Johns Hopkins University, Baltimore, USA)

After 80 years of research in higher education, how far have we progressed to comprehensively assess the job of teaching in medical education? Who cares? Why does this matter? Isn't the ubiquitous student rating scale adequate to assess teaching? These and other questions percolating in your mind on this topic will be addressed in this Broadway-type production. Psychometric standards, the 360 multisource feedback model, formative and summative decisions, challenging technical issues, and the two most perplexing student-rating online administration problems will be covered at "twitch" speed. If you teach, you don't want to miss this "assessment" session.

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SESSION 2   SIMULTANEOUS SESSIONS
1100-1230 hrs

2A   Symposium: Good Assessment
John Norcini[1] (Chair), Robert Galbraith[2], Richard Hays[3], Trudie Roberts[4] ([1]FAIMER, Philadelphia, USA; [2]NBME, Philadelphia, USA; [3]Bond University, Australia; [4]University of Leeds, UK)

A feature of the Ottawa 2010 program was the work undertaken by Theme Group 1, which developed criteria for good assessment. They were 1) validity or coherence, 2) reproducibility or consistency, 3) equivalence, 4) feasibility, 5) educational effect, 6) catalytic effect, and 7) acceptability. No single set of criteria apply equally well to all situations, nor are they of equal weight for all stakeholders even given the same assessment. Consequently, the criteria were presented with a discussion of how test purpose and the perspective of the stakeholders influence the importance of the criteria.
In the session, we will very briefly review the criteria and then the members of the panel will spend 5 minutes talking about what, if any, progress has been made and what might be done in the future. This will leave the majority of time for discussion with the audience.

2B   Oral Presentations: Curriculum Evaluation 1

2B1
IMMERSe (Integrated Multidisciplinary Model of Education in Rural Settings): A case study of longitudinal interprofessional learning for undergraduates
Christine Nobes*, Jacqui Michalski, Julie Forgan, Marcy Lopriore, Lyn Gum, Janet Richards, Lucie Walters (Flinders University Rural Clinical School, PO Box 3570, Mount Gambier SA 5290, Australia)

Background: In 2010 Flinders University Rural Clinical School Implemented an innovative program, called IMMERSe (Integrated Multidisciplinary Model of Education in Rural Settings) based on the principle that inter-professional learning whilst embedded in rural practice will increase students' understanding of professionalism, teamwork and collegiality and recruit them to practice in rural areas on graduation.
Summary of work: This program had five and six students in 2010 and 2011 from disciplines including: Paramedics, Nutrition, Physiotherapy, Nursing, Medicine and Speech Pathology. Clinical placements and formal course requirements were integrated to: respond to clinical supervisor workforce shortages, and to increase formal reflection on practice. IMMERSe students also undertook fortnightly small group learning sessions as a collective. The learning objectives of these sessions focused on inter-professional teamwork and application of learning to the rural clinical setting.
Summary of results: Key outcomes from student clinical logs, reflection exercises, and focus groups included: self aware team-orientated graduates with well developed senses of their profession and positive rural recruitment outcomes.

Conclusions: This case study demonstrates that longitudinal interprofessional programs can be provided to students in rural areas where a culture of interprofessional teamwork can be translated to the development of shared "non-technical" student competencies.

Take-home message: Longitudinal interprofessional education value adds to rural placements.

2B2

Define the words before attempting to evaluate: The case of Social Accountability

A Centeno*, A Del Rio (Faculty of Biomedical Sciences, Austral University, Buenos Aires, Argentina)

Background: Social accountability (SA) of medical schools is a concept that has attracted the interest of medical educators worldwide in these last few years.

Summary of work: Many attempts to define objective indicators, useful for different contexts, have been insufficient due to the lack of a generalized consensus on what SA really is worldwide. To understand the conception of SA in our country we conducted in depth interviews to key informants at 6 medical schools (faculty members, students, administrative personnel). Their discourse was analyzed independently by two researchers to indentify the subjacent conception of SA in them.

Summary of results: There is a recurrent perception of the actual immersion of each school within the society, mainly by community teaching, health prevention and capacity building. There is a strong connection to the government (nationally and locally), ministries of health and scientific societies. There is a marked contradiction between undergraduate medical education and health society needs.

Conclusions: No specific or explicit definition of SA is given but the interviewees recognize many effects of SA implicit in their schools.

Take-home message: Before attempting to measure SA actions and defining indicators, there is a need to clarify the hidden assumptions in this area.

2B3

Quality in the Swedish undergraduate medical program – physicians' perspective, two years after graduation

A Kiessling*[1] A Hoppe[2] ([1]Department of Clinical Sciences, Danderyd Hospital, Karolinska Institutet, SE-182 88 Stockholm, Sweden; [2]The Educational Unit of the Medical Program at Uppsala University, Sweden (at time of this study))

Background: The aim was to evaluate how the medical program had prepared for the demands of residency training.

Summary of work: A national alumni survey was performed among residents two years after graduation from medical schools in Sweden. Questions comprised: General view of the undergraduate program; to be prepared for clinical work respectively personally, professionally and scientifically.

Summary of results: Two thirds of the 424 answering physicians were satisfied with their education. They felt well prepared for history taking and physical exam but less well prepared for more complex clinical issues e.g. handling psychiatric patients, handling conflicts or interprofessional collaboration. Many wanted a more contemporary program design which is in line with the curriculum reforms now taking place at all medical schools in Sweden. Answering women felt significantly less prepared than men regarding several clinical skills. This finding should be seen in the perspective that both men and women in this survey answered that the program only in a low grade had highlighted gender issues in the education.

Conclusion/Take-home message: Today's medical students are supposed to be tomorrow's skilled physicians and leaders. Continuous development of undergraduate medical education is essential, and national alumni surveys can be a worthy tool.

2B4

Comparison of Performance of Students from Two Curricula on the Comprehensive Basic Science Self-Assessment Offered by the NBME

N Al Wardy*, M Al Moundhri (Sultan Qaboos University, College of Medicine & Health Sciences, Oman, P.O. Box 35, PC 123, Al Khod, Oman)

Background: A new curriculum has been implemented in our medical school. In spring 2011 the first batch of students from this curriculum and a parallel track of students from the "old" curriculum had finished the basic science (preclinical) phase and were entering the clinical phase. One way in which the quality of the two curricula could be measured is by the achievement of students on international examinations. As a trial, the web-based Comprehensive Basic Science Self-Assessment (CBSSA) offered by the National Board of Medical Examiners was chosen. The content of CBSSA is typically covered in basic science medical education courses and it resembles USMLE Step 1.

Summary of work: Students at the end of the preclinical phase of both curricula sat the CBSSA. Student participation in the exam was voluntary.

Summary of results: The number of students who took the exam was 101, 73 from the old curriculum and 28 from the new curriculum. Mean performance of new curriculum students was higher. The GPA of students from the new curriculum also correlated better with the score on the CBSSA.

Conclusion: Students from the new curriculum are doing better on the CBSSA. However, selection bias should not be ruled out.

2B5

Curriculum and assessment mapping using a database

YB Kang (International Medical University, School of Pharmacy and Health Sciences, Kuala Lumpur, Malaysia)

Background: Curriculum mapping has been a bug-bear for many an integrated curricula. The BPharm (Hons) programme of the International Medical University employs a database to track and evaluate the curriculum.

Summary of work: An integrated outcomes-based curricula faces the challenge to ensure that the coverage of the relevant subject matter appears at the right level and is assessed appropriately to determine that the outcomes are supported. The enormity of this task is tracked using a database, which allows for the relevant descriptors for the curricula to be monitored and measured.

Summary of results: The database includes descriptors and these are linked to the various outcomes of the programme/module. In addition, the database allows for the calculation of the various credit units and multiple field searching across the entire database. Assessments can be tracked and matched to the outcomes using the database.

Conclusions: This database allows for a comprehensive analysis of the integrated curricula. It can be used as an implementation device, academic calendar planner as well as a monitoring tool for the coordinators and academic administrators. Additionally, students can use it as a learning planner.

Take-home message: The database is an effective way for monitoring the implementation of an integrated programme and its assessments.

2B6

Acceptable return rates for curriculum evaluations and decision making: estimations using reliability analysis simulations

Margaret W Gerbase[1,2], Michèle Germond[1], Bernard Cerutti[1], Anne Baroffio[1], Nu V Vu[1] ([1]Unit of Development and Research in Medical Education (UDREM), University of Geneva, Faculty of Medicine, Geneva, Switzerland; [2]Department of Internal Medicine, University Hospitals, Geneva, Switzerland)*

Background: Low return rates affect the reliability of curriculum evaluations. However, the optimal number of raters to target remains unclear.

Summary of work: We analyzed 2172 students' evaluations of preclinical instructional units (PIUs) and clerkships to assess the needed return rates to ensure reliability for curriculum change decisions. Rating scores (Likert scale *5=strongly agree* to *1=strongly disagree*) and questionnaires' return rates were calculated for PIUs/clerkships. Simulation models were built using generalizability method, considering standard error of measurements (SEM) preset at 0.10, 0.15 and 0.20.

Summary of results: Return rates were 74% and 84%, and reliability coefficients were 0.96 and 0.91, respectively in PIUs and clerkships. Simulations with SEM at 0.10, 0.15 and 0.20 yielded return rates of 49%, 22% and 12% (PIUs), and 81%, 38% and 21% (clerkships). In models featuring a 0.20 SEM, reliability decreased below 0.8 and 95%CI ratings fell below the cutoff score for curriculum revision in nearly all PIUs/clerkships.

Conclusion: Reductions by half in return rates seem not substantially affect the reliability of evaluations, provided that SEM is limited to 0.15.

Take-home message: Setting standards for acceptable SEM values in curriculum evaluations might allow lower return rates providing reliable ratings to support curriculum changes.

2C   Oral Presentations: Clinical Assessment 1

2C1

An OSCE or a traditional clinical bedside exam? An economical perspective

A Dermine, K Bosselaers, A Goethuys, B Himpens (K.U.Leuven, Centre for High Stakes Assessment in Medical Education, Leuven, Belgium)*

Background: As reported at AMEE 2011, there is clear evidence on the technical but less on the economic viability of the OSCE. The latter, however, is an important issue as the financial burden of this exam is high. 4 years after the replacement of the traditional clinical bedside exam by the OSCE at our medical school, we performed a cost-benefit analysis.

Summary of work: At the K.U.Leuven, yearly 350 students take an OSCE of 22 seven-minute stations assessing competencies achieved during their clerkships. During the OSCE, trainees interact with standardized patients and are observed by clinical trainers or faculty members. Score forms are station-specific check-lists combined with global ratings. The total test score is the averaged station score. We calculated the real cost of the OSCE and the traditional clinical exam per student and weighed the outcome against university - income for this course activity based on the financial reimbursement model for education of the Flemish government.

Summary of results: The computed cost of the OSCE is 25% of the university-income and 50% of the cost of the traditional exam.

Conclusions: The OSCE at our medical school is economically feasible!

Take-home messages: The cost of a traditional bedside clinical exam might be higher than the cost of an OSCE.

2C2

"Wise men put their trust in ideas and not circumstances"; Assessment of year 2 medical students in Northern Uganda

N A Lees*, M A Surgenor*, G J Byrne, Emmanuel Moro* (Undergraduate Medical Education, University Hospital of South Manchester NHS Foundation Trust, UHSM Academy, Southmoor Road, Manchester, UK)

Background: UHSM has been involved in the medical education of students at Gulu University since 2006. Current assessment methods are written paper and ward-based assessment, the latter perceived as arbitrary by both clinicians and students. The Ugandan Medical Council is keen to introduce OSCEs as an assessment tool to ensure harmonisation of national standards of medical practice with international standards.

Summary of work: OSCES were piloted with Year 2 medical students following a week where basic clinical skills were taught, forming the blueprint of the OSCE.   Local examiners were pre-trained and mentored during the OSCE by experienced Manchester examiners.

Summary of results: The OSCEs ran after overcoming various logistical and cultural challenges. Cultural differences included attitudes of Gulu examiners to a completely different and in some ways extrinsic way of assessing students, juxtaposed with the predispositions and expectations of the Manchester examiners and organisers.

Conclusions: Our experience shows it is possible for culturally relevant yet valid OSCEs to be delivered in challenging circumstances.

Take-home messages: Visiting examiners would have been better prepared if forewarned to adapt to cultural differences and examination protocols without compromising standards. Both local and visiting examiners had to adjust their own cultural expectations of the assessments.

2C3

Assessing undergraduate medical students' capacity to integrate patient information: A novel OSCE

Margaret Hay*[1], Loretta Garvey[1], Parasakthi Navaratnam[2,1] (Faculty of Medicine, Nursing & Health Sciences, Monash University, Building 15, Room 202A, Clayton Campus, Wellington Road, Clayton, Victoria 3800, Australia; [2]Monash University, Malaysia)

Background: Assessing students' capacity to integrate patient information a holistic framework was not a component of formal assessment in our undergraduate medical program despite its salience in our mission statement.

Summary of work: An OSCE encompassing one patient scenario but assessing distinct systems, procedures and skills was developed. A novel 'integration' station requires students to synthesise their discoveries in the preceding stations and to apply these to the depicted patient's case. Examiners rotate across stations to ensure reliability.

Summary of results: Psychometric analysis indicates good construct validity and reliability that is consistent with the previous segregated station OSCE. All stakeholders rated the novel OSCE as a better representation of an actual patient encounter.

Conclusions: The shift from segregated to integrated assessment was achieved without compromise to OSCE validity and reliability.

Take-home messages: It is possible to assess students' learning about the human dimensions of health care from the beginning of their training.

2C4

A new collaborative peer evaluation of clinical skills (CPECS) model designed for end of clinical posting assessment of undergraduate medical students at workplace

Shahid Hassan (Universiti Sains Malaysia, Penang, Malaysia)

Background: Workplace assessment is used in apprenticeship learning of postgraduate then undergraduate medical education due to increasing number of students and ever growing awareness of patient consumerism. Traditionally patient-based long case scenarios are mostly used in undergraduate examination to assess competency but students are less often supervised for assessments at workplace. A new collaborative peer evaluation of clinical skills (CPECS) has been developed to address these problems with authentic formative assessment in undergraduate clinical education.

Summary of work: CPECS is a special model for peer assessment of undergraduates at workplace to evaluate clinical skills during posting. Patients from outpatient clinic are worked-up for history and examination and briefed to share quick feedback on student's performance as communication skills, humanism and confidence. Students are divided into small groups of 3-4 for each encounter. Each group share the same patient for demonstrating medical interview and physical examination skills in a collaborative setting. Patient is introduced to students who take turn by asking two questions in medical interview and one test at a time in physical examination to complete 3-5 rounds. Performance is documented on a rating form. The interesting part of the CPECS assessment is the unanswered question by one student, treated as bonus question for another student next in queue. The session is also opened to 1-2 postgraduate trainees who are invited to give their feedback.

Summary of results: CPECS was experienced to know its feasibility and practicality as an assessment tool in clinical education of 26 undergraduate students in year 4 during 2009/2010. Students were assessed in outpatient clinical

setting. Data were analyzed for mean values. Rating in clinical attributes of medical interview and physical examination were undertaken in 7 groups with 3-4 students per group and feasibility and practicality of CPECS was observed.

Conclusions: The application of the concept is a move forward from traditional assessment in controlled environment to real scenario. The aim behind this assessment was to give supervisors their dual role as teachers and assessors like the one observed in postgraduate apprenticeship to bridge up the gap between clinical teachers and undergraduate medical students.

2C5

Direct Observation of medical students' physical examination skills on commencement of first clinical year

TP Yeow, LC Lee, S Easaw, WS Choo, AS Khir, LC Loh (Penang Medical College, Department of Medicine, Penang, Malaysia)*

Background: Direct observation of trainees with actual patients by supervising clinicians is essential for development of clinical skills competence. We incorporated direct observation of students performing physical examination (PE) into our curriculum. Performance was marked against predetermined criteria. Multiple attempts were allowed until satisfactory performance was achieved on examinations of 4 major systems (Cardiovascular, Respiratory, Abdominal and Neurological). We evaluated the implementation of this educational tool against the principles advocated in by Hauer et al.

Summary of work: This programme was implemented for 2 consecutive years of 3rd-year medical students. Data were gathered from questionnaire responses from students.

Summary of results: 165 out of 208 students completed the questionnaire. 95 & 86% reported improvement in ability to perform PE and interpret signs. 12% vs 88% preferred it as assessment vs educational tool. 77% valued direct observation while 19% felt they could learn equally well by observing performance of others. 48,46 and 62% perceived feedback to be specific, accurate & motivating; 18,6 and 5% reported feedback left them anxious, embarrassed & demotivated. Students preferred dedicated time and venue for observation and feedback.

Conclusion: Incorporation of direct observation of PE skill early in clinical clerkship has been positively received. Evaluation highlighted the need to orientate observers and learners to direct observation and quality feedback.

2C6

Team-Based Learning: Assessing Team Emotional Awareness in an Internal Medicine Clerkship

N J Borges, K Kirkham, A S Deardorff, J A Moore (Wright State University Boonshoft School of Medicine, Dayton, OH, USA)*

Background: Although increasing numbers of articles have been published on Team-Based Learning (TBL), none have assessed team emotional awareness. We examine changes in team emotional awareness during an internal medicine clerkship where TBL is the primary instructional strategy. We hypothesized that team emotional awareness will increase during the clerkship.

Summary of work: In 2009-2010, TBL was implemented as the instructional strategy for the internal medicine clerkship. With IRB approval, 105 third-year students (100% response rate) completed the Team Emotional Awareness and Management Scale (TEAMS)(1) at the beginning and at the end of their 12-week clerkship.

Summary of results: Paired t-tests showed that team emotional awareness increased significantly pre to post clerkship for 3 of 4 TEAMS(1) scales: Awareness of Own Emotions ($p = .018$), Recognizing Emotions in Others ($p = .031$), and Ability to Manage Other's Emotions ($p = .013$). There was no change for Ability to Control Own Emotions ($p = .570$).

Conclusion: In an internal medicine clerkship where TBL is the primary instructional strategy, team emotional awareness increases.

Take-home messages: TBL in an internal medicine clerkship may positively impact team emotional awareness. This supports TBL as an adjunctive tool to traditional medical education pedagogy.

(1) Jordan PJ, Lawrence SA. Development and initial validation of the Workgroup Emotional Intelligence Profile - Short Version (WEIP-S). J Manag Org, 2009;15: 452-69.

2C7

The Long Case Examination is Still Relevant in Medical Education

Hazian Hamzah, Khairuddin Abdul Wahab, Mohamed Moussa Mohamed, Yong Rafidah Abdul Rahman (Faculty of Medicine, Cyberjaya University College of Medical Sciences (CUCMS), No. 3410, Jalan Teknokrat 3, Cyber 4, 63000 Cyberjaya, Selangor Darul Ehsan, Malaysia)*

Background: 14-station-Objective-Structured-Clinical-Examination (OSCE) and two long-case examination were used in the final MBBS Examination at CUCMS, with more weightage on OSCE in final marks. Questions arose whether only OSCE should be used.

Summary of work: Opinions from 77 students were sought after the examination, using self-administered

questionnaires, with 5-point Likert-scale (1=strongly disagree to 5=strongly agree) items.

Summary of results: The response rate was 82% (n=63). 78% of respondents agreed that the OSCE stations were fair in terms of difficulty level, with acceptable time allocation and number of stations. 95% rated the long case examination as fair in difficulty level and number of cases. Nevertheless, 75% of the students disagreed on OSCEs as being the sole assessment method. 65% disagreed on the long case as being the only assessment method. Majority (92%) disagreed to abolishing the long case examination.

Conclusions: The face validity of both methods used for this final examination was high. Despite being aware of the diverse range of patients and examiners, medical students still regard long case examination as an appropriate and acceptable method of assessment.

Take-home messages: Combining OSCE and long cases are acceptable by medical students in assessing their clinical competencies.

2D   Oral Presentations: Assessment of Leadership

2D1
Evidencing leadership learning
L Hadley*, D Black (Kent Surrey and Sussex Deanery, 7 Bermondsey Street, London SE1 2DD, UK)

Background: Clinical leadership is essential for maintaining and improving good patient care and is embedded in all UK medical curricula. To evidence the teaching of leadership KSS Deanery planned to encourage trainees to have at least one formative assessment of leadership skills each year.

Summary of work: To support educational supervisors and trainees in assessment, KSS set up a network of Leadership Champions and practical workshops. At the Annual Review of Competency Progression (ARCP) each trainee was asked to evidence having completed a work place based assessment (WPBA) of their leadership skills and to complete a questionnaire.

Summary of results: The questionnaire completed by 83 out of 99 (84%) trainees interviewed at ARCP demonstrated that 77% of these had undertaken a leadership assessment during the past year. The assessment was rated as the same or more helpful than a usual WPBA by 77%. Less helpful factors were a lack of information and understanding about the assessment for supervisors and trainees.

Conclusion: Awareness raising initiatives encouraged trainees to undertake a leadership assessment.

Take-home messages: Encouraging trainees and their supervisors to undertake a formative assessment of leadership can be an effective way of facilitating learning about leadership. Ongoing support is needed to make sure all supervisors and trainees find the experience educative.

2D2
Assessing trainee leadership skills using Standardized Patient encounters in a cross-functioning team: a pilot study
JM Sandella, EE Langenau*, A De Champlain, Jeanne M. Sandella (National Board of Osteopathic Medical Examiners, Center for Clinical Skills Testing, 101 W. Elm Street Suite 150, Conshohocken, PA 19428, USA)

Background: Medical residents are required to function in many different leadership roles: instructor of trainee physicians, liaison to the attending, and team facilitator of patient management within the inter-disciplinary healthcare team (including nursing and other healthcare providers). Leadership assessment tools have been developed and used in the past, but research has been limited.

Summary of work: The National Board of Osteopathic Medical Examiners has developed a tool (Clinical Facilitator Assessment Tool – CFAT) to assess the ability of a physician to facilitate team management of a standardized patient during a single encounter. Within a six-station OSCE, 43 residents participated in a clinical encounter wherein the resident is pulled into a patient room by a simulated nurse; the resident is required to work with the nurse, respiratory therapist who witnessed an acute event, and patient. After the simulation, the three standardized performers (nurse, respiratory therapist and patient) completed the CFAT. The resident also completed a self-assessment using the same tool. All participants were debriefed following the OSCE. Investigating these scores will assist in evaluating the functionality of the tool in this setting. We investigate the functionality of the CFAT tool in this setting to assess leadership skills of resident physicians.

2D3
Developing clinical leaders and managers takes time and collaboration: but can be done
J McKimm (Swansea University, College of Medicine, Swansea, SA2 8PP, UK)

Background: Non-technical skills, including leadership, are vital for effective and safe professional practice. Trainee doctors (interns) are increasingly required to demonstrate competence in clinical leadership and management and to engage in health innovations and improvements.

Summary of work: 24 trainees on Academic Foundation Programmes working in a large UK Emergency Department undertook a year-long clinical leadership development programme. The structured postgraduate programme comprised nine contact days and workplace based learning, assessed through an essay, management report and multi-part portfolio including psychometric assessments and reflective practice.

Summary of results: Participants demonstrate increased knowledge, enhanced leadership, management and

communication skills, observed changes in behaviours and deeper insight into their own and others' leadership practice in clinical situations. The health organisation benefitted through trainees' engagement in health innovation projects with defined deliverables and cost savings.

Conclusions: Leadership development needs to be linked closely to workplace practice, tailored to individual needs. Trainees can undertake masters' level work alongside achievement of defined clinical competencies if the programme is designed and delivered collaboratively by universities and health organisations.

Take-home messages: Clinical leadership and management can be learned and assessed but requires a structured development programme closely aligned to workplace based learning and clinical practice.

2D4

Metamorphosis through *nosce te ipsum* - knowing thyself

Alena Chong (University College London, Department of Primary Care and Population Health, Upper Third Floor Royal Free Campus, Rowland Hill Street, London NW3 2PF, UK)

Background: Implementing a shared vision "to give everyone access to high quality care and a skilled and dedicated workforce proud to work for the NHS" becomes increasingly difficult with diminishing financial resources. The aim of the 4-module Senior Leadership Course is to use transformative learning as a catalyst for NHS staff leadership development to achieve this vision.

Summary of work: The programme is grounded in practical proven methodologies and delivered by a faculty of established leaders drawn from the NHS, Armed Forces, business and education. The 4 modules: "self awareness", "self management", "leading teams" and "big leadership", are based around the core values of reflective and experiential learning in small facilitated groups, immersive simulation with structured feedback, together with personal and peer review of observed behaviours.

Summary of results: Reflective participant narratives describe qualitative Pygmalion-like transformative, 'enriching', 'exciting', 'challenging', confidence-building professional journeys, built on transmitted knowledge and transacted experiential tasks within a safe environmental network of educational governance.

Conclusion: The results of leadership are difficult to measure, yet extraordinarily important, because poor leadership adversely affects patient care. This course promotes leadership development, through stress coping strategies, increased confidence and transformational learning.

2D5

Assessing Tomorrow's Leaders: Mapping the Competencies of Trainee Doctor Representatives

S Quy, S Kennedy* (KSS Deanery, University of London, 7 Bermondsey Street, London SE1 2DD, UK)*

Background: Trainee doctors in the UK are required to be assessed on competencies outlined in the Medical Leadership Competency Framework.

Summary of work: At each stage of training, some doctors undertake the role of Representative for their cohorts and play a vital role in supporting and developing high-quality medical education within NHS Trusts. The KSS Deanery's Doctors' Voices Project has worked with trainee doctor representatives over the last three years to support them in developing leadership and management skills. An important outcome of this work has been the development of a mapping tool. Using this with consultants, doctors plan, monitor and evaluate their time as a representative and assess acquired leadership and management competencies. A pilot group of Representatives, across specialties, in Kent, Sussex and Surrey, successfully trialled the tool.

Summary of results: An increased awareness of the Medical Leadership Competency Framework amongst trainee doctors and their assessors**;** Trainers found the tool easy to use**;** Training doctors appreciated a tool that allowed for assessment of their competencies in the role of representative.

Conclusions: Both trainers and trainees see the mapping tool as a valuable formative and summative assessment tool.

Take-home message: Developing practical assessment tools for assessing leadership and management skills in representatives will help support and develop the medical leaders of the future

2D6

Academic Leadership competencies in Iranian Medical universities: A Nationwide Survey

Ali Bikmoradi, Mats Brommels, Alireza Shoghli, Davoud Khorasani zavareh, Italo Masiello (Hamadan University of Medical sciences, Hamadan, Iran)*

Background: The medical education system in Iran has undergone a transition from elite to mass higher education very rapidly with a considerable increase in the number of medical schools and faculties. Due to the specific academic leadership and structure of Iran, this country was a good model for exploring dimensions of academic medical leadership.

Summary of work: A survey was conducted using a developed questionnaire by factor analysis and test-retest on a stratified sample of academic leaders at public Iranian medical schools and universities.

Summary of results: Administrative management had a negative impact on academic leadership, indicated as lack

of fair and efficient supervision, an educational climate not conducive to creativity and innovation, low motivation, low respect and ranking for faculties, and the absence of an efficient evaluation system. Furthermore, academic leaders perceived an inappropriate management climate and low satisfaction with leadership, even though they themselves were academic leaders.

Conclusions: Academic medical academic leaders do not provide appropriate support and commitment to achieve shared vision, goals, and strategies, nor do they offer proper management in the context of teaching, research, and administration, or an efficient educational environment. Academic leaders are burdened with overwhelming tasks and responsibilities, but they are not sufficiently prepared for leadership.

Take-home message: Enhance academic leadership competence for quality improvement in medical education.

2E   Oral Presentations: Patient Safety

2E1

Generic online induction with integral assessment

K Nathavitharana (NHS West Midlands Deanery, St Chad's Court, 213 Hagley Road, Edgbaston, Birmingham, West Midlands B16 9RG, UK)

Background: Induction is a pre-requisite for employment and essential for patient safety. As doctors rotate through several NHS Trusts, induction becomes repetitive, inefficient and risks losing its impact. Hitherto, signing an attendance register in a classroom has constituted 'competence'. A Deanery-wide online generic e-induction programme, with an integral assessment component, is described.

Summary of work: A representative multi-professional working group was established, with the remit to define modules, meeting regulatory requirements, and commissioning subject matter experts. Incorporating best practice in e-learning, 4 statutory, 8 patient safety and 6 general modules were developed and implemented.

Summary of results: The modules took approximately 7 hours to complete. The facility to access modules intermittently offered flexibility to the user, minimising interruption to training and service-delivery. Successful completion of all 18 modules (passmark 80%) generated a certificate of completion.   Over 3,700 doctors have completed the West Midlands Deanery e-induction and others, starting later in the year, are on course to do so. Excellent communication with stakeholders and multi-professional collaboration have facilitated universal acceptance of the generic induction across the entire region. Many NHS Trusts have modified their own inductions to avoid repetition.

Conclusion: Deanery-wide generic e-induction is cost-effective, standardised and provides a verifiable certificate of completion following assessment, preventing decades of repetition.

2E2

Psychometric evaluation of the nurses' attitudes toward eICU® scale (NATES)

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Background: The eICU® technology system has been implemented nationwide to facilitate efficient and safe care for patients. The purpose of this study was to provide psychometric evidence of the reliability and validity of an instrument, the Nurses' Attitudes Toward eICU® Scale (NATES). The development of the Nurses' Attitudes Toward eICU® Scale (NATES) was underpinned by the Technology Acceptance Model (TAM) that had been used to measure nurses' attitude toward the eICU® technology system and to predict their intention to use the technology (Kowitlawakul, 2008).

Summary of work: The study involved 117 registered nurses working in critical care units that had not yet implemented eICU® technology. SPSS 15.0 was used to analyse the data. Principal component analysis (PCA) was performed to identify the domains or factors underlying 21-items in the NATES.

Summary of results: The reliability for the total scale was 0.91. Factor analysis results indicated that five factors accounted for 67.3% of variance in the data: (1) cost and benefit, (2) anxiety and confidence, (3) patient care and quality, (4) effort, and (5) anger and fear. The reliability and validity of NATES was supported by both logical and empirical analysis.

Conclusion: Therefore, the NATES showed promise as a psychometrically sound instrument for assessing nurses' attitudes toward eICU® technology.

2E3

Assessing medical students' ability to calculate drug doses

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Background: A doctor's ability to calculate drug doses is a skill which is generally assumed. We assessed medical students' performance when given four types of dosing calculations typical of those required in an emergency setting.

Summary of work: Students were assessed at the beginning of 3rd year and again during 3rd and 4th year. Competence was defined as correctly answering all four categories of calculation at any one time (i.e. scored 100%). Interventions comprised an assignment with a model

answer for self-assessment in 3rd year, and a lecture and tutorial in 4th year.

Summary of results: Of 364 eligible students, 82 were competent at the beginning of 3rd year. Of the 282 remaining, 58 (20.6%) were competent by the end of 3rd year. By their last test in 4th year, 99 of the remaining 224 (44.2%) had attained competence. Although race and home language were predictors of performance at baseline, both associations had been lost by the final assessment.

Conclusions: More students became fully competent during the 4th than the 3rd year of study. Overall the number of competent students increased from 23% to 66%.

Take-home message Students' competence was improved by training, repeated exposure and assessment.

2E4

The impact of a medication administration competency tool

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Background: Errors in administration of medication account for 41% of medication errors and are often associated with more serious consequences (NPSA 2009). This presentation will outline the development of a medication administration competency framework (MACAF) within a mental health and learning disability NHS Trust.

Summary of work: An education pathway and competency assessment toolkit was developed and implemented across 116 services. The impact of the toolkit has been evaluated through triangulation of qualitative and quantitative data collated through stakeholder evaluation, training and development and risk management data and will demonstrate the impact of the project in: Increasing competence; Increasing practitioner confidence; Reducing drug errors and Providing evidence of professional development and knowledge.

Summary of results: Early data collection from risk management reports, practitioner report, and questionnaires demonstrate improved practitioner confidence and competence in administering medication. This is evidenced by a 15% reduction in medication administration errors in an 8 month period.

Conclusions: The education pathway and medication administration competency assessment toolkit has demonstrated an increase in confidence and competence in administration of medication resulting in a reduction in medication administration errors.

Take-home messages: Education and assessment are integral to medicines safety for nurses and mental health professionals.

2E5

Assessment of Safe Prescribing in Paediatric Practice

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Background: Following a serious incident resulting in accidental overdose and death of a child from anti-convulsant toxicity it was decided that all doctors new to paediatrics within a large UK postgraduate School of Paediatrics should be formally assessed in their ability to prescribe safely. It was agreed that this type of assessment should be accompanied by a learning module to demonstrate 'best practice' in paediatric prescribing.

Summary of work: This paper describes the work undertaken by trainees and trainers within a UK Deanery; in combination with the Medicines for Children Committee of the Royal College of Paediatrics and Child Health; to produce a simple electronic learning and assessment package for use at induction of junior staff into paediatric practice.

Summary of results: Early results suggest that the programme was widely adopted by trainers and valued highly by trainees although concerns were raised about the potential risks associated with trainees that were felt to be less than competent following assessment. It is intended that this package will be augmented by a more sophisticated e-learning programme in due course.

Conclusion and Take-home message: Safe prescribing cannot be assumed in trainees that are new to paediatric practice but assessment needs to be supported by targeted learning.

2E6

'Lessons Learnt - Building a Safer Foundation': Patient Safety training for Junior Doctors

Maria Ahmed*[1], Sonal Arora[1], Stephenie Tiew[2], Paul Baker[2], Charles Vincent[1], Nick Sevdalis[1] (Room 504 Medical School Building, Imperial College London, W2 1PG, UK; [1]Department of Surgery & Cancer, Imperial College London, UK; [2]North Western Deanery, Manchester, UK)

Background: Patient Safety is a key healthcare agenda internationally. It is being increasingly recognised that patient safety should be integrated into all healthcare worker curricula to promote sustainable improvements in safety and quality. This study aimed to evaluate an innovative approach to the delivery of safety training to junior doctors in the North-western region of England- 'Lessons Learnt: Building a Safer Foundation' (LL).

Summary of work: LL comprises regular sessions integrated into the teaching program wherein junior doctors lead a peer-group discussion on a patient safety incident (PSI) in a safe, facilitated environment. Sessions

are held in confidence and are facilitated by trained attending-level physicians. LL was implemented across all 16 Foundation programmes (32 cohorts, 1000+ junior doctors) in our region from January-June 2011.

Summary of results: Evaluation revealed high levels of satisfaction; significant improvement in participant safety knowledge, skills and attitudes and a significant increase in the reflection, discussion and formal reporting of incidents amongst junior doctors. The innovation also led to wider organisational impact through participants undertaking quality improvement projects to improve patient care.

Take-home messages: Through addressing the well-documented barriers to implementation of safety training in healthcare worker curricula, Lessons Learnt successfully led to improvements at both the individual and organisational level.

2F   Oral Presentations: Assessment Around the World

2F1

An investigation into the use of an authentic assessment rubric for nursing students

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Background: Nursing education has changed from an approach focusing primarily on knowledge and skills to the current approach that focuses on academic and professional nursing (Elzubeir & Sherman, 1995). Assessment in nursing education is the reflection of the quality and quantity of learning and is concerned with students' progress and standards of attainment (Lofmark & Thorell-Ekstrand, 2000). The challenge for nurse educators is how to use assessments effectively to assist nursing students in integrating theoretical knowledge and professional practice.

Summary of work: This study aimed to enhance nursing students' learning outcomes and their critical thinking skills through the use of an authentic assessment rubric. The study adopted a qualitative approach and explored 39 nursing students' experiences with the use of the rubric through case learning and focused group discussions. A short survey was also conducted.

Summary of results: The findings showed that nursing students had greater awareness of their own performance through self, peer, and teacher assessments, enhanced their learning outcomes, and increased self-confidence and motivation to learn. Implications for nurse educators and curriculum developers on ways of using an authentic assessment rubric in nursing education will be discussed.

2F2

Subject-based formative assessment: improvement in performance in Physiology in Block Tests under an integrated medical curriculum

S Ghosh*, S C Soon, H Aung (Faculty of Medicine, MAHSA University College, Kuala Lumpur, Malaysia)

Background: Summative assessment in an integrated curriculum involving proportional contribution of questions by individual subjects, being graded on an overall basis, reflected an improper assessment of subject knowledge.

Summary of work: A subject based formative assessment [formass] was introduced by the department of physiology for the first year medical students in their second semester, along with the integrated block test [BT]. Questions were of multiple choice type at different levels – recall, concept and case-based reasoning which were electronically graded. Feedback was given to the students before BT was conducted. Scores of physiology in the formass and BT were analysed and correlations were calculated.

Summary of results: Improvement in scores of recall and concept based questions from the formass to the BT was observed without much improvement in the case based scores. 20% students failed in formass while only 5% failed in the physiology component in BT. However, 48 students [32.6%] failed in the overall score of integrated test in the BT of which only 8 [5.4%] failed in physiology.

Conclusion: Students improved in performance and reflected subject proficiency in Physiology through improved scores in the BT, which can be attributed to the formass.

Take-home message: A subject based graded formative assessment needs to be introduced as an important tool in assessing basic sciences under an integrated curriculum, which ensures improved performance in important core subjects and helps assessing the proficiency in a particular subject.

2F3

Assessment: cart or horse?

John Paul Judson*, Hla Yee Yee (The International Medical University, 126 Jalan Jalil Perkasa 19, Bukit Jalil, Kuala Lumpur, Malaysia)

Background: Whether assessment should drive the curriculum or the other way round is a question that often plagues educators. Whilst assessment "for learning" obviously precedes the curriculum, assessment "of learning" in its summative form carries high stakes. Miller stated. "Assessment drives learning". Should we ensure it does in every instance?

Summary of work: The relationship between curriculum development, assessment and practices related to the latter was reviewed for the twelve systems courses in the Medical sciences preclinical curriculum. The aspects

reviewed were related to formative assessments, usage of rubrics, check-listing content and construct validity.

Summary of results/Conclusions: Formative assessments needed to be improved on, with feedback incorporated. Blueprints were not used by many co-ordinators and the level was mainly recall. Elements of "authentic assessment" need more representation. Strategies to improve have been instituted.

Take-home message: The curriculum tends to drive assessment., The reverse can be ensured by proper curriculum mapping that takes assessment strategies into account.

2F4

Mentoring based on summative assessment and formative progress testing - Two evaluation systems combined in one mentoring system for medical students in the Aachen reformed curriculum

J Arias*, A Schiffel, S Finsterer, W Dott, M Simon (RWTH Aachen University, Medical Faculty, Aachen, Germany)

Background: The reform-curriculum in Aachen offers students a mentoring based on examination performances. Mentors need a preselection of different efforts to prepare an effective mentoring.

Summary of work: The combined evaluation of summative and formative assessment offers a view on students' knowledge in specific fields. This mentoring is provided to 1200 students in Aachen. The work consists of conceptual design and implementation of software that combines data bases containing curricular credits and Progress Test results. A code of practice for a standardized mentoring has to be developed.

Summary of results: The combination of summative and formative evaluation is possible for mentoring purposes. For this reason it is necessary to create an interface which provides students and mentors with a more detailed sight of students' assessment. This work creates a base for mentoring which is to be rounded off by personal and professional contents. Feedback for academics and their courses is possible.

Conclusion: The combination of summative and formative examination performances is profitable because of a more differentiated evaluation. The data obtains basic information for a curriculum development.

Take-home message: Students' and academics' self-perception needs to be supplemented by summative and formative evaluation forms.

2F5

Competence-based model of medical education in the Republic of Kazakhstan

A A Akanov, S S Sarsenbayeva*, M A Abirova, A A Tabaeva (Kazakh National Medical University, named by S.D. Aphendiyarov, Almaty, Kazakhstan)

Background: In Kazakh National Medical University (KazNMU) named after Asfendiyarov S.D. having a 80-year history, more than 9,000 students study at 8 faculties of medicine, pharmacy and public health.

Summary of work: The cornerstone of the implementation of modern education is the introduction of competence-based approach to learning that will enable the release of medical education to a new level.

Summary of results: The first step in creating qualitatively new level of medical education in KazNMU was to develop a model of professional competence of graduates of KazNMU, which includes the following components: a cognitive component (knowledge), an operational component (skills), axiological component (communication skills), the legal component, continuous learning - willingness design and implement their own educational trajectory throughout life, ensuring the success and competitiveness. At present, a system for assessing competence of a medical student, which includes a detailed study of student progress towards specific skills.

Conclusions: KazNMU is an innovator in the field of innovations in medical education in Kazakhstan, having introduced in the training of the competence-oriented approach, as well as many innovative methods of teaching students.

2F6

The attitudes of students on examination methods and their performance in the examination at Oulu University Medical School Finland

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Background: We wished to investigate the views of 5th year medical students (N=64) on different types of examinations during the OBGYN course at Oulu University, Finland.

Summary of work: In a multiple choice (MC) examination including polling system we had 4 **Background** questions which were combined the results.

Summary of results: A majority of students wished to be allowed to have all course material in the final examination. Most students, 73%, preferred clinical cases as the best examination method. They also succeeded well in the examination.

Conclusion: The results supports to the current way of OBGYN teaching.

Take-home messages: Students of today value clinical patient cases as a superior testing method most likely because of their reality like approach.

2G   Oral Presentations: Self-Assessment 1 / Multiple Choice Questions

2G1

Does self grading improve student assessment outcomes?

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Background: Clinical competence is multidimensional with many different methods used for assessments.   The Clinical Performance Examination (CPX) is a collection of twelve 15 minute case simulations used to evaluate the competence in the diagnosis and treatment of patients.

Summary of work: The students self-graded their exam as a formative assessment to prepare for the USMLE. 110 MS IIIs completed their assessments. Each student received an individualized e-mail with their written exams and the grading rubric. A grade sheet was provided.

Summary of results: 110 students returned their self-graded scores. Each student's exams were compared to an independently scored exam to validate student scores. A questionnaire was distributed to determine the student's perception of this experience. A comparison was made to determine student scores on the USMLE exam over the past three years.

Conclusions: To date, all students have successfully passed the USMLE CS Step 2 with a self-reporting they felt more confident and better prepared. Previously, only 94% were successful in their first attempt to pass. Formative evaluations appear more effective in preparing students to successfully pass the national exam.

Take-home messages: Formative assessments for MS IIIs more effectively prepared them for the USMLE National CS Step 2 Exam.

2G2

E-log of clinical competencies: A guideline and assessment tool

Sh Sulaiha Aznal, Ramesh C Jutti, Chiu Chee Kid, Nazimah Idris (International Medical University, Clinical School, Seremban, Negeri Sembilan, Malaysia)*

Background: One of the components during training that often under looked is clinical competency due to lack of standard ways to encompass formative and summative assessment on it. This innovation is structured to evaluate the students' perception on their achievement of the competencies.

Summary of work: A clinical competency e-log consists of different components of skills is formatted to serve two objectives: 1. A guideline on the expected clinical competencies at each training year in medical programme. It is available in the E-learning platform. 2. A student's self assessment tool on their competencies and the teaching faculties to use it as a formative assessment. It is structured with scoring system from 0 (no knowledge or no confidence to practice) to 4 (able to apply knowledge to practice or confident to perform with/out supervision).

Summary of results: The e-log was tested on 3 cohorts of students of semester 7, n=67(after 1 year of clinical training), semester 9, n=76 (after 2 years) and semester 10, n=78 (completed 2.5 years). In general, the scores significantly increase longitudinally from semester 7 to 10 (p value-0.000) and matched the predetermined scores for each component of skills. Students also found the template useful as it helps them to know what competencies are important to be attained.

Conclusions: Self assessment allows recognition of one's clinical inadequacy thus measures to be taken. As it is made available online, it can be revisited as per necessary.

Take-home messages: This e-log can be adapted as an assessment by graduates in other programmes

2G3

Self-Assessment by Students: A method for program evaluation & further training needs assessment

Thomas Vengail Chacko, Yegnanarayanaiyer Saraswati Sivan* (PSG Institute of Medical Sciences & Research, Department of Community Medicine, Coimbatore, India)*

Background: The "Problem-Solving for Better Health" is a semester-long program to help students become doctors capable of doing research to solve community's health problems. However, which sub-components of the research training process required further strengthening was not being evaluated.

Summary of work: After the program, a "Retrospective-Pre survey" helped students self-assess gain in their level of competency for each of the 20 sub-components of the research process which they underwent. Self-assessment (from novice to competent level) is helped by defined criteria used in the Dreyfus scale of competency assessment.

Summary of results: The Program was effective in increasing the research competencies of the students by a significant 86.98% over their pre-test scores (p = 0.0001). This was more so for the research competency sub-components like framing the research question, methodology, writing results and discussion. It identified research competency sub-components that improved the least (data collection, data analysis and abstract writing) and hence the areas that need further training inputs.

Conclusions: Self-assessment of competency by students is generally not reliable, but can be used for program

evaluation to identify program sub-components that need further inputs.

Take-home messages: Self-assessment is useful to identify the gap between expected and attained research sub-competencies and thereby areas that need further improvement.

2G4

A confidence and safety matrix to determine insight and foresight from MCQ responses

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Background: Healthcare professionals should demonstrate insight (by accurately judging their capability) and foresight (by recognizing the consequences of their actions).

Summary of work: A scoring system has been developed where students rate their confidence of their responses and where incorrect responses are stratified for safety. An MCQ test for year 5 medical students used these two factors within a matrix. This matrix was used to inform progress decisions and included in feedback.

Summary of results: 67 students sat the MCQ. Insight was demonstrated through levels of confidence reflecting an increasing likelihood of being correct: 44% (145/329) for low confidence, 59% (268/456) for moderate confidence, 81% (379/466) for high confidence. Foresight was more limited as safety was not well associated with confidence: responses not correct and unsafe to any degree were 44% (81/184) for low confidence, 43% (81/188) for moderate confidence and 60% (52/87) for high confidence. There were 8 students who gave 9 incorrect highly unsafe responses held with high confidence.

Conclusions: The matrix provides information on insight and foresight of the students and could be used to guide students learning.

Take-home messages: The matrix provides useful additional information to usual MCQ scoring, decision making and feedback.

2G5

The 31 Revised Taxonomy of Multiple-Choice Item Writing Guidelines: Can it be used as a Vetting Protocol?

Majed Wadi*, Muhamad Saiful Bahri Yusoff, Ahmad Fuad Abdul Rahim (Medical Education Department, School of Medial Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia)

Background: The vetting process consumes a lot of time and effort of faculty members. To date, there are no evidence-based vetting protocols although many references highlight evidence-based guidelines in item writing. The authors modified a vetting protocol from these guidelines and measured their colleagues' view of its use.

Summary of work: Ten non-vetted questions were randomly selected and distributed to six medical educationists who vetted them using the 31 revised taxonomy of multiple-choice item writing guidelines as a vetting protocol. They were then asked to reflect on their feedback of its using via a guided survey.

Summary of results: About half of them found it difficult to use and 66.7% recommended for further revision and paraphrasing. Approximately half of them could not follow the guidelines particularly related to the writing formats. They (50%) were also uncertain of its functionality and applicability.

Conclusion: Although the authors believe the protocol has great potential in aiding and standardizing the vetting process, effort must be taken to validate it and make it user-friendly.

Take-home messages: In the age of evidence-based practice, it is worth to search for evidences of the vetting process to assure insight incentives for those who spend extensive time and efforts.

2G6

Psychometric Analysis of Multiple Choice Questions Tests In Qassim College of Medicine through the Past Ten Years: Venues for Improvement

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Background: Invalid questions exert a detrimental effect on test reliability, characteristics, student scores, and pass–fail outcomes. The aim of this study was to examine the frequency of badly written MCQs, their characteristics, and their relations with test reliability and overall students' scores.

Summary of work: The study examined 10 years of examinations in Qassim University, College of Medicine. A total of 287 exams were included; 17706 questions and 88,530 question items were analyzed. Psychometric parameters including the difficulty index and discrimination index were calculated for all tests and for each item in these tests. Test reliability was calculated when possible. Item and exam characteristics, correlation between Non-Functioning Distractors (NFD) and different test parameters were analyzed.

Summary of results: Only 5.2% of the MCQs in this study had no NDF while 74.1% of all questions have two or more. Questions with non-functioning distractors have poor discrimination, more difficult; impacts good students more than others and affect overall exam reliability.

Conclusion/Take-home messages: It is the quality of questions and their construction that affects the students' evaluation and the reliability of the exams. Increasing the number of options in MCQs was only beneficial when good quality items were well written. Bad quality questions impacted the good students and rendered exams more difficult and less reliable.

2H   Oral Presentations: Postgraduate Specialist Training

2H1
A method of assessment of clinical microsurgery skills

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Background: Microsurgery is an essential component in Plastic Surgery training. Competence has become an important issue in current surgical practice and training. The complexity of microsurgery requires detailed assessment and feedback on skills components. We present a method of Structured Assessment of Microsurgery Skills (SAMS) in the clinical setting.
Summary of work: Three types of assessment (modified Global Rating Score, errors list, summative rating) were incorporated to develop the SAMS method. Clinical anastomoses were recorded on videos using a digital microscope system and were rated by three Consultants independently and blinded.
Summary of results: 15 clinical cases of microvascular anastomoses performed by trainees and a Consultant Microsurgeon were assessed using SAMS. The Consultant had consistently the highest scores. Construct validity was also demonstrated by improvement of SAMS scores of microsurgery trainees. Overall inter-rater reliability was strong (α= 0.78).
Conclusions/Take-home message: The SAMS method provides both formative and summative assessment of microsurgery skills. It is demonstrated to be a valid, reliable and feasible assessment tool of operating room performance to provide systematic and comprehensive feedback as part of the learning cycle.

2H2
An Interim Review process supporting ARCP-the KSS experience

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Background: The Annual Review of Competence Progression-ARCP is the process which underpins progression for Trainees covering their specialty curriculum in the UK. A panel reviews all information, including all assessments and issues either a satisfactory outcome to enable progression or one that requires remediation.
Summary of work: Since 2007 an interim process to support ARCP has emerged commencing with the School of Surgery. This process is supported by an e-portfolio and is hosted at local venues in the hospitals. Training Programme Directors with administrative assistance from specialty workforce run the events.
Summary of results: Six specialties now run interim reviews at the Local Education Provider hospitals.
1. They are timed to occur a minimum of three months before expected ARCP.
2. The supporting panel reviews individual trainee progression face-to-face with the trainee.
3. The specialty e-portfolio is utilised and updated.
4. The trainee is reminded of the required assessments against the curricular timeline.
5. Trainees requiring tailored remediation are identified so that the ARCP outcome will be satisfactory.
Conclusions: The interim review process is an increasingly popular method amongst specialities to ensure successful curricular objectives are met prior to ARCP.
Take-home messages: Review of trainee progression at local level is popular and enables trainees to meet their mandatory assessment targets.

2H3
Measuring Non Technical Skills (NTS) during Residency

EHAJ Coolen*, JMT Draaisma, JL Loeffen (Department of Paediatric Surgery, Radboud University Nijmegen Medical Centre, Postbus 9101, 6500 HB, Nijmegen, The Netherlands)

Background: Non-technical skills (NTS) are essential for optimal team performance during critical patient situations. Residency programs rarely focus on how to achieve optimal NTS. We studied the applicability of the Ottawa Global Rating Scale (OGRS) as a monitoring tool for NTS during paediatric emergency simulations.
Summary of work: 18 residents were included in our study and agreed to video-assessments on NTS. We collected 6 different simulated emergencies per resident during a one year period (n=108). We used the OGRS to structure feedback and monitor individual progression of NTS in residents. Furthermore we studied the possibility of using the OGRS as a tool to differentiate between novice, more advanced and proficient residents.
Summary of results: Preliminary results show a high level of satisfaction among residents receiving structured feedback on NTS. Scores on leadership and problem solving

skills differentiate best between novice and more advanced residents.

Conclusion: The OGRS can be used to structure feedback on NTS during video-debriefing. Individual NTS can be monitored using the OGRS and differentiates between novice and more advanced residents.

Take-home message: The OGRS can be used as an effective formative tool in monitoring NTS.

2H4
Should we Introduce Real Life Biases into Speciality Trainee Assessment?

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Background: Valid assessment of high level (specialist) clinical competence through clinical exams should reflect the clinician's ability to cross common/important diagnostic hurdles. Cognitive bias has been consistently shown to underlie diagnostic errors among specialists, however de-biasing skills are not routinely assessed in most clinical exams.

Summary of work: Analysis of Australian Ophthalmology speciality clinical examination patterns (as a representative example).

Summary of results: The analysis shows over-representation of artificially "clean"assessment items and lack of realistically-biased items ("red herrings", misleading previous diagnoses, important findings irrelevant to the patient's complaints etc). This "clean assessment" philosophy provides valuable information about candidate knowledge but little or no information about the ability to use that knowledge in real life. It therefore fails to assess a crucial skill, the lack of which routinely underlies adverse patient outcomes.

Conclusions: We call for specialist assessments to include a component in which nothing can or should be assumed by the candidate, therefore authentically mimicking common biases and testing the candidate's ability to cope with them. This is a key clinical skill.

Take-home messages: Specialist assessors should be mindful of common or important diagnostic errors and construct part of their assessment items around them.

2H5
Prevalence of harassment and discrimination among residents in Saudi Hospitals "A Multi-Regional Study"

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Aim: To assess the prevalence of harassment and discrimination among residents at the National Guard Hospitals "NGH".

Summary of work: In 2010, a cross sectional survey was conducted at NGH. A total of 213 residents [123 male (57.75%), 89 female (41.78%)] returned a completed questionnaire. Harassment was subdivided into different types, such as the following: verbal abuse, academic abuse, physical abuse and sexual harassment, as well as discrimination on the basis of gender, region of origin or physical appearance. Male and female responses were statistically compared using chi-square analysis.

Summary of results: Out of the 213 residents, 83.64% of respondents reported at least one of the types of harassment considered in this study. The most frequently experienced forms of harassment were verbal abuse and gender discrimination (61.5% and 58.29%, respectively). Sexual harassment was commonly reported (19.34%) and was experienced significantly more often by female residents than by male residents (p=0.0061).

Conclusion: The results of this study demonstrate that harassment of NGH residents is high in general and that the rates of specific types of harassment are high as well. Hopefully, elaboration on the occurrence of this unsavory tradition in medical culture will lead to the establishment of strong preventive methods against it.

2H6 from 6E2
Joining the dots on workplace-based assessment

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Background: A system to monitor performance on workplace based assessment longitudinally within an undergraduate medical programme has been shown to improve opportunities for remediation and can act robustly on problems with professionalism. There is an increasing need to combine information from a variety of workplace based assessments within postgraduate programmes, yet systems to do this are less well developed.

Summary of work: Problems with current postgraduate workplace based assessments are: (1) assessment burden, (2) focus on box-ticking rather than learning, (3) paucity of feedback and (4) confusion about the purpose and types of assessment. WPBAs need to inform summative judgments but there is the still the need to ensure the safety of patients.

Summary of results: We present solutions to these issues that have been shown to work in an undergraduate setting

and propose how these could be applied to postgraduate settings

Conclusions: Fewer workplace-based assessments of better quality are required to enhance learning development and provide a robust process to inform progression. Undergraduate and postgraduate medicine can together provide solutions to the current problems related to workplace-based assessment

Take-home messages: Setting clear expectations, clarifying purpose, use of conditional pass and longitudinal monitoring assist in learning and monitoring progress.

2I   Workshop: The Objective Structured Clinical Examination: Creating your own reliable and valid assessment tool
M Ladhani*[1], H Writer*[2] ([1]McMaster University, Department of Pediatrics, Canada; [2]University of Ottawa, Department of Pediatrics, Canada)

Background: A reliable and valid assessment of clinical competence has become an increasingly important area in medical education. Clinical competence encompasses elements such as history taking, examination skills, skills in practical procedures, communication, collaboration, problem solving ability and management skills. The objective structured clinical examination (OSCE) is now used widely in medical education because of its reliability and validity. The OSCE can be used not only to assess medical knowledge but also other non-medical expert skills critical to physician competence. In an OSCE the candidates rotate sequentially around a serious of structured cases in which specific tasks have to be performed. The marking scheme is structured and determined in advance. There is a standard time limit for each station. The basic structure of an OSCE may be varied but the fundamental principal is standardisation of tasks, time and marking method.

Intended Outcomes: The participants will learn the basic principles of an OSCE. The reliability, validity, educational impact and acceptability will be reviewed. The workshop will help participants design a template applicable to any individual OSCE station as well as a blueprint for a multiple station OSCE examination. Both template and blueprint will hold multipotential for OSCEs assessments across all levels of the curriculum.

Structure: Didactic plus hands on OSCE design.

Intended Audience: Educators/Assessors undergraduate and post graduate medical education

Level of Workshop: Intermediate

2J   Workshop: The International Medical University Partnership: Lessons from a 20 year programme of international medical education and workforce development
J Chow*[1], M Boohan*[2], A Carmichael*[3], V Lim*[4], S Peters*[5] on behalf of Partner Medical Schools ([1]St George's University of London, Division of Clinical Sciences, Cranmer Terrace, London SW17 UK; [2]Queen's University Belfast, Centre for Medical Education, Belfast, UK; [3]University of Tasmania, School of Medicine, Tasmania, Australia; [4]International Medical University, Kuala Lumpur, Malaysia; [5]Memorial University of Newfoundland, Faculty of Medicine, St John's, Canada)

Background: Since its establishment in 1993 the International Medical University (IMU) represents a unique concept in international education. Students entering IMU undertake 2.5 years of study in KL, subsequently transferring to one of 30 international partner schools to complete their training. 1,783 students have transferred to partner schools over the last 20 years, there is a high success rate in terms of graduands. The annual Academic Council meeting enables IMU and partners to quality assure the IMU programme, identify mutually acceptable solutions to issues arising from students transferring to institutions with diverse curricula and pedagogical approaches and offers partners a distinctive networking opportunity.

Intended Outcomes: Highlight the factors that have led to the success of IMU.

Emphasise the importance of employing a flexible evaluation framework.

Identify the factors that contribute to successful collaborations in international medical education

Structure: Presentations by representatives from IMU and partner schools focusing on successes and challenges of the programme over 20 years. Group work to explore:

Benefits of engaging in international partnerships

Lessons for other institutions from IMU's approach to curriculum development and quality assurance.

Intended Audience: Those interested in international medical education and programme evaluation.

Level of workshop: Intermediate.

2K   Workshop: Assessment of Medical Ethics – the use of "Goldfish Bowl" format for formative purposes
Peter Haughton (School of Medicine, King's College London, UK)

Background: There are a number of different approaches to the assessment of medical ethics, - essays, short answer

questions, multiple choice, vivas and OSCEs (Objective Skills Clinical Examination). All have certain strengths and weaknesses. At King's College London, School of Medicine we have used the "goldfish bowl" format for case discussion for the formative assessment of the cohort of 450 students at the end of their second year of study.

Intended Outcomes: The purpose of the workshop is to give participants experience of the use of observed group discussions of a case study together with tips on the giving of constructive feedback.

Structure: Delegates will be invited to participate in a "gold fish" group discussion as if they were medical students being assessed for their ethical competency. The group activity will be observed by the workshop leader and his colleague and formative feedback will be given. Following from this exercise, a general discussion around the strengths and weaknesses of the method of assessment will take place.

Intended Audience: All those engaged in assessing ethical competency may find this workshop particularly useful. It will benefit participants to have some knowledge of medical ethics and its assessment whether at undergraduate or postgraduate levels.

Level of workshop: Intermediate.

2L   Workshop: Using Technology to Assess Simulation Performance of Active Participants, Transform Passive Observers into Activated Learners, and Evaluate Time-To Metrics
Susan Eller, Paul Pribaz, Craig Adams, Lanty O'Connor (Simulation Technology and Immersive Learning, Feinberg School of Medicine, Northwestern University, Chicago, IL, USA)

Background: A typical simulation scenario involves an active learner(s) and several passive observers of the hot-seat performance. This workshop will demonstrate technology that allows the instructor to capture assessments of the active learners, capture time-to metrics, and transform the otherwise passive observers by having them function as raters. The technology allows faculty to access observer assessment of the simulation performance, including error recognition, and guides debriefing. The workshop will include discussion of further implications, including: data collection, future research implications, and financial efficiencies of simulation effort.

Intended Outcomes: After the session, participants will be able to:
1. Use technology to gather real-time performance data on both active simulation participants and observers.
2. Apply technology to transfer otherwise passive observers into active learners.

3. Describe ability for faculty to identify performance gaps in both active participants and observers.
4. Utilize this data to customize the debriefing experience for individualized adult reflective experiential learning.

Structure: Opening Discussion; Observe video of team performance, use iPads to rate performance (Authors will provide iPads); Debriefing of results; Discuss assessment and measurement metrics; Discuss debriefing of both active learners and activated learners ; Evaluation and open discussion.

Intended Audience: Instructors using simulation-based education that includes observers, researchers seeking new methodologies for assessing behaviorally-anchored performance.

Level of workshop: Intermediate.

2M   Workshop: Assessment of competency and performance across the continuum of Health Professional Education
D A Kandiah (University of Western Australia, Faculty of Medicine, Dentistry and Health Sciences, Education Centre, Perth, Australia)

Background: Assessment of clinical competence needs a range of tools that will allow the examination of knowledge, intellectual application, attitudes, practical skills and teamwork. This includes appropriate diversity and flexibility in assessment to produce the type of graduates who could be comfortable in any sphere of clinical practice.

Intended Outcomes: Outcomes include:
1. Determination of competency levels at each stage of training.
2. Awareness of how current assessment tools could be fine-tuned to provide integrated assessment across the continuum of undergraduate and postgraduate medical training.
3. Development of research collaborations to establish the reliability and validity of a combination of assessments to guide decision making and confirm progression through the spectrum of training.

Structure: The workshop will be divided into three sections:
A. Determination of level of learning and subsequent achievement: Novice, Learner, Competent, Capable, Proficient, Experienced, Expert.
B. Level of competency required e.g. Describe the clinical features and pathogenesis of a medical condition, Perform a full assessment and management of a patient with that condition.
C. Selection of best assessment tools for the level of competency required.

Intended Audience: This workshop will be pitched to those who are teachers in medicine and the healthcare professions, Deans, curriculum developers, course directors, assessment specialists, and researchers. Students

and trainees may benefit by contributing to discussions on their own experiences.

Level of workshop: Advanced.

2P Posters: Subjects in the Curriculum 1

2P1

Success Stories: Impact of Student Health Advocacy Projects on HKSAR Public Health

C Tam*, W Chan, DK Ip, AJ Hedley, TH Lam, JM Johnston (The University of Hong Kong, School of Public Health, Hong Kong)

Background: The MBBS Year-3 Problem Based Public Health (PBPH) module at the University of Hong Kong (HKU) exposes students to a broad range of public health issues, and prompts participation in advocacy projects.

Summary of work: To characterize the scope, methods and outcomes of undergraduate MBBS student public health advocacy projects. Using a qualitative approach previous PBPH advocacy projects (1999-2010) were reviewed and classified into themes. Media exposure and other ways in which public health messages were conveyed to the community were coded into response categories and classified as active or passive advocacy.

Summary of results: Advocacy project themes included smoking cessation, tobacco tax, obesity, organ donation, breast cancer screening, air pollution and cardiovascular disease. 24 advocacy projects were reported in the local print media; (19 in the top news section, 2 local news section, 3 editorial letters).5 in HKU newsletters, and 1 letter from the local health authority. Active advocacy attracted more media exposure.

Conclusion: These advocacy projects addressed a wide range of important public health issues and used diversified and multidimensional platforms with high levels of student engagement.

Take-home message: Based on this anecdotal success a formal evaluation study using Outcome-Based Approaches to Student Learning outcomes should be implemented.

2P2

Evaluation of the course work education employing Cognitive Behavior Therapy

M Shirakura[*](1)*, H Oka*[(2)]*, T Kamiya, F Suehiro, K Shirasuna*[(1)]*, M Sugai*[(1)]*, M Kobayashi*[(1)] *(*[(1)]*Promoting Office for Postgraduate Program, Graduate School of Biomedical Sciences, Hiroshima University; *[(2)]*Department of International Collaboration Development for Dentistry, Graduate School of Biomedical Sciences, Hiroshima University, Japan)*

Background: We have been conducting course work (CW) in the Graduate Program for BioDental Education in Hiroshima University since 2008. CW was designed for graduate students to learn basic principles and techniques of biomedical research through practice. This year, we attempted to take up Cognitive Behavior Therapy (CBT) into CW to improve the students' positive attitude. Here, we show the results of the new trial and comparison with former CW will be discussed.

Summary of work: Total 10 participants in 2010 and 9 in 2011 were enrolled in Startup-Program. The participants in 2010 evaluated themselves about the achievements of each topics item by item immediately after CW. That in 2011 evaluated themselves before and after CW. Then, we evaluated the students' positive attitude to the CW by grading into four ranks using self-evaluation sheets.

Summary of results: The participants in 2011 highly valued acquired skills and knowledge after the CW. They showed higher score in attitude to the CW than that in 2010.

Conclusions: The participants noticed what they should learn in the CW by adequately checking the aims of each topic before starting the CW. This trial indicated that it is effective to improve the way of education using CBT.

Take-home messages: Cognitive Behavior Therapy is an effective mean to improve CW education.

2P3

Independent Research Projects - A Useful Tool for Medical Students?

G.Dovey*, J.Montgomery,*, K.Walker-Bone, H.Adlam, I. Haq (Brighton and Sussex Medical School, Brighton, UK)

Background: Brighton and Sussex Medical School's academic training includes formally assessed individual research projects (IRP). This is unique within the UK. Our study investigated factors governing success in the IRP, the influence of project choice on career pathways and the impact of academic skills training on graduate doctors.

Summary of work: Information was obtained from undergraduates and newly-qualified doctors via questionnaires and BSMS records.

Summary of results:
• 53% of students increased their understanding of the research process as a result of their project.
• 79% have enhanced interest in research.
• 45% increased their interest in a particular specialty.
• Students with an intercalated BSc were likely to achieve a higher grade (p= 0.028).
• Graduates found audit skills and presentation skills to be essential academic competencies during the foundation programme. They would appreciate further tuition in these areas.

Conclusions: Assessed research projects gives students the skills and motivation required to perform research and can inform their career choices.

Take-home messages: Many aspects of the academic curriculum are applicable to newly-qualified doctors, but

our study determined that expansion of some aspects could further support them. Doctors should graduate with the knowledge required to undertake research. Modules such as the IRP provide an enjoyable way of achieving this.

2P4

Surgical Skills for Students: A purpose designed course for all undergraduate students

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Background: The Intercollegiate 'Basic Surgical Skills' (BSS) course was established two decades ago to improve practical skills teaching for trainees, and is now embedded in many training systems worldwide. Improvements in operating skills have been scientifically confirmed.
Summary of work: UK Medical Schools must teach and assess a series of clinical skills mandated by the General Medical Council. Seven of these are 'surgical', including secure knotting, suturing, asepsis, safe handling of sharps and efficient handling of instruments and tissue. The 'Surgical Skills for Students' (SSS) course was designed utilising BSS philosophy and content and from advice by UK student surgical societies.
Summary of results: The course was piloted twice in London and once at the Royal Preston Hospital. Refinements were made from participant and faculty evaluation. A purpose made DVD and course manual were developed containing pre-course reading and video demonstrations. A modular approach allows SSS to be delivered and assessed as two half-day sessions or a complete one day course. Pilot course evaluation showed high satisfaction levels.
Conclusion/Take-home message: A low-cost resource is now available to centres already delivering BSS or a similar variant, and to any medical school able to utilise existing BSS faculty.

2P5

Perspective of senior dental students of the achievement of educational objectives using the CIPP model of evaluation

A Pakdaman, R Kaboosi, MJ Karrazifard (Community Oral Health Department, School of Dentistry, Tehran, Iran)*

Background: The aim of the present study was to assess students' perspective on the achievement of the educational objectives of the Community Oral Health and Periodontology Departments using the CIPP model of evaluation.
Summary of work: A cross sectional survey of senior dental students has been conducted anonymously using a questionnaire consisting of four domains as introduced in

the CIPP model of evaluation (Context, Input, Process, and Product).
Summary of results: The response rate was 67.7% for year 6 (n=44) and 87.5% for the year 5 students (n=56). From the list of items presented, students had fewer problems with the teaching skills and motivation of the educators in the Community Oral Health Department compared to Periodontology Department. From the list of items students' self assessment of their clinical competencies obtained in periodontology was weak in some complicated procedures such as: implant, making periodontal splint, electro surgery and management of acute gingivitis.
Conclusion: The evaluation of the educational achievements of the two departments (COH and Periodontics) using CIPP model of evaluation showed that there is significant difference in two domains (Context and Process).
Take-home messages: Usefulness of the CIPP model in medical education.

2P6

Evaluation of medical students' and students' awareness of the rights of the child

Davendralingam Sinniah, Nurjahan M Ibrahim (Department of Paediatrics, IMU Clinical School Seremban, Jalan Rasah 70300 Seremban)*

Background: Malaysia ratified the Convention on the Rights of the Child (UNCRC) in 1995, thereby undertaking to disseminate knowledge on the rights of the child (RC) within its capacity and responsibility.
Summary of work: A structured questionnaire was developed to determine medical students' and student nurses' awareness of the UNCRC and its provisions. The questionnaire was administered at 2 premier private medical universities in Malaysia.
Summary of results: The results of the survey reveal that the majority of medical students and nurses are unaware of the UNCRC or its provisions. They had not heard of the UNCRC either at school, or university. Most have no idea about the civil, cultural, economic, political and social rights of children.
Conclusions: Medical students and student nurses are unaware of the UNCRC and its provisions. Unless positive steps are taken to introduce this topic into the curriculum, they will be completely unequipped to understand the needs of children, and will be poor advocates of child rights. Unless this serious shortcoming is addressed, Malaysia will be paying only lip-service towards fulfilling its commitment to the UNCRC, and its children whom it has pledged to protect.

2P7

Evaluation of dental students' training in geriatric oral health programme (GOHP)

ZA Hasan*, OH Al-Bayati , SP Khoo, BS Tan, CG Toh (International Medical University ,Dentistry Department, No 126, Jalan Jalil Perkasa 19, Bukit Jalil, Kuala Lumpur 57000, Malaysia)

Background: The study objective was to evaluate effectiveness of the teaching-learning process (TLP) involved in the GOHP for dentistry students.

Summary of work: The geriatric oral health theme is part of Year Three (Y3) dental curriculum in IMU. A total of 40 dental students participated in this study. They were required to conduct a clinical examination for the elderly to identify the aging effects on the dentofacial structures and their dental needs. This was followed by a workshop aimed at designing an oral health education programme customized to each student's patient's needs. The GOHP's effectiveness was evaluated using a self-administered questionnaire.

Summary of results: 75% of the students agreed that the training programme had successfully: (1) sensitized them towards harbouring a caring attitude towards the elderly, (2) enabled them to improve their interaction with the elderly, (3) made them realize the relevance and importance of including community geriatric dental education in their curriculum.

Conclusions: Supplementation of a clinical-based geriatric dentistry learning activity in addition to the theory knowledge is relevant and important towards enhancing the students' understanding of the elderly needs.

Take-home messages: Incorporation of GOHP will help future dentists be more confident when catering to the oral and dental needs of the elderly.

2P8

The effect of education by the group of students as "safe community pioneers" on knowledge, attitude and practice about safe nutrition of secondary school students in Zabol

Hashemi Nayereh*, Hashemi Zohreh, Miri Abdolhosein, Hashemi Roya (Nutrition &Drug Institute, Zabol University of Medical Sciences, Iran)

Background: Good nutrition is important in human life and is a basic requirement for health especially in early growth. Lack of awareness of the principles of nutrition and imbalanced and inadequate nutrition has an important long-term adverse effect on children's performance and health.

Summary of work: Students' knowledge, attitude and practice (KAP) about safe nutrition in a secondary school (age range 12-14 years) were examined by a questionnaire and checklist. Then 10 students were selected as "safe community pioneers" based on interest. They received training through researchers and gave the necessary training to other students. They were monitored over school buffet and healthy snacks. Students' KAP was examined by the same questionnaire and checklist after 2 weeks. Data comparison was done by KAP Questionnaire and checklist before and after training and also compared with students in other schools where education was delivered by health teachers. SPSS17 was used for analysis.

Summary of results: The results showed the KAP of recipients after training compared with before training significantly increased (p=0.000). Also KAP of students in schools where education was delivered by safe community pioneers significantly increased in comparison with students in other schools where education was delivered by health teachers.

Conclusions: The results showed that when nutrition education is conducted by a group of students (safe community pioneers) it is more efficient and more effective than health teachers especially in teenagers.

2P9

Student Oral Case Analysis (SOCA) Examination as the tool to assess students' clinical reasoning skill

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Background : The clinical reasoning modules were developed at the end of each preclinical year. However, the tool to assess clinical reasoning skill is not yet well established, so it was decided to conduct an oral examination.

Summary of work : The oral examination, known as SOCA (Student Oral Case Analysis), was performed for the fourth and sixth semester. Every student was handed by one complete clinical case to be analyzed in thirty minutes, and then the concept map of the case was presented to the examiners in twenty minutes.

Summary of results: From the final result, 50.94% fourth semester students passed the examination and 49.06% failed. Of he sixth semester students, 60.32% passed and 39.68% failed.

Conclusion: The initial SOCA implementation raised some issues. The first was that SOCA was considered an important tool to assess clinical reasoning skill.   The second was that SOCA as the first experience for both students and examiners might affect the final result. The third was the sixth semester students had much more prior knowledge than the fourth so that the number of students who passed was higher. Those issues proposed consideration to continue and improve the SOCA.

Take-home message: SOCA could be used as the alternative in assessing clinical reasoning skill of preclinical medical student.

2P10

Is it necessary to pass the practical educational course in the university dependent educational pharmacy?

Mohammad Ali Darbandi, Majid Zande Karimi* (Pharmaceutical Research Laboratory, School of Pharmacy, Zabol University of Medical Sciences, Zabol, Iran)

Background: The goal of the study was to determine how important it is to pass the practical educational course in the university dependent educational pharmacy by the students.

Summary of work: 22 students of pharmacy from Zabol University of medical science were divided in two groups. 11 students were located in group A and 11 others in group B. The students of group A passed the educational course in the university dependent educational pharmacy and the students of group B passed the educational course in the pharmacies which were located in the different points of the city. Two months later the ability of the students in filling the prescription, drug information and communication of the student with the patients were evaluated by the exam.

Summary of results: The results showed that the ability of the students of group A was more than group B. It may be related to the presence of the members of the scientific mission in the university dependent educational pharmacy and their ability in teaching the skills to the students.

Conclusions: The results of the study showed that the students should pass the practical educational course in the university dependent educational pharmacy and if the students want to pass the practical educational course in the other pharmacies they should select the pharmacies in which the members of the scientific mission are present.

2Q   Posters: Students and Learning Characteristics

2Q1

To determine the cognitive style of first year medical students and evaluate relationship to academic performance in the first year examination

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Background: The study was to determine the cognitive style of the first year medical students; evaluate relationship to performance in the first year examination and difference in cognitive style related to gender. The group embedded figures test was used to determine the cognitive style.

Summary of work: The quasi-experimental study design recruited all consenting first year students. The cognitive styles were determined by group embedded figures test and were categorized into field dependent, field neutral and field independent. The SAQ results of the first MBBS examinations were used to determine relationship between GEFT and SAQ results. The chi-square for categorical data was generated using SPSS version 11.5 to test for statistical significance.

Summary of results: In the first part of the study, 35 students completed the GEFT questionnaire. 80% were found to be field independent, 17.1% field neutral and 2.9% field dependent. The second part of the study relating SAQ and GEFT results is scheduled for November 2011. The first part of the study was repeated again with a second cohort of students from the August 2011 admissions to validate the results and is in the midst of analysis.

2Q2

Medical students' personal epistemology (and learning approaches) related to assessment outcomes and thinking about wider health concepts

G Maudsley (Department of Public Health & Policy, Whelan Building, Quadrangle, The University of Liverpool, Liverpool L69 3GB, UK)

Background: The literature tends not to explore medical students' personal epistemology, particularly for appreciating wider health issues. Tomorrow's Doctors (2009) implicitly promoted better ways of 'knowing', and broader knowledge-types, e.g.: "Apply to medical practice the principles, method and knowledge of population health and the improvement of health and healthcare". Aim: To explore medical students' cognitive development and learning approaches related to their appreciation of a population health perspective.

Summary of work: Senior medical students (Liverpool problem-based curriculum) completed a questionnaire including: ---Moore's Cognitive Complexity Index (CCI) [for n~112] (and Entwistle learning approaches); ---open-item: what has prepared them for reducing health inequalities when doctors. A subgroup of responders had also, back in Year 1, provided their CCI and described their developing knowledge-base. Open-items were analysed inductively and deductively. Overall analysis incorporated examination outcomes for Population Perspective theme.

Summary of results: Examples of how responders conceptualize wider health issues are linked to their personal epistemology (CCI and descriptions of knowledge-base) and achievement in assessment.

Conclusion: Using several sources to piece together personal epistemology gives valuable insights.

Take-home message: Exploring such insights further should contribute to supporting students to broaden and make best use of their 'knowledge'.

2Q3

Restructuring the paradigm of learning approaches adopted by undergraduate medical students through psychometric evaluation of Revised Two Factor Study Process Questionnaire (R-SPQ-2F)

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Background: The study aimed at analyzing construct of the paradigm 'learning approaches' adopted by undergraduate students of Melaka Manipal Medical College (MMMC) in their preclinical phase, through determining psychometric properties of Revised Two Factor Study Process Questionnaire (R-SPQ-2F).

Summary of work: Responses were obtained from seven batches (n=1601) from September 2005 (Batch 17) to September 2008 (Batch 23). Internal consistency, test retest reliability and confirmatory factor analysis were performed using SPSS version 16.

Summary of results: The R-SPQ-2F inventory demonstrated acceptable internal consistency and test retest reliability. Factor analysis resulted in a four factor solution, different from original, explaining 47.29% variance. Factor solution obtained was given to six experts and based on their feedback the constructs in which each factor to be placed was decided. The newer factor structure is as follows: Factor 1: Surface approach with strategic outcome orientation; Factor 2: Deep approach with meaningful outcome orientation; Factor 3: Deep approach with learning process orientation; Factor 4: Surface approach with learning process orientation

Conclusions/Take-home messages: Study proposes a newer factor structure for R-SPQ-2F. MMMC students were found to have two dimensions of learning and outcome orientation in both deep and surface approaches revealing a newer possible dichotomy in the students' approaches to learning.

2Q4

Learning styles and learning approaches influence scores in various assessment tools

SC Soon*, S Ghosh (MAHSA University College, Faculty of Medicine, Kuala Lumpur, Malaysia)

Background: Although first year medical students have achieved their best to qualify into medical schools, some might fail to continue showing their best performance in examinations. The study aims to find out if the revelation of learning styles and approaches made early in the medical course is able to influence performance.

Summary of work: Study was targeted on 107 Year One students. Learning styles (VARK and by Jester) and learning approach (R-SPQ-2F) questionnaires were filled up by students and results were compared with their performance in their First Year Examination, comprising various assessment tools such as Multiple True/False (MTF), Essay-type questions (ETQ), and Objective, Structured Practical Examination (OSPE) questions.

Summary of results: Of all students who performed well overall, over 70% were deep approach learners and had visual learning styles. However, most of the poor performers showed no dominant learning approach. Majority of the deep learners performed well in all types of assessment, MTF, OSPE and performed exceptionally well in ETQ format. Interestingly, the students who did not show any high preference for any learning approach showed generally lower scores in all three assessment tools.

Conclusions: Performance of the medical students is influenced by appropriate efforts based on their knowledge on how to learn and also enhance their effectiveness at all levels.

Take-home messages: First year medical students should be made aware of their respective learning styles and learning approaches, which can serve as a feedforward strategy towards enhancing students' performance, appropriate towards handling various assessment tools.

2Q5

Association between emotional intelligence and job satisfaction in dentists

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Background: There has been increasing interest in the assessment of emotional intelligence (EI) in the health professions because of its association with patient satisfaction and staff turnover. This paper explores the association between EI and job satisfaction (JS) in recently qualified dentists working in the Malaysian public health service.

Summary of work: All 581 dentists in the government's Three-Year Compulsory Service were surveyed using a postal questionnaire during April to June 2008. The factor structures of EI and JS were explored. Association between EI and JS were analysed using Pearson's r.

Summary of results: Of the 344 (59.2%) respondents, there were no statistically significant differences in EI and JS total scores according to their socio-demographic and

occupational characteristics. EI was statistically significantly correlated with JS total score (r=0.40, p=0.001). Factor analyses suggested a 1-factor EI and 7-factor JS construct. EI was associated with six JS factors; patient relationships (r=0.28, p=0.001), quality of care delivered (r=0.57, p=0.001), peer support (r=0.30, p=0.001), professional development opportunities (r=0.21, p=0.001) and support staff relationships (r=0.24, p=0.001), but not with income satisfaction.

Conclusions: High EI scorers are more likely to derive JS. This finding has implications for EI assessment in student selection, and in professional development.

2Q6

The relationship among personality traits, perceived emotional intelligence, and physician empathy in medical students

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Background: The purpose of this study was to explore the relationships between personality traits, perceived emotional intelligence (PEI), and physician empathy in medical students.

Summary of work: Three hundred and twenty-three medical students completed a survey packet consisting of three standardized instruments. Standardized instruments included the Mini-Marker scale, the Trait Meta-Mood Scale (TMMS), and the Jefferson Scale of Physician Empathy-Student Version (JSPE-S). Data were analyzed by descriptive statistics, t-test, one-way ANOVA, and Pearson's product-moment correlations. The major findings were as follows.

Summary of results: Male students are more neurotic than female. Junior students obtained a significantly higher average rating of positive personality traits than senior students. Additionally, junior students in PEI and physician empathy are better than senior students. Physician empathy, PEI, and two of three TMMS dimensions: clarity of feelings, mood repair are positively correlated with Openness, Conscientiousness, Extraversion, Agreeableness personality, and negative correlated with Neuroticism. Attention to feelings is positively correlated with Conscientiousness and Agreeableness personality. Physician empathy is also positively correlated with PEI and three TMMS dimensions, i.e. attention to feelings, mood repair, and clarity of feelings.

2Q7

Medical student development for humanized health care

N Pajaree, M Sunisa, K Pitchaya, P Jarurin (Medical student affairs unit, Faculty of Medicine, Prince of Songkla University,Thailand)*

Background: In today's modern society with modern technologies medical profession can be easily dehumanized. Medical students should be immunized against changing for the worse.

Summary of work: In the academic year 2009, the first year medical students were interviewed and their professional attitudes and emotional quotient assesse. The students with low scores were selected to attend the project. In the project the students had opportunities to learn and develop themselves via self reflection. In-depth interviews were done at the end of the first year project.

Summary of results: The medical students in the project showed a positive attitude towards medical professionalism and humanized health care. They found that the project was fruitful for self development.

Conclusions: Medical students involved in holistic activities appreciated humanity and humanized medicine.

Take-home messages: Medical students should have opportunities to display humanity.

2Q8

Discussion of Glasser's "Quality World" among Medical Students

K Hwang, F Huan (Inha University School of Medicine, Department of Plastic Surgery and Center for Advanced Medical Education by BK21 Project, Incheon, South Korea)*

Background: Glasser described the "Quality World" as a "personal picture album" of all the people, things, ideas, and ideals that we have discovered and it increases the quality of our lives.

Summary of work: Participants were 205 medical students, 4 to 7 students were allocated as a group. They were asked to fill an open answer to 4 categories of "Quality World" (the people we most want to be with, the things we most want to own or experience, the idea or system of belief that govern much of our behavior, and the places we most want to visit) and discuss them in an open forum.

Summary of results: Among 205 students, 50.2% wanted to be with adoring people; followed by entertainers and artists (18%), 51.7% wanted to own material wealth; 27.3% considered family, friends, and lovers most valuable; 52.2% wished for an overseas trip. As a belief that governs much of their behavior, only a small portion of medical students thought wealth or honor are most valuable. Despite their low estimated value, wealth or honor are most important to pursue.

Conclusions: We suggest that discussing "Quality World" might be a useful tool to gain understanding among the health personnel in small group activities and increase group dynamics.

2Q9

Assessing the medical students' level of happiness in Tehran University of medical sciences

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Background: Happiness includes feeling of gladness and not of depression and has a direct effect on psychological health of students. Aim of this research is to determine the amount of happiness in medical students of TUMS.

Summary of work: This research is a cross-sectional study. Oxford happiness questionnaire has been used for data compiling. Questionnaires have been completed by students and after statistical analysis, the final report will be submitted.

2Q10

Promoting healthy behaviour choices: understanding patient challenges by undertaking a personal behaviour change task

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Background: Our first year medical school project aims to increase student awareness of the importance of unhealthy behaviours such as poor diet, smoking and physical inactivity, their systematic measurement; recommended behaviour targets; challenges in achieving patient behaviour change; and psychological theories which aid change.

Summary of work: Students are provided with evidence-based health behaviour guidelines. Students select whichever behaviour they would like to achieve improvement in, systematically record behaviour for one week (baseline), and then try to implement behaviour change for two weeks, using psychological theory as an aide. Students report their results and discuss outcomes reflecting on explanations for their success or otherwise. A virtual learning environment (Moodle) ensures project engagement and completion.

Summary of results: This assignment has been successfully completed by students over previous academic years. The use of deadlines for uploading sections of coursework has increased project quality and completeness. Students learn to use standard instruments and learn recommended professional guidelines early in medical training. Also, self-reported health behaviours improved over the course of the assignment.

Conclusions: This project allows students to test the difficulty of adhering to professional advice they themselves will give to patients. The assignment combines knowledge, skills and attitudes. The novel use of a virtual learning environment ensures high participation.

2Q11

Assessment of student's professional and personal attitudes: What do we know about our medical students from their undergraduate research?

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Background: Undergraduate research gives our MBBS Year 3 medical students opportunity to consolidate their evidence-based knowledge gained in previous two years of their medical education and apply the research principles to the selected topic. Medical students are frequently recruited as subjects for this students-led research. Favourite research topics include medical students' knowledge and attitudes towards different medical and health problems. Objectives of this paper are to asses student's professional and personal attitudes and identify factors that should be addressed in medical education planning.

Methods: A systematic review of MBBS Y3 research papers written during six years from 2005-2011. Selection criteria include primary studies with recruited subjects of medical students in Year 1-5 at the University of Hong Kong.

Results: 33 out of 90 papers (36.6%) were included in this review. Different categories of students' characteristics (knowledge and skills, perception of learning, lifestyle and behaviour, attitudes towards medical or health problems) have been analysed with the intention to identify psychological, physical and social students' needs important to tackle in medical curricula.

Conclusion: Undergraduate research provides us with the relevant and useful insights into various aspects of medical students' learning experience, professional attitudes as well as personal life. These should be considered within the context of a holistic learning environment for the medical education curricula planning.

2R   Posters: PBL/Community-based Education

2R1

A study of Problem based learning (PBL) process evaluation as a predictive tool for student performance in examinations

JP Judson, YY Hla, S Chakravarthy, PW Wai*, YS Chen* (International Medical University, School of Medical Sciences, 57000 Kuala Lumpur, Malaysia)

Background: PBL is a key learning tool at the International Medical University, the process of which is evaluated on six domains including group dynamics and professionalism.
Summary of work: Each student is independently assessed both by the facilitator and the other group members and the perceptions collated and qualitatively analysed. A few focus group discussions were later held for further analysis and feedback.
Summary of results: Students' self-perception scores tended to be high in early semesters and more modest and self-depreciatory in the later semesters. Peer scores were generally generous, while facilitator scores seemed more consistent, reliable and discriminatory. Student performance at the summative assessments showed best correlation with the facilitator evaluations. Focus group discussion results indicate that students understand the PBL philosophy better as they advance within the programme.
Conclusions: PBL assessment - though formative - is found useful by students for self improvement, with faculty feeling that it could be a good early warning system to flag students weak in communication and other interactive skills, that could hinder their success as a medical professional.
Take-home message: Continuous assessment of PBL processes could help identify and bring about useful improvements in student learning and development.

2R2

The results of the implementation of a new online interactive Problem Based Learning (PBL) Programme

Ella Iskrenko*[1], Trupti Jivram[1], Rachel Ellaway[2] ([1]St George's University of London, eLearning Centre, Cranmer Terrace, London SW17 0RE, UK; [2]Northern Ontario School of Medicine, Sudbury, Ontario, Canada)

Background: In 2009 St George's replaced its conventional Problem-Cased Learning undergraduate course with interactive online virtual patients (VPs) that allowed students to explore optional routes through patient cases by taking management decisions and dealing with the consequences of their actions. A study was conducted to examine the impact of this curriculum change on students.

Summary of work: The study was based on two metrics of performance. The first was based on tracking student discussion at different points in the case and the second tracked student contributions (opinion or knowledge) at decision and non-decision points in the case. Observations were made on both individual and group behaviour.
Summary of results: Students became increasingly actively engaged with the patient case and worked better as a team, at those points where the activity took on the characteristics of a problem-solving game. There were changes in individual and group behaviour, both in terms of students involved, and the types of contributions they made.
Conclusions: Learners changed their behaviour when using virtual patient cases, reflected in greater individual engagement with the case and in more collaborative working within each PBL group.
Take-home message: The move to online interactive PBL has led to an improvement in group discussion, knowledge sharing, and team behaviour.

2R3

New trend in manipulating of seminar in PBL

M Salah Ahmed (Faculty of Medicine, King Fahad Medical City, Saudi Arabia)

Background: The seminar is one of the most important activities in PBL. It helps to fill in the gap of students' knowledge in the PBL system. Sometimes the students lose interest regarding attendance of and interaction in seminars as we found that more than 30% of students were absent, and 50% attended without any interaction.
Summary of work: 45 students were allocated into 5 groups in the lecture hall and each group asked the questions that they wanted. Then each group was invited to answer the questions and the difficult one was answered by the staff representing each basic science subject. The staff decided the marks for each group and supplied the members of the winning group with gifts.
Summary of results: All students were eager for interaction in the seminar and attendance of the students jumped to 98%.
Take-home message: The old fashioned manipulation of the seminars needed to be reviewed.

2R4

Use of a learner's log for assessment of first year medical students' self-directed learning in PBL

Amudha Kadirvelu*, Sivalal Sadasivan, Parasakthi Navaratnam, Shajahan Yasin (Jeffrey Cheah School of Medicine and Health Sciences, Monash University Sunway Campus, Jalan Lagoon Selatan, 46150 Bandar Sunway, Selangor DE, Malaysia)

Background: While the problem based learning (PBL) approach promotes unsupervised self-directed learning

(SDL), many students experience difficulty juggling the role of being an information recipient and information seeker. Logbooks have been used to assess trainee doctors but not in other areas.

Summary of work: The project aimed to determine the effectiveness of logbook for assessing SDL during PBL sessions in first year medical students. After baseline assessment, PBL case-specific log books were given to each student (on alternate weeks) at the end of PBL sessions to make it less prescriptive and to allow autonomy in students' learning decisions. The log book included a learning checklist and knowledge and skills components. Students were asked to assess their SDL using the log book. The assessment of student performance in PBL sessions was repeated at the end of the semester.

Summary of results: Comparisons with the baseline assessment of student performance in PBL and that at semester end showed significant improvements in student performance (31.5 ± 8 vs. 17.7 ± 4.4; p<0.001) with a large effect size of 3.93.

Conclusions: The learner's log for PBL has played an important role in enhancing SDL in first year medical students.

Take-home messages: Learner's log could be a good self-assessment tool for the undergraduate medical students.

2R5

What Do Medical Students Learn from a Longitudinal Community Patient-Centered Module in the Family Medicine Clerkship?

R Puvanendran*, FF Vasanwala, R Kamei, KH Lee, D Lie (Duke-NUS Graduate Medical School, Singapore)

Aim: To examine learning outcomes of students participating in a required patient-centered care module within a one-year longitudinal family medicine clerkship.

Summary of work: This is a prospective cohort study to examine learning outcomes of a curricular intervention using home visits. 44 students participated in a community-based patient-centered module (approximately 42 hours). Written reflections (n= 253) responding to semi-structured questions were submitted 3 times per patient, over the year. Reflections were thematically coded by 3 coders and dominant themes identified. Grounded theory was used to generate a framework to explain their learning experience.

Summary of results: Six dominant themes were identified. There was temporal variation in the themes, 'Biomedical care' was the dominant theme in the first reflection. 'Patient Centeredness' and 'Chronic disease management' were prevalent themes in the second and third reflections. 'Health systems' and 'community support systems' were of similar frequency across the 3 time periods. 'Professional issues' was the least prevalent.

Conclusion: A longitudinal patient-centered care module using home visits resulted in learning about patient-centeredness and chronic disease management. Learning shifted from a disease-based model to a patient-centered

and community-based model during the exposure. The home visit strategy of teaching patient-centeredness allows evolution of learning about chronic disease and the need for holistic family-based care.

2R6

Evaluation for a Pilot study of Community Participatory Medical Education - Possible New spectrum of Community Oriented Medical Education?

A Takamura*, M Susaki, K Ohno (Kanazawa Jouhoku Hospital, Centre for Community Based Medical Education, Kanazawa, Japan)

Background: Recently community oriented medical education is being implemented. But in many cases, the participation of community people is still passive.

Summary of work: This pilot study examines whether community activities with people who educationally participated could affect interns' consciousness for community medicine. Five medical graduates who started their first clinical year have been fixed in each region for two years and given missions to activate people's health consciousness through activities as sub-curriculum, while community people were asked to make the interns motivated to learn community medicine. We assessed this by questionnaire and interviews.

Summary of results: The results of the questionnaire show that community activities affect positively interns and community people overall. The educational participation of community people could change the consciousness of both of them.

Conclusion: The result indicates that the active participation of community people which we call Community Participatory Medical Education could increase new doctors' positive consciousness level for community medicine. In addition, people also felt they join in the nurture of good community doctors. Consequently, community activities with people should be introduced more in medical education to foster doctors.

Take-home message: It might contribute to increase the number of future community doctors by positive experience.

2R7

Differences in Clinical Science Comprehensive Examination Scores (MEQ) between 6th-year students at Faculty of Medicine, Ramathibodi Hospital, and community-based medical school students

C. Ngarmukos*, S Liawwanich, N Plungpongpan, P Phuapradit, S Wanvarie (Faculty of Medicine, Ramathibodi Hospital, Mahidol University, 270 Rama 6 Rd., Rajthevi, Bangkok 10400, Thailand)

Background: Ramathibodi Hospital (RA), a well-established medical school, has assisted Praboromarajchanok Institute (PI), a community-based medical program, to ensure quality. MEQ (modified essay question) is part of the comprehensive examination (CE) required for graduation and medical licensure. This study aims at comparing the MEQ scores between RA and PI students to improve educational efficiency.

Summary of work: 2008-2010 MEQ scores were analyzed. The numbers of RA:PI students were 112:64, 115:64 and 124:71 respectively. Each CE consisted of 8 MEQ topics of various disciplines and 6 assessment-related tasks. The total scores plus scores from each topic and task were analyzed.

Summary of results: The RA vs. PI total scores (mean ± SD %) in 2008-2010 were: 58.61 + 4.07 vs. 54.34 + 3.88; 64.70 + 4.11 vs. 59.98 + 4.63; 59.60 + 5.64 vs. 51.15 + 5.60; respectively. Differences were statistically significant. We also found differences regarding physician tasks in data gathering, hypothesis refinement and patient education.

Conclusions: The study showed statistically significant differences in MEQ scores between the two student groups, probably due to different learning experience.

Take-home messages: Learning experience in different settings may affect outcomes of written assessment.

2R8

Students' experiences in a geographically dispersed MBBS course: Learning from patients

J Lindley*[1], P Harvey[1], M Simmons[1], R Hill[1], T Dornan[2], D Nestel*[1] ([1]Monash University, Faculty of Medicine, Nursing and Health Sciences, Building 15, Clayton, Vic, Australia 3800; [2]Maastricht University, Netherlands)

Background: Monash University offers an MBBS course for undergraduate and graduate-entry students. The MBBS is delivered over geographically dispersed sites in urban and rural settings in Australia and Malaysia. Expected learning outcomes are the same across sites. Students undertake the same assessment activities.

Summary of work: We explored the experiences of students in the second clinical year across sites. Students completed surveys and participated in focus groups. Descriptive statistics and thematic analyses were used to determine factors which effect learning in clinical settings, with a focus on interactions with patients.

Summary of results: The results highlight the complexities of learning in clinical environments and challenges to learning in different delivery models of a single MBBS course. However, across all sites objectification of patients was common. Learning from patients was usually valued by students, especially when mediated by clinicians.

Conclusions: Learning from patients in clinical settings is obviously important. In our study, effective learning requires affordance of opportunities to learn from patients together with mediation by clinicians.

Take-home messages: Although a single MBBS course is delivered across national boundaries, students experience similar challenges regardless of site. Learning from patients in clinical settings is complex and may require clinician mediation.

2R9

Learning from a distance: The experience of offering a physical therapy program to students attending classes via video conferencing technology at a satellite campus

B Martin*, J Daniels, R Haennel, R Johnson (University of Alberta, Department of Physical Therapy, 2-50 Corbett Hall, 8205 114 Street, Edmonton, Alberta, Canada T6G 2G4)

Background: The University of Alberta's professional, entry-level Master's of Science in Physical Therapy (PT) program established a sub-cohort of students at a rural satellite campus in 2010 and will introduce another satellite campus in August 2012. Twenty-two students currently attend lecture, labs and all curricular assessments at the satellite site via real-time video conferencing. Two local instructors provide support and teaching assistance.

Summary of work: This project was initiated as a proof-of-concept pilot project for a distributed learning (DL) delivery model. A multifaceted program evaluation is being conducted including student learning and engagement, instructor experience, technology performance and satellite community impact.

Summary of results: Preliminary findings illustrate comparable academic and clinical performance by the satellite students. Instructors report increased workload but also unanticipated novel teaching strategies. Technology performance has been very good. Local PT clinicians have embraced the program, offering additional learning opportunities to satellite students.

Conclusions: Early results suggest using a DL model involving real-time video conferencing can offer PT students at a satellite campus an equivalent learning experience when compared to the traditional face-to-face format.

Take-home messages: DL has the potential to dramatically change access to education. Teaching, learning and assessment can be successfully completed using DL technology.

2R10

Extending Clinical Training from Bedside to the Population: Reforms of the Problem-Based Public Health Advocacy Programme to Reinforce Public Health Leadership & Holistic Professional Development

YH Chan, C Tam, DK Ip, AJ Hedley, TH Lam, JM Johnston (School of Public Health, The University of Hong Kong)*

Background: Conventional medical education has focused predominantly on the individual level of patient care. The Problem-Based Public Health (PBPH) Advocacy Programme in MBBS III had demonstrable success in completing and furthering the molecular-cellular-patient-population clinical continuum and the potential to generate improved understanding of the prevention and control of important health conditions.

Summary of work: Current PBPH curriculum was reviewed and summary student feedback was studied to identify room for improvement and to further reinforce the programme objectives.

Summary of results: Main issues identified were : 1. Limited scope of public health issues discussed; 2. Possible re-iteration of contents from previous modules; 3. Insufficient interconnections among components in the Programme to lead to the final objective of public health advocacy. 4. Suboptimal level of linkage between the individualized patient care objective and public health advocacy. The old curriculum structure was revised to the new structure (details to be given in presentation) to specifically address these limitations, with approval from the Faculty for implementation in Oct 2011. New learning outcomes were drafted in terms of Outcomes-Based Approach to Student Learning (OBASL).

Conclusions/Take-home messages: The new curriculum should provide a more diversified public health paradigm to stimulate problem-based, student-driven experiential learning to facilitate achievement of the objectives of public health advocacy, leadership and holistic professional development, and to further the concept of the molecular-cellular-patient-population clinical continuum. The programme effectiveness should be critically evaluated prospectively in terms of OBASL learning outcomes.

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SESSION 3   SIMULTANEOUS SESSIONS
1400-1530 hrs

3A   Symposium: Technology and Assessment
Zubair Amin (National University of Singapore), Jack Boulet (FAIMER, Philadelphia, USA), Moira Maley (University of Western Australia, Perth, Australia), Uno Fors (Stockholm University, Stockholm, Sweden)

The dynamic interaction between technology, health care, and education opens up an exciting opportunity to extend and incorporate the capabilities of technology to enhance assessment practices across the spectrum of medical education. The symposium offers a platform for discussion among the stakeholders to raise and debate issues related to use of technology to enhance assessment. Although it is foreseen that the Consensus Statements and Recommendations from the 2010 Ottawa Conference (Technology-enabled assessment of health professions education: Consensus statement and recommendations from the Ottawa 2010 conference) would form the preliminary basis of discussion, the issues can be expanded further. Therefore, discussions might include facilitating use of technology in assessment, ethical considerations, available options, user training, and policy support. The symposium is expected to benefit anyone interested in the use of technology in assessment.

3B   Oral Presentations: Curriculum Evaluation 2

3B1
21st Century Learning in Medicine: Traditional Teaching Versus Team-based Learning
R K Kamei, S Cook, J Puthucheary, C F Starmer (Duke - NUS Graduate Medical School, 8 College Road, Singapore 169857)*

Background: In 2007, Duke-NUS introduced a learning strategy called TeamLEAD to deliver the one year basic science curriculum. TeamLEAD is based on Collaborative and Team-Based Learning principles with extensive pre-class preparation, in-class team activities focused on assuring understanding, applying principles, and solving problems with faculty guidance.

Summary of work: The US medical student's performance on the National Board of Medical Examiners Comprehensive Basic Science Examination (CBSE) and United States Medical Licensing Examination (USMLE) Step 1 was used to assess impact of this strategy on learning basic science content.

Summary of results: First three cohorts of Duke-NUS students performed comparably to US students on the CBSE (61.0 vs. 61.0) at the end of one year basic science coursework. At the end of second year (clerkships), Duke-NUS cohorts scored significantly higher than the US students (67.2 ± 8.7 vs. 61.0 ± 11.0) ($p<.05$; 95% CI [65.7 to 68.7]). The first cohort has now taken USMLE Step 1 and has scored significantly higher than US students (230.4 ± 17.9 vs. 222 ± 24) ($p<.0025$; 95% CI [223.5 to 237.3]).

Conclusions: Results suggest that TeamLEAD is an effective way to deliver basic science content in a short time and potentially provide a good foundation for students when studying for high stakes examinations.

3B2

Medical Students at Non-clinical Community Placements – An Evaluation Approach

J Goodall*, T Holt (Monash University, Faculty of Medicine, Nursing & Health Sciences, Clayton, Australia)

Background: In its Community Based Practice (CBP) program, Monash University implements as part of the core curriculum a non-clinical community based placement program in medical education. Given the challenges of the program being outside the traditional clinical experience of placements in hospitals, clinics and general practice, it became even more important to demonstrate the effectiveness of this program using both qualitative and quantitative evaluation methods.

Summary of work: SPSS 19 was used to analyse retrospective longitudinal data which was collected over a five-year period from 672 students.

Summary of results: By utilising an evaluation instrument to evaluate the student experience, psychometric analysis of the instrument resulted in four scales with Cronbach alphas ranging from .81 to .88 across key areas of: 1. Personal Learning – How to apply skills and understanding in practice; 2. Personal Engagement – Inner growth, challenge, understanding and reward; 3. Understanding the Connections between Medicine, Community & Health; 4. The Community Placement Experience as a Learning Environment

Conclusions: These scales shed interesting light on what such a program can contribute to medical education, as well as laying the groundwork for useful future evaluation developments.

Take-home messages: The findings imply areas of real challenge for the campus based academic coursework years of undergraduate MBBS courses, while the strength of the results demonstrate that best practice strategies can support real development in students' attitudes and learning about community health issues within a non-clinical environment.

3B3

Does involvement in community-based projects improve medical students' research capability?

PL McLennan*, JR Mullan, KM Weston, KJ Mansfield, WC Rich (University of Wollongong, Graduate School of Medicine, Wollongong, NSW, Australia)

Background: Medical students at the University of Wollongong undertake a community-based research project during their year-long rural/regional clinical placement. This allows students to put into practice their prior learning in critical analysis of relevant literature while introducing broad principles of research methods and interpretation. We evaluated the research capability of students before and after conducting their research project.

Summary of work: Students were guided to design projects relevant to their own and community interests. Research capability across two cohorts, encompassing 150 projects, was determined with respect to: writing a research protocol, use and interpretation of the literature; research methods; and results, using the "Research spider" self-assessment tool (Smith et al, Primary Health Care Res Devel; 2002; 3:139–140).

Summary of results: Students improved in nine of ten aspects of research assessed in the research spider. These included: defining a research question: presenting; and writing a report. Capacity to apply for research funding did not improve.

Conclusions: The research projects engaged the students, stimulated them to think about research issues in rural and regional Australia, and measurably improved their research capability.

Take-home messages: Practical involvement in a research project develops authentic learning and improves the research capability of future medical practitioners.

3B4

Feedback and repetition rapidly teaches students to distinguish innocent and pathological heart sounds but immediate assessment is insufficient

P Nicol*[1], H Wright[1], R Caissie[2], B Hoyt[3], J Finley[4] ([1]Faculty of Medicine, Dentistry and Health Science, University of Western Australia, Australia; [2]School of Human Communication Disorders, University of Dalhousie, Nova Scotia, Canada; [3]Dept of Physiology and Biophysics, Dalhousie University, Nova Scotia, Canada; [4]Faculty of Medicine, University of Dalhousie, Nova Scotia, Canada)

Background: Recognition of normal and abnormal heart sounds and murmurs is critical in detecting children's heart disease. Repetition and feedback are fundamental to auditory recognition methodologies and should be useful applied to learning this clinical skill.

Summary of work: Using access via the web to an auditory training protocol which required them to identify random common paediatric murmurs as either normal or abnormal, students completed a pre test, the training protocol, and a post test immediately following training and then again 2 months later. Feedback was given continuously. A control group did not complete the training.

Summary of results: The training group had a significant difference between pre-test and post-training test score (p<0.000) but this was not maintained at 2 month follow up. The control group showed no significant change over time.

Conclusion: This new auditory training program rapidly teaches students to distinguish innocent and pathological murmurs with 90% accuracy but was not maintained. A

follow up study is investigating optimal timing for reinforcement of skills.

Take home messages: Feedback and repetition of a few examples assists in learning to distinguish heart sounds. However, reinforcement is required for maintenance of the skill. Immediate assessment is insufficient to assess for competency.

3B5

Feedback, cross comparison and official ranking increase the quality of clinical teaching at a University Hospital

Jakob Johansson[1]*, Martin Wohlin[2] ([1]Institution of Surgical Sciences, Department of Anaesthesia and Intensive Care, Uppsala University Hospital, Uppsala, Sweden; [2]Institution of Medical Sciences, Uppsala University Hospital, Uppsala, Sweden)

Background: Clinical teaching in medical schools needs continual improvement. Our aim was to develop a simple and specific assessment instrument for clinical teaching to implement across all clinical rotations in order to enable feedback, cross comparison and official ranking.

Summary of work: A web-based questionnaire, based on a seven-category concept from Stanford University, was introduced at all hospital departments at Uppsala University Hospital, Sweden. Ten questions reflecting different aspects of clinical teaching were used (Likert scale 1-6). Strong participation among students, faculty and departments were reached.

Summary of results: The evaluation instrument was gradually introduced from autumn 2009. Medium time from introduction to follow-up in spring 2011 was 2.5 semesters. The students' response rate was 70%. The departments' mediums rating at baseline were 4.11±0.54. At follow-up, the score had increased to 4.50±0.46 (p<0.001).

Conclusions: The introduction of a uniform clinical teaching evaluation instrument enabled cross comparison between different departments' and caused a rapid and substantial increase in the quality of clinical teaching.

Take-home messages: This uniform, simple yet specific, instrument significantly increased the quality of clinical teaching. Specific feedback of clinical teaching and also cross comparison and ranking between departments and hospitals, both nationally and internationally, is now possible.

3B6

Evaluating the implementation of a distributed medical program: Measuring beyond the checklist

P Smith*, P Alexiadis Brown, J Steeves, J Sargeant (Clinical Research Centre, 5849 University Avenue, Halifax, Nova Scotia, PO Box 15000, Canada, B3H 4R2)

Background: Students at the Dalhousie Medicine Education Program, New Brunswick completed their first year within the inaugural program which was launched in 2010. A contractually-mandated evaluation of implementation for the four-year program continues to be an ongoing focus.

Summary of work: Implementation documents and interviews with faculty, students and staff provided rich data for identifying the processes and successes associated with implementing the medical program and associated ancillary programs. An evaluation report captures this process and provides a historical account of the activities leading to implementation.

Summary of results: In September 2010, 30 New Brunswick students, 56 New Brunswick faculty and approximately 20 staff launched Dalhousie's distributed medical program in New Brunswick. While a comparability framework is used to guide distribution and evaluation of medical curricula across sites, implementation of ancillary programs and services associated with medicine (e.g. research, student services), required special attention to regional resources and needs.

Conclusions: Ongoing consideration of unique and shared outcomes among stakeholders both external (e.g. partnering universities, government funders etc) and internal (e.g. students, faculty, staff) is required when evaluating a distributed medical program.

Take-home message: Implementation of a newly distributed program is an iterative process requiring thoughtful consideration of measures and methods needed to evaluate it in a rigorous manner.

3B7

Money aside……What is e-learning costing academics?

L Delgaty (School of Medical Science Education Development, 16-17 Framlington Place, Newcastle University, Newcastle-upon-Tyne, NE41HH, UK)

Background: E-learning has transformed education. Learning can occur anytime, anywhere. Students can access unlimited resources; boundaries of time and geography evaporate. Sound familiar? These claims are common, but, in reality e-learning is marginal in the lives of most academics. Existing research largely focuses on student perspectives; however academics are major stakeholders in e-learning. Involvement can be a risky undertaking for inexperienced academics unfamiliar with the resources required.

Summary of work: This study evaluated the staff resources required to create and deliver an e-module for clinicians. Data was collected (web analytics, email traffic, work logs) outlining time involved and responsibilities with a detailed analysis of planning/implementation.

Summary of results: Academic (out of normal office hours) workload was remarkably high. Technical, administrative

and academic roles were essential, but varied in timings and predictability.

Conclusions: Universities struggle to engage academic staff with e-learning due to its unrecognized and (many academics believe) unsustainable workload. Avoiding 'traditional' workload assumptions that are erroneous and inaccurate, this evaluation provides academics and managers clear guidance and an increased understanding of workload with a goal to provide quality learning experiences for students.

Take-home messages: 17 hours staff time (10 academic, 2 admin, 5 technical) developed one hour online student activity. 75% of academic contributions occurred outside work hours.

3C   Oral Presentations: Clinical Assessment 2

3C1

Challenges of Assessing the Reliability of the MOSLER Clinical Examination

S Wright, B Lunn, R Barton, A Myers (Newcastle University, School of Medical Sciences Education Development, Newcastle upon Tyne, UK)*

Background: The MOSLER (Multiple OSLER) examination was created in 2008 to address concerns over low reliability and case specificity of single long cases. Face validity and acceptability of the MOSLER are superior to that of its predecessor; however, difficulties exist in measuring its reliability.

Summary of work: The MOSLER was delivered over six sites in the North-East of England to around 340 students in each assessment diet. Students clinical skills were assessed at four separate stations. Three stations, using patients were limited to core clinical problems and were the same within groups but varied between groups. One station using a simulated patient focussed on complex communication skills and was the same for all candidates. A single examiner marked student performance on each case.

Summary of results: The design of the examination made a generalisability study difficult to perform and interpret. Cronbach's alpha, variance components, failure rates and examiner marking were reported in attempt to obtain a clearer picture of the reliability of this complex examination.

Conclusion: When creating assessments of clinical competence primacy of the theoretical, face validity and logistical needs of the examination can lead to difficulties in measuring reliability. Multiple metrics are therefore required when assessing reliability of complex clinical examinations.

3C2

Contribution of examiner variation and patient heterogeneity in long case examination

N Chierakul, S Danchaivijitr (Department of Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, 10700, Thailand)*

Aim: To evaluate the effect of examiner subjectivity and heterogeneity among the cases on scores from the Royal College of Physicians (RCPT) long case examination.

Summary of work: Data from internal medicine candidates who performed clinical part of RCPT board certifying examination in academic year 2008 were collected. For each candidate, scores from pair of examiners for each of the long case was stratified based on disease category according to the course syllabus into 3 groups; very common, common, and uncommon diseases. The scores also categorized according to difficulty level subjectively rated by the examiners into 3 levels; easy, moderate, and difficult.

Summary of results: There were 21 examination centers involved with 1,840 number of encounters by 232 candidates. Mean and SD of scores from the very common, common, and uncommon diseases were 75.5+11.6, 75.6+10.6, and 74.7+11.3 respectively, with no statistical significant difference between the groups. Mean and SD of scores from the standard, difficult, and very difficult cases were 76.1+10.5, 74.8+11.0, 75.5+10.9 respectively. The difficult group has the lowest score with a statistical significant difference from other groups ($p = 0.042$).

Conclusion: In current RCPT long case examination, difficulty of the case appears to contribute variation in scores derived from the examiners.

3C3

Assessment of competence in the operating theatre

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Background: Assessment of competence in the operating theatre has not previously been defined. Assessment by a trainer of when a trainee becomes competent is through a process of inference from observing the trainee's performance during other cases.This study sets out to define what domains are regarded to contribute to general operative competence.

Summary of work: Semi-structured interviews with 10 trainers and 12 trainees in UK hospitals. This was a purposeful sample including doctors from both teaching and district general hospitals. Interviews were audio recorded, transcribed and thematically analysed by a panel of author from different academic **Background**s.

Summary of results: We identified different types of competence required in the operating room - routine

technical competence, adaptive competence, motor competence and social competence.

Conclusions: Assessing competence in the operating room environment is complex and requires assessment across several domains to ensure that decisions about whether a trainee is ready to 'go solo' are robust. There is a requirement to be able to cope with the unexpected, complications and patient variability as well as routine tasks.

Take-home messages: A taxonomy of curricular items required for competence has been created and should be considered by trainers when assessing whether a trainee is ready to 'go solo'.

3C4

Digital Video Documentation as Evidence of Clinical Skill Acquisition

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Summary of work: In 2008 we conceptualised and began the development of the processes for the use of digital video as a means of demonstrating and recording the surgical skills of surgeons performing specific surgical procedures. The end product was the creation of a digital certificate which incorporated security and authentication elements. This certificate provides evidence of a surgeon performing the surgical procedure named on the certificate. Their potential use will be in the digital documentation and archiving of skill acquisition of surgeons. This archive of digital video evidence of skill acquisition will become part of the appraisal and credentialing framework. A technique was found that used a combination of watermarked conventional video and Adobe PDF (Portable Document Format) files. In brief a DVD video containing an edited and unedited sequence of watermarked footage taken on the day of surgery was produced. On this DVD would be included an uneditable PDF document containing a short video sequence that matched the main DVD video. The first digital video certificate has been produced and used as evidence of ability as part of a Post Graduate Diploma in Hand Surgery, University of Manchester. In practice the process can take as little as four hours total creation time excluding rendering. The co-operation of the trainer must be sought and agreed before recording as an editing/approval time commitment will be required from the trainer.

3C5

Validity and quality of assessment - patients' perspectives

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Background: Recent initiatives have sought to extend the role of patients and the public in all aspects of undergraduate curricula. There have been several studies of the perceptions and perspectives of patients involved in clinical teaching, but few specific to assessment.

Summary of work: We surveyed volunteers, patients, and simulated patients ("patients") participating in final MB.BS examinations on two occasions, triangulating responses with candidate and examiner views. We wanted to evaluate the quality of the process, face validity (how similar it was to previous consultations with doctors), reasons for participation, their perceptions of the process, their ability to differentiate between students, and how they perceived examiners treated the candidates.

Summary of results: One hundred and seventy "patients", 198 candidates and 102 examiners responded. Over half of "patients" had not participated in prior teaching or assessment. They felt the process had good face validity and was of high quality. They participated for altruistic reasons and enjoyed the process. They could not easily differentiate between candidates.

Conclusions: Patients enjoy participating in formal assessments. They believe the examinations reflect real clinical encounters, but cannot easily distinguish between candidates' performances.

Take-home messages: Using patients to contribute to marking in clinical examinations would require significant training.

3D   Oral Presentations: Postgraduate Education: Training for General Practice

3D1

Benefit Analysis of mock-simulated surgery exam

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Background: This research aims to assess whether a mock examination improves the first time pass rates of Simulated Surgery Exams such as the Clinical Skills Assessment (CSA) required for membership to the Royal College of General Practitioners. Anecdotal evidence shows an alarming increase in the failure rate for the CSA exam. This has cost implications to the individual and the training organisation. There has been particular difficulty in getting those at greatest risk of failing the exam to engage with extra training.

Summary of work: 2nd year general practitioner trainees will take part in a mock CSA. Self-evaluation questionnaires, before and after receiving feedback, will be given to allow candidates to gauge whether they require extra support. Demographic factors and previous academic results will be

analysed (in this and previous cohorts) with a view to identifying what combination of factors are the best predictors of performance in the CSA Exam. Particular attention will be placed on linguistic skills due to cases involving patient safety that have attracted substantial media interest. If factors that reasonably predict CSA performance can be established it will allow appropriate extra resource allocation, to a group who will engage with the additional training, thus increasing the likelihood of CSA success.

3D2

Assessing impediments to completion of GP training by a cohort of Indigenous Registrars

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Background: Australia's first Indigenous doctor graduated in 19831. By 2010 the number of Indigenous doctors (153) and medical students(161) had gradually grown2. Despite this increase, it has become apparent in the last two years that this cohort is having difficulty completing the subsequent training and summative assessment criteria of the national GP training program .

Summary of work: Stakeholders in GP training, Indigenous Medical education and Indigenous doctor support were brought together to discuss the overall problem and specific case analysis. The aims were to find underlying factors responsible for difficulty completing the assessment processes and provide a set of supports and solutions.

Summary of results: A complex web of interactions became apparent. These include registrar knowledge deficits, educational difficulties not remediated at university, cultural difficulties with the assessment format, training provider support issues , external commitments and registrars' perceived inability to pass assessments.

Conclusions: Despite recent increases in number of Indigenous Doctors in Australia, successful completion of GP training remains challenging, due to a complicated set of factors relevant to the assessment process.

Take-home message: Analysis of the failure of a specific group to meet training and assessment goals requires examination across all levels of causality.

1. O'Mara, P. Our doctors making a difference: Aboriginal and Torres Strait Islander doctors walking in both worlds for the benefit of all Australians, in Indigenous Health issue, Medical Journal of Australia, volume 194 number 10, 16 May 2011.
2. Australian Indigenous Doctors' Association. Aboriginal and Torres Strait Islander doctors and students.
http://www.aida.org.au/pdf/Numbersofdoctors.pdf (accessed 22nd September 2011)

3D3

Current assessment practices in General Practice Training don't add up

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Background: Current assessment practices for general practice training in Australia are heavily reliant on snap shot evaluations, often towards the end of training. There is a dearth of formal formative assessments at key milestones along the training continuum. Current practices often find registrars who are in difficulty not being identified until late stages of their training.

Summary of work and results: This paper contends that there needs to be a paradigmatic shift in the approach to assessing a registrar's competency to be fit for entry level General Practice. We offer a comparative analysis of current training and assessment practices with a view to proposing an assessment model for the future. The proposed model espouses satisfactory completion of evaluation activities at each GPT level before progressing to the next stage of training and attempts to incorporate different learning styles. We contend that a significant revision of current examinations practices for fellowship occur as a matter of priority and hence propose an alternative model of assessment that includes a combination of both formative and summative assessments across the continuum of training at key milestones to assess a registrars satisfactory completion of training.

Conclusions: We contend that a significant revision of current examinations practices for fellowship occur as a matter of priority and hence propose an alternative model of assessment that includes a combination of both formative and summative assessments across the continuum of training at key milestones to assess a registrars satisfactory completion of training.

3D4

Developing a readiness for General Practice…
Learning Needs Appraisal – Innovation in Assessment

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Background: General Practice (GP) placements for pre vocational (post graduate) doctors are an essential part of the vertical integration model. These doctors undertaking remote general practice placements in the Northern Territory (NT), Australia have had limited general practice exposure in an indigenous context. The Learning Needs Appraisal (LNA) model was developed to identify the "general practice readiness" of these doctors following a 3 month GP placement. The LNA is comprised of an objective structured examination, based on the Australian Curriculum

Framework for Junior Doctors (ACFJD). The LNA model was piloted in 2008, initial results presented at 14th Ottawa Conference in Miami.

Aim: To determine whether these GP placements improve performance of pre vocational doctors in communication, clinical management and professional skills- the domains of the ACFJD.

Summary of work: These doctors underwent a LNA during their orientation and at the end of placement. Group level feedback was provided immediately via group discussions, while further individual feedback was provided in writing. Pre- and post- placement results were compared to see any improvement in the above mentioned GP based skills.

Conclusion/Take-home message: Quantitative results have continued to show a modest improvement in the GP based performance of these doctors. However, qualitatively, this model received positive feedback from the participants for identifying individual learning areas in need of improvement.

3D5

Significant variations in Clinical Postgraduate Examination Performance by Medical School of Graduation

Mei Ling Denney[1], *Richard Wakeford*[2] ([1]*Royal College of General Practitioners, London UK;* [2]*University of Cambridge, UK)*

Background: Only two major UK postgraduate examinations (MRCP(UK), MRCGP) have reported their clinical examination results by candidates' UK medical school. The MRCGP has been mandatory for three years; its annual data can be conflated and UK medical schools' graduates' Clinical Skills Assessment performance compared with the equivalent MRCP 'PACES'. Hitherto, data on the London medical schools has been reported collectively: our data separates them.

Summary of work: Medical schools' rank order was calculated, according to graduates' performance on the CSA. Correlations were calculated with the schools' published rank order on MRCP(UK). Separately, London graduates' CSA performance was calculated according to London medical school.

Summary of results: Schools' rank order correlation between MRCGP CSA and MRCP(UK) PACES was .84. London medical schools' graduates' performance was not significantly different from the UK mean at four schools: at the fifth, it was significantly worse.

Conclusions: Relative performance by graduates of the UK medical schools is remarkably consistent between the two clinical assessments. There are differences between London medical schools.

Take-home messages: There is agreement between the two major clinical examinations as to whose graduates perform best and worst. Performance amongst London schools varies. The results support arguments for the

establishment of better QA across medical schools and possibly a national medical qualifying examination.

3D6

Facilitating Use of Assessment tools in General Practice e-Portfolio by Educators in the Workplace

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Background: Competency development of the doctor through specialty training and its attainment at programme completion is determined by evidence on the trainee's e-Portfolio. The opinion of the educational supervisor is crucial in this process. Nevertheless some use their anecdotal experience for their decision, rather than the objective and sustained documented evidence which the eportfolio provides.

Summary of work: The work explores the Educational Supervisors' and Trainees' beliefs about the purpose and function of the ePortfolio. Work on a national level has been undertaken to reduce impediments and barriers to its functionality. Sophisticated support and training structures were established including materials and events, feedback both personalized and anonymised.

Summary of results: A significant incremental improvement in the quality of the documentation by both educator and trainee on the e-Portfolio to support the recommendation of the Educational Supervisor in a more referenced and objective form.

Conclusions: Motivation of Educators is important in improving the quality of use and if complimented by resources to the trainees enables improvement and change.

Take-home messages: Active involvement and support with good motivational techniques of all stakeholders are necessary for the developing use of the ePortfolio as an assessment tool.

3E   Oral Presentations: Evaluation of the Teacher

3E1

Qualitative analysis of student expectations and experience of their tutors

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Background: Medical schools have two inseparable tasks. We have to ensure that our students acquire the necessary knowledge, skills and attitudes. We also have to help them become part of our community of practice and start the process of becoming doctors. This report is the culmination of a 16 year longitudinal study into what students expect from their tutors.

Summary of work: Interviews and Q-sorts were used to derive a 25-item questionnaire in which students indicated how things actually were, and how they should be. The questionnaire was administered in 1995, 1999, 2003 and 2011 in parallel with the inception and development of a reformed curriculum using problem-based learning, increased clinical contact and a greater emphasis on community medicine.

Summary of results: Close analysis of the combined data shows that in 2011, as in previous years, students want their tutors to be good listeners, able to empathise, make time available, to be accessible and to be reliable. Confidentiality is less important to them now than previously. These results will be discussed in relation to the students' developing understanding of professionalism.

Conclusion/Take-home message: Unfortunately, our students' expectations of the staff are not always met, which has consequences for their development as doctors, and should make us consider our behaviour.

3E2

Practical Teaching Behavior Inventory (PTBI): An Inventory as a Feedback Mechanism to Improve Competency of Physiotherapy Graduates

Bhavani Veasuvalingam (School of Physiotherapy, AIMST University, Malaysia)

Background: The context of practical teaching should be realistic, patient-centered and underpin authentic clinical context. Teaching of technical skills should complement interpersonal skills, communication skills and professionalism. Teachers should create clinical simulation with realistic scenarios, to give students the taste of actual clinical context with its complexity that underpins clinical events. Thus, instructors should possess certain practical teaching behavior. An assessment tool consisting of 29 items with seven domains was created in an effort to overcome these issues.

Summary of work: Practical Teaching Behavior Inventory (PTBI) is an assessment tool created for students to evaluate the instructor during practical teaching sessions as a feedback mechanism to improve quality of practical teaching. A cross sectional study was conducted among physiotherapy students (n=17) to evaluate its face validity index (FVI) with regards to items' clarity and comprehensibility level of PTBI. SPSS version 18 was used to calculate the FVI. An FVI value of more than 0.5 is considered as an acceptable level of face validity.

Summary of results: The overall FVI of PTBI was 0.67, indicating an acceptable level of face validity. The FVI for clarity and comprehension components were 0.67 and 0.68 respectively, while the FVI (both clarity and comprehension components) of each domain of the PTBI ranged from 0.57 to 0.77.

Conclusions: This small study showed PTBI has an acceptable level of face validity. This promising tool could improve students' technical skills with clinical perspective in

mind. Further validation process is proposed to evaluate other aspects of validity and reliability.

Take-home messages: This tool can improve quality of practical teaching to expose students to real-time clinical environment.

3E3

The Discrepancy-Agreement Grade (DAG): A Novel Grading System to Provide Feedback and Quality Assurance on Rater Judgments

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Background: Rater judgments are known to have a generosity error, provide limited discrimination, distorted interpretation and often fail to document serious deficits. These problems compromise the capability of raters to maintain the standards of rating.

Summary of work: The author developed a grading system to provide feedback on rater judgments. Rater judgments were classified into grade A, B, C and D using two statistical tests. It was applied in an examination and an interview. The purpose was to evaluate its practicability to provide feedback on examiners and interviewers rating judgements.

Summary of results: Five short essays were rated by five pairs of senior lectures. Out of 5 pairs, 2 (40%) obtained grade A and 3 (60%) obtained grade B. A total of 48 pairs of interviewers interviewed ten applicants. Out of 48 pairs, 20 (41.7%) obtained grade A, 1 (2.1%) obtained grade B, 23 (47.9%) obtained grade C and 4 (8.3%) obtained grade D.

Conclusions: The grading system showed inconsistency of examiner and interviewer judgments on students and applicants performance. It provided feedback and quality assurance on the examiner and interviewer judgments. This exercise demonstrated its practicability to provide feedback on rater judgements.

Take-home messages: The DAG is a novel grading system to provide feedback on rater judgments during examination and interview.

3E4

Assessment of specialty registrars as teachers

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Background: In the UK specialist registrars (residents) are a major source of clinical teaching for junior doctors. Medical education and teaching skills are core competencies included in the generic curriculum for specialist training. Hence, there is a need for a validated assessment instrument that can measure the attributes of specialty registrars as effective teachers.

Summary of work: The study is being conducted in three phases. 1: The generation and testing of a list of attributes developed from literature review and Delphi technique. 2. Designing and pre-testing of the instrument. 3. Field testing the instrument (in progress). The attributes of specialty registrars will be assessed by clinical supervisors, peers and students.

Summary of results: The Delphi study of medical education experts produced a consensus on 18 statements for the final draft of the instrument, which was then circulated to local teaching hospitals for feedback. A few minor changes were then made to the layout. The preliminary results of field testing will be also presented.

Conclusion: A new instrument specifically designed to test the teaching attributes of doctors-in-training is being designed.

Take-home messages: The aim is that this instrument will be useful for both formative and summative assessment of clinical teaching.

3E5
Setting and evaluating standards for clinical teachers
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Background: Whilst there is much written on desirable skills, attitudes and practice of excellent clinical teachers, there is little clarity about what standards can be expected of clinical teachers. As part of a Royal College of Psychiatrists Scoping Group on Undergraduate Psychiatry Education a draft document was developed to set teaching standards expected of clinical teachers. Standards were set for Preparing to teach, Delivery of teaching, Teacher conduct, Supporting activities, Training in clinical teaching and Acknowledging and developing skills.

Summary of work: 1. Pilot project through a student selected component to compare medical students' views of teaching standards with the views of consultants in psychiatry; 2. Establish the opinion of consultants on the importance of their responsibility to fulfill teaching roles.

Summary of results: There were positive results concerning engaging with teaching and providing a safe learning environment. Students and consultants felt however that teaching preparation was inadequate and improvement between the university and clinicians needed improvement. Peer reviews of teaching were uncommon.

Conclusions: Draft document is useful but further work is required about effective implementation and impact of standards on the quality of the learning experience.

Take-home messages: Need to have clear standards which can be assessed at appraisal

3E6
What do you learn from that? An exploration of scaffolded learning in clinical feedback encounters
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Background: To develop clinical knowledge students should elaborate and reflect on cases with a clinical teacher [1]. In educational scaffolding, discourse between peers and tutors enables students to achieve better understanding then they can alone[2]. We explored questioning strategies employed by clinical teachers and the effectiveness of their questioning in scaffolding learning.

Summary of work: 24 clinical feedback sessions were audio recorded and transcribed. They typically comprised two 3rd or 4th year medical students feeding back to a consultant on patients they had seen that week. Transcripts were analysed by theme in addition to fine-grained interactional analysis.

Summary of results: Tutors utilised a combination of questions: some factual and some challenging assumptions. Students were helped to work out answers for themselves with tutors supplying little information. Scaffolding was unsuccessful where tutors' cues were not taken up. In some instances tutors missed opportunities for scaffolding and supplied answers themselves.

Conclusions: Skillful use of questioning by clinical tutors can help students develop their knowledge to a higher level. Students need to be receptive to tutors' cues and we encourage tutors to embrace scaffolding in their teaching.

Take-home messages: Through scaffolded learning clinical tutors can help students to apply what they know.

3F Oral Presentations: Accreditation of Medical Schools

3F1
Impact of medical education accreditation on international medical graduates' USMLE performance
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Background: A system of accreditation should ensure high quality educational experiences, although research on effectiveness beyond face validity is limited.

Summary of work: The purpose of this study is to examine the impact of medical education accreditation on outcomes. International medical graduates' first attempt pass rates on United States Medical Licensing Examination

(USMLE) Step 1, Step 2 Clinical Knowledge (CK) and Step 2 Clinical Skills (CS) were compared by presence of a national system of accreditation (yes/no) in the countries of the physicians' medical schools.

Summary of results: Overall, students/graduates of accredited schools had higher first attempt pass rates than those from non-accredited schools for Step 1 (75.4% versus 63.4%), Step 2 CK (82.5% versus 79.6%) and Step 2 CS (76.4% versus 70.1%). Within continents, accreditation had a strong positive impact on Step 1 in North America, Oceania and South America, and a mixed effect in Africa, Asia and Europe. The impact of accreditation on Step 2 CK and CS performance also varied.

Conclusions/Take-home message: The global impact of medical education accreditation on student/graduate performance on USMLE is positive, although effects vary throughout regions of the world. Further research is needed on other outcome measures and with additional populations.

3F2

Using Accreditation as a Driver for Curriculum Change

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Background: In the USA accreditation standards have become increasingly rigorous, especially regarding curriculum. We decided to take a formal approach to meeting these standards as a strategy for facilitating needed curriculum change.

Summary of work: We identified the most challenging accreditation standards and then separately convened and changed preclinical and clinical task forces to study the issues and provide recommendations. Both task forces worked seriously and provided recommendatons, which weere then considered and approved by the faculty and dean. Separately, a retreat of chairs, course/clerkship directors and administrators was held to develop recommendations on the same issues. These three sets of recommendations were carefully studied by a formally changed Curriculum Implementation Committee, which then developed a plan and timeline for implementation. These plans were approved by the faculty and dean.

Summary of results: Many of the recommendations have been or are being implemented. Prioritization and funding are being developed for those recommendations involving significant costs. It is notoriously difficult to achieve faculty support for any significant curriculum change, but our studied, formal and inclusive approach appears to have the support needed to implement the needed changes.

Conclusion/Take-home message: Accreditation can be used to drive curriculum change, if a very formal, inclusive and studied approach is used.

3F3

Accreditation as agent of positive change for students and society

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Background: Accreditation standards and processes have historically been perceived as rigid and fixed and not responsive to the needs of those they serve: the public and the learners.

Summary of work: Several recent reports have demonstrated the need to focus on patient safety in all teaching clinical environments and that schools need to advance inter and intra-professional practice. Issues of concern to our learners include the rate of student mistreatment and preparation for, and safety on, international electives.

Summary of results: Patients will be better served by the creation of a standard that explicitly addresses patient safety and the appropriate supervision of medical students. Standards are being proposed with a focus on inter-professional education in courses and clerkships that allow inter-professional collaborative practice. A new standard requires schools to provide a learning environment that promotes appropriate professional attributes. A medical student initiative has led to a standard that will require schools to support students on international electives.

Conclusions: Accreditation can be an important vehicle to facilitate change within our health education institutions. Moving forward, we need to ensure that the system be nimble enough for changes to occur in a timely manner.

Take-home message: Medical School accreditation is a powerful driver of positive change.

3F4

The Swiss Federal Examination in Human Medicine (FEHM): Necessary conditions and processes leading to the implementation of a new national qualifying examination

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Background: Medical schools' autonomy is recognized in Switzerland as an important factor in allowing prompt curriculum adaptations and innovations. However, it is admitted that a quality assurance of the undergraduate medical training at the national level is needed.

Summary of work: To ensure the quality of the medical training, several steps were taken: the adoption of the Swiss Catalogue of Learning Objectives, the new 2006 law on University Medical Professions training, the compulsory accreditation of medical schools, and the qualifying Swiss Federal Examination in Human Medicine (FEHM). The FEHM, administered at the end of the 6-year curriculum, qualifies students for their federal diploma in medicine and their eligibility to apply for postgraduate training. The design and development of the FEHM started in 2008 and the exam was administered for the first time in 2011.

Summary of results: The FEHM consisted of a 300 multiple-choice questions exam and a10- standardized patient stations clinical examination in both French and German versions. Each exam was administered on the same day at the five Swiss medical faculties. The exam results are presently analyzed and issues regarding its validity, reliability, feasibility and implications for future examinations will be discussed.

Conclusions: The adoption of the FEHM suggests that a wide acceptance and participation of the main stakeholders in the project as well as a recognized certification body with a dedicated budget are the key ingredients for its development and implementation.

Take-home messages: Conditions and processes leading to the implementation of a national qualifying examination will be identified and discussed.

3G   Oral Presentations: Self-Assessment 2

3G1

Is students' confidence calibrated by knowing their competence?

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Background: We confirmed in our student population that self-assessed confidence in practical skills does not accurately reflect their competence. Would their confidence be calibrated once they knew their competence?

Summary of work: 62 third-year medical students underwent an 18-week practical skill module and a post-module OSCE-type assessment. Students rated their confidence on a 6-point scale for each skill post-module and again post-OSCE. Pass marks for three stations, "Intramuscular Injection" (IM), "Waist-Hip ratio measurement" (WH) and "Venesection"(V), were obtained using the borderline group method. We analyzed the change in confidence relative to their assessed performance.

Summary of results: 38%(IM), 58%(WH) and 32%(V) of students with high post-module confidence were assessed as not competent in the respective stations. Despite this, most of these students continued to rate their confidence as high. In a questionnaire, 84% of students were

unsatisfied with their performance during OSCE while 66% believed the OSCE performance did not accurately reflect their competence.

Conclusion: Subjective confidence in practical skills was not necessarily calibrated according to assessed competence. Confidence may be affected by students' self-assurance, their self-reflective skills or their confidence in the assessment.

3G2

Does completion of a self assessment questionnaire on confidence in managing certain medical problems drive learning in the problems identified as the weakest?

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Background: The BEME self assessment review (2008) highlighted a lack of research examining the impact of self assessment on the learner. This study followed and developed one by Gruppen (2004).

Summary of work: The aim was to determine if the process of self assessment drove learning.
Medical students completed self assessment questionnaires on 13 medical problems and using open text reported why they were more/less confident and what contributed to this. This was repeated after a 16 week clinical placement adding questions on which problems they spend most and least time on and what that learning consisted of. A sample of students was interviewed to access details about the drivers of learning.

Summary of results: 240 students completed the first questionnaire and 42 the follow-up. Nine students were interviewed. The self assessment questionnaire did not drive learning. The main drivers were exams, feedback from clinicians and teaching.

Conclusions: Completion of self assessment questionnaires, where the respondent is asked to identify their areas of weakness did not stimulate learning in that area.

Take-home messages: Identifying areas of weakness did not drive learning for these students. This could reflect the stage of their career which is mainly externally driven.

3G3

Student-determined learning objectives as a method of self-assessment on clinical placements

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Background: Clinical placements are heavily reliant on opportunistic patient contact, making them a relatively unstructured teaching environment. Students completing placements in the same clinical department may have very different learning experiences. The University of Queensland's MBBS programme requires students to set their own elective clinical placement learning objectives. This study investigated the ability of students direct their own learning and then self-assess using this approach.

Summary of work: Students developed their self-determined learning objectives (SDLOs) prior to their placement. Their final report, after their placement, included a self-assessment of how well they met their SDLOs. Report data was used to explore the range of SDLOs, strategies used to meet them and how well they related to curriculum objectives.

Summary of results: This model provides medical students with a more structured learning experience during clinical placements, taking into account their diverse learning needs and rates of learning. Students improved their ability to scan new clinical environments for learning opportunities and resources, and used these to address gaps in their knowledge.

Conclusions/Take-home messages: Requiring students to take control over their learning in a clinical environment increases motivation and better equips them with skills necessary to become lifelong learners.

3G4

The role of reflection in the assessment of consultation competence in clerkships

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Background: Reflection on performance is conditional to become and stay a clinical expert. Therefore students have to learn how reflection can help them recognize their limitations. Written reflections, following a videotaped medical consultation, can demonstrate insight into students´ perception of own strength and weaknesses. The purpose of this study was to investigate how these written reflections influence the assessment of the overall clinical performance.

Summary of work: Students' consultations with a standardized patient were videotaped (n= 346). After viewing the video, students wrote up the patient's chart as well as a self-reflection based on the consultation. Clinical teachers rated the video, the chart and the reflection on a three-point scale; they also scored students' overall performance. We used multiple regression analysis to analyze the data.

Summary of results: The three parts of the consultation are independent predictors of the total result. Poor reflection influences the overall result negatively, good reflection does not influences the overall score positively.

Conclusion/Take-home message: Reflection on consultation competence does have an additional effect on teachers' assessment of clinical performance. Given the importance of self-reflection its role in assessment should be encouraged.

3G5

Junior doctors' insight into their teaching skills – an innovative intervention to improve competence and self-assessment

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Background: The UK assessment portfolio for newly qualified doctors (FY1s) includes demonstration of teaching skills. FY1s are extremely keen teachers and we recognize near-peer tuition is effective and popular with students.

Summary of work: FY1s rated their own teaching skills at the beginning of their first year. A sub group was observed during student teaching and provided with individualized feedback, a seminar on teaching skills including a formative Objective Structured Teaching Examination (OSTE). The doctors self assessed their teaching skills after training and at 6 months. A sample was re-observed and repeated the OSTE.

Summary of results: Most FY1s were extremely confident in their teaching skills (self rating 3.5 on 4 point scale) but this did not match the variable quality of the teaching they actually provided. We will present data from the 6 month follow-up.

Conclusions: There is a marked mismatch between confidence and competence in junior doctors teaching . Furthermore, they choose topics and methods ill-suited to their experience. A brief intervention may, despite limitations, have benefits for skills and insight.

Take-home messages: Newly qualified doctors can provide effective teaching but overestimate their skills and need training and guidance on appropriate teaching topics, methods and self-assessment.

3G6

Self-directed learning in post graduate and undergraduate students in Shiraz University of medical sciences

Elahe Mohamadi, Rita Rezaei, Hajar Shee`E, Azade Amini, Roohollah Hoseini, Zahra Karimiyan, Somaye Delavari, Arezoo Farajpoor, Shokoofe Nikseresht (Shiraz University of Medical Sciences, Medicine Faculty, EDC Unit, Shiraz, Iran) Presenter: A Farajpour*

Background: Self-directed learning has an important role in the improvement of the students` learning capacity, life-long learning and guide for new skills. It is a process in which learners are responsible for their own performance and assessment. The aim of this study was to evaluate the skill of self-directed learning in the students and to compare it according to their grade.

Summary of work: This is a descriptive cross-sectional study in which 200 postgraduate and undergraduate students participated. They completed a 36-items questionnaire to assess self-directed learning skills, which was scored in "Likert scale". Reliability of the questionnaire was determined by Cronbach-α 84%. Data were analyzed using SPSS version 15.

Summary of results: Most prevalent skills among studied students were "decision making", "learning new skills", "determining learning objectives" and "responsibility". More than 50% of the students did not benefit from the time sufficiently and were not able to manage their personal plan. About 45% had no specific time assigned for studying. There was no significant difference between genders or different educational levels.

Conclusion: The skill of self-directed learning is an important part of education and teaching and also is a basic, required skill for all students. The students should be capable of performing research, self-directed education, decision making skills and time management which are essential for both private and professional success. It is recommended to teach such skills to the students as a part of their educational curriculum.

3I Workshop: Measurement and Improvement of the OSCE: Recognition and Remediation of Station Level Problems

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Background: OSCEs remain one of the principal tools for measuring clinical performance in health care disciplines. Ensuring the quality of the OSCE is central to the delivery of a robust, valid and defensible assessment and standard setting process.

Intended Outcomes: Participants will build their confidence in measuring quality at both station and whole exam levels using psychometric indicators. This workshop will focus specifically on detection and remediation of station level problems, ranging across checklist/station design issues and the impact of aberrant assessor behaviour.

Structure: This interactive workshop starts with an overview of the common standard setting techniques with special reference to the borderline methods, and discusses the use and interpretation of a variety of psychometric

indicators. A range of 'diagnostic' exercises will then allow participants to gain confidence in interpreting station level metrics, recognising problems, proposing solutions, and carrying out subsequent monitoring.

Intended Audience: Persons involved with the design, delivering and monitoring of OSCEs

Level of Workshop: Intermediate

3J Workshop: Serious Concern Reporting Cards – when and how should they be used?

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Background: In recent years Serious Concern Reporting Cards (yellow cards) have been used to record aspects of student performance and professionalism that are difficult to capture as part of formal criterion based OSCE assessment grids. This system has been used at Queen's University Belfast (QUB) for high stakes examinations for 2 years. There is a paucity of evidence about the effectiveness of this system with no national or internationally agreed standards for implementation and applying sanctions.

Intended Outcomes: Gather information from an international audience on current practice. Explore the actions that should be taken for different levels and types of concerns. Explore which concerns if any should be a barrier to progress or result in fitness to practise for students

Structure: Presentations with examples from QUB of serious concerns recorded to date and actions taken Group work: Debate the need for serious concern reporting and discuss the stance that marking grids should capture these behaviours. Use scenarios to highlight differences between medical schools in judging the seriousness of concerns reported and actions implemented.

Intended Audience: Those involved in undergraduate assessment with an interest in professionalism.

Level of Workshop: Intermediate

3K Workshop: "Diligence is the mother of good fortune": Measuring conscientiousness in health care settings

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Background: We have previously shown that conscientiousness is valid and reliable as a measure of a

significant component of professionalism. Early concerns about professionalism are a risk factor for later disciplinary proceedings. Measuring conscientiousness is objective and inexpensive, correlates to staff and students views of professionalism and other academic measures, as well as other measures of conscientiousness. Conscientiousness measures are being implemented in a range of health care disciplines both nationally and internationally.

Intended Outcomes: To enable colleagues to develop and implement a conscientiousness measure suitable to their environment, and demonstrate how to subsequently evaluate its reliability and validity. This workshop will also cover how to develop a related cohort study in their institution.

Structure: After a brief introduction to the data in settings such as undergraduate, anaesthesia, paramedics and podiatrists, participants will be provided with exemplars of conscientiousness measures and divided into discipline groups to develop conscientiousness instruments suitable to their own particular setting. As a group we will consider these individual instruments, and then explore the necessary data collection required to determine validity and reliability, and develop a cohort study.

Intended Audience: Colleagues interested in measuring professionalism in a variety of health settings.

Level of Workshop: Intermediate

3L   Workshop: Designing an assessment program: Moving from individual assessment instruments towards a coherent assessment program fit for purpose

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Background: Over the years, assessment literature has mainly focused on individual measurement instruments and their psychometric properties. More recently, a shift can be seen towards designing assessment programs, in which a purposeful arrangement of instruments is required for measuring medical competence as a whole. Design principles and quality criteria of such an assessment program are proposed in the literature.

Intended Outcomes: The participants will understand the key concepts of assessment programs, be able to analyse their own curriculum with focus on specific purposes of assessment and develop a plan on how to translate concepts of assessment programming to their own context.

Structure: The evidence for assessment programs will be briefly presented, then, in small groups the participants will analyze the assessment methods and strategies of their own setting and will plan the next steps towards their own assessment program. Examples of best practices will be shared. The workshop will be highly interactive, requiring participants to use the evidence and translate it to their assessment practices.

Intended Audience: Educators/teachers and program/course directors responsible for teaching, learning and assessment.

Level of Workshop: Intermediate

3M   Workshop: Assessment for re-accreditation of medical specialists

F Scheele[1]*, J Norcini*[2]*, E Driessen*[3]*, C van der Vleuten*[3]*, E ter Braak*[4]*, V Schelfhout*[5] *([1]VUmc University Medical Centre, Amsterdam, Netherlands; [2]Foundation for Advancement of International Medical Education and Research (FAIMER®), PA, USA; [3]Maastricht University, Netherlands; [4]University of Utrecht, Netherlands; [5]Royal Society of Dutch Physicians, Netherlands)*

Background: Accountability for medical professionals has become an important topic in most developed countries. In the USA licensing exams have been used for re-accreditation of medical specialists. Until now, in the Netherlands a combination of credit points for continuous medical education (CME), proof of ongoing experience in clinical practice of at least 16 hours per week and participation in quality visitation has been used for re-accreditation. However, societal demands and an increasing interest in quality assurance resulted in the urge for a new re-accreditation system. For our nationwide discussions we are very interested to learn from other countries.

Intended Outcomes: To achieve an international perspective on re-accreditation of medical specialists; To understand various building blocks for re-accreditation of medical specialists.

Structure: Examples from the USA and the Netherlands are presented. The audience is asked to discuss various aspects of re-accreditation.

Intended Audience: Medical educators and clinicians from several countries

Level of Workshop: Intermediate

3N   Workshop: ASPIRE – International Recognition of Excellence in Medical Education

Ronald Harden*[1], Trudie Roberts*[2], Trevor Gibbs[1] ([1]AMEE, UK; [2]University of Leeds, UK)

Background: The ASPIRE Programme has been established to fulfil the need for a form of quality assurance in a medical school that goes beyond accreditation, recognising that the education programme in a medical school can be subjected to peer review against an agreed set of "standards" or "benchmarks" that identifies world-class excellence in education. A Board and three panels have defined draft criteria for excellence in the areas of (1) student assessment; (2) student engagement in the curriculum and in the medical school; (3) social responsibility and accountability as a mission of the medical school. Other potential areas of excellence will be developed in the future.
Intended Outcomes: The criteria will be presented to participants, in order to gain feedback in an international context.
Structure: Short presentations and group discussion.
Intended Audience: All with an interest in excellence in medical education.
Level of Workshop: All

3P   Posters: Subjects in the Curriculum 2

3P1

Patient needs assessment: Communication between Iranian patients and health care team in hospital: a hermeneutic phenomenology study
Hojatollah Yousefi (Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Islamic Republic of Iran)

Background: Some patients in Iranian hospitals have indicated that their care has been less individualized, holistic, and caring than they expected. Rather, nurses and other health team members focused on technical and mechanistic care. This results in patient dissatisfaction with communication.
Summary of work: This qualitative study was conducted between July 2006 and April 2007 in a university hospital in Iran. The aim was to explore the communication experiences of hospitalized patients. Data were generated with 22 participants, using in-depth interviews. Analysis based on the framework of Diekelmann.
Summary of results: One constitutive pattern, 'Communication: a need of hospitalized patients' and Three related themes – Need for respect, Need for verbal Communication, and Need for empathy and caring - were

identified in the data. Besides routine care, patients need to be accepted and respected by health care members.
Conclusions: These findings offer unique insight for planning and implementing appropriate clinical practices in Iran, especially in caring for Muslim patients. As a qualitative research on these patients in Iran, this may not generalize in other societies. The major implications are to consider communication criteria during nursing assessment and planning of care during a patient's hospitalization.
Take-home messages: This study finds that patients are more comfortable when they have a good communication with health care providers.

3P2

BioDental education at Faculty of Dentistry Hiroshima University, Japan - To produce new generation of leaders in dentistry
Y Mine*, T Uchida, F Nishimura, H Nikawa, K Kozai, T Kanematsu, T Takata (Hiroshima University, Faculty of Dentistry, BioDental Curriculum Center, Hiroshima-shi, Japan)

Background: Historically, the teaching of clinical practice has not been evidence-based. "In my experience" approach to teaching can lead to a lack of consistency in clinical practice. Evidence-based dentistry is an essential component in the 21st century dental education. Meanwhile, life science is rapidly expanding which includes regenerative dentistry. In these circumstances, we provide program of BioDental education for undergraduate students, in order to cultivate the dentist and co-dental professional who perform biological evidence-based dentistry.
Summary of work: BioDental education program is introducing course work (CW) systems. As core programs, we provide "start-up CW" and "advanced CW". Additionally, we develop globalism in advanced English practice course.
Summary of results: In start-up CW, students learn about the cell culture technique and dental CAD/CAM system. Next, students are divided into 4 groups and provided lectures assigned by basic laboratories in advanced CW. In advanced English practice course, students acquire scientific presentation skills, and/or a way of communicating in English.
Conclusions: We believe that this program will help guide the students to develop into well-rounded dental professional who will be able to carry out decisive breakthrough in future dentistry.
Take-home messages: We cultivate "BioDentist", "Oral Health Manager" and "Oral Engineer".

3P3

Innovation of educational program for undergraduate dental students at Hiroshima University

H Oka, Y Mine, U Tedjosasongko, T Uchida, K Tanne, H Kurihara, T Takata (Department of Oral and Maxillofacial Pathobiology, Graduate School of Biomedical Sciences, Hiroshima University, Hiroshima, Japan)*

Background: It has long been anticipated to foster dental human resources who well understand the trend of biology and genome medicine, and practice evidence-based and patient-oriented dentistry. For this mission, we have been required to operate education based on biology, engineering and general medicine, to harmonize the education crossing-over disciplines among dental jobs, and to develop the ability to respond to globalization.

Summary of work: We have actively pursued educational reform in dentistry and oral health sciences at undergraduate level over the last decade, and made a ceaseless approach to develop Asia-based global collaboration in dental education and research.

Summary of results: We established a unique two-course program (course for frontier dental science and course for clinical dental science) and a four-year school of oral health sciences. We started the "BioDental" education at undergraduate school. We will welcome international students into our undergraduate school and start a four-year international dental course collaborating with Asian dental schools.

Conclusions: We have tried to reconstruct and establish an educational program of dentistry to develop human resources; "BioDentist", "Oral Health Manager", "Oral Engineer", who can manage the paradigm shift of dental medicine cooperatively and internationally in the 21st century from undergraduate level.

3P4

Training evaluators for on the job assessment of clinical pharmacists

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Background: Peer review in the context of clinical pharmacy services in hospitals is not new. In 2010, SHPA developed a clinical competency assessment tool adapted from the UK Competency Development and Evaluation Group. Core elements and performance criteria were contextualised to apply to Australian standards and guidelines.

Summary of work: The clinical competency assessment tool was designed to support pharmacists through structured evaluation. For the individual pharmacist, it identifies professional development requirements, plans career progression and supports re-registration. A critical success factor was evaluators who could provide effective feedback, and address change management and implementation challenges in workplaces.

Summary of results: A two-day interactive workshop was developed using adult learning principles and role-plays to practise effective feedback principles to allow participants to identify and plan for local implementation. Pre-reading and undertaking a self-assessment precede the workshop. There is a buddy system for follow-up workplace practice for participants. Undertaking three workplace assessments completes the training.

Conclusion: Feedback from participants and pharmacists assessed in the workplace supports the effectiveness of the workshop design. The training is now being implemented across Australia.

Take-home messages: Adult learning principles, opportunities for role-play and a buddy system have ensured that the evaluators can manage the process.

3P5

Students as patients – using role-play to teach psychiatry to medical students

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Background: Although the OSCE format is widely used for assessment of medical students' psychiatry rotations, there is little evidence for the regular and structured use of role-plays as part of a formal education program. The poster will report on an innovative program which replaced the existing PBL format with a series of small group Case-Based Learning (CBL) modules using medical students as simulated psychiatric patients. The program was developed in response to poor attendance and unfavourable student satisfaction ratings.

Summary of work: The poster will provide a description of the program, including sample materials, as well as the results of an evaluation study. The evaluation will compare student satisfaction, attendance and performance data for the clinical schools using the new program with those still using the old, PBL-based, program.

Summary of results: While the results of the formal evaluation were not available at the time of submitting this proposal, those using the new program have reported a dramatic improvement in student satisfaction ratings and attendance.

Conclusions: The program provides an interactive learning format that engages students and promotes clinical knowledge and communication skills in a structured, reflective environment.

Take-home messages: Delegates are encouraged to consider incorporating this approach into their own programs.

3P6

A sound mind in a sound body: Early exposure of medical students to health promotion

S Dussawan, W Panu, S Jettawan (Medical Student affairs unit, Faculty of Medicine, Prince of Songkla University, Thailand)*

Background: Medical students are usually trained to be a vital element in relieving diseases. However their ability to empower people to move toward the state of optimal health is worth their weight in gold to society.
Summary of work: We encouraged the first year medical students in Prince of Songkla University to be the leader of a health promotion project for high school students in the community through an in-depth interview.
Summary of results: Two hundreds medical students participated in the project. They organized a festival consisting of various health communications such as health exhibition, stage performance, cooking contest, Mr and Miss healthy body and mind contest, a quiz competition and health promotion.
Conclusions: First year medical students can be the health promotion project leader.
Take-home messages: Early exposure of medical students to health promotion project.

3P7

Medical Genetics curriculum in India

Rahul Kamat (Vidyasagar Institute of Genetic Studies, 54, Mahalaxmi Niwas, Hindu Colony, Road 1, Dadar (E), India)

Summary of work: Using Kern 6 step framework, a needs assessment revealed the need for a 1 year program in Medical Genetics with a part-time structure which should be accessible to medical students immediately after their graduation. A literature search was conducted on PubMed using the MeSH database with keywords Medical Genetics, Curriculum, Education and can be summarized as follows: Understanding biochemical/molecular pathways, pedigree analysis of family history, use of online resources like OMIM, multimedia based teaching, needs-assessment of learners, use of Standardized Patients.
Program Description: Post-Graduate-Diploma-Medical Genetics is a rigorous part-time program which started in August 2006 with 3 theory and 3 practical (laboratory) sessions per week. Depending on the module under study, the schedule may be suitably modified to incorporate clinical case discussions, field trips, assessment sessions (including tutorial sessions). Students go through a broad range of genetic sub-specialities.

Brief gap analysis and suggestions for future: Bloom's Taxonomy should have been deliberately used for formulating knowledge objectives. Attitudinal objectives were unstated. There is a clear need for a hospital tie-up so that students could be exposed to a regular medical genetics OPD. Pre-recorded videos of genetic counseling can be shown to participants. In the future, PBL approaches to teaching Medical Genetics could be developed.

3P8

Time for change - exercise, sports and musculoskeletal medicine in UK medical school curricula

F Oluwajana, C Rufford (Department of Clinical Skills, Barts and the London School of Medicine and Dentistry, London, UK)*

Background: Exercise and Obesity (EO) and Sports and Exercise Medicine (SEM) are important topics in today's society. However, little is known about their occurrence in medical school curricula.
Summary of work: The study investigates the availability of EO, SEM, and MSK teaching in UK medical schools, opinions regarding the importance and quality of teaching and compares SEM and EO with MSK teaching. An anonymous online survey was designed, piloted and distributed to 33 UK medical schools.
Summary of results: The response rate was 76%. All medical schools have a direct focus on MSK in their curriculum.60% have a direct focus on EO and 40% on SEM. MSK is perceived to be more important and have better quality teaching.
Conclusions: EO and SEM teaching are uncommon and considered less important in UK medical schools compared to MSK teaching.
Take-home message: The prevalence of obesity is rising fast and this has huge implications for society. The medical profession has an important role in encouraging physical activity and understanding using exercise as a health tool. In our medical school we will include SEM in the curriculum, using exercise as a health tool for many different medical conditions.

3P9

SCORPIO teaching of core skills to prevent the major causes of maternal and neonatal death

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Background: An estimated 3.5 million neonatal and 350 000 maternal deaths occur each year mainly in low income countries. The Masters of International Public Health (MIPH) workshop, addressed core skills necessary for prevention of the six major causes of death.

Summary of work: A six station SCORPIO teaching session on 'Public Health Approaches to Basic and Emergency Obstetric and Neonatal Care' (BEmONC) was conducted for 102 participants in 2009-11 complementing the lectures and tutorials. Over half the participants were international and half health care providers. A study guide outlining the aims and objectives preceded the teaching. A short introductory lecture was followed by five groups of 6-8 rotating around 6 interactive, 30 minute, stations. Summary of results: An evaluative questionnaire revealed that almost all (98%) participants rated the workshop as very good or excellent. There was a highly significant increase in knowledge as measured by a pre/post formative assessment. Qualitative evaluation of focus groups will be presented.

Conclusions: The introduction of SCORPIO teaching into the MIPH course was highly regarded and an effective teaching method which has the potential for more wide spread application.

Take-home messages. The SCORPIO method enabled the knowledge transition from lectures/tutorials to practice and is a valued method of transferring evidence into action.

3P10
Perceptions of University Educators and Students on the Teaching of Chinese Medicine in Healthcare Courses

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Background: Realizing that its multiracial population uses traditional medicine with allopathic medicine, the Malaysian government integrated certain aspects of traditional, including Chinese medicine (CM) treatment modalities into 10 public hospitals by October 2011.

Summary of work: This research studied university educators' and students' knowledge and perception on teaching of CM in various degree courses in healthcare. It surveyed 100 university lecturers and 100 students each in 6 university degree courses in 3 universities. Data was analysed using SPSS.

Summary of results: Lecturers' knowledge of CM was weak to moderate on CM education in many countries and on CM in treatment of 12 listed diseases and conditions. The overall mean self-evaluation score of 9 CM practices was only 43.2%. for lecturers and only average for students. Less than 50% lecturers and 20-43% students were aware of integration of CM practices into public hospitals. Close to 60% lecturers agreed that Chinese medicine should be taught in medicine, pharmacy and health science courses with agreement from 42 -56 % medical, 68-80% pharmacy, 64 to 73 nursing, 53 to 66% dental,67 to 81% science and 49-76% arts students.

Conclusions/Take-home messages: The findings indicate that university lecturers and students need to have more training and improve their awareness in Chinese medicine.

3P11
Using social cognitive theory to develop a psychiatry education program for general practice

Chun-Wei Chang (Department of Psychiatry, Bei-Tou Armed Forces Hospital, 60 Hsin-Ming Rd. Beitou District,112, Taipei, Taiwan)

Background: Learning theories are used in many fields, but few applied in medical education. We develop a psychiatry curriculum under the Bandera's social cognitive theory for non-psychiatry postgraduate year one general practice and to test and verify the effectiveness.

Summary of work: The purpose of this study was to develop a psychiatry education program for non-psychiatry physicians and to explore the effect of "psychiatry education intervention on psychiatry knowledge, attitude to psychiatry disease, self-efficacy in dealing with psychiatry disease.

 Summary of results: The findings of the study were as follows: one month psychiatry education can improve psychiatry knowledge, attitude to psychiatry disease, self-efficacy in dealing with psychiatry disease. Control group only can improve in psychiatry knowledge, and no effects in attitude, self-efficacy and intention toward psychiatry disease. Baseline group was no effects in all evaluation criteria.

Conclusions: The curriculum conducted under social cognitive theory is effective and proves the learning theory in medical education.

Take-home messages: Social cognitive theory is a bridge between medicine and education. It is original to test and verify learning theory in curriculum development of medical education.

3P12
Assessing Malaysian Pharmacy Students' Understanding, Perceptions and Self-use of Complementary and Alternative Medicine (CAM)

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Background: In recent times the basic understanding, perceptions and CAM use among undergraduate health sciences students have become a topic of interest.

Summary of work: This cross-sectional study was conducted on 500 systematically sampled pharmacy students from two private and one public university. A

validated, self-administered questionnaire comprised of seven sections was used to gather the data.

Summary of results: Overall, the students tend to disagree that complementary therapies (CM) are a threat to public health (mean score = 3.6) and agreed that CMs include ideas and methods from which conventional medicine could benefit (mean score = 4.7). More than half (57.8%) of the participants were currently using CAM while 77.6% had used it previously. Majority of them (69.3%) asserted that CAM knowledge is necessary to be a well-rounded professional.

Conclusions: This study reveals a high-percentage of pharmacy students who were using or had previously used at least one type of CAM. Students of higher professional years tend to agree that CMs include ideas and methods from which conventional medicine could benefit.

Take-home messages: Integration of CAM education into curriculum gives students a chance to provide accurate and unbiased information on CAM.

3P13

What does 'quality improvement' look like in practice and what is the best way to teach it?

C Mulder, G Agarwal* G Ogrinc* (University of Liverpool, UK; McMaster University, Canada; Dartmouth Medical School, USA)*

Background: Although there is an increased sense of the importance of Quality Improvement (QI) in healthcare, it still does play not a prominent role in medical curricula. Programs that exist increase knowledge but do not generate clinical benefits . Outcomes evaluated range from curriculum participation to patient outcomes and behaviour.   Consensus on what QI looks like is necessary to determine the best way to teach physicians to improve quality in undergraduate, graduate and CME settings.

Summary of work: Focus groups and key informant interviews informed the development of a questionnaire administered to residents before and after QI training at two medical schools and after graduation. Responses were compared at each stage. Analyses also included intra-subject and inter-rater agreement on the QIKAT tool used to assess QI knowledge.

Summary of results: Initial results show there was no consensus on what QI looks like but there was consensus on barriers and enablers for QI. Analysis of survey results (administered Oct 2011) is underway.

Conclusions: The study evaluates curricula by measuring the target behaviour in practice and contributes to the standardization of a tool for measuring QI knowledge.

Take-home messages: Consensus about what QI looks like does not exist and is needed for evaluation and improvement of QI curricula.

3P14

Do Future Pharmacy Practitioners understand the concept of Generic Medicines in Malaysia? An exploratory Insight

Mohammad Jamshed Ahmad Siddiqui, Shazia Jamshed (School of Pharmacy and Health Sciences, International Medical University, Kuala Lumpur, Malaysia)*

Background: In an era of ageing population and escalating healthcare costs generic medicines are instrumental as cost cutting treatment modalities.

Summary of work: In the backdrop of the current scenario of ageing population and escalating healthcare costs we will attempt to explore the understanding of future pharmacy practitioners towards generic medicine dispensing in Malaysia. We plan to execute a quantitative study which will be based on a pre-validated instrument. The instrument will then further re-validated by subjecting to a cohort of pharmacy academics and future pharmacy practitioners alike. If required, necessary changes will be addressed in the instrument and then subjected to pilot testing. Cronbach alpha will be computed to ascertain the reliability of the instrument. The instrument will then be administered as classroom survey to public and private universities in Malaysia.

Summary of the results/Conclusion: It is presumed that the results will highlight that incorporating case studies in economics course in pharmacy curriculum will help future practitioners to develop into counselors of cost-effective regimens. It could presumably highlight that pharmacy students must have knowledge about the NDP and the EDL that contain information on cost-effective medicines. A module on pharmacoeconomics which is included as a subject in many pharmacy curricula globally could also be a part of the Malaysian Pharmacy curriculum in public and private universities.

3Q   Posters: Competency-based Assessment of the Trainee and Practising Doctor/Work-Based Assessment

3Q1

A national program for advancing Family Medicine Competency Based Assessment Processes – Canada's Story

T Laughlin on behalf of The College of Family Physicians of Canada Working Group on the Certification Process (Department of Family Medicine Northumberland Residency Program, Dalhousie University, Moncton New Brunswick, Canada)

Background: The College of Family Physicians of Canada (CFPC) has advanced the Triple C Competency Based

Curriculum for family medicine residency programs. This necessitates an in-training assessment process that requires programs to make judgments of learner competence in the workplace.

Summary of work: The Working Group on the Certification Process embarked upon a process to articulate evaluation objectives for entry to the independent practice of family medicine. The process included surveys and subsequent analysis by expert groups of family physicians to identify the critical competencies required.

Summary of results: Based upon this process, the CFPC has been able to:

a) Define competencies required of a beginning specialist in family medicine; b) Recommend the use of daily written feedback (field notes) to sample competency attainment and stimulate learning through shared reflection; c) Suggest the development of a process for in-training assessment that focuses on the assessment of the essential practice skills.

Conclusions: This presentation aims to share Canada's process for articulating and assessing the competencies necessary for safe entry to family medicine practice.

Take-home messages: For Competency Based Education to work well the appropriate building blocks (Competencies) must be identified and assessed in authentic workplace settings. This presentation will share Canada's learned lessons.

3Q2

How Interprofessional faculty can deliver training for novice trainees in Anaesthesia in Postoperative Care Unit for completing Initial Assessment of Competency

K Mukherjee (Medway NHS Foundation Trust, Windmill Road, Department of Anaesthetics, Level 3 Green Zone, Gillingham, Kent, ME7 5NY, UK)

Background: Anaesthetics curriculum in UK stipulates the core clinical learning outcome in postoperative and recovery room care for novice trainees, which include management of emergence from anaesthesia, awareness and management of common immediate postoperative complications and assessment and treatment of pain and nausea/vomiting. However Consultant trainers busy in operating rooms, are not always free to deliver this. We describe how an interprofessional faculty of nurses and clinicians delivered this aspect of curriculum to novice trainees.

Summary of work: A dedicated Faculty, consisting of recovery nurse educators, programme director and Consultant trainers, was trained in delivering the curriculum through focus group meetings and curriculum mapping. Trainees were placed in the postoperative care unit for 3 days for training, which consisted of hands-on training, equipment training and curricular topic discussions. Feedback was obtained from trainees and

faculty and by inspection of trainee log book and performance at Initial assessment of Competency.

Summary of results: 16 novice trainees over a five-year period (2007-11) went through this training programme. All achieved and demonstrated adequate level of knowledge and skills at the end of training module.

Conclusions/Take-home messages: Interprofessional delivery of training helps in achieving curriculum objectives for novice trainees in postoperative care unit.

3Q3

Competence Assessment for Pharmacist in Medication Therapy Adherence Clinic (MTAC) Warfarin Service

Ee Vien Low[1]*, Jacqueline Lai*[1]*, Normah Talib*[1]*, Sahimi Mohommad*[2]*, Houng Bang Liew*[3]*, Azmi Hassali*[4]*, Abida Haq*[5]* (*[1]*Department of Pharmacy, Hospital Queen Elizabeth, Sabah;* [2]*Department of Pharmacy, Hospital Tengku Ampuan Afzan, Kuantan;* [3]*Cardiology, Department of Medicine, Hospital Queen Elizabeth, Sabah;* [4]*School of Pharmaceutical Sciences, University of Science, Malaysia;* [5]*Pharmaceutical Services Division, Ministry of Health, Malaysia)*

Background: Pharmacist led Medication Therapy Adherence Clinic (MTAC) is a service introduced by Ministry of Health under the 9th Malaysian plan with the objective of enhancing pharmaceutical care for patients. In implementing such service, training is essential to ensure that the pharmacist conducting MTAC is competent to provide the service.

Summary of work: A training module for pharmacists to provide MTAC service was developed. The module was divided into two components comprising theory and practical training. The theory component is designed to covers the pathophysiology of the disease, pharmacologicy of drugs used and protocols in dosage adjustment. During the practical component, the pharmacist will be attached to an accredited clinic to learn the "know-how" from a preceptor pharmacist. Besides this, the training module also incorporates elements of soft skills required in patient management. Pre and post evaluation of the participants was conducted to evaluate the effectiveness of the programme.

Summary of results: A log book was developed to document the training program. An online website www.sbhmtacwarfarin.co.cc was also developed as a source of reference for pharmacists . Pharmacist who achieved at least 70% in the post test evaluation and completed both theory and practical components were certified to provide the MTAC service.

Conclusions: Continuous professional improvement and training is essential to ensure competency and skills of pharmacist.

Take-home messages: Effective competency training is a pre-requisite for extending pharmacists current role in

specialised patient care. A national accredited program for training in-service pharmacists has been implemented to ensure quality of services provided.

3Q4

The Need to Implement Ongoing Competency Assessment in HIV Care

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Background: While the burden of HIV infection in low resource settings remains high, HIV medicine is rapidly changing. To address these twin challenges, the World Health Organization Integrated Management of Adult and Adolescent Illness Second Level Learning Program (IMAI-SLLP) is being designed for ongoing learning and competency assessment.

Summary of work: Expert panels designed the initial course and integrated various assessment methods, which include Problem-Based Learning (PBL). An electronic PBL approach is being implemented to update clinicians with the latest country-specific guidelines and assess ongoing learning.

Summary of results: PBL has emerged as the most effective method for providing effective updates of HIV care guidelines and assessing ongoing competency.

Conclusions: After achieving initial competency in HIV care, significant ongoing learning is required to maintain competence. Developing ongoing competency assessment is a significant challenge in low resource settings. A PBL curriculum, along with a systematic and process-focused assessment method may lead to better incorporation of rapidly changing guidelines into clinical practice.

Take-home messages: Implementing a digital Problem-Based Learning approach with integrated assessments incorporating new guidelines may help providers maintain competency in the rapidly changing area of HIV medicine.

3Q5 - Withdrawn

3Q6

Sharing a Canadian experience: Redesigned web application supports physicians' lifelong learning and continuing professional development

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(Royal College of Physicians and Surgeons of Canada, 774 Echo Drive, Ottawa, Ontario, K1S 5N8, Canada)*

Background: A formal program evaluation for the Royal College's Maintenance of Certification (MOC) program has been completed and resulted in recommendations and

revisions to the MOC program and to MAINPORT – a web application supporting the learning of Royal College Fellows and other MOC Program participants. A key part of the transformation being implemented in 2011 is a full redesign of MAINPORT. The goal is to enable MAINPORT to become a learning space to facilitate the planning, reflection, documentation, and tracking of CPD goals and learning activities.

Summary of work: The new MAINPORT focuses on the user experience and embeds key design principles to achieve: a simplified approach to the documentation of learning activities and outcomes (group learning, self-learning, and assessment activities); a greater ability to manage CPD through planning and tracking goals; an expanded capacity to access learning resources and tools; access to MAINPORT through mobile devices; the automation of documenting physician participation in learning activities by third parties.

Conclusions: MAINPORT reflects the MOC Program's incentivized credits for knowledge and performance assessments. Accredited self-assessment programs, simulation, chart audits and multi-source feedback are examples which may be recorded.

Take-home messages: Tools which support individual CPD planning, managing, reflection, and documentation are an important component of physician lifelong learning.

3Q7

Reliabilities of Mini-CEX, CbD, DOPS as performance assessments of practicing physicians

YY Chen[1], CC Wu[2], TS Chu[2], HS Lai[3], TS Huang[1], PC Yang[4] ([1]Dep Social Medicine; [2]Dep Primary Care Medicine; [3]Dep Surgery; [4]Dep Internal Medicine, National Taiwan University College of Medicine, Taiwan)*

Background: The purpose of this study was to evaluate the reliability of Mini-CEX (mini-clinical evaluation exercise), CbD (Case-based Discussion), and DOPS (direct observation of procedural skills) as a performance assessment of practicing physicians in a non-English speaking clinical practice.

Summary of work: Thirty-eight raters randomly selected from six medical centers in Taiwan were recruited to conduct the assessments. Three videotaped clinical encounters for each assessment tool were made. Each rater watched through all the clinical encounters based on the following orders: three for Mini-CEX, three for CbD, and three for DOPS. The rater was required to rate the performance of the physician right after the rater was done with watching the clinical encounter. All raters were required to watch all the nine videos at two different occasions. For evaluating the test-retest reliability of the three assessment tools, the two occasions were separated by three weeks.

Summary of results: The results showed that the translated and validated Mini-CEX, CbD, DOPS have good test-retest reliability and internal consistency reliability, while the inter-rater reliabilities of the three assessment tools are not so good. In addition, we also identified worming-up effect as demonstrated by only acceptable reliabilities in the first two rating.

3Q8

Enquiry into the Primary-Secondary care interface of Work Place Based Assessments for ST1 and 2 General Practice Trainees in the UK

E Neale, S Newton, S Scallan (University of Winchester, Department of Primary Health Care Education, Winchester, UK)*

Background: Workplace based assessments (WPBAs) are a core assessment in GP training, and are used throughout the three years. Their purpose is not only to assess a trainee's clinical practice but also to direct and shape their learning towards a primary care perspective. In the UK, the first two years of training are undertaken predominantly in secondary care, where it is recognised that there have been difficulties ensuring a primary care focus to assessments and regarding the experience of assessment for trainees.

Summary of work: This research will explore: the interface between Primary and Secondary care in relation to training continuity and assessment, with particular regard to areas assessed by Secondary Healthcare professionals; the outcomes of assessment as perceived by trainees during hospital-based training; the perception and reception by both Primary and Secondary care professionals of a General Practitioner's involvement in WPBA's during hospital-based training; the perspective on assessment expressed by Primary and Secondary Care educators and it's link to training for general practice.

Summary of results: This project is ongoing. Observational and interview findings will be presented in relation to research questions and wider literature.

Conclusions: Conclusions will be drawn in light of the findings.

3Q9

Local Training for Work Based Assessments for Foundation Doctors

L Moran, G Menon*, A Elliott (Frimley Park Hospital, Post Graduate Education Centre, Frimley , UK)*

Background: The rapid introduction of electronic portfolios for doctors in postgraduate training has left many educational supervisors having to learn new skills in assessment. With busy workloads and an ever increasing number of portfolios to access an effective method of assimilating the technology was required.

Summary of work: Different methods of delivering training were explored. Quality assurance reports relating to the assessments stated that the assessment tool was being used only as a summative measure of trainee's progress. The PGEC developed a drop in session held over a breakfast meeting to coach trainers to use the tool as it was designed to be used putting formative assessments on to the portfolio.

Summary of results: There was good take up from assessors. Peer support to discuss the assessment tools was highly valued. There was an increased understanding of the technology behind the electronic portfolios.

Conclusions: These sessions need repeating regularly as new assessors are appointed and there are changes to the technology. Further feedback from the quality assurance team is required for this academic year to measure the success of the learning regarding summative & formative assessments.

Take-home messages: All assessors need to understand the assessment tools used across a variety of Specialties both for formative and summative assessments in electronic formats.

3Q10

Medical record audit of the final year medical students: a potential tool for work-based assessment

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Background: Medical student performance during clerkship was subjectively assessed by direct observation. It was hypothesised that quality of medical record may reflect students' performance during clerkship.

Summary of work: A 3-hour workshop about how to write good quality medical records was provided for the final year medical students at the beginning of clinical ward rotationl. Medical records were reviewed by 4 auditors. The scores from medical record audit were compared with performance scores from direct observation during clerkship and grade point average (GPA). Some students were followed for medical record audit after graduation.

Summary of results: 1,432 medical records (38% discharge summary forms-DSF, 53% admission form-AMF) by 35 medical students were reviewed.The students with higher GPA had significant higher mean total score in AMF (30.5 vs 28.3, $p=0.04$). They also had nonsignificant higher mean total score in DSF (54.2 vs 51.3, $p=0.08$). There was no significant difference in total mean score of medical record audit when the students were grouped according to their clerkship performance.Twenty-five doctors were visited 2 years after graduation. All showed significant improvement of all items in AMF.

Conclusions: Higher achievement students showed better scores in medical record audit. However, students who had higher performace assessed by direct observation did not

show similar trend. All visited doctors showed significant improvement in writing medical record after graduation.

Take-home messages: Medical record audit should be considered as a potential tool to reflect student's performance during clerkship. Regular audit and immediate feedback should be encouraged to improve work-based performance.

3R   Posters: The OSCE

3R1

Validity and Reliability of Pre-Internship Objective Structured Clinical Examination

M Alizadeh Naini*, N Vaseghi (Shiraz University of Medical Sciences, Clinical Skill Lab Center, Shiraz, Iran)

Background: In Shiraz University of Medical Sciences, all 6th year medical students' clinical competence is evaluated by objective structured clinical examination. This study examines the validity and reliability of pre-internship OSCE. Validity is the extent to which the test measures what it is intended to measure. Reliability is whether a test gives the same results over different samples and time.

Summary of work: Face validity and content validity were established from expert opinion and blueprinting. The construct validity was evaluated by correlating station scores with the total OSCE score and interstation correlation. Interexaminer reliability was assessed using the coefficient of correlation.

Summary of results: The face validity had been reviewed and accepted by faculty members. Content validity was established by alignment between the curriculum and the OSCE using blueprints. Correlation of station scores with the total OSCE score were positive and meaningful in all stations except 16th station (suturing). The interexaminer reliability, as assessed by the coefficient of correlation, averaged 0.83 (range 0.33–0.99).

Conclusions: Our findings support the assumption that the pre-internship OSCE is suitable to assess students' clinical competence.

Take-home message: Validity and reliability studies should be performed for all new assessment tools, particularly in high-stakes assessments. We see a number of areas in which to improve the process.

3R2

Examiners' Bias: Objective Structured Practical Examination vs Traditional Clinical Examination in Physiology

Pinaki Wani*, Shobha Kini, Vrinda Dalvi (Department of Physiology, K.J.Somaiya Medical College, Sion Mumbai 400022, India)

Background: Traditional clinical examinations are subjective, monotonous and inadequate in evaluating the overall performance of students at all levels of knowledge, skill and attitude. Marking should depend only on students' variability, patient variability and examiner variability which affect scoring resulting in dissatisfaction. OSPE assesses practical competencies in a proper, step-wise, methodical, objective and in a time-orientated manner.

Summary of work: A total of 50 First MBBS Students in Physiology were divided in 3 batches with 8,8,9 students examined by 3 examiners with teaching experience of 35, 6 and 1 year respectively in each batch. All the 3 examiners conducted TCE followed by OSPE for same batch of students for 2 modules in Abdominal System. The students' and Faculty's feedback regarding their experience about the overall procedure was taken.

Summary of results: ANOVA and POST – HOC Bonferroni's test among examiners in TCE shows significant difference in the mean marks given by Examiner 1 and 3, Examiner 2 and 3 but no statistical difference by Examiner 1 and 2 for both the modules. OSPE shows no significant difference in the mean marks given by all the examiners for both the modules suggesting that OSPE eliminates the examiners bias based on their experience. The students' and faculty's attitude towards OSPE was found to be positive.

Conclusions: OSPE is an objective, structured, unbiased assessment method which can be incorporated along with the Traditional examination for formative and summative assessment of the students.

3R3

OSCE assessment for the Postgraduate first year resident Evidence Based Medicine training under Supplementary e-learning

HC Ho*, CR Wu, JL Lan (Taichung Veterans General Hospital, Evidence-based Medicine Center, Taichung, Taiwan)

Background: Evidence base medicine (EBM) training is one of the essential programs for the Postgraduate first year resident (PGY1) at Taiwan. For decreasing the teaching time in classroom, the EBM training program transformed from classroom teaching in 2008, small group learning in 2009 and to working group learning with supplementary e-learning in 2010. We want to compare the learning effect between these three curriculums.

Summary of work: All PGY1 at Taichung Veterans General were included and received EBM training as classroom program in 2008, small group program in 2009 and supplementary e-learning in 2010 respectively. They received the OSCE at the first week of PGY training and three months later, including scenario analysis, formation of question, search and evidence appraisal.

Summary of results: There was a total of 205 PGY1 included (77 PGY1 classroom program, 71 small-group and 57 supplementary e-learning. They all showed

improvement in EBM skills assessed by OSCE (p< 0.05). However there is no different between these three training programs (p=0.556).

Conclusions: Compared with ten-hours of class room teaching, the PGY1 could achieved similar learning effect in working group without class room teaching with the help of e-learning.

Take-home messages: Even though there was a decrease in the hours of classroom teaching, the PGY1 showed a similar training effect via supplementary e-learning.

3R4
Setting up an OSCE: A simplified evidence based algorithm

Sankaranarayanan Ramachandran*, Kamran Khan (Lancashire Teaching Hospitals NHS Trust, Medical Education & Simulation, Royal Preston Hospital, Preston PR2 9HT, UK)

Background: To the best of our knowledge, there are only a few publications in the peer reviewed literature on setting up Objective Structured Clinical Examinations (OSCEs). In the process of writing up an AMEE guide on Setting up OSCEs we have developed a simple and evidence based algorithm to set-up the examinations.

Summary of work: We have presented the task of setting up the OSCEs as a flow chart, from the inception of the idea to the conduct of the examination. The process is divided into academic and administrative considerations. Followed by stepwise approach to run mock OSCEs leading to the real examination and post OSCE considerations. The algorithm covers the process of setting up appropriate committees with their remits, planning, designing, blueprinting and developing scoring rubrics.

Summary of results: Our algorithm has resulted in the generation of simple, stepwise and easy to follow approach to setting up the OSCEs for those who do not have established OSCEs in their institutions.

Conclusions: Setting up OSCE examination from scratch could be challenging and a myriad of factors need to be taken into account. Following an algorithm can help to simplify this task.

Take-home messages: OSCE programmes could be set-up by following a systematic and logical approach.

3R5
The methodology of objective structured clinical examination (OSCE) for interns

SS Sarsenbayeva[1], AA Tabaeva*[1], SI Sadykova[1], Sh.Kh.Ramazanova[1], IV Brezhneva[2] ([1]Kazakh National Medical University named by S.D. Aphendiyarov; City Children's Hospital; [2]Almaty, Kazakhstan)

Background: In Kazakh National Medical University (KazNMU) named after Asfendiyarov S.D. having a 80-year history, more than 9,000 students study at 8 faculties of medicine, pharmacy and public health. OSCE has been held at the University for 10 years of clinical disciplines, starting with the third course.

Summary of work: The exam consists of 10-12 steps. Assess the skills and knowledge independent expert doctors. Evaluate the theoretical knowledge and practical and communication skills. Estimate rate of 5 major competencies (knowledge, skills, communication skills, knowledge of matters of law, self). A student comes to the exam with a portfolio. From 2011 an OSKE is held in the Center of the practical skills of our university.

Summary of results: The effectiveness of this type of assessment of competencies of students and interns is high.

Conclusions: The dramatic qualitative changes in the educational system of the Republic of Kazakhstan contribute to the integration into the international educational space, manifested in the signing of the state of the Bologna Declaration. Kazakh National Medical University (KazNMU) named after Asfendiyarov S.D. - one of the universities that have signed the Magna Carta of Universities. The use of technology in the undergraduate OSCE encourages students and interns in the development of clinical thinking, communication and desire to improve themselves.

3R6
Application of standard setting methods for comprehensive OSCE of third year medical students in Faculty of Medicine, Airlangga University

F.S.I. Prihatanto*, N.M.Rehatta (Medical Education Research and Staff Development Unit, Faculty of Medicine, Airlangga University, Surabaya, Indonesia)

Background: Clinical skills are ones of most important competences that medical students must be able to perform. One of the drivers of their learning is the conducted assessment system. In a summative assessment, the decision of cut off point determining pass or fail has a major role in driving students' learning. Some methods have been proposed to determine cut off point.

Summary of work: Teachers from many disciplines were selected to be OSCE examiners and trained; including exposure to standard setting methods. The teachers who had trained were involved in the 3 stations of comprehensive OSCE station for 201 third year medical students in FMAU. Standard setting methods were Borderline Regression, Borderline Group, Angoff's, and absolute (as usual in FMAU).

Summary of results: The conducted stations were: abdomen examination and IV infusion; history taking and chest examination; and reflex examination and patient education. Using BGM, BRM, and Angoff produced cut off points and the different numbers of students who passed.

Conclusions: The conducted method of standard setting showed different cut off points. Some methods produce a lower cut off point. It could drive the students to study not

as hard as using the absolute method. Good characteristics of standard setting conflict with educational impacts.

Take-home message: The considerations to decide the selected standard setting method in assessment should be carefully implemented due to competences acquisition.

3R7
From arbitrary to Borderline Regression Method as standard setting in undergraduate OSCE: student and observer perception
R Sylvia, AP Fransiska, I Iis (Medical Faculty, Jenderal Achmad Yani University, Indonesia)*

Background: Our institution has implemented undergraduate OSCE with arbitrary standard setting. According to student evaluation which highlighted the passing score, we initiated to use Borderline Regression Methods (BRM) as standard setting. This study set out to explore the student, observer and item writer perception about BRM as standard setting in undergraduate OSCE.

Summary of work: This study was done in the OSCE of Emergency Medicine Block. Two different questionnaires were completed by 24 observers during the exam and 153 students after the passing score was published. Focus group discussion was developed to explore the item writer's perception.

Summary of results: There was a positive result on student perception especially the fairness (87%); provide their actual capability (79%), and encourage learning (66%). Observers agreed (76%) that this method could interpreted the real student performance. However, some observers worried about the difference definition of borderline. The item writers noticed that BRM's standard could decrease the institution standard. In positive way, the standard of BRM could possibly evaluate the learning process.

Conclusions: BRM has been positively accepted for students and observers. This method also could have a positive impact on evaluation. Further psychometric evaluation will strengthen the evidence of this result.

Take-home messages: The BRM in OSCE could influence student learning, increase the construct validity, and evaluate the learning process.

3R8
Has skill for blood culture improved after the implementation of OSCE in medical license examination?
SJ Lee, CW Kim, SE Kim, DH Lee (College of Medicine, Chung-Ang University, Department of Emergency Medicine, Seoul, Korea)*

Background: From the 74th National Examination for Medical Practitioners in Korea, OSCE is adopted to evaluate clinical skills. Qualities of blood culture test, one of the OSCE items, were compared before and after the 74th

exam. Also, clinical application of OSCE checklists was reviewed.

Summary of work: From 2008 to 2011, contamination rate of blood culture in the first month of interns' service were collected. The data were divided into 2 groups, "before" and "after" OSCE. Also, a questionnaire about the application of OSCE checklists was carried out.

Summary of results: The average contamination rate was 1.8% (98/5531). The contamination rate of March during 4 years and the rate before and after OSCE were not significantly different (p=0.57, 0.17). In survey, 96% of respondents said that actual test kits were not different from the OSCE kits or not causing inconvenience. But they pointed out that OSCE model is not like real patients and actual blood drawing is more difficult.

Conclusions: Blood culture skill is included in medical license examination as practical test, but contamination rate did not changed after the adoption of OSCE.

Take-home messages: A better testing model to reduce the gap between mannequin and actual patient, and more developed education method need to be introduced for improving clinical service quality.

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SESSION 4   SIMULTANEOUS SESSIONS
1600-1730 hrs

4A   **Symposium: Performance Assessment**
Kathy Boursicot[1], Sydney Smee[2], Gail Furman[3], Richard Fuller[4], John Norcini[5], Dave Swanson[3] ([1]St George's University of London, UK; [2]Medical Council of Canada; [3]National Board of Medical Examiners, USA; [4]University of Leeds, UK; [5]FAIMER, USA)

Following an introduction and summary of the Consensus Statement from Theme Group 3 at the 2010 Ottawa Conference, there will be short presentations on (1) latest developments in OSCEs for licensing; (2) an introduction to USMLE Step 2 OSCE; (3) use of a smart phone app for mini-CEX at undergraduate level and (4) latest research on Work-Based Assessment. The floor will then be open to the audience for questions, comments, examples of innovation and developments, moderated by a discussant.

4B   **Symposium: Interprofessional Learning, Working and Assessment: Can we really get there?**
Sari Ponzer (Karolinska Institute, Sweden), Brian Jolly, (Monash University, Australia), Lindy D'Avray (St Georges Hospital Medical

School, London, UK), Leone English, (Holmesglen Institute; Chair Victorian Simulation Network, Australia), Uffe Hylin (Karolinska Institute, Sweden), Jennifer Newton (Monash University, Australia)

This international and inter-professionally delivered symposium will present provocative and dynamic perspectives from researchers and senior policy makers involved in a wide variety of initiatives in inter-professional education. Each speaker will, in 6 minutes, sketch the challenges in and strategies for delivering high quality inter-professional education, and describe projects or research that identifies both desirable and undesirable outcomes. The research will cover inter-professional training wards, health team challenges, buddy systems, and other initiatives against a background of increasing pressure on clinical placement availability, more discerning patients, and heightened regulatory requirements for supervision of students and trainees.

4C   Oral Presentations: International Dimensions 1

4C1

Strategic and practical measures to ensure equivalence in assessment across international barriers: The Newcastle Experience in The UK and Malaysia

S Jones[1], P Bradley*[1], B Lunn[2], R Jordan[1] ([1]Newcastle University Medicine Malaysia, Nusajaya, Malaysia; [2]Newcastle University, Newcastle upon Tyne, UK*

Background: Newcastle University opened a medical school in Malaysia in 2011 which leads to the award of the Newcastle MBBS on graduation. We describe how equivalence in assessments between UK and Malaysia has been achieved.
Summary of work: NUMed academics sit on The Assessment Working Group determining strategy, and The Board of Medical Studies to which it reports. Students in Malaysia and the UK undertake assessments at the same time. Written papers share the same blue print. In 10% of questions the context of questions is adjusted, although the principles being are the same. OSCEs are conducted in English, requiring careful selection and training for role players used to assess communication skills. Examiner calibration is ensured by training local examiners, led by NUMed academics and by using internal and external examiners, from the UK. Psychometric analysis of results is used to screen for differences between UK and Malaysia cohorts.

Summary of results: Strategic and practical measures ensure that assessments in the UK and Malaysia are equivalent.
Conclusions: Equivalence across international boundaries is achieved through attention to strategy, adjusting context but not core content and examiner calibration.
Take-home messages: Undergraduate assessments can be run across international boundaries.

4C2

International medical education in practice - Developing flexibility in clinical communication to meet the diverse needs of patients

J Hamilton, C Chung*, S Yasin ([1]Victoria University, School of Nursing and Midwifery, Melbourne, Australia; [2]Monash University, Jeffrey Cheah School of Medicine and Health Sciences, Kuala Lumpur, Malaysia)*

Background: In 2005 an Australian university established a medical school in Malaysia. Students complete most of their clinical learning in Malaysia, but also complete extended clinical placements in Australia. Students thus have opportunities to develop their clinical communication skills within two different healthcare settings.
Summary of work: A qualitative study was conducted, involving semi-structured interviews with 58 final year medical students. Their perceptions of similarities and differences between the Malaysian and Australian clinical learning settings were sought. Thematic analysis was used to identify common themes in the data.
Summary of results: Participants noted variations in how clinical communication was conducted and modeled within the different settings. These included the amount of detail provided to patients and the degree to which a patient-centred approach was adopted. Some participants reflected on their own behavior, reporting a tendency to adapt their clinical communication style to suit patient expectations, effectively developing 'multiple repertoires' for conducting clinical interactions.
Conclusions: Participants were exposed to a broad range of clinical communication approaches and patient behaviours. This promoted awareness of how interaction style can influence the medical consultation.
Take-home messages: International medical education programs can help students develop the capacity to adapt their clinical communication style to better accommodate diverse patient preferences and needs.

4C3

The Contribution of International Medical Students to Taiwanese Medical School Classes

AP Fan, RO Kosik, GA Mandell, TC Tsai, CH Chen (Faculty of Medicine, National Yang-Ming, P.O. Box 22072, Taipei, Taiwan, ROC100)*

Background: In this study, we examine how international students at a Taiwanese medical school diversify their classes and how they perform academically in comparison to their peers.

Summary of work: From 2003 until 2007 we surveyed 531 students (513 Taiwanese students and 18 international students) that matriculated at the National Yang Ming University School of Medicine. Questions concerned socioeconomic status, physical health, mental health, and specific character traits. First year GPA, cumulative GPA, research orientation, School Merits received, and School Demerits received were calculated for each student. GHQ (General Health Questionnaire) and Taiwanese Depression Questionnaire were included.

Summary of results: International students were more likely to be female (p=0.02), to have less educated fathers (p=0.005), and to have less educated mothers (p<0.001) than Taiwanese students. International students did not significantly differ from Taiwanese students in terms of both their cumulative and first year GPAs. No significant differences in other comparisons were found.

Conclusion: The admission of international students to the National Yang Ming University School of Medicine leads to greater gender and socioeconomic equality. Because these students have similar GPAs as their Taiwanese classmates, these increases in diversity come at no cost to academic aptitude.

Take-home messages: International Students Increase Diversity at no Cost to Academic Competency.

4C4

An Interprofessional course for developing students' global citizenship

Jung-Yul Park*1, Young-Mee Lee[1], Young-Hee Lee[1], Sung- Ock Suh[2] ([1]Department of Medical Education, College of Medicine, Korea University; [2]College of Medicine, Korea University, Seoul, Korea)

Background: Modern health care education requires Interprofessional Education (IPE) to develop collaboration skills. In addition, active participating on global health improvement has been recognized as health profession's social accountability. At Korea University, a new IPE course called "KU UN MDG (United Nations Millennium Development Goals) course" has been developed for students from all health science related disciplines to develop the global citizenship.

Summary of work: One-half day orientation and 2.5-day workshop were provided to these students. The workshop was mainly conducted by students' self- directed group activities to explore what they can do for practicing the UN MDG goals as health science students. Each of 6 groups consisted of 15-20 students according to students' preference among eight goals. At the end of the workshop, students were asked to fill-up the survey.

Summary of results: Students showed highly positive responses to both 10-Likert scale questions and open ended questions. Based on these results, we will develop and implement field service experience.

Conclusions: Students demonstrated appreciation for each others' roles and for collective practice.

Take-home messages: Our interprofessional learning course has shown to provide an opportunity for students to build up the global citizenship and competency as for future health care providers.

4C5

Exploring ethics and safety of global health experiential learning: what faculty need to know to prepare students

E Dell, A Petrosoniak, L Varpio, C Jackson, J Levine, AE McCarthy* (Office of Global Health, Faculty of Medicine, University of Ottawa and Division of Infectious Disease, The Ottawa Hospital, Ottawa, Canada)

Background: Medical students travel to low resource settings for clinical electives, facing unique and complex ethical challenges. We conducted a qualitative study to characterize the types of ethical and safety issues facing Canadian medical students during global health experiences (GHEs).

Summary of work: 24 open ended, semi-structured interviews were conducted with students completing GHEs during medical school, addressing ethical dilemmas and patient / trainee safety. A modified grounded theory methodology identified emergent themes, until theme saturation was achieved.

Summary of results: 24 participants completed 40 GHEs (69.3% during pre-clinical years), spending a mean 6.9 weeks abroad, visiting 24 countries: 51.3% Africa; 20.5% the Americas; 17.9% Asia. The majority (57.7%) had predeparture training while 34.6% had debriefing. Emergent themes included: threats to physical and emotional safety; mismatched expectations of skill and training levels; levels of supervision; and resource disparity.

Conclusions: Trainees experience complex ethical dilemmas and safety concerns during GHEs that require faculty attention. Emotional support and established clinical limitations are areas of weakness.

Take-home messages: Ethical issues exist as part of the hidden curriculum of global health education and must be formally addressed by training institutions.

4C6

Using Simulated Patients across Countries in an International Clinical OSCE: enhancing consistency in the MRCGP (International) South Asia assessments

Marie Andrades[1], Rukhsana Ansari[1], Garth Manning[2], Richard Wakeford[3], Val Wass*[2] ([1]MRCGP

[International] S Asia, Karachi, Pakistan; [2]Royal College of General Practitioners, London UK; [3]University of Cambridge, UK)

Background: Postgraduate clinical examinations delivered in more than one country (e.g. MRCP, MRCGP International collaborations) present challenges surrounding the use of local or external Simulated Patients (SPs).

Summary of work: The MRCGP (International) S Asia qualification for primary care doctors from throughout South Asia involves a 14-station SP OSCE conducted in English: deliveries currently alternate between Colombo (Sri Lanka) and Karachi (Pakistan). SPs are recruited in both countries. Initially, cost issues were thought to necessitate all SPs being local. It quickly became apparent that this arrangement would favour candidates from – and socially adept in – the local culture. So 30% of SPs for each delivery now come from the other centre. Stations (including SPs' performance) are regularly monitored by 'reserve' examiners. Candidate feedback is routinely obtained, including interaction with the SP. Candidate performance data are analysed to seek to identify 'rogue' SPs.

Summary of results: No difficulties, adverse comments or performance were encountered. Using individual SPs at both centres enhances comparability. It maintains their experience of simulation and saves additional training of new local SPs.

Conclusions: It is realistic, practically and financially, to use SPs in assessments in two different countries. It adds face validity to assessment consistency.

Take-home messages: Effective, culturally-sensitive patient simulation can be achieved across a regional examination.

4D   Oral Presentations: Computer-based Assessment/Script Concordance Test

4D1
Students' perception towards the first Saudi experience of Computer Based Summative Assessment in King Abdulaziz University

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Background: Assessment is an essential and integral part of any educational process. We can't separate it from learning and teaching. Computer-based assessment (CBA) techniques provide a valuable resource to help students evaluate their levels of knowledge and progress and many provide access to instant, personalized feedback.

Summary of work: A computer based assessment system was developed by university deanship for distance learning.

A set of questionnaires was designed and administered immediately after the examination to the students to assess the adequacy of the system and questions and the level of ease of using the exam program. The population for this survey is 341 third year medical students, 161 female and 180 male.

Summary of results: There was high satisfaction among students about the first Saudi experience of CBA in final examination. However about half of them prefer a pilot CBA before applying it in final exams, and for this reason many of them didn't recommend the generalization of CBA in all future examinations.

Conclusion/Take-home messages: Computer-based assessment offers a range of advantages: Place-independent assessment in formative test…….etc. Students responded positively, if cautiously, to the introduction of CBA for summative assessment in reproductive module. The many benefits for both sets of users were seen to outweigh the disadvantages. Further studies are required to monitor the extended use of such CBA technology for larger classes and for a variety of subjects.

4D2
Using CIP and EMQ to assess clinical reasoning in a Computer Based Assessment

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Background: To reduce workload of teachers and staff, three medical universities in The Netherlands aim to develop a shared question database for assessing Computer Based Assessment formats.

Summary of work: To determine the preferred question types suitable for CBA in clinical reasoning a literature study was undertaken. Teachers were trained to develop the preferred question types. A pilot assessment was done in all three universities. Based on this, functional requirements and technical conditions for the database were defined.

Summary of results: Literature study indicated several question types suitable to assess clinical reasoning. Not all question types can easily be used in CBA for various reasons. Regardless of the chosen question type; patient vignettes should be used as a standard stimulus format to assess clinical reasoning.

Conclusions: Combined Comprehensive Integrated Puzzles and Extended Matching Questions cover most aspects of clinical reasoning, produce valid and reliable test results, and are suitable for use in CBA. Training teachers in developing these question types as well as in writing good

patient vignettes is essential to ensure high quality questions. We will present the results of the pilot tests at the conference.

Take-home message: Using a mix of question types with rich context patient vignettes enables teachers to develop efficient CBA of clinical reasoning.

4D3

Assuring the quality of an applied knowledge assessment for licensing purposes (Membership of the Royal College of General Practitioners, MRCGP) in UK general practice

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Background: The Applied Knowledge Test (AKT) forms part of the tripos of the MRCGP exam. It is a computer-delivered licensing assessment of applied knowledge. This presentation demonstrates how the test quality is reviewed.

Summary of work: From the RCGP curriculum blueprint, the construction of test items is referenced to high quality evidence, peer reviewed and critically appraised before addition to the question bank. A standard process for question selection, proof reading and feedback to candidates supports its validity. New question formats include free text answers which enhance discrimination. Standard setting follows the modified Angoff process.

Summary of results: The test shows a high Cronbach's alpha (0.88-0.92). Pre-trialling of questions, common to many postgraduate medical examinations, is deemed unnecessary with an alpha-coefficient for new questions in the most recent test > 0.8 (0.91 when adjusted for the test length). Computer delivered testing enables detailed analysis of patterns of timing and omission of items by candidates.

Conclusions: Systematic processes in test construction and computer delivery has enhanced continuous quality assurance of the AKT.

Take-home messages: Test performance relies on meticulous attention to detail in item writing and test construction. Use of un-trialled new questions enables reliable testing of emerging and changing knowledge.

4D4

A Systematic Process for Generating Items on Medical Licensure Exams in Canada

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Background: The development of test items is a costly endeavor, especially so for medical licensure exams. A panel of experts is needed to develop items based on their interpretation of the required tasks. Large banks of test items are needed to ensure test fairness and minimize exposure of items to examinees. Development of more informative testing designs and administration methods not only demand items to be created at an unprecedented rate, but items must fit more specific content categories and adhere to higher psychometric standards. Thus, it is no longer possible for item writers to meet the demands of producing large numbers of high quality test items.

Summary of work: By incorporating a systematic development process with technology, we demonstrate how items for a medical licensure exam can be generated in an automated manner. In this paper, we demonstrate the process of Automatic Item Generation(AIG) by: 1) describing the systematic process of item model development in the context of medical education; 2) describing the necessary technology named IGOR(Item GeneratOR); and 3) applying aforementioned processes to generate items in the domain of post-operation fever and hernia. Initial results from these item models suggest that AIG is able to generate large numbers of well-functioning items without the costs of employing item writers.

Conclusion: AIG is a new item development approach aimed to aid item writers in producing an abundance of quality test items to satisfy high demand for items and enable new assessment methods.

4D5

The script concordance test (SCT) as a measure of clinical reasoning skills for residents in Internal Medicine

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Background: Clinical reasoning and decision-making are the major process of clinical competence. The SCT is a new tool for measuring knowledge organization and reflective clinical reasoning.

Summary of work: Our study was conducted to assess Internal Medicine residents' reasoning and decision making and to measure the degree of concordance between trainees' scripts and experts' scripts. The SCT of 20 scenarios with 60 items were constructed. The one-hour test was administered to applicants for residency training and residents with different levels. Twelve board-certified internists constitutes the reference panel for the study. Test reliability and construct validity were also assessed.

Summary of results : The median score was 31.24 (range 25.30-36.67), 32.55 (range 28.96-40.03), 37.87 (range 33.09-40.60), 38.65 (range 34.95-41.25) for pre-resident applicants (n=18), 1st year residents (n=13), 2nd year residents (n=8) and 3rd year residents (n=11), p = 0. The Cronbach's coefficient alpha of the test was 0.71.

Conclusions : The SCT demonstrated good reliability and construct validity, differentiating reasoning performance among residents in Internal Medicine according to level of experience.

Take-home messages : SCT is a useful tool in assessing residents' clinical reasoning skills which is important for evaluating and managing patients. It is also reliable, valid and feasible.

4D6

The psychometric properties of the ethical script concordance test

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Background: The Clinical Script Concordance Test (SCT) has been successfully used to measure high cognitive ability on clinical decision making. As sharing similar cognitive process with clinical problem-solving, an ethical SCT (eSCT) was constructed in assessing ethical reasoning. The research is to report the psychometric properties of the eSCT.

Summary of work: This study developed an eSCT case set of 13 ethical dilemmas and 46 items. Five experts provided opinions on the face validity of the test. Scoring key was based on the responses from 13 ethical experts. The test takers were 22 year 5/6 medical students and 60 laypersons. Using ANOVA, the comparisons of mean scores were made among experts, students and laypersons.

Summary of results: The experts confirmed the face validity and feasibility of the eSCT. The scores were significantly higher in experts, when compared with medical students and laypersons. This finding of "higher scores in experts" provided evidence of construct validity. The internal reliability of Cronbach alpha was 0.81, and which was considered satisfactory.

Conclusion: Ethical SCT is a tool with quality psychometric evidence in measuring physicians' competency on solving ethical dilemmas. With the use of eSCT, the assessment can be delivered to a large group, and thus enhance the effectiveness of ethical education.

4D7

Neuroscience, medical education and assessment

Derek Soon[1] *, Reg Dennick*[2] *([1]National University of Singapore, National University of Singapore; [2]Nottingham University, Nottingham, UK)*

Background: Recent increasing partnership between cognitive neuroscience and mainstream education has benefitted both parties, guiding educational practice and identifying pertinent areas of neuroscientific research. We propose an analogous partnership between neuroscience and medical education: neuro-medical education (NME)

and explore the potential implications of such a partnership on assessment.

Summary of work: *Neuroscientific basis to assessment innovation*: The neuro-cognitive basis of some modern developments in assessment is explored. This includes the script concordance test (which tests clinical reasoning through script theory) and existing modalities of workplace based assessment such as the minicex and DOPs (which utilise rehearsal, visualisation and feedback to reinforce learning). We argue that there is great potential for new neuroscientific insights to drive further innovation in medical assessment in the future. *Use of neuroimaging to support assessment*:

Imaging studies have documented brain activity associated with an increasing range of cognition and emotion. We argue that neuroimaging studies could be used to support formative assessment, especially in less easily assessable domains such as empathy.

Conclusions: We present a few ways in which assessment can be influenced and guided by neuroscience. Further application of neuroscience in medical education can be explored and validated fully through research implemented via NME partnerships.

4E   Oral Presentations: Postgraduate Foundation Programme

4E1

Improving assessments within the Foundation Programme

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Background: In 2009, Medical Education England (MEE) commissioned an evaluation of the Foundation Programme which reported that assessment of doctors was considered to be excessive and not valued. It recommended that the range of assessment tools and the frequency of assessments be reviewed.

Summary of work: A working group of the Association of Medical Royal Colleges (AOMRC) addressed this. Some of the assessment tools had been designed to be educationally formative and therefore were not suited for assessment.

Summary of results: Formative tools re-designated as Supervised Learning Events; Numerical Descriptors (Mini-Cex, DOPS & CBD) removed to provide white space for feedback, moving away from tick box format; Assessment tools clearly specified: Team Assessment of Behaviour (TAB, ie an MSF tool) and teaching assessment; Overall judgement of individual doctor's performance based on Clinical and Educational supervisor's collated reports.

Conclusions: The assessment of Foundation Doctors has been reviewed, with issues identified and addressed. Feedback post-implementation is essential to ensure continued improvement of assessment.

Take-home message: This experience shows importance of clear distinction of tools designed to encourage learning from those designed for assessment so junior doctors value the process and engage appropriately.

4E2

Competency of gaining consent: a Foundation trainee's perspective in the North Western Deanery

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Background: The GMC and the NHSLA have strict guidance on how informed consent should be gained and how trainees should be supported when learning to take consent, however foundation trainees often feel vulnerable when expected to gain consent for a procedure they have little or no expertise for.

Summary of work: Questionnaires were distributed in 9 hospital trusts in the North Western Deanery and completed by 203 FY1s in the first 6 months of their post.

Summary of results: 71% had taken written informed consent, of these 43% felt they had been put in a position in which they were unhappy to do so, 33% were supervised and 16% were formally supervised. Confidence levels were increased by: supervision (Mean confidence 7.26 vs 6.58, 2 sided P value 0.0036); and formal assessment (Mean confidence 7.26 vs 6.64, 2 sided P value 0.0277). Respondents preferred the following modes of teaching consent: one-to-one session with supervisor (47%), organised tutorial session during induction (21%), and medical school (20%).

Conclusion: Results show low levels of supervision and formal assessments in gaining consent, despite being key factors in increasing confidence.

Take-home messages: A mandatory Mini CEX or similar activity early in Foundation training could lead to better prepared doctors in gaining a valid consent.

4E3

The Foundation Programme Curriculum Resource: a toolkit for learning and assessment

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Background: The Foundation Programme is a two-year generic training programme which bridges a doctor's time between medical school and specialist training. The

Foundation Programme Curriculum sets out the educational framework that supports the professional development. The Collins Review of the Foundation Programme questioned whether new graduates are able to learn efficiently and effectively.

Summary of work: The UK Foundation Programme Office (UKFPO) created a Curriculum Resource to assist doctors in improving their knowledge and understanding of the topics set out in the Curriculum. The resource highlights freely available evidence-based national guidelines and protocols, alongside e-Learning modules, to support each of the Curriculum's domains.

Summary of results: The Resource was well received by both trainees and supervisors. An "excellent and very comprehensive" resource, supervisors felt it allowed them to direct trainees to resources to fill in the gaps where they were lacking and having difficulty in providing evidence.

Conclusions: The resource helps consolidate and develop knowledge and skills to deliver safe and effective patient care. Completion of e-Learning modules can provide documentary evidence of achievements, which can be linked to a foundation doctor's e-portfolio and contribute to appraisals.

Take-home messages: A more learner-centred approach to healthcare education is central to the development of doctors as pioneers of innovative educational tools.

4E4

Exploring career decision-making in medicine: a focus group study of foundation doctors in the Wessex Deanery, UK

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Background: There has much research over the years into career choice for specialty training. However little is known about how career preferences may change over time, or be influenced by experience and circumstances. This research aimed to identify the range of differing influencing factors that are reported as affecting career choice and the points in training when they occurred in order to better support trainees in making such decisions.

Summary of work: Rounds of focus groups were undertaken with foundation doctors across the Wessex Deanery. The research questions underpinning the study are: What factors are currently influencing choice of specialty as a career for foundation doctors? Have these influencing factors changed since being an undergraduate or undertaking foundation training? Have any experiences (undergraduate/in training) been significant in coming to a decision about career choice?

Summary of results: This project is on-going. Interim findings from the focus groups will be presented in relation to the research questions and wider literature.

Conclusions /Take-home messages: The project considers the range of factors that may influence specialty career choice over time, and how medical educators may support trainees in making this decision.

4E5
Aims and attitudinal impacts of Foundation Programme General Practice placements for Wessex doctors - Perspectives from secondary care specialty trainees and GP Foundation Programme supervisors

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Background: Junior doctors in England are expected to complete the two year 'Foundation Programme' prior to embarking on specialist training programmes. Foundation Programme doctors are able to experience placement s in General Practice. These are felt to be important in providing insight into the role of the General Practitioner (GP) and the interface between primary and secondary care.
Aims of the study: To assess whether Foundation Programme General Practice (FPGP) placements impact upon attitudes and perceptions of doctors who enter secondary care based specialty training programmes. To assess what GP supervisors aim to achieve and benefits they feel that the FPGP placement offers to Foundation Programme doctors who do not intend to become GPs
Summary of work: Questionnaires were distributed to Wessex secondary care based specialty training doctors and to GP supervisors of FPGP placements. Free text responses were analysed by the authors and grouped according to themes.
Summary of results: The research is currently ongoing. The findings will be presented at the meeting, in relation to the aims outlined above.
Conclusions/Take-home messages: The conclusions will be presented at the time of the meeting in the light of the results and in the context of the wider literature.

4E6
A pilot metric for quality assessment of Core Medical Training in London

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Background: Quality assurance(QA) is of paramount importance to the London Deanery. Discovering quality markers of Core Medical Training(CMT), and methods of utilizing them are essential. We piloted a metric platform for quality assessment of CMT posts in London.

Summary of work: A scorecard based on 4 criteria was developed. The GMC national trainees survey(2010) was recalculated in relation to the London mean, and criteria selected based on direct relevance to CMT. National outlier data for CMT from the 2009-2010 survey was analyzed, and trusts failing to improve were identified. Training program directors'(TPDs) attendance at training committees over 3 years was scored for outliers. 16989 WPBAs from CMT trainees in London were analyzed to determine the proportion of WPBAs undertaken by consultants at each Trust. Other measures were considered but found not useable. A final score was derived ranking all Trusts. Modeling exercises weighting score components differently were critiqued via Delphi analysis by TPDs for face-validity.
Summary of results: Trusts scored as performing best and worst were those expected by experienced trainers.
Conclusions: We have attempted to create a transparent and reproducible system of comparative performance across multiple Trusts.
Take-home messages: It provides an initial platform for QA of CMT.

4F Oral Presentations: Selection for Postgraduate Training

4F1
Matching applicants to programmes – adopting national scores

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Background: Traditionally, applicants to the Scottish Foundation Allocation Scheme (SFAS) were ranked in order of preference by Foundation Programme Directors (FPDs) on the basis of their CVs, which was time-consuming. However, national scores for applicants were already available following the applicants' admission to the Scotland Foundation School.
Summary of work: The SFAS stable matching algorithm was run twice to compare outcomes: once using the applicants' preferences together with the FPDs' rankings, and once using the applicants' preferences and the national scores.
Summary of results: Of the 735 applicants, 700 were matched to a programme and 469 were allocated to their first choice using the FPDs' rankings. Using the national score alone, 685 were matched to a programme but 500 were allocated to their first choice.
Conclusions: Adopting national scores for the programme preferences had no significant impact on the outcome. It resulted in a better overall score profile and more applicants receiving their first choice. In addition, a

significant amount of FPDs' and administrative time was saved.

Take-home messages: The standardisation of processes between SFAS and the UK Foundation Programmes Office for ranking applicants not only resulted in an efficient and cost-effective method to match applicants to programmes but also provides an open, fair and transparent process.

4F2

How should communication skills be assessed in selection for entry into postgraduate medical specialty training at ST1/CT1 level?

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Background: Doctors may apply from all over the world to enter specialty training (ST) in England at ST1/CT1. Effective communication is a core GMC requirement1 requiring more than linguistic skills however no standardised approach in assessing communication skills (CS) or minimum acceptable standard of performance has been defined for selection across specialties for the 10,000+ applicants annually. We investigate current methods and recommend best practice.

Summary of work: All 12 specialties recruiting at ST1/CT1 in England completed a questionnaire detailing how CS are assessed in selection. All specialties assess CS: Methods include simulated clinical scenarios, presentations and portfolio interviews. Most (8/12) allocate a % total score to CS (10% to 35%). In others CS contribute to a global score.

Conclusions and **Take-home message**: Wide variation exists in assessment methods and overall weighting placed on CS in ST selection. Examples of best practice highlight using professional role players, lay assessment and standardised question banks. As a result of the findings, Medical Programme Board of Medical Education England support CS to be separately scored in future CT1/ST1 selection. A consensus on minimum acceptable standards for CS should be defined across specialties.

1. General Medical Council; Good Medical Practice: http://www.gmc-uk.org/static/documents/content/GMP_0910.pdf

4F3

The utility of the MMI in a National Selection Process for GP Training

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Summary of work: Developing quality assured selection procedures into specialist training programs is of great international interest. Following a successful pilot in 2010 using five regional training providers and two selection

centres, the Australian General Practice Education and Training (AGPT) ran a National Selection Centre System to rank and allocate over 1200 applicants from all over the world. They had applied to 17 Regional Training Providers. Those applicants deemed successful were then matched to GP supervisors in both urban and rural and remote training places nationally. Applicants were diverse in nature by virtue of age, gender, country of birth, country of training, and wether restricted to practicing in an area of need. Three assessment formats were used, a situational judgement test (SJT), the multiple mini interview (MMI) and referee reports. This particular presentation focuses on the psychometric qualities of the MMI. The presentation of the reliability figures and understandings of validity are illustrated with interpretations gained form extensive observational data and face to face interviews with participants in selection centres from three different states.

4F4

A job analysis to define new selection criteria for UK General Practice

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Background: With the increasing transfer of patient care services to the community, it is more important than ever to select trainee GPs that are adequately equipped for this amplified role. The selection criteria used for this must reflect the knowledge, skills, abilities and other attributes required for this significantly broader role.

Summary of work: Adopting a triangulated approach, a literature review was conducted, alongside interviews (N=103), and focus groups (N=93) with stakeholders including GPs, trainees, allied healthcare professionals and patients across the UK. Behavioural observations of GPs were also conducted (35 hours across 5 sites). 4528 behavioural indicators were extracted from the data and analysed using a two-level coding process to produce a comprehensive framework of 11 selection criteria. This model was validated by a survey distributed to over 3000 GPs across the UK.

Summary of results: Full details of the selection criteria will be presented. Results showed that areas were broadening beyond current criteria such as clinical expertise and empathy to also consider leadership within multi-professional environments, critical appraisal and strategic thinking.

Conclusions/ Take-home messages: A multi-method job analysis identified a broad range of knowledge, skills and abilities to consider when selecting GPs. Selection process and training interventions are currently being reviewed to update assessments and the training curriculum.

4F5

Targetting commencing medical students for streamed educational experiences

D O'Mara (Assessment Unit, Office of Medical Education, Sydney Medical School, University of Sydney, NSW, Australia)

Background: The shortage of medical practitioners in general practice, rural areas and scientific research has been well documented in Australia and overseas.
 Summary of work: Previously, cluster analysis was used to identify groups of medical students based on the MSOD* commencing survey of 2005/2006. This study evaluated the usefulness and stability of the clusters using survey data on graduation and also provided new results on the stability of practice intentions over time.
Summary of results: 2,922 medical students were classified into 5 potential workforce groups; Local and Overseas Metro Workforce (18%), Rural GPs and Physicians (23%), Rural Technical Specialists (15%), Researchers and Academics (15%), People Orientated (14%) and Overseas Researchers and Academics (14%). Exit survey data were found to be stable in discriminating students at exit and were available for 3 of the 4 local student clusters. Significantly less movement was identified for practice intention, as defined in the clusters, than for variables considered in isolation.
Conclusions: A multivariate approach to identifying the likelihood of commencing medical students pursuing particular career paths would enable flexible, efficient and targeted medical experiences to be delivered.
Take-home message: The MSOD database could be used to better target medical students, provide streamed experiences and help meet health workforce needs in Australia.
* Australia & New Zealand Medical Schools Outcomes Database and Longitudinal Tracking (MSOD) Project

4G   Oral Presentations: The Student and the OSCE

4G1

Integrated Case Scenarios: Preparing Students for OSCE Assessment

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Background: During OSCE assessment medical students may find it difficult to link basic sciences and the clinical case presented. This pilot program seeks to integrate anatomy, pathology, imaging and clinical history, giving students a holistic view of the patient and facilitating a focussed clinical examination. By bridging this gap between basic sciences and clinical medicine, it is hoped that students will approach their end year OSCE with a greater degree of clinical acumen and preparedness.
Summary of work: Year 2 medical students were advised of integrated case scenario sessions and given pre-work. Groups of 4 students rotated sequentially through scenarios. Tutor led students through clinical history, relevant anatomy, pathology and imaging for 7 mins. One student then asked to complete a focussed & relevant clinical examination in 8 mins on volunteer patient.
Summary of results: Students were asked to complete a de-identified survey and participate in a focus group debrief at completion of session. A further survey will be provided for students to complete after their end year OSCE.
Conclusions & **Take-home message**s: The Clinical Skills Unit at James Cook University has trialled an innovative method to help students prepare for OSCE exams. It is hoped that data collated from the surveys and focus groups will be supportive of this methodology.

4G2

An effective approach in providing information on the objective structured clinical examination (OSCE) to first year medical students

WM Lau (Monash University Sunway Campus, Jeffrey Cheah School of Medicine and Health Sciences, Jalan Lagoon Selatan, 46150 Petaling Jaya, Selangor, Malaysia)

Background: The Summative OSCE is an important part of assessment for both first and second year medical students at Monash University. A new OSCE format was introduced in 2010. This involved a linked four station OSCE to reflect the integrated curriculum.
Summary of work: The facilitator used a life demonstration in the lecture theatre to present the information in an accurate and standardized manner to 131 first year students at the Malaysian campus. The facilitator and a first year student role played the patient and examinee respectively. The other 130 students were also actively involved as examinees and observers. Answers were projected onto the screen immediately at the completion of each task. Time was allocated for further discussion.
Summary of results: 131 (100%) students completed the feedback questionnaire to assess the value of this method. More than 90% of students found this interactive method of delivering information effective and many enjoyed it.
Conclusion: This work demonstrated how important information on OSCE can be delivered in an interactive and effective manner to a large group of students.
Take-home messages: Interactive approach in providing new information on OSCE to a large group of students is effective.

4G3

Providing holistic integrated OSCE feedback to students

Bunmi Malau Aduli*, Craig Zimitat* (Medical Education, School of Medicine, University of Tasmania, Australia)

Background: An OSCE comprises a specified number of stations designed according to a blueprint to sample appropriately across the clinical curriculum, organised to provide maximum reliability and validity.

Summary of work: OSCE blueprints were used to classify each of the criteria in each OSCE station in summative assessments into specific themes (e.g. interpretation of data, therapeutics, management). Student's OSCE scores were reported as gross scores station x station. In addition, OSCE scores were also reported by theme across the whole examination. Student and staff responses to this change in feedback was evaluated by survey.

Conclusions: Holistic integrated OSCE feedback providing a broad view of strengths and weaknesses in skills across the whole clinical examination was very positively received by students and staff when compared with typical feedback consisting of a piecemeal collection of comments / data about different elements of performance on each station.

Take-home message: Holistic integrated OSCE feedback provides students with a broad view of their strengths and weaknesses across the whole clinical examination.

4G4

The exam skills workshop: A formative tool to improve medical student performance in summative assessment

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Background: The assessment of medical students is a complicated process with medical schools making regular updates to the process to ensure it is not only comprehensive and robust but also standardised and fair.

Summary of work: An exam skills workshop was organised for final year Nottingham University students at Lincoln for their surgical placement. It was a 6 station OSCE utilising examiners with variable experience. Post-workshop feedback was gathered from the students. Student performance in the summative OSCE was compared to that of a control group (who did not attend the workshop).

Summary of results: All 24 students, who attended the workshop, felt that the experience would help them in coping better with the summative OSCE as they had an idea about what to expect. Pass rate in the summative OSCE for students who attended the workshop was 100% as compared to 83% for the control group (p-value 0.0197).

Conclusions: The exam skills workshop, is valued by students and may improve their performance in summative assessment. Further research that identifies and controls for confounding factors is needed to confirm this observation.

Take-home messages: Formative assessments such as an exam skills workshop should be used to facilitate student learning.

4G5

Introducing an OSCE examination as a formative feedback tool into a clinical skills preparation course for final year medical students. Do the OSCE results give any additional value to students?

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Background: Final year medical students start their clinical rotations with a skills-preparation-course. It is difficult for those students to value their clinical competencies. Due to the lack of any formative or summative assessment in clinical competencies we added a formative OSCE to the preparation-course.

Summary of work: Overall 18 students took part in a formative OSCE. Seven stations were developed using a blueprint and a standard setting with a modified Angoff-method. Checklists were created with a global rating by expert consultation. Students had to value their self-perception (s-p) before starting with the examination. After the OSCE the results were compared to students self perception.

Summary of results: Students' s-p does not correlate with the OSCE results. Only 3-times students rated their competence correctly (49 OSCE>s-p, 38 s-p>OSCE). Students valued that OSCE increases their s-p (2.1; n=18; 6-point likert-skale 1=I totally agree, 6=I do not agree).

Conclusion: The formative OSCE is a helpful feedback tool to increase student's self-perception before starting their final year clinical rotation. Students' self-perception of clinical competence does not correlate with OSCE performance.

Take-home message: Students' self-perception needs to be supplemented by an outcome-based parameter such as an OSCE examination.

4H   Oral Presentations: Portfolios

4H1

Faculty experiences of changing the philosophy and format of the undergraduate medical portfolio

M Herns, W Scott-Smith*, I Haq (Brighton & Sussex Medical School, Medical Education Unit, 344A Mayfield House, Falmer, Brighton BN1 9PH, UK)

Background: At BSMS, in 2009, the undergraduate medical portfolio underwent a major transformation in format and ethos, resulting in the introduction of a new model of electronic portfolio in Year 1 of the MB,BS course.

Summary of work: At the end of the first year, the experiences and views of eight experienced faculty mentors were explored using the focus group approach. Interviews were taped, transcribed and thematically analysed.

Summary of results: Faculty mentors raised concerns which were both of a generic nature (having to do with developing reflective capacities in first year students) and more specific, around the new portfolio format and the use of the electronic medium.

Conclusions/Take-home messages: Effective engagement with the idea of reflective practice requires that the underlying ethos and vision of an undergraduate portfolio needs to be very clear to both faculty and students; The introduction of electronic submissions can create concern amongst faculty members; appropriate support is vital particularly with increasing workload from marking; Learning cycles have a specific place in facilitating reflective practice but have contextual limitations; Faculty should be aware of tactical strategies used by some students and should be prepared for some intense personalised reflection on occasions.

4H2

'Taking your baby online': Evaluation of the transition from paper-based to an online data-recording and assessment process for a longitudinal learning experience in 'Human Early Life Development

A Wearn*, R Booth, B Shulruf, S Hawken, B O'Connor, C Mitchell (Clinical Skills Centre, Faculty of Medical & Health Sciences, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland 1142, New Zealand)

Background: In MBChB phase 1, our students undertake a longitudinal 'Human Early Life Development' learning activity. In pairs, students are allocated a family with a pregnancy; making visits over 18 months. Whilst gaining an understanding of child development, students also develop professional and clinical skills.

Summary of work: Students expressed dissatisfaction with paper portfolio-based data-recording, analysis and

submission for assessment. In 2009 we introduced an online portfolio. A cross-sectional two cohort comparison was set-up using a survey to assess the value of the changes (2008-9 & 2009-10). The online system was one aspect of the evaluation.

Summary of results: 59% of students responded. The 20 items were compared between cohorts. Four questions asked about improvements in managing, comparing and submitting data - three were significant at p=0.001-0.034 for 2010 cohort (Mann-Whitney). Exploratory Factor Analysis produced similar findings, with items loading under the 'data management' factor as significant (p=0.003). Qualitative data added context.

Conclusions: Switching to an online data-recording and submission process was valued by students and helped to reinforce some of the activity's learning outcomes.

Take-home messages: Transmediation to an e-learning platform, with added innovative functions that aided student engagement, can address some of the weaknesses of paper delivery and ease the submission and marking process.

4H3

Assessment of trainees' reflective logs in Electonic Portfolio

H M Goodyear*, T Bindal, D Wall (West Midlands Workforce Deanery, St Chad's Court, 213 Hagley Road, Birmingham B16 9RG, UK)

Background: Reflection creates greater self understanding to inform personal development plans, is an essential part of lifelong learning and is mandatory in UK postgraduate training. The UK Paediatric E Portfolio uses a structured template with prompts to help in-depth reflection of clinical and non-clinical experiences. Regionally, concerns were expressed about the quality of trainees' reflective logs and trainers' summative assessment scores.

Summary of work: In 2010, two medical clinical educators assessed all regional paediatric trainees reflective logs using a 12-item proforma.

Summary of results: Of 115 trainee logs, the mean number of reflections was 5 (range 0-18). Female trainees undertook more reflections than males (p=0.006). All aspects of reflection scored below the midpoint of a 6-point Likert scale ranging from 1 (poor) to 6 (very good). Ten trainees had no reflections but only 2 were marked below average in the trainer's annual assessment report. Trainers' ratings correlated with the number of reflective logs (p<0.001).

Conclusions: Both trainees and trainers need further training in the use of reflective logs to make this a meaningful learning process and to help raise assessment standards.

Take-home messages: It is important to look at the quality rather than quantity of reflections when assessing trainee progress.

4H4

Quality management of portfolio assessment and its positive influence on training standards

J Foulkes, J Edwards*, S Street* (RCGP, 1 Bow Churchyard, London EC4M 9DQ, UK)*

Background: In 2007, the Royal College of General Practitioners introduced a new Internet based portfolio system of learning and assessment for trainee GPs in the UK; the Work Place Based Assessment. Through the years of GP Training, trainee doctors collect evidence to demonstrate the development of professional competence. Since its introduction, the RCGP has developed a robust system of quality managing the Trainee ePortfolio.
Summary of work: Twice a year a team of RCGP external advisers come together to consider two closely linked aspects of the ePortfolio: the six-monthly Educational Supervisors reports and the Annual Reviews of Competency progression (ARCP) performed by the UK Deaneries. All unsatisfactory and 10% of all satisfactory ePortfolios are reviewed. To date several thousand ePortfolios have been examined in detail. In this oral presentation the process of external quality management will be described and the results for 2011 discussed. It will be shown that it has helped to drive up the standards of GP Training, Educational Supervision and the Deanery Review process and also that the Educational Supervisors Report can act as a surrogate marker of training standards.

4H5

Development of a portfolio-based assessment for postgraduate Family Medicine training in South Africa

L Jenkins, B Mash, A Derese (University of Stellenbosch, Division of Family Medicine and Primary Care, George Training Complex, South Africa)*

Background: In South Africa family physicians are the clinical leaders within multi-professional district health teams. Registrars must prove at the end of training that all required competencies have been attained. District health managers must be assured that the family physician have the required competencies to deliver the expected service. The Colleges of Medicine of South Africa (CMSA) require a portfolio to be submitted as part of the uniform assessment of all registrars applying to write the national fellowship examinations.
Summary of work: A draft portfolio was assessed for content validity via the Delphi technique. Sixty one content items and 27 principles were tested.
Summary of results: The Delphi panel recommended that 50 of the 85 national learning outcomes be assessed by the portfolio. The panel recommended that various types of evidence be included in the portfolio. The panel supported 26 of the 27 principles, but could not reach consensus on

whether the portfolio should reflect on the relationship between the supervisor and registrar.
Conclusion: A portfolio was developed and distributed to the eight departments of Family Medicine in South Africa.
Take-home messages: The correct use of the postgraduate portfolio, reflective learning, supervisor-trainee interaction, without creating unnecessary extra burden, remains challenging.

4H6

Summative portfolio assessment in a community engaged primary care curriculum : an eLearning platform

N Shadbolt, C Roberts* (University of Sydney, Sydney Medical School, Sydney, Australia)*

Background: Traditionally medical programs focus on hospital based student encounters. Most healthcare encounters take place in primary care where student participation is less well controlled, but where social and cultural factors provide a diverse and rich environment.
Summary of work: Within a PBL graduate entry program, we have designed, implemented and evaluated a community engaged curriculum in primary care which integrates students' engagement with patients in their diverse communities with an academic program. It aligns the achievement of specified student learning outcomes, provides flexible and diverse approaches to student inquiry in a range of experiential contexts, and provides a robust portfolio-based assessment. The challenge of the community setting (urban, rural and remote and international) is that students are physically dispersed, clinical experiences may be distinctive and highly individual and teaching will be variable. The curriculum is supported by an eLearning platform to facilitate engagement of students, and their clinical teachers, student assessment, and an evaluative feedback loop, giving good curricular oversight.
Summary of results: Evaluation of student engagement is presented. The summative assessment portfolio is compared to more traditional written assessments
Conclusions: A community engaged curriculum can deliver learning objectives and assessment activities in an innovative, interactive but reliable and reproducible way.

4H7

Study of portfolio related factors as a clinical teaching strategy in nursing education

Shayesteh Salehi[1], Tahereh Rezaee[1], Parastoo Afghari[2] ([1]Islamic Azad University, Khorasgan (Isfahan) Branch, Faculty of Nursing and Midwifery, Isfahan, Iran; [2]Isfahan Medical Sciences University)*

Background: Clinical education is at the heart of the nursing program and teaching and evaluation strategies are very important for goals achievement in education.

Recently many researchers suggested portfolio as a teaching and evaluation strategy in nursing. The present study aimed at studying the portfolio related factors as a clinical teaching and evaluation strategy in nursing education.

Summary of work: This study is a descriptive research that obtained 40 nursing students' opinion about portfolio related factors after applying this method as a teaching and evaluation strategy in CCU wards for them.

Summary of results: The related factors are personal and environmental. Personal factors such as age, sex, motivation, interests and orientation about portfolio as teaching and evaluation method. Environmental factors such as teacher characters
istics, head nurse and other nursing team cooperation, information technology, internet access, patient access and time.

Results and Conclusion: Portfolio is an acceptable method for students and it is useful for clinical education in nursing but the educational system should be aware of the factors that may affect the application of portfolio. Students' orientation and environmental preparation are vital factors that must be provided for nursing students.

4I Workshop: Producing a health workforce to meet the needs of underserved populations: Can assessment in an undergraduate medical program reflect social accountability?

S McKenzie*, S Larkins*, T Sen Gupta*, R Murray (School of Medicine and Dentistry, James Cook University, Douglas QLD 4811, Australia)

Background: Health professional schools are responsible for producing graduates with competencies and attitudes to address health inequities and respond to priority health needs. Our school takes its mandate towards social accountability seriously, orienting selection, curriculum and placements towards the needs of rural, remote and Indigenous Australians. Assessment should likewise reflect knowledge, skills and attitudes required for work in underserved areas.

Intended Outcomes: To discuss and debate the development of formative and summative assessment items that assess undergraduate students' knowledge, skills and attitudes relevant for working with underserved populations. Examples will be drawn from our school and the Training for Health Equity network (THEnet), of which we are a foundation member.

Structure: Initial presentation (30 minutes) will discuss the need for socially accountable health professional education, summarise our integrated course and assessment and present examples of socially accountable assessment items from THEnet schools. The audience will

divide into three groups, for small group discussion around three elements: what to assess; how to assess it; and the merits of formative versus summative assessment (30 minutes). A facilitated wrap-up session will involve the reporting back of findings from each group and general discussion (30 minutes).

Intended Audience: Academics interested in social accountability

Level of Workshop: Intermediate

4J Workshop: Curriculum renewal: A Tale of Two Cities

S Peters*[1], M Wells[1], P Hansen[1], J Barrett*[1], S Pennell[1], D Davies*[2], J Kidd*[2], P Stylianoudaki*[2] ([1]Memorial University of Newfoundland, Faculty of Medicine, St John's, Canada; [2]University of Warwick, Warwick Medical School, Coventry, CV4 7AL, UK)

Background: Memorial University of Newfoundland in Canada and Warwick Medical School in the UK are undergoing a process of undergraduate medical programmes curriculum review and renewal. Curriculum renewal is a complex process. For both schools, the journey and outputs have had a number of similarities and differences. Partnering with another school going through similar processes, sharing ideas, approaches and experiences has been valuable.

Intended Outcomes: During this workshop participants will learn about common elements of the renewal process including review of learning outcomes in the context of changing external accreditation, a move towards more case-based learning, enhanced curriculum integration, changes to assessment methods and timings, and inclusion of more technology-mediated learning. In addition, we will address consultation with key stakeholder groups and active participation of faculty and staff.

Structure: Workshop participants will gain insight into processes and tools used by two medical schools from different countries to renew curricula, from basic needs assessment prior to renewal, to teaching/learning, assessment and evaluation after renewal. The workshop will be interactive, with opportunities for Q&A, discussion and hands-on experience with curriculum planning tools.

Intended Audience: Teaching faculty, physicians and other health disciplines; students; medical school staff

Level of Workshop: Intermediate

4M Workshop: Revalidation of Doctors in Practice: an International Perspective

J McLachlan*, J Mason, J Illing (Durham University, School of Medicine and Health, Thornaby TS17 6BH, UK)

Background: Revalidation of doctors in practice is both important and contentious. A variety of approaches to revalidation have been taken internationally, but there is no common consensus on best strategy.

Intended Outcomes: To generate a review of international practice on revalidation, tested in an open forum discussion session.

Structure: Colleagues from a variety of countries both with and without revalidation programmes will be specifically invited to attend the workshop. The remaining workshop places will be open to other interested participants. Each invited colleague will give a brief presentation of their national experiences and data where available. Small groups, with participants mixed across countries, will be invited to consider the materials presented and produce recommendations for good practice. A recursive approach will be taken to identifying consensus on such practice. This consensus will be developed with a view to a group publication as a research paper to inform review of revalidation practices where they exist, and development of revalidation processes in the considerable number of countries where revalidation does not currently take place.

Intended Audience: Clinical colleagues, health service administrators and non-clinical medical educators interested in revalidation in a variety of health settings.

Level of Workshop: Intermediate

4N Workshop: Classical Item Analysis Made Simple

Patricia A Revest (Barts and The London School of Medicine and Dentistry, Centre for Medical Education, Garrod Building, Turner Street, London, E1 2AD, UK)

Background: A number of different test theories; classical test theory (CTT), item response theory (IRT) and generalisability theory (G-theory), can be used to estimate how good a test is and how reliable are the results. However, both IRT and G-theory require both a good knowledge of statistical mathematics and specialized software. Elements of CTT can be applied to multiple-choice exams using basic spreadsheets to produce analyses of individual question performance, which enable poorly performing questions to be rapidly identified. Calculation of item facility, discrimination and analysis of distractors allow examiners to produce better and more reliable examinations.

Intended Outcomes: Participants will get a basic introduction to item analysis using CTT. They will then learn to use basic spreadsheets (provided) to analyse exam data and estimate item performance and improve their exam. Participants can use their own exam data or use samples provided.

Structure: A short presentation on CTT and item analysis (30 min) followed by a practical session (30 min) ending with a discussion of the actions which would follow from the item analysis (30 min).

Intended Audience: Senior examiners who are interested in monitoring the quality of their questions and exams.

Level of Workshop: Beginner

4P Posters: Professionalism/Patient Safety

4P1
Pediatric Residents' Perception of Professionalism
A Alrumayyan (College of Medicine,King Saud bin Abdulaziz Univesrsity for Health Sciences, Saudi Arabia)

Background: Effective professionalism is essential in clinical practice and affects doctors' relationship with their patients. The aim of the study was to explore pediatric residents' self-assessment of professionalism in dealing with patients and their families.

Summary of work: The survey questionnaire used in this study is a modified version of the American Board of Internal Medicine (ABIM) Patient Assessment Survey. The survey was completed by 42 pediatric residents. Descriptive statistics were performed and data was managed and computed.

Summary of results: Males rated themselves higher than females in items related to "treating the patients and/or family as they're on the same level. However, overall in all items related to professionalism, females rated themselves as more professional than males. When comparing between graduates of Saudi Arabian medical schools and graduates of medical schools outside Saudi Arabia, no significant statistical differences between the groups in all items related to professionalism.

Conclusion: The tool appears to be internally consistent for residents' self assessment of professionalism.

Take home message: The findings in this study can be utilized to raise the awareness of the residents' professionalism.

4P2
Teaching professionalism to medical student by applying appreciative inquiry in social media
YW Wang[1,2]*, JG Hsieh*[1]*, LC Koh*[2]* ([1]Department of Family Medicine, Tzu chi Hospital; [2]Department of Medical Humanities , Tzu chi University, Taiwan)*

Background: Students observe physician's behavior in clinical practice. Role modeling is the major learning process for professionalism. In modern era, students communicate with each other through social media (e.g. facebook).

Summary of work: We use facebook to spread the observed professional behavior among medical students.

Applying the principle of appreciative inquiry, the observed behavior should be real and based on the 18 attributes of professionalism described by R. Cruess. Students have to submit at least two observed events and reflections in each semester.

Summary of results: The program started from March 2011 until June 2011 (Spring Semester) and restarted on Oct 2011 (Autumn Semester). A total of 161 observed events were posted on facebook (50% compassion, 49% responsibility, 47% competence, 44% altruism). The evaluation of the program will be the change of reported attributes of the observed behaviors between two semesters. The students and the observed clinicians gave a very positive response in a qualitative survey.

Conclusion: Medical students using facebook to discuss about positive clinical behavior is a useful method to learn professionalism.

Take-home message: Applying the concept of appreciative inquiry in social media is a useful way to learn professionalism in clinical setting.

4P3

Assessment of Outcomes Relating to Medical Professionalism

R Delport*[1], M van Rooyen[1], C Krüger[2], G Pickworth ([1]University of Pretoria, Department of Family Medicine, School of Medicine, Faculty of Health Sciences, Pretoria, South Africa; [2]University of Pretoria, Department of Psychiatry, School of Medicine, Faculty of Health Sciences, Pretoria, South Africa)

Background: Appropriate assessment of professionalism outcomes is of vital importance as assessment purportedly directs learning. Defining generic outcomes and assessment criteria for medical professionalism helps define subject-specific sub-outcomes and assessment criteria, and assures consistency of assessment. The validity of the assessment, however, depends on the suitability of the defined specific outcomes, the clarity and measurability of assessment criteria and the appropriateness of assessment tools.

Summary of work: The Charter for Medical Professionalism of the University of Pretoria was made available to the Pre-graduate Committee of the School of Medicine to inform inclusions of professionalism outcomes in all module study guides. Outcomes relating to Medical Professionalism for 2011 Family Medicine modules were appraised using the Charter outcomes as reference.

Summary of results: Outcomes defined within the Charter in relation to professional and ethical competences and ethical values appear to be less than adequately represented within the study guides.

Conclusions: The process of integrating professionalism outcomes across the total range of possible professionalism outcomes needs to be directed and assured by a central Professionalism Teaching Committee.

Take-home messages: Concerted and continual action to ensure the attainment of professionalism outcomes is essential.

4P4

A survey to assess professionalism education development in Australia Medical Schools and Specialist Colleges

T Lee*, R Ruffins (Underdale, Australia)

Background: The undergraduate and postgraduate curricula development in medical professionalism can impact on students and trainees future professional performance. It is thus imperative that the Good Medical Practice - A code of Conduct for Doctors in Australia (GMP –CCDA) published in 2010 is incorporated into their undergraduate and postgraduate curricula.

Summary of work: We conducted semi structured interviews with seventeen Australian medical school and two specialty college representatives with the aims to assess: (1) awareness of the GMP –CCDA and its adaptation into their professionalism curricula. (2) views to cooperate and share resources to produce a national 'professionalism education' website and forum.

Summary of results: All participants:
I. are aware of the GMP-CCDA documents.
II. have adopted the GMP-CCDA documents in their professional education programs.
III. endorsed the ideas of sharing resources to develop professionalism education website and forum.
3 Key Themes:
1. Challenges of the teaching professionalism
2. Difficulties of adopting certain area of the GMP-CCDA documents
3. Potentials to develop and improve professionalism education

Conclusions: Australian Medical Schools and specialty colleges have recognized the importance of the GMP-CCDA document into professionalism education and curricula. Discussion on the development of a national professionalism education website and forum should occur without delay.

4P5

Assessing Empathy scores among clinical students using the Jefferson Scale of Physician Empathy Health Professionals version (JSPE)

N Sivalingam*,WF Tam, D Akmal (Clinical School, International Medical School, Jalan Rasah, 70300 Seremban, Malaysia)

Background: Empathy scores among medical students have not been extensively studied.

Summary of work: One hundred and fifty medical students from year 3-5 were randomly selected and stratified according to age, gender, year of study and religion they practiced. The Jefferson Scale of Physician Empathy (JSPE) Health Professional (HP) was used to determine empathy scores.

Summary of results: 118 students , 45 from 3rd year, 54 from 4th year and 19 from 5th year were assessed The mean score of empathy was 114.4 +/-11.9 . Seventy three (61.9%) were in satisfactory range (>110); Incremental scores with year of study was apparent (107.0 vs. 112.7 vs. 118 respectively) with a significant increase between 3rd and 4th year (p=0.038) and 3rd and 5th year (p=0.002). Empathy scores among females were significantly higher than males (113.5 vs. 108.5; p=0.024). No significant difference in scores was seen in religion and age. Focus group discussion alluded to clinical experience contributing to increasing empathy with gender, age and religion having minimal effects.

Conclusions: This study confirms the usefulness of the JSPE as a valid tool for . The increase in empathy scores with increasing years of clinical experience is dissimilar to the findings of others.

Take-home messages: Most medical students score above the satisfactory range for empathy.

4P6

Evaluating Observation of Nursing Professional Ethics in Iranian Nurses

Mohsen Shahriari*, Elahe Baloochestani (Nursing & Midwifery Faculty, Isfahan University of Medical Sciences, Hezarjrib Ave, Isfahan, Iran)

Background: Addressing ethical issues is very important from the perspective of nursing practice. There is always a moral sensitivity in every nursing intervention. The aim of this study is to determine the compliance of nursing professional values at the time of caring for patients.

Summary of work: This descriptive – analytical study was conducted in Isfahan in 2010. For this purpose, a convenience sampling was done over 250 nurses and they all completed the Nurses Professional Values Scale Questionnaire. Data out of 150 returned questionnaires were analyzed.

Summary of results: The results indicate that no relationship exists between demographic characteristics such as age, sex, education level, nursing experience and the observation of professional ethics. It was specified that observing professional ethics is equal between nurses of different age, sex, educational study and work experience.

Conclusions: From the evaluated cases, maintaining confidentiality of the patient, respecting their legal and ethical rights, and the public health and safety were indicated as the highest importance value and the less importance derived from participating in public policy decisions affecting distribution of resources, participating in

peer review, and dealing with health team members with poor performance. There are differences in ranking systems of different countries about the ethical and professional values in nursing which stems from social, cultural, religious and economic conditions of society.

Take-home messages: The instruments used to determine professional and ethical values require matching based on the circumstances of each country.

4P7

Resident Work Hours at McMaster Children's Hospital: Are We There Yet?

J DellaVedova*, M Ladhani (McMaster University Medical Centre, Postgraduate Education – Pediatrics, 1280 Main St. W., Hamilton ON L8S 4K1, Canada)

A growing body of international evidence is illustrating the impact of resident work hours on patient safety and resident wellness. In response, many countries have enacted limitations on resident work hours. Most residents in Canada continue to work shifts up to 24 hours in duration, plus patient handover time. In June 2011, a Quebec arbitrator declared the 24-hour shift a violation of human rights, giving hospitals 6 months to comply with maximum 16-hour shifts. However, well in advance of similar rulings reaching other provinces, the Pediatrics program at McMaster University in Hamilton, Ontario adopted an innovative approach to scheduling that has been well-received by residents and the department alike. The incrementally-implemented night float system applies to all senior residents as well as junior residents on certain rotations. Residents group their overnight shifts, working 16-hours on alternate nights for a 2-week period. Demonstrated benefits include better-rested residents, better continuity of care, and theoretically fewer patient errors without compromising the educational program. The next challenge will be extending night float to all residents in the department. McMaster's system serves as a model for programs in Canada and abroad dealing with the challenge of resident work hour reform.

4P8

E-Handover – a new tool to improve patient safety!

T Rourke*, J White* (Milton Keynes NHS Trust, UK)

Background: Handover is essential when maintaining high levels of patient safety. In our hospital, user surveys highlighted concerns with existing handover tools.

Summary of work: We developed an e-handover tool utilising Microsoft Amalga software for the weekend handover of medical inpatients. An electronic handover sheet was designed to be completed by doctors who required a weekend review or clinical task to be undertaken. This data populated an information grid on Amalga and tasks were allocated to the weekend on-call team.

Summary of results: After training, the handover tool was piloted. User feedback suggested the tool was more user-friendly, allowed quicker data input and was available on more computers. To date, over 450 inpatients have been involved in the Amalga e-handover tool. Surgical, nursing and hospital at night teams are also designing new e-handover tools with Amlaga which will shortly be in use.

Conclusion: We are the only trust within the UK to be using this e-handover tool. With more awareness from potential users it will underpin the majority of handover situations within the trust.

Take-home messages: Amalga is able to design new e-handover tools. We have developed a new e-handover tool to assist handover throughout our trust.

4P9

Dedicated Patient Safety training – can it pay for itself?

L Morgan (Winchester and Eastleigh Healthcare Trust, Royal Hampshire County Hospital, Education Centre, Winchester, UK)

Background: The issues of cost benefit analysis of interventions and use of simulation in healthcare are much written about. This project combines both concepts. We implemented a practice-based simulation training programme within an acute hospital setting, to improve patient safety by reducing falls, and analysed its financial consequences.

Summary of work: Following an analysis of patient safety incidents, a package of satellite simulation training was implemented aiming to reduce falls. An options appraisal was utilised to analyse the cost benefit of the implementation.

Summary of results: Reported falls in this clinical area have reduced from an average of 9.75 / month in the four months preceding implementation and 3.75 / month in the corresponding period the previous year to 2.5 / month post implementation of the training package. With the modelled cost of falls averaging £2650 / month prior to implementation, we demonstrate a potential £1900 / month cost benefit post implementation.

Conclusions: The implementation of a targeted satellite simulation training package is associated with a reduction in falls, with no cost burden and the potential for cost savings.

Take-home messages: With appropriate clinical engagement and educational support, the programme could be adapted to meet many patient safety needs.

4P10

Evaluating Patient Safety Climate in University Medical Centers of Kashan: An Assessment to Establish Clinical Governance

Mohammad Sabahi Bidgoli, Jafar Asgari Arani*, Hamid Reza Seyyedi, Somayeh Shahri (Faculty of Health, Kashan University of Medical Sciences, Kashan, Iran)*

Background: The issue of patient safety is today of much importance for the medical community and the World Health Organization in the developing and developed countries. Medical errors are serious threats to the public health and patient safety. Public concerns about patient safety along with legal and ethical requirements have put more emphasis on this issue.

Summary of work: This cross-sectional study investigated the viewpoints of 218 nurses working in the medical centers of Kashan towards patient safety using a questionnaire. Seven aspects covered by the questionnaire were: educational opportunities, reporting, refreshment, head nurses' viewpoints, nursing condition, relation with physician, and nurses' inter-relations. Content validity method and Cronbach's alpha coefficient (0.89) were used for confirming validity and reliability of the questionnaire, respectively. Kruskal-Wallis test was used for analyzing the data.

Summary of results: Mean age of the nurses participating in the study was 32.63 6.85 years, of which 85.8% were female. The mean of patient safety climate score in all seven aspects were significantly different. Except for the refreshment aspect, other aspects had different mean scores in different centers (pv= 0.001). Highest and lowest mean scores were related to the nurses' inter-relations (3.24 0.67) and head nurses' attitudes (2.47 0.71), respectively.

Conclusions: The patient safety climate in the centers in the current study was not good. This motivates the managers of the health sector in the city to adopt an appropriate approach to patient safety climate in health care centers.

4P11

Pilot study of the prospective identification and classification of prescribing error in consultations

Lucy Ambrose, Robert K McKinley (Keele University School of Medicine, Keele, UK)*

Background: Clinical errors occur in up to 20% of doctor patient consultations. These estimates are retrospective with errors identified by critical event analyses or clinical record review and give little insight about the cognitive processes underpinning errors, our area of interest. We report a pilot study of the identification of error and classification of reasoning from video-recordings of consultations.

Summary of work: Pairs of judges are reviewing video recordings of volunteer final year medical students in a formative OSCE station with a standardised patient. One pair is independently classifying prescribing decisions as correct or erroneous whilst the second pair is independently classifying the reasoning which contributes

to each decision. Both pairs reviews each consultation giving four judgments; two on the presence or absence of error and two on classification of reasoning used.

Summary of results: Analysis is underway and results (proportion of consultations with errors, agreement between observers and associations between reasoning types and identified errors) will be available for the conference.

Conclusions: If found feasible, we will proceed to test this approach to the study of error in real consultations.

Take-home message: This approach may offer new insights on cognition and error.

4P12

Panel review of nurse's competence

Sue MacDonald (Nursing Council of New Zealand, PO Box 9644, Wellington 6141, Midcity Tower, Level 12, 139-143 Willis St, Wellington 6011, New Zealand)

Background: In 2004 new legislation (Health Practitioners Competence Assurance Act 2003) was introduced in New Zealand for all health practitioners. The Nursing Council role is to protect public safety and is to ensure that all nurses are competent to practise. The Nursing Council set up a process for managing nurses who were reported as not meeting the required standards of competence.

Summary: Where the Council has a concern about a nurse's competence a panel is set up to review the nurse's practice. A three member panel made up of two nurses and one lay person meets with the nurse and his / her support people to assess if the nurse meets the Council competencies. This presentation gives an overview of how the panel assesses the nurse using reflection, tests, role-play, and scenarios.

Summary of results: When a nurse is assessed as not competent the Council makes orders for the nurse to undertake. These include education, support, assessments, and may include conditions placed in a nurse's scope of practice. The process is designed to be remedial and nurses are usually given 12 months to meet any requirements.

Conclusions: The outcomes for the reviews held 2010 to 2011 will be outlined.

Take–home messages: Protecting public safety

4Q   Posters: Pot Pourri

4Q1

Video Recordings of Lectures in an International Branch Campus of a US Medical School: Beneficial or only Desirable?

A Sultan*, A Khidir, M Mian, R Koshi, C Triggle, B Uthman, T Arayssi, MA, Baker (Weill Cornell Medical College in Qatar - NY Office, 575 Lexington Ave, Suite 670, New York, NY 10022, USA)

Background: Available research on video recordings of lectures shows greater student use of this learning aid. No data are available for whether videos improve performance of international medical students and how these students perceive them.

Summary of work: In one first-year medical course recordings of virtually all lectures were available, including videos for both a New York and a local version for 45% of lectures. Quantitative and qualitative data were gathered to evaluate frequency and determinants of use, students' perception and relationship between viewing and performance.

Summary of results: Number of video connections ranged from 0 to 96 per student. Mean number of connections per student was 45.2. Mean viewing time per student ranged from 0 to 53.3 mins per connection. NY lectures were watched disproportionately more often than those given by local faculty. Student quiz grades showed low correlation with watching videos for the preceding week, yet 73% of students said videos were helpful, 78% found having more than one lecture version helpful and 60% wanted future access to videos.

Take-home messages: Access to video recordings is valued by students, but further work is needed to understand why and how videos contribute to learning.

4Q2

The Effectiveness of the Mentor-Mentee Program: Perceptions of the students of University of Kuala Lumpur-Royal College of Medicine Perak (UniKL-RCMP)

ATM Emdadul Haque*, Nadiah Bt. Kamal Paramasivam, Nur Hanisah Bt. Mohamad Kani, Nur Zatil Aqmar Bt. Abdul Wahid, Saiful Islam Bin Abu Bakar (UniKL-Royal College of Medicine Perak, No. 3, Jalan Greentown, 30450 Ipoh, Malaysia)

Background: The purpose of this study was to gather the perceptions of the mentees on the effectiveness of the Mentor-Mentee Program of UniKL-RCMP.

Summary of work: This was a cross-sectional study to evaluate the effectiveness of Mentor-Mentee Programs in UniKL RCMP. A questionnaire was prepared and distributed to the Phase 1B, Phase 2 and Phase 3A students. All the information were coded, entered and analyzed by using the SPSS software.

Summary of results: Out of 119 respondents, 37 were from Phase 1B, 36 from Phase 2 and 46 from Phase 3A. The majority (63.9%) of the students agreed that mentor-mentee program was an academic advising system, and about 48% considered mentors as a coach. Besides that, 43.7% of mentees had the opinion to have a strong relationship with their mentors. Finally, 50.4% of mentees agreed that mentor mentee program supports students for better academic performance, but 45.4% of them were unsure if the program increased their self esteem level.

Conclusion: If some of the areas of mentees' concern could be addressed properly this program would be very effective to improve student teacher relationship, to ensure a conducive environment for learning and to provide opportunities for the students to build their career in a professional manner.

4Q3

Modality of contribution of medical students in education in Jahrom University of Medical Science

A Rasekh Jahromi*, F Mehrabipour, M Hossinpoor, M A Nasseri (Jahrom University of Medical Science, Iran)

Background: The objective of this study is application of an interactive discussion method between professor and students in order to provide continued contributions throughout the classroom with minimum fatigue.

Summary of work: This is a descriptive cross sectional study with a statistical population of 120 medical students. 77 questionnaires were completed. Scoring was assigned by Likert scale and its reliability determined using Cronbach's alpha coefficient equal 0.94 and analyzed by SPSS 15.

Summary of results: 56.5% participants were male and 43.5% female. Average students' agreement in contribution design was 3.77 out of a score of 5. Contribution of female students was 3.97, male students 3.27. The relationship between sex and contribution of students in education was significant (P: 0.02). This design allocated 3 .87 out of 5 for augmentation of motivation in medical students, 4.0 out of 5 for more understanding and faster course content. The scores of 3.89 were allocated to questions designed by students and contribution factor of students in education.

Conclusions: Application of question design and discussion around the questions between medical students and teachers is an effective method of learning.

4Q4

How lecturers perceive reflective learning: a preliminary study

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Background: A preliminary survey was conducted to determine lecturers' perceptions on reflective learning which included the ability of lecturers to undertake reflective learning, effectiveness of implementation, and factors facilitating or hindering reflective learning.

Summary of work: The survey was conducted through a questionnaire comprising closed-ended and open-ended questions.

Summary of results: The overall response was positive. The majority stated the suitability of reflective learning and their ability to support students in reflective learning, and that students enjoyed reflective learning and benefited from it, but needed to understand more about what was expected of them. Challenges faced by students included inadequate knowledge and different levels of reflective capacity. Most expressed the need for training sessions for lecturers to better equip them with reflective learning skills, briefing sessions for students to raise awareness, and improving implementation through providing opportunities and eliminating time constraints.

Conclusions: Reflective learning should be implemented as it is deemed suitable and beneficial for students. Requirements for successful implementation include training sessions for lecturers, and briefing sessions and opportunities for reflective learning for students.

Take-home messages: For successful implementation of reflective learning, it is crucial to evaluate the lecturers' ability and enhance requisite skills as relevant, to brief students on their role, and to provide appropriate opportunities.

4Q5

Focus Group Discussion with Pharmacy Students on Generic Medicines: An Exploratory Insight

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Background: In an era of ageing population and escalating healthcare costs, generic medicines are viable cost-effective options globally. This study aimed to explore the understanding and perception of pharmacy students towards generic medicines in Karachi, Pakistan.

Summary of work: Focus group discussions were undertaken during 2009-2010 in public and private pharmacy institutes. Purposive sampling was done to identify key respondents, which subsequently helped in identifying focus group discussion participants through snowball sampling.

Summary of results: On the basis of a priori themes and thematic content analysis misunderstanding about generic medicines and lack of understanding of the concept of bioequivalence were identified. Moreover, students expressed their apprehension towards the safety and efficacy of locally manufactured generic medicines. Students pinned their expectations towards the curriculum to include problem-based learning and industrial exposure on a regular basis.

Conclusion: Gaps in understanding of the basic concepts of generic medicine and their bioequivalence were documented. Interestingly, students were unsure about the efficacy and safety of generic medicines.

Take-home message: This study provides a path to the curriculum developers to develop a curricular innovation in healthcare system instruction and communication skills, which provide an understanding of how these key facets, could serve the purpose to influence patient health outcome.

4Q6

Case-based discussion and presentation as an assessment tool for foundation medical trainees

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Background: Case based discussion (CBD) was incorporated as work-place based assessment for our foundation medical trainees and modified to include oral presentation (CBDP), scheduled every six months to two consultant-level assessors and other trainees. Trainees are assessed on professional judgement and application of medical knowledge as well as presentation skills.

Summary of work: Online feedback questionnaire was sent to all trainees at the end of the year to collect views on CBDP.

Summary of results: Response rate was 95% (20/21) from year 1 (4) and year 2 (17) trainees. From 20 responses: 75% found it do-able, 20% found it easy and 5% found it very easy to fit in each 6 months. 45% found it very useful, 50% found it quite useful and 5% found it neither useful nor useless. 30% found feedback during CBDP very helpful and 70% found feedback quite helpful. As a method of assessment, on a scale all trainees gave moderate to high ratings. Free text comments (5/20) were positive citing improvement in knowledge and presentation from their own and others' CBDP.

Conclusions: CBDP is a useful learning and teaching tool with the added element of presentation perceived favourably.

Take-home messages: Scheduled oral presentation using pre-selected clinical cases may be usefully incorporated into CBD for foundation medical trainees.

4Q7

'Case Method' in the teaching of basic medical sciences in a medical curriculum: a preliminary result

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Background: 'Case Method' (CM) is an interactive teaching-learning approach that has not been explored intensively in medical education. It has the advantage of accommodating a large group of students and is less resource intensive compared to Problem Based Learning (PBL).

Summary of work: The aim of this study is to examine the feasibility of CM learning in integrating basic medical sciences concepts. This study involves second year medical students. In total 12 CM modules are developed. A content-expert facilitator leads the two-hour session involving the whole class. Students' perception towards CM is examined.

Summary of results: Ninety-six percent of students (123/128) participated in the study of which (77%) responded to the questionnaire. More than 50% of students agreed that CM make efficient use of time prior to and during the session, the structure promote learning and it gives more opportunity to explore related topics and for tutor participation. At the point of study however only 35% (33) of students agreed that CM has more advantages over the PBL method.

Conclusions: Our preliminary result shows that CM does have a role in the teaching of the applied aspects of basic medical sciences.

Take-home messages: CM should be explored as one of the teaching-learning approaches.

4Q8

Anatomy laboratory performance: a good predictor of academic performance within a graduate entry medical program?

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Background: In 2005, Peterson and Tucker (Anat Rec 283B:5–8.) showed that the class rank in medical gross anatomy and the score on a gross anatomy comprehensive final examination were correlated with scores on the USMLE Step 1 examination. There appears to be no published work looking at the predictive validity of anatomy practical results to performance within a medical program.

Summary of work: The current study investigates whether performance in anatomy practical examinations could be predictive of student performance within the four year, graduate entry medical program at Griffith University.

Summary of results: The anatomy practical examination (part of Years 1 and 2 examinations) scores are significantly correlated ($P<0.01$) with the scores in the Doctor and Knowledge of Health and Illness (DKHI) theme (the scientific basis for medicine; accounting for 40-50% of the medical program) for all years of the program. Regression analyses showed that anatomy practical scores have high predictive value for performance in the DKHI theme in all years of the program.

Conclusions: Anatomy practical scores appear to be good predictors for student performance in a medical program.

Take-home messages: Laboratory work in anatomy is an important component of medical student training.

4Q9

Class ability levels vary with course of study?

Manavika Punnan (Medical Educaton Center (MEC) of Queen Savang Vadhana Memorial Hospital, Sriracha, Chonburi, Thailand)

Background: Dewey method, standard setting method, was implemented for relative marking system assessment of the clinical medical students in the Medical Education Centre (MEC) of Queen Savang Vadhana Memorial Hospital, the NEW MEC in Thailand. Class ability level for considered acceptable grade 'A' was appraised in each subject so that distribution of the number of students at each grade level was appropriate. The first student class assessment is a very interesting point for the new MEC.

Summary of work: This study concerned analysis of the student assessment tools in the MEC. There were 32 medical students of Burapa university and 10 clinical subjects. Grading system in the theory part was appraised by norm reference. Then the outcome level with pre clinical year school-record was compared.

Summary of results: For all of the subjects, the assessment of the students was in line with grade point average (GPA) as before. (Pre clinical year GPA related with national license examination score, step I)

Conclusions: Identifying the ability level of class for norm reference assessment can be separately appraised in each course.

Take-home messages: A student assessment tool for the new MEC shows curriculum effectiveness.

4Q10

Continuous Assessment - Can it be relied upon?

Roland Sirisinghe, S Gurumadhva Rao (RAK Medical & Health Sciences University, PO Box 11172, Ras Al Khaimah, United Arab Emirates)*

Background: In most medical undergraduate programs, continuous assessment (CA) contributes significantly to the final grades, although the percentage contribution varies in different institutions. Scrutiny of the outcome of CA from time to time could reassure all stakeholders that it continues to do what it is expected to.

Summary of work: We scrutinized the relationship between the outcomes of CA and the corresponding Comprehensive Examinations (CE), in a five-year undergraduate medical program. The individual and mean scores in CA and corresponding CE were analysed. Theory and practical components were studied separately.

Summary of results: Among a total of 57 pairs of data studied, 44 showed a significant difference between the mean scores in CA and CE. In 41, CA scores were higher than CE and in 16, lower. However, in all except 4, marks

were within 10% of each other. In 52 instances there was a significant correlation between individual CA and CE scores.

Conclusions: The strong positive correlation and closeness of mean scores in most instances validate CA and its significant contribution to the final grades. Marginally higher marks in CA are generally acceptable.

Take-home messages: However, the study also pointed to instances, where the relationship between CA and CE deviated from the expected, which need to be further investigated.

4R   Posters: Clinical and Work-based Assessment

4R1

The fostering of competence through an authentic integrated assessment strategy for wound care in nursing

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Background: Prior to 2000, the third-year nursing students at the University of the Free State, South Africa, undertook a once-off clinical competency test of a wound care procedure as part of the traditional assessment approach. Since then, the facilitators at the School of Nursing have introduced new ideas related to wound care in the generic degree. The idea was to design a wound care project with an integrated assessment approach in order to assess the competence of the specific outcomes related to wound care.

Summary of work: An action research (AR) design was selected. A diversity of data was collected using a variety of methods, for example, observation, nominal group techniques, and reflective discussions. Data was analysed by the project coordinator, themes listed and patterns identified. An independent auditor confirmed the trustworthiness of the data. The comments made by the students were categorised according to the ten criteria of assessment.

Summary of results: Recommendations on how to improve the project and/or competencies included a request from the students that assessors are involved in their final assessment, and that the hours spent with the patients count as experiential learning hours. Evidence indicated that, opposed to the once-off clinical competency test, the project developed students as wound care practitioners.

4R2

Patient perceptions of medical students' involvement in their obstetrics and gynaecology health care

D Carmody[1], A Tregonning[1], E Nathan[2], J Newnham[1] ([1]School of Women's and Infants' Health, The University of Western Australia; [2]Women and Infants Research Foundation, King Edward Memorial Hosptial, Subiaco, Western Australia)*

Background: The development of clinical skills is a core component of a medical student curriculum. Clinical experience in obstetrics and gynaecology is beneficial in order to meet learning outcomes difficult to meet elsewhere in the curriculum.

Summary of work: This study evaluated patients' perceptions of medical students involved in their obstetric and gynaecological care at a tertiary women's hospital. An anonymous self-administered questionnaire was used to collect patients' perceptions of the student's professional skills, their attitude to and level of comfort in the patient and student interaction.

Summary of results: Ninety-five percent of patients approached participated in this study. Results demonstrated a high level of patient satisfaction with student involvement in care. Most patients believed students should be part of the hospital team and were prepared to have a student involved in the future. Satisfaction levels were higher for patients for whom English was their first language, women under 40 years of age and those receiving care in assessment and in-patient settings. Patient comfort in student participation was greater for those seen by a female student and those who had previously had a student involved in their care or previously attended the hospital.

Conclusion: Patient perceptions of students' involvement in their obstetrics and gynaecology care are mainly positive. Attention must be paid to informing patients of the presence and possible level of interaction of students in their care.

4R3
Making Clinical Evaluation Meaningful: Using the RIME Framework in Qatar

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Background: The RIME (Reporter-Interpreter-Manager-Educator) scheme is a conceptual framework for assessing competence. Weill Cornell Medical College in Qatar is the first North American medical school in a region where traditionally, clinical evaluation has been by summative exam only. In our 12-week US style clerkship, formative and detailed summative evaluations are of utmost importance. We describe our experience in implementing the RIME method for evaluation in the medicine clerkship.

Summary of work: Orientation to RIME was given to students and faculty at the beginning of the clerkship.

Formal evaluation sessions were conducted midblock and at the end of the clerkship rotations. Starting with residents, the team spent 15-min evaluating each student. The sessions were facilitated and documented by clerkship co-directors. Standard evaluation forms were also collected.

Summary of results: The quality of the feedback improved significantly.   There was better separation of the class in terms of clinical grade versus the traditional evaluation method. We also achieved more direct communication with clinical faculty, improved residents' evaluation skills, and increased students' satisfaction with the depth of their evaluations.

Conclusions: We were able to receive meaningful evaluations that help us better measure our clerkship objectives.

Take-home message: The RIME framework is a successful and acceptable method to assess competence in a non-North American setting.

4R4
Assessment of Clinical Competence: A Systems Approach to Training and Assessing Healthcare Scientists in the UK

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Background: Modernising Scientific Careers (MSC) is a UK programme led by the Department of Health (DH) Chief Scientific Officer (CSO) aimed at developing a transparent, standards-driven educational/training framework for over 45 specialties (with 55,000 employees) in healthcare science.

Summary of work: The MSC training model incorporates a 3-year Bachelor's degree in Healthcare Science, integrating academic and workplace based learning for technicians (Practitioner Training Programme [PTP]) and a Scientist Training Programme (STP), a 3-year academic and workplace-based programme underpinned by a part time Master's degree in Clinical Science. Higher Specialist Scientific Training (HSST) programmes similar in standard to specialist medical training are under development for very senior healthcare scientists.

Summary of results: Curricula and assessment programmes for 23 scientific specialisms have been agreed. An e-learning Portfolio, incorporating on-line workplace assessment tools has been developed and 550 trainers have received training in their use. Recruitment to PTP and STP for 2011 is complete and a pilot in Genetics sees Practitioners graduating this year and the first cohort of Scientists completing next in 2012.

Conclusions: MSC introduces the first co-ordinated UK approach to training healthcare scientists, underpinned by a national workplace assessment system.

Take-home messages: The UK has introduced training for Healthcare Scientists which is (1) co-ordinated, (2) standard driven, (3) nationally assessed.

4R5

Validity evidence for an oral examination to assess application of knowledge of biomedical sciences in clinical practice

G Velan, PD Jones, R Kumar (Faculty of Medicine, UNSW, Sydney, Australia 2052)*

Background: Learning biomedical sciences is integrated with clinical practice throughout the UNSW six year program. A structured oral examination is held in the penultimate year to assess application of this knowledge.
Summary of work: The oral examination comprises four stations where students are presented with authentic clinical problems designed to highlight the relevance of biomedical sciences to clinical practice. Using appropriate prompts (e.g. pathology specimens, imaging studies, laboratory reports), pairs of examiners from matched clinical and biomedical **Background**s use structured questions to assess students' application of knowledge. Evidence for the validity of the examination was based on two cohorts completing the examination in 2009 and 2010.
Summary of results: Procedural evidence for validity includes the quality process for defining the content of the stations, the design of the stations (including selection of prompts and writing of questions) and training of examiners. Empirical evidence includes evidence for reliability and correlations with past and subsequent performance in written examinations assessing biomedical sciences and clinical knowledge. Consequential evidence was obtained from student surveys reporting impact on learning.
Conclusions: An integrated, structured oral examination late in the Medicine curriculum provided valid results to judge students' knowledge of biomedical sciences and encouraged students to relate this knowledge to clinical practice.

4R6

Clinical assessment method used by faculty member on medical students in Qazvin University of Medical Science

Afsaneh Yakhforoshha, Sonia Oveisi, Ramin Sarchami, Zohreh Yazdi (Qazvin University of Medical Science, Iran)*

Background: Clinical assessment is a powerful tool for both trainer and trainee because it not only discriminates the students, but also helps the instructor to evaluate progress.
Objective: The goal of this study was to investigate which assessment method is used for decisions related to medical students progress.
Summary of work: This descriptive study was conducted on 65 clinical academic staff in Qazvin University of Medical Science. The data gathering tool was a questionnaire with validity confirmed by experts and its internal consistency approved by a pilot study (0.8). It included 12 items about faculty member's use of a variety of clinical assessment methods. The collected data were analyzed by using SPSS software.
Summary of results: Responses were from 65 clinical academic staff, 80% male and 20% female. The average age of participants was 40 ±7 years and average academic performance was 10±4 years. The most important methods used for evaluation were: Multiple Choice Questions, written exam tests at the end of each of rotation (essay), OSCE and oral examination. 90% of faculty members used only summative evaluation.
Conclusions: Findings indicated that the current system of student assessment has many drawbacks, thus rapid and extensive change in assessment methods should be conducted.

4R7

Assessment of Gender aspects in learning Basic Life Support

S Sopka, H Biermann, A Jäger, S Rex, R Rossaint, S Beckers (AIXTRA – Aix-la-Chapelle Center for Training in Medical Education, Medical Faculty, RWTH Aachen University, Wendlingweg 2, D-52074 Aachen, Germany)*

Background: Learning Basic Life Support (BLS) is essential in resuscitation training. Quality of external chest compressions (ECC) is key to improving patient outcomes. Objective was to evaluate whether the formation of groups containing single or differing gender affects practical performance and retention of skills.
Summary of work: Laypersons were randomly allocated to three groups for BLS-training: Only female participants (F); only male participants (M); participants of mixed-gender (S). All were tested on a manikin in cardiac arrest single-rescuer-scenario one week and 6 months after the BLS-training. Learning environment was evaluated with questionnaires.
Summary of results: After one week F was superior to S concerning compression depth (p=0.0157), Six months later, F achieved the correct compression rate more often than S (p=0.0232). F was the only group that significantly improved their compression depth after 6 months (p=0.0387).
Concerning the constitution of training groups, M felt significantly more unwell than group S (p=0.0278).
Conclusion: Gender constitution of training groups significantly affects the practical performance of ECC even after a 6 month evaluation period. Particularly female participants that were trained in groups containing only their gender showed significantly superior performance most probably due to a more suitable learning environment.

Take-home message: Gender related training influences practical performance of BLS.

4R8

Using patient-practioner orientation scale to measure medical students' attitude toward doctor-patient communication skills lab activity

E Rukmini*, F Natasya, R Linarto, E Suwangto (Atma Jaya Catholic University Indonesia, School of Medicine, Pluit Raya #2, Jakarta, 14440, Indonesia)

Background: Doctor-patient communication is important in medicine. Therefore, students have been practicing doctor-patient communication skills. This presentation intended to report the comparison of students' attitude towards patient centred paradigm before and after practicing doctor-patient communication modules.

Summary of work: Preliminary study was completed by piloting the first and second modules to two groups of students. The groups were asked to complete the Patient-Practitioner Orientation Scale (PPOS) (Krupat, 2000) as pre and post tests. The students also completed open-ended questions to review the modules. The modules were also reviewed by a group of skills lab instructors. The researcher then revised the modules based on the perspectives of students and reviewers. Full implementation were completed recently. The participants were the first (n=160) and second year (n= 150) students. The pre-test were compared to the post-test of each cohort using the pair t-test. Both of the first and second year PPOS results were compared to see the differences.

Summary of results: Among all data, there is only one significant difference which was the mean score of caring items of the first year students (p=0.019). The scores were 3.30 and 3.38 for the pretest and postest respectively. This small increment showed the shifting paradigm toward caring and more patient centered.

4R9

Medical students' contact with patients: How much is enough?

A Dodds*, K Reid, G McColl (The University of Melbourne, Medical Education Unit, Level 7, Medical Building, Melbourne, Victoria, 3010, Australia)

Background: Assessment of medical students is designed to test authentic clinical skills, and assumes that students perform better when they encounter a wide range of patients and conditions. However, we know little about how much clinical contact our students actually have with patients.

Summary of work: We asked 240 students at the end of their first clinical year how many patients they had assessed (history, physical examination, problem formulation) in each of six medical and surgical rotations. Students also rated their level of confidence in performing patient assessments, and whether they believed they had seen sufficient patients throughout the year.

Summary of results: Only 61% of students believed they had seen enough patients. Those students who had seen enough patients were more confident in performing patient assessments (r=.55, p=<.01). Forty per cent of students completed more than 10 patient assessments during a six week cardio-respiratory rotation, but 44% reported assessing less than 5 patients during orthopaedics and rheumatology.

Conclusions: Students reported relatively low levels of patient assessment during their first full clinical year. Wide variation in the number of assessments was evident across the clinical blocks.

Take home message: Clinical educators need more information on students' level of patient contact in order to set realistic guidelines for appropriate expectations prior to clinical examinations.

4R10

Residents' perceptions of assessment and feedback in a Surgical Department: supervisors must do better!

RJ Oostenbroek[1,2], PW Plaisier*[1], JMM van de Ridder[2] (Albert Schweitzer Hospital, [1]Department of Surgery; [2]Department of Education, Dordrecht, the Netherlands)

Background: Assessment of and feedback on performance are very important in the residents´ learning process. However, little is known about how residents perceive their supervisor's assessment and feedback skills. We studied how supervisors' skills and the learning climate were perceived by surgical residents.

Summary of work: The Dutch Residents Educational Climate Test (D-RECT) and Systematic Evaluation of Teaching Qualities (SET-Q) are currently used to answer these questions. Surgical residents filled out the D-RECT in 2009 (n=19), and both the D-RECT and SET-Q in 2010 (n=13) and 2011 (n= 14). Scales scores (Likert 1-5) were determined. In October we will receive the results of 2011.

Summary of results: In 2009 and 2010 the quality of coaching and assessment (M=3.1 and M=2.9) and feedback (M=3.2 and M=3.0) were the lowest rated aspects of learning climate. However, residents valued supervisors feedback skills (M=3.8) and their assessment skills (M=3.5) as reasonable high. Setting goals together with residents based on assessment needs attention (M=2.8).

Conclusions: Although residents perceive supervisors' feedback and assessment skills as reasonably good, actual feedback and assessment are perceived as the weakest part of the learning climate.

Take-home messages: The discrepancy between supervisors´ feedback and assessment skills and actual feedback as perceived by residents needs more attention.

4R11

Peer-Assisted Feedback (PAF) in Case-Based Tutorials

I Siddiq, D Day, H Wiemer, K Blake* (Dalhousie University, General Pediatrics, 5850/5980 University Ave., Halifax, NS B3K 6R8, Canada)

Background: The relevance of timely and specific formative assessment to the achievement of learning outcomes is much discussed in medical education.1,2 Formative assessment in the curriculum merits attention, particularly in the setting of group tutorial sessions, as these provide the best opportunity for this method of evaluation.

Summary of work: An exploratory survey investigated 10 undergraduate medical students' experiences with formative assessment in tutorials. Collectively, these students had over 400 hours of tutorial experience. Subsequently, a pilot investigation of a novel in-tutorial formative assessment tool called Tutor-Facilitated, Peer-Assisted Feedback (PAF) was undertaken. While existing assessment methods employ mid- and end-unit feedback by tutors alone, PAF proposes weekly self-assessment as well as peer and tutor feedback.

Summary of results: In the first study, most students reported that feedback was infrequent, non-specific and lacked developmental direction. In the second investigation, PAF proved feasible and efficacious as a formative assessment method, informing tutors' summative assessments.

Conclusions: Current practices of formative assessment may be limited and untimely, problems that PAF may be able to resolve.

Take-home messages: Students welcome feedback and there are opportunities for faculty to facilitate this with and amongst students. A study is planned to investigate students' needs, and the acceptability and effectiveness of a pedagogical intervention (PAF) to address them.

4R12

The Assessment of Excellence in the workplace

Simon Street*, Jill Edwards (Royal College of General Practitioners, London, UK)

Background: This presentation is about the assessment of excellence of clinical competence in the work place. With the introduction of competence and work place based assessment in the licensing exam for UK general practitioners the average and excellent trainees have been preoccupied with avoiding failure. Describing and assessing the criteria of excellence enables trainees to shift their focus and aspire to the best.

Summary of work This report will describe the first phase of action research to address the question: "What benefits can be derived from establishing an agreed definition of the excellent portfolio of Work Place Based Assessment for speciality training in UK general practice?"

Summary of results: Lessons have been learnt from participants' feedback and our own experience of this assessment in the workplace including the utility and validity of setting criteria for excellence, the standardisation of criteria and calibration of assessment and the training and quality assurance of assessors in different regions.

Take-home messages: The research was predicated on the aim of reducing the burden of assessment for both trainee and trainer and the recognition that excellent trainees deserve and may be motivated by proper recognition and reward for their excellence. These aims can be realised.

4R13

Development and validation of learner-adjusted endotracheal intubation assessment tools for medical students and residents

S-J Kim*[1], S W Lee[1], T H Lim[2], C W Kim[3], C H Chang[4], H-J Choi[2] ([1]Department of Emergency Medicine, Korea University College of Medicine; [2]Department of Emergency Medicine, Hanyang University College of Medicine; [3]Department of Emergency Medicine, Chungang University College of Medicine; [4]Anesthesiology and Pain Medicine, Yonsei University College of Medicine, Seoul, Korea)

Background: Endotracheal intubation (ETI) is the most reliable way to manage the airway. Stepwise deliberate practice and mastery training is essential in maintaining and promoting the skill of ETI. This process of ETI acquisition may differ between students and residents.

Summary of work: We attempted to refine and validate endotracheal intubation assessment tools for medical students and residents, and analyze the differences between these tools for the two learner groups. Content validity index, internal consistency, and inter-rater reliability were estimated for both learner-adjusted assessment tools.

Summary of results: The student-adjusted assessment tool had 12 items on the checklist with ternary scoring system, and showed low inter-rater reliability and internal consistency. The resident-adjusted assessment tool which showed higher inter-rater reliability and internal consistency, on the other hand, was also composed of a ternary scoring checklist including 15 items, in addition to Global rating scale.

Conclusion: Learner-adjusted assessment tools may be composed of different items and different scoring systems depending on who the target learners are. The refinement of such tools may be the basic step in the learner-centered mastery learning of the ETI to develop effective airway training strategies. Further studies are needed for more sufficient reliable tools, which can be used in clinical practice.

SESSION 5   PLENARY
0830-1030 hrs

5A   Learning for effective performance in practice
Professor Sharifah Hapsah Shahabudin (Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia)

Medical education assumes that graduating doctors have the potential to maintain their competency throughout their practice careers through an ability to continue to learn effectively on their own. Is this assumption correct? Two issues are important: the learner and changes in practice. Information is usually not the problem because it is everywhere around us and easily accessible. For the learner, medical education methods such as problem based learning try to inculcate skills in identifying one's own learning needs, how to satisfy those needs independently, how to evaluate the effectiveness of the learning process, and how to critically appraise the quality of information acquired. These are competencies that students acquire and can be assessed under examination conditions. How well do they apply these skills in their practice? This comes under the realm of performance in practice, and change becomes an important factor. Changes in practice occur routinely. Some are small accommodations while others may be larger adjustments or even transformational. Some changes are forced upon the doctor and some are adopted willingly. Whatever the force, change is a prerequisite to competent medical practice. Learning is central to change. Learning occurs when the doctor is clear about why he has to change and the effects of the change. How well are we preparing students for the clarity that is required for the changes that are inevitable? Focusing on assessment of performance rather than just competencies may help students achieve better understanding and feeling about how to handle change.

5B   Medical student assessment and health system reform: Reflections of a Dean
Professor Nicholas Glasgow (College of Medicine Biology and Environment, the Australian National University, Canberra, Australia)

Health system reform continues to be to the fore of government agendas around the globe. In Australia, concerns about looming shortages in the health professional workforce including doctors, has resulted in health professional education being a central aspect of the reform agenda, and with that questions are being asked about assessment processes by new players. What are these questions? Do these players have a right to ask them? What are the challenges for established assessment practices medical school's face in responding to these questions? Professor Glasgow will consider some of the implications for medical schools and responses to date.

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SESSION 6   SIMULTANEOUS SESSIONS
1100-1230 hrs

6A   Symposium: Assessment of Professionalism
Brian Hodges[1], Richard Cruess[2], Sylvia Cruess[2], Fred Hafferty[3], Ming-Jung Ho[4], Eric Holmboe[5], Val Wass[6], Tim Wilkinson[7] ([1]University of Toronto, Canada; [2]McGill University, Canada; [3]Mayo Clinic, USA; [4]National Taiwan University, Taiwan; [5]ABIM, USA; [6]Keele University, UK; [7]University of Otago, New Zealand)

The International Ottawa Conference Working Group on the Assessment of Professionalism at the time of the 2010 Miami conference published a framework assessing professionalism in three domains: as a characteristic of individuals, as part of the teacher-student relationship and as an institutional/system-level phenomenon. The framework has helped to advance thinking about a comprehensive approach to the assessment of professionalism. However societal and health care systems changes can create pressures that work against fostering professional behaviours. Current assessment tools are not always sufficient to deal with this. This symposium will focus on state of the art assessment of each domain, but also ways in which different domains can be aligned, focusing on conflicts when the domains are in conflict. For example, the professional behaviours valued in an individual student (taking time to understand and respect the needs of a patient) might be in conflict with institutional values (reducing emergency wait times), both of which arise from patient-centred, professionalism oriented goals.

6B   Oral Presentations: Postgraduate Training

6B1
Postgraduate medical summative assessment: blueprinting in action
S Ahmad*, S Carney, J Warner (Royal College of Psychiatrists, UK)

Background: Postgraduate examinations have been under considerable pressure over the last decade to become more educationally sound and reliable, especially with respect to being high stakes and major drivers for learning. The Royal College of Psychiatrists has made significant improvements to its examination programme, including development of assessment of evidence-based practice and critical appraisal skills.

Summary of work: The Critical Appraisal Panel set out to develop a bank of questions and a syllabus. This was done using four principles: face validity, feasibility, content coverage and transparency. The five principles of evidence-based practice (from the Sicily statement) were used to organise the new syllabus and it was iteratively developed at meetings and using question performance feedback.

Summary of results: The critical appraisal syllabus is the first to be developed at the Royal College of Psychiatrists and has been successfully blueprinted to the questions. Examples of this and data from the last three year period are presented.

Conclusions: A bank of highly performing questions that map to a published syllabus has been developed. It is now clear what trainees must learn and what education providers must deliver, with clearer alignment between the educational processes.

Take-home message: Blueprinting in postgraduate assessment is important and achievable.

6B2

Which components of training should we be assessing? A Delphi consensus study

I McMullen[1]*, S Ahmad*[2]*, T Sensky*[2]*, M Maier*[2] *([1]South London & Maudsley NHS Foundation Trust, London, UK; [2]School of Psychiatry, London Deanery, London, UK)*

Background: In 2010, we reported a Delphi study which identified components of postgraduate psychiatry training and established expert consensus about how well these components were incorporated into training1. Here we report on a similar process with trainees to determine whether there is consensus between experts and trainees.

Summary of work: 20 core psychiatry trainees from the seven London training rotations took part. Using 71 components identified during the expert Delphi study, trainees rated each component for how important it was, and how well it was incorporated into training.

Summary of results: There was consensus between trainees and experts about the most important components, with five featuring in both of the top ten: clinical supervision, feedback from consultant, coverage of core conditions, acute assessment work and working in community settings. There was more disparity between groups when considering how well incorporated each component was.

Conclusions: Trainees and experts share similar views about important components of training, particularly around assessment and feedback, but there are differences between their perceptions of how well incorporated into training these components are.

Take-home messages: Trainees and experts achieve consensus regarding the important components of training but differences of opinion highlight areas which need addressing to ensure that assessments are fair.

6B3

Annual Face to Face Planning Meetings: enhancing learning through formative assessment

T Bindal[1]*, D Wall*[2]*, H Goodyear*[2] *([1]Alexandra Hospital, Department of Paediatrics, Redditch, Worcestershire, UK; [2]West Midlands Deanery, Birmingham, UK)*

Background: All paediatric trainee doctors in the West Midlands (UK) are invited to an annual face to face planning meeting (APM) with a panel of senior trainers.

Summary of work: A questionnaire about APMs was given to all participating trainees and trainers in 2011.

Summary of results: Response rate was 93% (139/150) and 67% (12/18) for trainees and trainers respectively. Reliability of the study was high (Cronbach's alpha 0.911). All trainers had received panel member training. 91% of trainees (126/139) felt adequately prepared for the meeting. Issues discussed included career plans (93%), future training placements (73%), Eportfolio (61%) and previous training posts (61%). Trainees felt the APM was a helpful formative assessment process (mean score of 5 on a 6-point Likert scale from 1(strongly disagree) to 6 (strongly agree)) and that panels were fair, supportive, communicated clearly, listened to concerns and focused on individual learning/training needs. 67% (8/12) trainers would have liked more information about the process beforehand.

Conclusions: APMs are a useful formative assessment process valued by trainees.

Take-home messages: Annual formative assessments by senior clinicians should be encouraged in all speciality training programmes to facilitate reflection on learning needs, formulation of personal development plans and career goals.

6B4

Is the way trainees justify their knowing related to their scores on a series of tests of medical competence?

A Roex, J Degryse, G Clarebout (Department of General Practice, Kapucijnenvoer 33, Blok J, Bus 7001, 3000 Leuven, Belgium)*

Background: Some trainees justify their knowledge by simply referring to authorities in the field. Others express a more nuanced justification in which they include experts'

opinions, existing evidence, contextual factors and a personal reflection. Within this study, we investigated whether this relates to their scores on different tests of medical competence.

Summary of work: Medical trainees (n=117) participated to 3 modules (a structured oral examination, an OSCE and a written MCQ test) of the final assessment procedure of General Practice (Flanders, Belgium). A validated questionnaire assessed the way they justify clinical knowledge. We explored the relations between the justification and the test scores.

Summary of results: We found a statistically significant correlation between the trainees' justification of their medical knowledge and the their scores on the written test (r=0,310 with p<0,01). Comparing subgroups of candidates (based on their level of justification) we found that trainees of one subgroup demonstrated statistically significant correlations between their scores on the different test formats (r varying from 0,375 to 0,474 with p<0,01).

Conclusions: There are no indications that trainees with nuanced ways of justifying knowledge get higher overall test scores within the current setup of the certification examination. Surprisingly, only one subgroup of trainees scored consistently across test formats.

Take-home message: The way trainees justify clinical knowledge may interfere with their scores on different tests of clinical competence.

6B5

Do they match up? Reliability of the assessment of junior doctors' clinical competence

D Patel, S Child (Clinical Education & Training Unit, Auckland District Health Board, Auckland, New Zealand)*

Background: The current assessment of the clinical competence of New Zealand's junior doctors occurs in the relatively uncontrolled conditions of a ward or clinic environment. There is currently limited national literature on the reliability of these assessments and a low rating can have serious consequences such as non-accreditation of training.

Summary of work: To investigate the inter-rater reliability and variation of doctors who are assessing the clinical skills of junior doctors. A clinical simulation video was created showing 4 clinical scenarios and was shown to consultants, registrars and junior doctors at multiple Grand Round's at Auckland City Hospital. Participants evaluated each scenario based on a modified version of the current assessment form by the Medical Council of New Zealand.

Summary of results: Results were analysed and presented to show the variability in the assessment of one junior doctor's clinical skills.

Conclusions: The value of this study lies in the reliability of the evaluation of junior doctor clinical competence by different assessors, based on the current assessment form. Discrepancies in assessment scores will clearly indicate the

need for further investigation to develop a consistent assessment criteria for New Zealand's junior doctors.

6B6

Implementation of a system of comparable generic metrics between Local Education Providers

D Black (KSS Postgraduate Medical and Dental Deanery, 7 Bermondsey Street, London SE1 2DD, UK)

Background: As part of Postgraduate Medical Deanery quality management processes the implementation of a system comparable generic metrics between Local Education Providers (LEPs).

Objectives: To give all LEPs the ability to demonstrate and improve in objective measures of process and outcome for PGME. For LEPs to be able to compare themselves and their processes with other LEPs. To put information about LEPs which is objective in the public domain. To assist on LEP reporting of their quality of patient care. To act as one source of information for deciding on future investment or disinvestment strategies.

Summary of Results: Ten final metrics were agreed in year 1 and an improved set of 12 in year 2. Areas covered included training for educational supervisors, time in job plans for education, GMC survey completion, local education data collection and serious educational problems identified at visits. The metrics were completed by LEP self-assessment and validated through external quality control mechanisms. Problems included finding and agreeing any comparable outcome measures, difficulties in using national survey data, assessing variability within LEPs.

Take-home message: Generic metrics are highly complex should not be used for funding decisions. They may have a role in process improvement.

6C   Oral Presentations: International Dimensions 2

6C1

MRCGP International: Development of an Accreditation Process for Family Medicine Examinations in Differing Countries and Health Care Systems

A Howitt, J Howard (Royal College of General Practitioners, MRCGP International Board, London, UK)*

Background: The RCGP has an international strategy which includes the MRCGP International examination. This aims to support the development of family medicine worldwide by increasing training of doctors in Family Medicine and by the creation of a new category of International Member.

Summary of work: We collaborate with bodies which provide postgraduate family medicine assessments. This

involves development advisors working with countries to produce assessments which are specific to local culture, practice, education and health care systems. All the examinations develop locally based curricula, blueprint development, test writing, examiner training, standard setting and psychometric and performance review. The RCGP accredits such exams as MRCGP International.

Summary of results: Currently there are accredited examinations in seven countries. They serve different purposes; some are summative assessments of vocational training, others are provided for established doctors who have no other opportunity to demonstrate their competence or quality.

Conclusions: We have successfully implemented a system of accrediting local family medicine examinations to international standards.

Take-home messages: The role of international medical examinations is controversial. We have produced a model which accredits locally derived and relevant assessments to an international standard which also builds local capacity and skills.

6C2
Communication skills assessment for non-English-speaking doctors wishing to practice in the UK

Annie M Cushing[1], *Jean S Ker*[2], *Paul Kinnersley*[3], *Anthony N Warrens*[1], *Olwyn M R Westwood*[1] (*[1]Barts and the London School of Medicine and Dentistry, Queen Mary University of London, UK; [2]School of Medicine, The University of Dundee, UK; [3]School of Medicine, Cardiff University, UK)*

Background: International medical graduates wishing to apply for limited registration with the General Medical Council (GMC) in the UK are required to pass a language test and the Professional and Linguistics Assessments Board (PLAB) examination. Graduates from EU medical schools are not currently required to undertake assessments for working in the UK for the medical degree is recognized as equivalent between EU states. Concerns have been raised about clinical communication competence and the potential patient safety and health inequalities issues when health professionals practice in a language and culture which is different from their origins.

Summary of work: We discuss the practical and legal questions around developing a clinical communication assessment for non-English-speaking doctors where clinical competence has been tested (and passed) in a non-UK institution. Its development is considered in relation to domains of communication competency and the design of marking schemes that ensure items being assessed reflect adequate communication skills. Three sites in the UK; London (England), Cardiff (Wales) and Dundee (Scotland) were selected to pilot the assessment. The preliminary outcomes of this trial are discussed together with the

legality and governance issues for establishing an examination of this type.

Take-home-message: It is a complex undertaking to develop a proportionate, valid and reliable assessment of clinical communication which presumes clinical knowledge competence.

6C3
Collaboration between Japan and Vietnam for postgraduate clinical education

Pham Nnu Vinh Tuyen[1], *Nguyen My Chau*[2], *Minoru Akiyama*[3,4], *Hideki Nomura, Akira Muraoka, Miwa Sonoda*[3,4], *Kinuko Saito*[3], *Phi Thi Nguyet Thanh, Pham Duc Muc, Luong Ngoc Khue, Nobutaro Ban ([1]Hue Central Hospital, Hue, Vietnam; [2]Bach Mai Hospital, Hanoi, Vietnam; [3]JICA Project for Improvement of the Quality of Human; Resources in Medical Services System, Vietnam; [4]Department of International Cooperation, National Center for Global)*

Background: In the interrelated world, it has become extremely important to collaborate in the education of healthcare professionals. Japan International Cooperation Agency (JICA) implemented several technical cooperation projects in the health sector in Vietnam, in which strengthening the training system was a very important area of cooperation.

Summary of work: Japan, in which a mandatory postgraduate clinical education was launched in 2004, refined the teacher training workshop, and Vietnam in which the law requiring 24 hours / year continuing medical training was ratified in 2008, shared a common interest in developing the teacher training program. JICA has launched the project to construct the 'Workshop on training of clinical trainers (TOTWS)' in cooperation with the Japan Society for Medical Education, Ministry of Health, Vietnam and hospitals in Vietnam, and established the 5 days of TOTWS.

Summary of results: Since November 2008, 3-days of Japanese type TOTWS was implemented into Vietnam and has been modified through 6 trials to the 5-days of TOTWS of the Vietnam version.

Conclusions: Japan and Vietnam have developed the new 'Workshop on training of clinical trainers (TOTWS)' for continuing medical education.

Take-home message: We can cooperate in the Asian context to develop and strengthen medical education methodologies.

6C4

The practice ready assessment of international medical graduates: factors predictive of success

C Brailovsky*[1,2], A-M MacLellan[1], F Miller[1], S Leboeuf[1], E Drouin[1], E Prégent[1] ([1]Collège des médecins du Québec, Montréal, PQ, Canada; [2]College of Family Physicians of Canada, Toronto, ON, Canada)

Background: The practice readiness of international medical graduates is assessed by the Collège des Médecins du Québec, the medical regulatory authority in Québec, Canada. Clinical assessments, of 3 months duration, occur in accredited university training sites. Only 60% of candidates pass the practice assessment in spite of having appropriate credentials and recent practice elsewhere in the world. It would be useful for candidates to have knowledge of factors predictive of success.

Summary of work: The files of 270 applicants for a permit to practice in specialties including Family Medicine were analyzed. Besides the usual criteria of age, sex, origin of MD diploma and continent of MD diploma, other criteria included the specialty, the length of time between the request and the assessment, between the MD degree and the assessment period, scores at the Medical Council of Canada Evaluating examination (MCCEE), and the impact of language proficiency.

Summary of results: Highly predictive factors for a successful outcome included a lower number of years since obtaining the MD degree and a higher score on the MCC evaluating examination. Other factors, also identified as predictive of success will be discussed.

Conclusions: Factors predictive of success in completing a practice ready assessment have been identified.

Take-home message: This study can be helpful for International medical graduates, before making a decision to move to Canada.

6C5

Evaluation of a three-week inter-cultural enrichment program

SH Ng (Monash University Sunway campus, Education Quality and Innovation Unit, Jalan Lagoon Selatan, 46150 Bandar Sunway, Selangor Darul Ehsan, Malaysia)

Background: The Monash Sunway campus Inter-cultural Enrichment Program (ICEP) was designed and implemented in Semester 1 2011 for foreign students to experience the diverse Malaysian cultural environment.

Summary of work: This paper presents a 3-week curriculum with a variety of experiential learning activities for students to explore the multi-cultural Malaysian environment. The program comprises a 3-hour weekly interactive classroom learning and 1-day outdoor trip with the participation of 18 foreign learners from different disciplines. A simple written National Language competency assessment, feedback questionnaire, informal interviews and observations were used as evaluations of the curriculum.

Summary of results: The results showed that learning was engaging and beneficial and the outdoor experiential learning was enriching. Three students scored distinctions, four a-near 'pass' and five 'weak' in the written language assessment. Most learners expressed their wish for an extended six-week program to use the local language in appropriate contexts. All expressed that they would recommend the program to other students.

Conclusion: In conclusion, both formal and informal evaluation methods used in this educational ICEP, were sufficient to provide a fairly good overview of the strengths and weaknesses of the curriculum. However, the program could be enhanced further with closer observation, frequent weekly interactive feedback and reflections as a Take-home message.

6D Oral Presentations: Communication Skills 1

6D1

The use of simulated patients and telephone calls to improve interprofessional communication on hospital wards

S Ramamoorthy*, B Armstrong (Emergency Department, Southampton University Hospitals NHS Trust, Tremona Road, Southampton SO166YD, UK)

Background: Effective communication between healthcare professionals is essential when requesting assistance to treat a deteriorating or critically ill ward patient. This study aimed to establish the utility of simulated patients and telephone calls to improve communication.
The use of the SBAR (situation, background, assessment, response) communication tool was encouraged (1).

Summary of work: Nursing staff from four orthopaedic wards participated in a training session facilitated by the author. A faculty member played the role of an orthopaedic patient. Telephones in the simulation suite and the control room allowed realistic simulation of telephone calls, which could be heard by all candidates.

Summary of results: 24 candidates have attended thus far. A total of 48 candidates will have attended by the time of the Conference. All 24 candidates stated in their structured written feedback that they felt more confident in their ability to effectively communicate concerns about patients on the telephone after the course. 16 felt that simulation was more effective than tutorials or lectures to teach these skills.

Conclusions: Simulation is a useful adjunct to improve communication amongst healthcare professionals when timely clinical intervention is required.

Take-home message: Simulation is an effective tool to teach time critical communication in healthcare.
1http://www.institute.nhs.uk/safer_care/safer_care/Situation_Background_Assessment_Recommendation.html (accessed 28/2/11)

6D2

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 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.

Conclusion: 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.

6D3

360-degree evaluation of residents on communication & Interpersonal skills; Inter-rater variation in judgment

M Tariq[1], J Boulet[2], A Motiwala*[3], SK Ali[4] ([1]Aga Khan University, Department of Medicine, Karachi, Pakistan and FAIMER Fellow, Philadelphia, USA; [2]FAIMER, Philadelphia, USA; [3]Aga Khan University, Department of Medicine, Karachi, Pakistan; [4]Aga Khan University, Department for Education, Karachi, Pakistan)*

Background: Effective communication and interpersonal skills are key components for the optimal performance of any health care professional. Developing these skills is an integral part of residency training. We conducted 360-degree evaluations of all our residents to assess their interpersonal and communication skills.

Summary of work: A cross-sectional survey of 49 of the residents currently enrolled in our Internal Medicine residency program was conducted. Using a 360-degree evaluation technique, every resident was evaluated by eight other co-workers. A self evaluation was also completed.

Summary of results: We received a total of 367 completed forms for the 360 degree evaluations (response rate of 83.2%). Comparing mean scores, we found a statistically significant difference between the ratings given by the nurses and the faculty (p-value 0.0003). On average, the mean resident self-assessment scores were significantly lower than those provided by faculty (p-value 0.0003).

Conclusions: The 360 degree evaluation technique is effective for measuring the communication skills of trainees. Individuals who interact with trainees on regular basis, at least in aggregate, can provide meaningful judgments of ability.

Take-home messages: The 360 degree evaluation technique is an effective tool for measuring the communication skills of trainees. Residents tend to underestimate their own performance.

6D4

Patient Assessment of Resident Patient-Centered Care through a Structured Interview

T Wen , B Huang, V Mosley, N Afsar-manesh, S Baillie, N Parker* (David Geffen School of Medicine, University of California, 12-138 CHS, 10833 LeConte Avenue, Los Angeles, California 90095-1722, USA)*

Background: Standardized interview protocols are useful in residency programs to assess patient communication abilities in either the ACGME or Can Meds Core Competency requirements. In 2006, the UCLA Health Systems established the Assessing Residents' C-I-CARE (ARC) Program to obtain patient feedback in assessing physician-patient interaction abilities of residents.

Summary of work: A 17-item structured interview questionnaire was developed. Volunteer pre-medical students were trained to interview hospitalized patients using a well defined protocol and were supervised by one of the authors. Likert and polar scales were used and open-ended questions allowed for comments. Survey forms included resident photo to assure a match.

Summary of results: Over four years, ARC provided patient feedback data to six residency programs collecting 5,634 surveys on 323 trainees. Scores for resident recognition, professionalism, communication and diagnostic performance increased from the first to second year of ARC's implementation by an average of 22.5%.

Conclusions: Resident patient-centered competency attainment can readily be assessed utilizing a standardized interview tool administered by premedical trained students in a hospital setting.

Take-home message: The ARC Program is an inexpensive and valuable way to collect information for quality control and provision of real-time feedback for residency trainees in the hospital environment.

6D5

Through the Looking Glass - Clinical Communication in the Clinical Workplace

J Brown (St George's, University of London, Centre for Medical & Healthcare Education, 6th Floor, Hunter Wing, Cranmer Terrace London, SW17 0RE, UK)

Background: This study investigates how Clinical Communication (CC) is taught, learned and practiced in one London Medical School and Hospital. It is informed by theoretical perspectives from workplace learning.
Summary of work: Clinical Communication teachers and medical students took part in interviews and ward observations. Teachers were interviewed about their teaching practice, were asked to observe students in the clinical workplace and were asked to reflect upon whether observations had informed their teaching practice. Students were interviewed about how they had learned and practiced CC. Fifteen interviews and nine ward observations were carried out and nine reflective accounts were collected.
Summary of results: Results suggest that teachers wished to develop a more authentic and integrated teaching practice focused on the clinical workplace and wanted to go beyond the traditional notion of CC as 'skills' based. Students seemed able to apply the CC skills they had been taught to the clinical workplace, but the patient centred philosophy underpinning these was lost.
Conclusions: Conceptually the research shifts focus to the clinical workplace as the legitimate location for teaching and learning CC and proposes a new and expanded way of understanding learning in this context.
Take-home messages: Clinical Communication education may need to embrace a new workplace focus to keep it relevant in the future.

6D6

Peer assessment of Communication Skills for formative assessment

CF Sow[1], J Porter[2], JK Sidhu[1], SD Amirthalingam[1] ([1]International Medical University, Clinical Sciences Division, Kuala Lumpur, Malaysia; [2]St George's Medical School, Clinical Skills, London, UK)*

Background: Formative assessment is a vital part of the modern curriculum and an important learning tool, greatly valued by students. It is however hugely demanding on Faculty time. This study was designed to determine whether effective and reliable formative assessment of communication skills can be carried out by peer review. International Medical University has an annual intake of 500 students in two cohorts. Teaching is in English but this is not the first language of many of the students. Teaching and evaluating communication a skill in the early stages of the student's learning is therefore particularly challenging.
Summary of work: All Semester One students are required to video record a seven minute medical interview with a simulated patient for their own learning. 30 students were selected at random from the August 2011 intake. Their recordings were assessed, using a simplified version of the Calgary-Cambridge guide, by the student subject, by seven of their peers, and by four experienced Faculty members.We hypothesized that correlation between self and peer assessment would be good but that students would be less reliable in their assessment, particularly of the "softer" communication skills than Faculty.
Summary of results: The degree of correlation between the assessments was therefore determined for the total score and correlations were also determined separately for the content components of the guide and for the process skills. We plan to follow these student subjects into their later years and evaluate their progress.

6E   Oral Presentations: Work-based Assessment

6E1

The assessor, the student, the patient and the extras: a video ethnographic study of assessment in clinical environments

WCY Hu[1], S Rosenkranz[1], Y Salamonson[2], L Zakrzewski[3], A Bialocerkowski[3], J Reath[1] ([1]School of Medicine, [2]School of Nursing and Midwifery, [3]School of Health and Biomedical Sciences, University of Western Sydney, Australia)*

Background: Despite much work to improve the instruments used in workplace based assessment (WBA), not much is known about how experienced assessors make actual judgements about student competence in the field.
Summary of work: Expert clinical assessors of medical and nursing students were recruited by peer nomination. Formative assessments which were part of the usual teaching program were video-recorded in hospital wards, clinics and consulting rooms. Semi-structured interviews were conducted while assessors viewed the videos. Video, audio-recorded interview and fieldnote data were analysed using the constant comparative method.
Summary of results: Common themes were: referencing the assessment of competence and readiness to practice against an internalised norm of the competent student at this stage of training; use of critical cues; and a capacity to attend to student performance despite multiple interruptions from the clinical environment. In the study,

frequency of interruptions ranged from 1.3 – 4.2 per minute of assessment.

Conclusions: There is considerable diversity in clinical settings and WBA tools used within and between different health professions. Nevertheless, expert assessors share common assessment approaches.

Take-home message: Efforts to improve the reliability and validity of WBA should focus on developing assessor expertise.

6E2 moved to 2H6

6E3
WPBA and its dependability
M Davies*, A Rughani* (Royal College of General Practitioners, London, UK)

Background: The validity of assessments is underpinned by their ability to test those attributes that are important in working life. Some of these, particularly professionalism, an ethical approach, team working and leadership are known to be important but are not easily assessed in traditional examination formats. Principally this is because the nature of these competencies is such that they need to be demonstrated consistently and sustainably over time in a range of circumstances, meaning that a 'performance' rather than ' competence' assessment is needed. How do we ensure the dependability of these targeted workplace performance assessments?

Summary of work: The Royal College of General Practitioners in the UK re-developed its assessment process 4 years ago. There are three elements to the assessment, an applied knowledge test in MCQ format, a clinical skills assessment, which is an OSCE format exam, and workplace based assessment (WPBA). We are focusing WPBA on areas that the summative assessments cannot reach and have introduced methods to improve the reliance we can place on these.

Summary of results: The acid test is ' do people fail WPBA?' Whilst release from training is uncommon as a result of failure of WPBA alone there is evidence that this is beginning to occur.

Conclusions: WPBA is an essential and potentially dependable means of assessing parts of the curriculum that otherwise could not be included in the assessment process.

Take-home messages: Peformance assessment is a vital component of medical licensing procedures in general practice and can be made dependable.

6E4
Beyond the educational scope: effects of workplace based assessment on its users in postgraduate medical education
Joanne PI Fokkema*[1], Pim W Teunissen[2,3], Michiel Westerman[1], Nadine van der Lee[1], Cees PM van der Vleuten[2], Albert JJA Scherpbier, P Joep Dörr, Fedde

Scheele[1,3] ([1]Department of Education, St. Lucas Andreas Hospital, Amsterdam, the Netherlands; [2]Department of Educational Development and Research, Faculty of Health, Medicine and Life Sciences, Maastricht University, Maastricht, the Netherlands; [3]VU University, Netherlands)

Background: Workplace based assessment (WBA) is establishing its place in PGME. Although WBA has purportedly many educational advantages, research on its actual effects on learning and supervision is ongoing. Other-than-educational effects of WBA are still unclear. This explorative study builds on the assumption that knowledge about WBA's effects on users and practice can aid implementation and optimization. The research question was: Which kinds of effects of WBA, apart from educative effects, do its users perceive?

Summary of work: This qualitative study was performed in the Netherlands in 2011-2012. Users of WBA in PGME (trainees, assessors and lead consultants) were interviewed semi-structured and transcripts were thematically analyzed. To aid exploration of effects beyond the educational scope, theoretical concepts about diffusion and effects of innovations from sociological and healthcare literature were used.

Summary of results (preliminary): Seven categories of effects of using WBA were detected in preliminary analysis: effects on workflow, logistics, communication, attitudes, healthcare, education, and time required for WBA.

Conclusions and **Take-home messages**: This study provides insight in the variety of effects that WBA has on daily practice of PGME. This knowledge contributes to considerations about the use of WBA, and to its implementation in practice.

6E5
Misunderstandings around workplace based assessment. Are trainers and foundation doctors devaluing the workplace as a space for learning?
L Pearmain*, C Parker* (Interdepartment Division of Critical Care Medicine, Toronto General Hospital, 200 Elizabeth St, Toronto, Ontario, Canada, M5G 2C4)

Background: The European Work Time Directive has shifted UK medical training from a time served apprenticeship model towards competency assessment (DoH 2004, 2009, Temple 2010). Work placed based assessments (WBA) are integral to training but utilisation varies, perhaps contributing to why many UK foundation doctors increasingly value 'formal' teaching?

Summary of work: My own reflective practice and findings from semi structured interviews of Junior Doctors. Undertaking formal training changed my utilisation of WBA as both a learner and trainer. Themes were sought from foundation doctors feedback exploring effects WBA have had on workplace based learning experiences.

Summary of results: Trainers and learners who regard WBA as part of the 'tick box culture' of medicine may not have experienced best practice use of WBA. Formal training increased my own understanding and enthusiasm facilitating the process of WBA. Foundation doctors reported adopting a formative developmental approach improves communication, identifies learning needs, making workplace opportunities 'real' and accessible.

Conclusions: Tuition and reflective thinking is required for both trainers and learners to recognise the formative and communicative nature of WBA. WBA not developmental in nature may decrease learner's engagement and devalue workplace learning.

Take-home messages: Training in the effective utilisation of WBA is vital for both learners and trainers to enhance the workplace's value as a space for learning.

6E6

Do assessors completing workplace-based assessments on the Acute Assessment Area (AAU) feel that they are a true reflection of the trainees' competence in that area?

C I Ward (Leeds Teaching Hospitals NHS Trust, St James' Hospital AAU, Beckett Terrace, Leeds LS9 7, UK)

Background: Workplace-based assessments are currently widely used by trainees as a marker of progression throughout their training. Within each curriculum, from Foundation to Higher Specialist training, there is a list of skills and competences that have to be achieved. If done correctly, these can be very useful assessments and can highlight areas that need improvement or help the trainee further their knowledge of a subject. My suspicion, however, was that the majority were just regarded as "box-ticking exercises" after a weekend on-call rather than true learning aids to demonstrate competence.

Summary of work: I designed a questionnaire using Survey Monkey, with 10 simple questions and emailed it to Medical Registrars across the UK. The response rate was poor but useful information could still be gathered. (Final numbers still being inputted)

Summary of results: Less than half of those who responded felt that the assessments were a true reflection of competence; most assessors just completed the forms by email, marked the trainee as "average" and did not mention an agreed action plan.

Conclusions: Although designed to assess competence in the workplace and highlight trainees in difficulty, the majority of those completing the assessments do not feel that we are achieving this.

6F   Oral Presentations: Situational Judgment Test/Selection for Postgraduate Training

6F1

How does a situational judgment test designed for selection into specialty training in the acute specialties on a national basis perform for selection into other specialties?

Alison Carr[1], Thomas Gale[2], Ian Anderson[2], Jane Dacre[3], Fiona Patterson[4] ([1]Department of Health, England, London SE1 6LH, UK; [2]Directorate of Anaesthetics, Plymouth Hospitals NHS Trust; [3]University College London, London; [4]Work Psychology Group)*

Background: A Situational Judgment Test (SJT) assesses how applicants may behave managing difficult professional dilemmas. In postgraduate medical training, their predictive and incremental validity for future clinical performance is well established.1 In 2010, a SJT designed for selecting applicants into acute specialties (anaesthesia, emergency medicine and acute medicine) was piloted in England for selection into specialty training at ST1/CT1 alongside a national multi-specialty clinical problem-solving test run by the Academy of Medical Royal Colleges.

Summary of work: Applicants for CT1 /ST1 posts in acute specialties, core medical training, General Practice (GP), histopathology and paediatrics were invited to sit a SJT, blueprinted onto 4 attributes important in acute specialties: situational awareness, empathy and sensitivity, coping with pressure and professional integrity. 351 doctors completed the SJT that showed good reliability (Cronbach alpha=0.84). Candidates preferring an acute specialty performed better than candidates preferring GP or other specialties (One way ANOVA P<0.05).

Conclusions and **Take-home message**: While a single multispecialty SJT may be cost effective for specialty training selection, this pilot shows using questions specifically targeting job families, such as the acute specialties in a bespoke SJT, selects doctors preferring the job family over other specialties.

1. Medical Education 2009; 43(1): 50-7.

6F2

Design and validation of a new Situational Judgement Test (SJT) to assess the professional attributes of all UK junior doctors

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Background: Having completed medical school training, students apply for a junior doctor post as part of the UK

Foundation Training Programme. It was recommended that a SJT was implemented to assess professional attributes, judgement and employability to replace the open-ended competency-based application form.

Summary of work: This project describes the design, piloting (N=1094) and analysis of a SJT for selection of over 7,500 medical students per annum, including a job analysis to identify the professional attributes expected of F1 doctors.

Summary of results: Psychometric analysis provided evidence that the SJT is a reliable measurement methodology in this context and overall is able to differentiate between candidates. Early evidence was found for criterion-related validity. Feedback indicated that candidates felt that the SJT was relevant and fair.

Conclusions: The outcomes of the project have been endorsed by the UK Secretary of State for Health and the SJT will be used for applications to the Foundation Programme 2013 onwards.

Take-home messages: A robustly designed SJT will enhance the predictive validity of the selection process and improve standardisation nationally. SJTs draw on non-cognitive attributes that cannot easily be targeted through traditional exams and reflect the challenging interpersonal context that junior doctors work within.

6F3

Design of a Situational Judgement Test of Professional Attributes for Selection into Dental Foundation Training

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Background: With increasing competition for UK Dental Foundation training, short-listing of candidates via application forms lacks reliability and is costly to implement. A newly designed machine-markable situational judgement test (SJT) was piloted as a selection method to evaluate important non-cognitive attributes for dentistry.

Summary of work: The SJT targeted four domains: integrity, teamworking, empathy & resilience. Test content was developed by dental trainers (N=8) and experienced psychometricians (N=3). The SJT contained 20 scenarios and a mixture of ranking/multiple response formats. The SJT was completed under invigilated conditions by 74 candidates immediately after live selection. Live selection involves two 15-minute structured interviews targeting, (1) Clinical skills, and (2) Management, Leadership/Professionalism.

Summary of results: Results show the SJT to have good reliability (α=.74). Initial evidence of criterion-related validity was established as candidate scores on the SJT correlated significantly with the Management, Leadership and Professionalism interview (r=.43. p<.01) but not with

the Clinical Skills interview. Candidate reactions to the SJT were generally positive, demonstrating good face validity of the SJT.

Conclusions/Take-home message: An SJT is a reliable and valid selection methodology for testing important non-cognitive attributes for entry into dental training. A machine-markable SJT could offer considerable efficiency savings over the current selection process.

6F4

New machine-marked tests for selection into core medical training: Evidence from a longitudinal validation study

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Background: 2,500 applicants compete annually for UK Core Medical Training posts. This study examines whether two machine-marked tests (MMT), a clinical problem-solving test (CPST) and a situational judgement test (SJT focusing on non-cognitive attributes), provide incremental validity in predicting in-training performance.

Summary of work: A longitudinal design was used to examine the predictive validity of the MMT, analysing the correlation between MMT scores and performance in College examinations (MRCP) approximately 2 years later (N=2,659). The MRCP includes applied-knowledge tests (Parts 1 & 2) and high-fidelity patient simulation (PACES).

Summary of results: The MMT was reliable (α=.85). The MMT and interview scores were positively correlated with all elements of the MRCP (p<.001), indicating good predictive validity. The strongest predictor for MRCP Parts 1 and 2 was the CPST (r=.73, p<.001). For PACES, the strongest predictor was the interview (r=.44, p<.001), followed by the SJT (r=.39, p<.001).

Conclusions: MMTs are appropriate for selection into core medical training, and add significant incremental validity to the process. They can be used to calibrate high volume coordinated selection.

6F5

Candidates' reactions towards a new selection procedure for postgraduate GP-training

MI Vermeulen*[1], F Tromp[2], F Patterson, MM Kuyvenhoven[1], BJAM Bottema[2] ([1]University of Utrecht, Postgraduate Training for General Practice Julius Centre, Utrecht, Netherlands; [2]University Medical Centre St. Radboud, Department of Postgraduate Training for General Practice, Nijmegen, The Netherlands)

Background: Historically, panel interviews were core to Dutch selection for postgraduate GP-training, however, research shows these to have low predictive validity. This study reports on candidate reactions towards a newly designed multi-method selection system.

Summary of work: The new selection procedure containing a behaviour-specific interview, a knowledge test, a situational judgement tests (SJT) and a simulated consultation was piloted alongside the current procedure. 47 candidates completed both procedures.

Summary of results: Both the panel interviews and the piloted behaviour-specific interview were considered job-relevant, and fair. The behaviour-specific interview however was considered by candidates to be a better predictor for successful completion of the training and to provide better opportunity to show their competencies. The knowledge test and SJT were considered relevant and job related, but the knowledge test was thought to be a poor predictor of future job performance. The SJT was considered highly fair (95,7%), whereas the simulation and knowledge test were rated as fair by candidates 78% and 64% respectively.

Conclusions/Take-home messages: Candidate reactions are an important consideration in any selection process. This new procedure is perceived by candidates as more fair and relevant compared to the previous process, but with scope for further improvements; i.e. more GP specific content and several simulations to avoid case specificity.

6F6

Using situational judgements tests (SJTs) of non-cognitive skills in postgraduate selection; validation evidence from seven independent studies

F Patterson*, T Gale, D Rowley, L McKnight, K Hinshaw, D Williams, A MacGregor, A Carr (University of Cambridge & Work Psychology Group, UK)

Background: Situational Judgement Tests (SJTs) are an increasingly popular selection method for evaluating non-cognitive skills across many high stakes settings. This paper examines the validity of SJTs for use in UK postgraduate selection. The results are used to inform future policy development for using SJTs in selection for all specialties.

Summary of work: Seven independent studies focusing on the design and validation of specialty-specific SJTs for non-cognitive skills (eg. integrity, empathy, teamworking) were conducted. Specialties included (1) General Practice (N=2,292); (2) Surgery (N=285) (3) Acute Specialties (N=350); (4) Radiology (N=297); (5) Obstetrics/Gynaecology (N=265); (6) Public Health and (7) Histopathology (N=35).

Summary of results: Results from each study consistently show each SJT to have good reliability and validity (face, content, criterion-related), although there is important variation between specialties. There are significant differences in priorities for non-cognitive skills for each specialty (eg. surgery vs general practice), which is reflected in the test specification for each specialty.

Conclusions/Take-home message: SJTs are a reliable and valid selection methodology for testing important non-cognitive attributes for postgraduate training. A broad-ranging SJT could be designed for selection for all specialties but the weighting of various attributes should be tailored to the priorities of each specialty.

6G   Oral Presentations: Issues Relating to the OSCE

6G1

10 years of OSCE security issues: is there a problem?

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Background: With large-scale OSCEs involving multiple circuits conducted over several days, examinees in later sessions may have an advantage because examinees in earlier sessions may disclose station content. Studies in the published literature have reported mixed results.

Summary of work: We collected data from graduation-level OSCEs at one medical school over 10 years, during which OSCEs were conducted over several days with no changes in station content and no sequestration of examinees. For the first six years, examinees took the entire OSCE in one session. In the last four years test administration was changed so students took subsets of stations in different order.

Summary of results: Analysis of the first six years showed an increase in total scores averaging 0.19 SDs on day 2 over day 1. In the later four years, a small increase in scores was observed for two types of stations and a decrease for one station type. Overall, there was substantial year-to-year variation in effect sizes.

Conclusions: Though there was evidence of security problems, effect sizes were small.

Take-home messages: When OSCEs are conducted over several days it may be advantageous to assign stations to subtests and students to subgroups so that the same students are not first/last for all stations.

6G2

Significantly better OSCE performance in the morning compared to the afternoon: what does it mean? An analysis of 32,006 candidate-cases in the MRCGP Clinical Skills Assessment (CSA) 2009

Richard Wakeford (University of Cambridge, Cambridge, UK and Royal College of General Practitioners, London, UK)

Background: The MRCGP's CSA is subjected to routine statistical quality assurance (QA) analyses. In 2009, time of day of the test (morning/afternoon) was recorded. Potentially alarmingly, modest but highly significant differences were discovered between morning and afternoon cases, the latter scoring lower. Explanations were required.
Summary of work: Sequential patterns of case scores were explored using histograms. Stepwise linear regression was used to explore the extent to which known important candidate variables (gender, ethnicity, local or international graduate), plus time of day, explained variance in case scores (n = 32,006).
Summary of results: Overall differences in mean scores, morning/afternoon, were 2.6% (F=119.6, p<.0001). Candidates' individual case scores improved from first to last, morning and afternoon. The percentage of case-score variance explained by multivariate analysis was: local/international graduate 10.8%; candidate ethnicity (white/non-white) 1.5%; candidate gender 0.7%; time of day 0.2%.
Conclusions: Candidates can select their examination times. The significant raw differences morning-to-afternoon arose because of differential sub-group selection of their time. Time of day is itself of trivial consequence as regards case scores in this assessment. Candidates' improving performance, case on case, is consistent with previous research.
Take-home messages: Apparently surprising sub-group performance differences in large national examinations can be explained by candidate sub-group variations in their selection of examination times.

6G3

Assessing the Quality of Objective Structured Clinical Examinations – The Aga Khan University (AKU) Experience
N Yousuf*, R W Zuberi (Aga Khan University, Department for Educational Development, Karachi, Pakistan)

Background: Clinical skills are commonly assessed through Objective Structured Clinical Examinations (OSCE) using itemized instruments with a checklist or a rating scale, and usually a global rating at the end. Assessing the quality of these instruments is necessary to ensure that the assessment is valid, reliable and fair. The objective of this study is to evaluate and improve the quality of OSCE stations at AKU.
Summary of work: Seventeen OSCE stations, using a 7-point rating-scale with global-ratings, administered to 197 MBBS Year 2 students in the years 2010 and 2011 are

studied. The reliability of the stations, inter-grade discrimination and the coefficient of determination are calculated using the station mean scores and global ratings.
Summary of results: The reliability of the stations ranged between 0.6 and 0.9. The inter-grade discrimination ranged between 5-11%. The coefficient of determination ranged from 0.3-0.9.
Conclusion: Inter-grade discrimination is found to be in the acceptable range. Fourteen stations have coefficient of determination in the acceptable range, i.e. 0.5 or above. The indices helped to identify the stations which need revisions and improvements.
Take-home message: Inter-grade discrimination and coefficient of determination are found to be useful and can be used to ensure the quality of the instruments for clinical skills assessment and identify gaps for improvement.

6G4

Examiner Selection and Training for a Regional Assessment of Clinical Competence: the MRCGP (International) South Asia Clinical OSCE
Marie Andrades[1], Rukhsana Ansari*[1], Garth Manning[2], Richard Wakeford[3], Val Wass[2] ([1]MRCGP [International] S Asia, Karachi, Pakistan; [2]Royal College of General Practitioners, London UK; [3]University of Cambridge, UK)

Background: The MRCGP (International) South Asia qualification is a regionally-developed English-language two-stage assessment (MCQ; OSCE) for primary care doctors from throughout South Asia, designed to accredit high quality performance. The 14-station Simulated Patient-based OSCE uses examiners from the principal participating countries of Bangladesh, India, Pakistan, and Sri Lanka. This presents challenging issues of selection, training and quality control.
Summary of work: We describe the examiner recruitment process, culminating with a one-day selection workshop, the training arrangements, and the resultant Examiner Quality Assurance outcomes.
Summary of results: We summarise the recruitment process and its reception, which was positive. We present how the Board then reviews examiners' performance – by level and range of scores, and examiner-total correlations, also in terms of possible 'national favouritism'. Overall quality statistics are acceptable, with daily Cronbach alpha coefficients averaging 0.73 and SEm always below 5%.
Conclusion: Recruitment of the clinical examiners across different countries, their training, and on-going quality assurance has resulted in an OSCE of defensible psychometric characteristics. Anxieties over the examiner selection day proved groundless.
Take-home messages: Despite obvious challenges, multi-state recruitment of examiners for a collaborative international, regional assessment is feasible and can

produce an effective and candidate-acceptable assessment across traditional borders.

6G5
Whole of school involvement in review of OSCE station wording to improve quality of assessment

K Brotchie*, G Somers, S Bullock, B Chapman (Monash University, Gippsland Medical School, Churchill, Australia)

Background: The Objective Structured Clinical Examination (OSCE) has been used at the Gippsland Medical School since its inception in 2006. Reliability has been analysed with Cronbach Alpha scores between 0.5 and 0.8. In 2011, Gippsland Medical School moved to a review of the wording of station materials utilising all available academic staff.

Summary of work: Feedback from both medical and non-medical academics was used to inform the wording of newly created OSCE stations. Wording was debated to consensus agreement with changes made to all stations.

Conclusions: Employment of non clinical academics is an efficient and effective way to improve the OSCE writing process.   Instructions for both simulated patients and students benefited from non-medically trained observations aiding consistency of delivery across circuits.

Take-home messages: We will present this model for improving OSCE station design through review of the wording of newly created stations utilising all academic staff at a small rural medical school. The use of both medically and non-medically trained academics can enhance the opportunity for clarity in simulated patient and student instructions as well as providing opportunity for debate about OSCE processes in an efficient and collegial encounter.

6G6
Multi-dimensional, Multi-Modal Objective Structured Performance Examination (OSPE): development, results and future directions

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Background: The Pharmacy Examining Board of Canada (PEBC) developed a multi-dimensional, multi-modal entry-to-practice Objective Structured Performance Examination (OSPE) for pharmacy technicians assuming an expanded scope of practice in a newly regulated profession. The purpose was to assess communication, collaboration, ethical decision-making and accuracy-checking skills along with sterile and non-sterile product preparation techniques.

Summary of work: PEBC developed an OSPE consisting of short standardized patient simulations and prescription compounding tasks assessed by a trained examiner, non-interactive stations requiring candidates to assess accuracy of patient records and dispensed products and video stations requiring candidates to evaluate techniques used to prepare sterile drug products and IV solutions. A 12-station OSPE was piloted; holistic scoring rubrics focusing on key features were developed; SP and assessor training and standardization processes were refined.

Summary of results: PEBC developed a reliable and defensible multi-dimensional, multi-modal performance-based examination. Pilot data analyses and training refinements resulted in shortening the OSPE to nine stations. Examination development, SP training refinements, station vignettes, exam results analyses and future directions will be presented.

Conclusions and **Take-home messages**: The OSPE format is an efficient, defensible instrument for assessing multi-dimensional competencies, using a variety of objective performance assessment tools and techniques. Training and standardization are key.

6H   Oral Presentations: Problem-based Learning 1

6H1
A Novel Embedded Assessment of Student Performance in Problem Based Learning, a Real-Time Approach

Colin John Greengrass (Department of Pharmacology, College of Medicine, Imam Mohammed ibn Saud University, 7544 Othman Ibn Affan Road, 13317-3324. Riyadh, Saudi Arabia)

Background: Assessment of the learning process, rather than merely its outcomes, is important in providing an accurate evaluation of student capability. The environment in which problem based learning (PBL) exercises are carried out is ideal for such assessment. Unfortunately, the practice of using embedded assessment in PBL sessions is often either ignored, or in the least poorly designed. Likert scales and assessment rubrics appear to become quite subjective in sessions of extended duration. Thus the design of a more accurate assessment was considered necessary.

Summary of work: The assessment tool described forthwith removes many of the limitations of such assessment methods. This tool allows continuous scoring of performance throughout PBL sessions. It allows tracking of several aspects of group dynamics within PBL sessions and allows for the assessment of important performance attributes of group members.

Summary of results: Analysis shows that data obtained from this assessment tool holds a closer correlation to performance of individual students in exams and seminars within the course, compared to other assessment tools. Analysis also may indicate that this tool can be used to evaluate fairness of examinations and other task assessments.

6H2

Assessing participation in Problem Based Learning using corpus analysis

Catherine Haines*, Matthew Tokode, Reg Dennick (Medical Education Unit, Medical School, Queen's Medical Centre, University of Nottingham, Nottingham NG7 2UH, UK)

Background: We have previously shown that corpus analysis can be used to study the processes occurring in a PBL session. We have now undertaken a cross-sectional study were we transcribed audio recordings from one 5 hour cycle of PBL with 10 groups all working on the same scenario.

Summary of work: This study presents preliminary results of corpus analysis of approximately 50 hours of transcripts using WMatrix2 software. It identifies the relative contributions of each student in terms of: participation, use of technical terminology, questioning and reasoning. The contributions of the facilitator have also been examined.

Summary of results: Differences are shown for students in terms of their participation in discussion, the frequency of their use of technical words, questioning and reasoning. The relationship between the facilitator's interventions and student participation allows us to develop criteria for evaluating the effectiveness of PBL and to give feedback to the group. Further work will examine the relationship between PBL contributions and personality, learning style and student demographic data.

Conclusions: Corpus analysis can be used to evaluate the process of PBL discourse. This information may improve student engagement with the PBL process, enhance learning and improve facilitator skills.

6H3

Subjectivity: A Concern in the Continuous Assessment of Students in a Hybrid PBL Based Curriculum

Akef Obeidat*, Salahuddin Khan, Imran Siddiqui (Al Imam Muhammad Ibn Saud Islamic University, College of Medicine, Riyadh, Kingdom of Saudi Arabia)

Background: Our school's curriculum is composed of three phases; phase I is the premedical year, while phase III is the clinical rotations phase. The phase II (years 2 through 4) curriculum is a fully integrated program offering a mixture of problem based learning with other modalities of learning/ teaching delivered through PBL-based and non -PBL based courses. Students in PBL- based courses are assessed by tutor-student evaluations, field visit reports, student seminar evaluation, lab reports, quizzes, and clinical skills (continuous assessment), as well as other formats of written exams. All the continuous assessment methods are subjective and in the hands of a sole evaluator. Students in non-PBL- based courses are continuously assessed by written exams and OSPEs.

Summary of work: Results of different modalities of exams in PBL-based and non -PBL based courses were analyzed.

Summary of results: Our study shows that the results of students were better in courses where subjective methods of continuous assessment were practiced.

Conclusions: We believe that some corrective measures need to be taken to lessen the effect of subjectivity in continuous assessment. Those measures should not defy the purpose of continuous assessment nor compromise the importance of written exams.

Take-home messages: We propose measures to minimize the effect of subjectivity in continuous assessment

6H4

Novel and Integrated Clinical Examination Systems (NOV.I.C.E.S) – An integrated clinical skills curriculum in the early phase of the medical course

The Clinical Skills Group, Barts and the London School of Medicine and Dentistry (BLSMD) (Presenter: Dr Adam Feather, Room 2:35, The Robin Brook Centre, St Bartholomew's Hospital, West Smithfield, London EC1A-7CA)

Background: At BLSMD we have recently augmented our PBL curriculum (Curriculum 08). As part of this augmentation, we in clinical skills were asked to redesign our curriculum, with special focus on the early phase of the course.

Summary of work: 'NOV.I.C.E.S' is a three phase spiral skills curriculum that takes the learner from absolute novice to competency in all the fundamental examination techniques required of a practising clinician. The first phase of the curriculum aims to build a strong integrated foundation for the learners' clinical skills, encouraging them to integrate and apply the knowledge they acquire in other disciplines, whilst supporting the clinical aspects of the PBL cases. This integration is reflected in the learning materials and the summative assessments. This presentation will describe: The development of the curriculum including our unique learning and tutor support materials; The positive affects it has had upon the profile of clinical skills within the early phase of the course; The issues, and practical solutions that have arisen as we have rolled out the programme

Take-home message: Introducing an integrated and structured clinical skills curriculum in the early phase of the medical course has a strong, positive educational impact on learners and faculty alike.

6H5

Fostering professionalism and attitudes through PBL process assessment

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Medical Education Unit, P O Box 26500, Kathmandu, Nepal)

Background: Acquisition of professional attitude and behaviors by the medical students is a challenging process. However, it could be facilitated if the students are periodically assessed on this domain during their medical training.

Summary of work: Undergraduate medical curriculum defined twelve measurable attributes, including the aspects of professionalism, to be developed by the graduates. To assess if they are acquiring those attributes satisfactorily, a novel, validated 32-item tutor assessment of student (TAS) tool was used for PBL process assessment. PBL tutors and academic coordinators provided one-to-one feedback for those who failed to demonstrate those attributes.

Summary of results: Assessment of first batch of medical students' performance in PBL revealed that 3 to 9 % of students failed to demonstrate expected professional behavior in initial part of first basic sciences year. However, upon receiving timely feedback from the faculty, these students improved their performance subsequently. The final summative evaluation using criterion-referenced borderline method, TAS tool showed all students performed satisfactorily.

Conclusions: The result shows that even those students who did not do well initially showed improvement upon receiving regular and timely feedback.

Take-home messages: Acquisition of appropriate professional attitude and behaviors can be effectively facilitated by the regular and timely feedback.

6H6

Are Problem-Based Learning Tutorials Places to Learn Clinical Reasoning? Perspectives from University of Melbourne and University of Indonesia

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Background: Clinical reasoning (CR) skill acquisition is one of the aims of Problem Based Learning (PBL), but there is little research on how PBL functions to develop this important skill.

Summary of work: This study explored CR teaching and learning in two undergraduate medical courses (University of Melbourne, UoM, University of Indonesia, UI) using a comparative case study. Four types of data were used: medical students' responses to the Diagnostic Thinking Inventory (DTI) (years 3 and 6), medical students' interviews (same years), academic teacher interviews (i.e PBL tutors, clinical teachers), and examination of curriculum documents.

Summary of results: UoM students and academics more strongly endorsed the value of PBL in developing CR skills at both year levels. Clear cultural differences in relation to attitudes to learning CR in PBL were evident in the two institutions; UI students and academics were more influenced by the power distance and preferences for avoiding uncertainty.

Conclusions: The role of PBL for teaching clinical reasoning skills was greatly influenced by both the structure of the triggers and the cultures of learning.

Take-home messages: PBL tutorials can be used as one way to explicitly teach clinical reasoning. To achieve this, careful planning on their structure as well as consideration of the institutional culture of learning is required.

6H7

An evaluation of a shift from a 1 to 2 day MBBS Problem Based Learning (PBL) model

L Garvey, M Hay (Monash University, Faculty Medicine Nursing and Health Sciences (MBBS), Clayton, Australia)*

Background: PBL moved from a 2-day to 1-day model. It was expected this would lead to improvements in case discussion, group work, and self-directed learning (SDL), which would lead to increased perception of preparedness for the clinical setting.

Summary of work: Students (N=80; 74% local, 26% International) experienced in both models completed an anonymous online questionnaire. Ratings were grouped into 3 categories to determine the proportion of ratings of a positive, negative, or no impact.

Summary of results: Students rated the 1-day model as an improvement in 64% of quality indicators, with no impact being the salient response in the remaining 36%. The majority rated improvements for; case understanding (48%), discussion of content (46%), depth of case discussion (44%), and case retention (43%). Most (53%) rated more effective group work in the 1-day model. Nearly all (94%) undertook SDL, and almost half (46%) reported an improvement in their understanding of the case due to the additional time for SDL. Most (70%) felt prepared for their transition to the clinical environment.

Conclusions: Shifting from a 2 to 1-day model of PBL led to student rated improvements in most key indicators. These improvements were likely due to increased time for SDL and hours of teaching.

Take-home messages: Timing of PBL to increase SDL and exposure to curriculum content can lead to enhanced learning outcomes, and perceived preparedness for the clinical setting.

6I Workshop: Training standardized patients for high stakes examinations: strategies and tools to achieve "exam readiness"

Cathy Smith*[1,2], Carol O'Byrne*[2], Debra Nestel*[3] ([1]University of Toronto, Faculty of Medicine, Toronto, Canada; [2]Pharmacy Examining Board of Canada, Toronto, Canada; [3]Monash University, Gippsland Medical School, Victoria, Australia)

Background: Standardization of Simulated/Standardized Patient (SP) performance in Objective Structured Clinical Examinations (OSCEs) is vital to the defensibility of the examination. However, little is written on how to achieve this goal. The process of standardization is nuanced, complex and dependent on many contextual factors. Trainers often have diverse backgrounds, education, training styles and perspectives. Trainers must prepare SPs to respond to a wide variation in candidate preparation and performance. Distributed exam sites present further challenges. As a result, there can be differences in trainers' understanding about expectations of training outcomes to ensure standardized performance. We draw on our experiences from Canada, the United Kingdom and Australia to share and examine our approaches to standardizing SP performance for a national licensing examination in pharmacy and high stakes examinations in medical school.
Intended Outcomes: Participants will: define elements of standardized SP performance for high stakes OSCE purposes; investigate specific training strategies and tools to standardize SP performance; acquire experience using these strategies and tools through interactive role-play; reflect on applications to their own practice.
Structure: Interactive exercises including discussions, simulation, large and small group activities and opportunities for individual reflection.
Intended Audience: Clinical educators and others responsible for training SPs for OSCEs
Level of Workshop: Intermediate

6J Workshop: Program Evaluation— Learning to determine whether your educational course, clerkship, or residency/registrar training program is "successful"

SJ Durning (Uniformed Services University of the Health Sciences, Bethesda, USA)

Background: Evaluating an educational program is a core responsibility for any course, clerkship, or residency director. This workshop is designed to help participants understand how they can convert regularly used learner-based assessment products (e.g., grades, tests, and evaluations) into curricular outcomes. We will discuss a model that uses both quantifiable and qualitative information collected from "Before", "During", and "After" an educational program, from a variety of sources.
Intended Outcomes: By the end of the workshop, participants will be able to: 1. Understand the Principles of Programmatic Evaluation; 2. Understand a Framework for Programmatic Evaluation 3. Define Essential and Desirable parameters for evaluation of their own programs.
Structure: We will use an interactive case-study method to illustrate examples of questions that could be posed to examine for educational program success, the types of data that could be collected, and methods for analyzing the collected data. We will first briefly discuss cardinal questions in program evaluation. In the second part of the workshop we will ask participants to work in small groups to explore the types of   questions they currently face in terms of evaluating their educational program, with large group discussion of methods to answer the questions.
Intended Audience: directors and core teachers of medical education programs
Level of Workshop: Intermediate

6K Workshop: Withdrawn from Programme

6L Workshop: Portfolio Assessment

J Edwards, M Davies*, J Edwards*, J Foulkes*, S Street* *(Royal College of General Practitioners, 1 Bow Churchyard, London EC4M 9DQ, UK)*

Background: Workplace based assessment, 'the evaluation of a doctor's progress over time in their performance in those areas of professional practice best tested in the workplace' is arguably the most valid assessment method for learners working independently in professional practice. The ePortfolio which is based on many of the same underlying principles is increasingly being used as an aggregated assessment method, sampling performance across a period of time.
There remains much debate as to the effectiveness of portfolio assessment, particularly when used for summative assessment. There is agreement that expert judgement is the key to effective assessment and that qualitative assessment methodology should be used.
Intended Outcomes: This workshop will examine how the dependability of portfolio assessment can be increased by using a programme of assessment, including quality management. By examining real ePortfolios participants will begin to calibrate their own benchmarks as to what constitutes sufficient evidence to demonstrate the gaining of competence and the markers for excellence.
Structure: Background; Principles of ePortfolio assessment; Illustrated by small group work; Plenary

Intended Audience: All trainees and educators involved in, or wanting to learn more about, ePortfolio assessment
Level or Workshop: Intermediate; Prior experience of using an ePortfolio and assessment in the workplace would be an advantage

6M ASME FLAME workshop - Fundamentals in Leadership and Management for Educators: Assessing Leadership

Association for the Study of Medical Education (ASME) (ASME, 12 Queen Street, Edinburgh, EH2 1JE, UK)

Background: It is widely recognised that non-technical skills, including leadership, are vital for effective and safe professional practice. Regulatory and professional bodies around the world increasingly require learners to demonstrate competence in leadership, yet many educators are struggling to teach and assess leadership competence. Many tools exist to assess leadership, but with crowded curricula and large numbers of students/trainees, how can educators implement effective leadership development programmes?
Intended Outcomes: Participants will: Demonstrate understanding of leadership theory in relation to assessing leadership; Become familiar with methods for teaching and assessing leadership; Have shared practice on challenges and solutions; Identify strategies for introducing/developing leadership programmes
Structure: The workshop will offer a combination of interactive small and large group activities and short presentations designed to facilitate discussion and participation and meet individual and group needs.
Introduction: Welcome, learning needs and current position/experience
Presentation: Assessing leadership and management: overview and theory
Groups/individual exercises: Challenges and opportunities; where do I want to be?
Discussion: Developing strategies for teaching and assessing leadership
Reflection and action planning
Intended Audience: Undergraduate and postgraduate medical and health professions' educators who run leadership and management courses or plan to do so.
Level of Workshop: Intermediate

6N Workshop: Progress Testing: Understanding and implementing the principles and processes

Adrian Freeman[1], Bill Wrigley*[2] ,Lee Coombes*[1] ([1]Peninsula Medical School, University of Plymouth, UK; [2]Faculty of Health,*

Medicine and Life Sciences, Maastricht University, Netherlands)

Background: Progress Tests are longitudinal, feedback-oriented assessment tools for the evaluation of the development and sustainability of cognitive knowledge. They are well established and increasingly used in both undergraduate and postgraduate medical education. They are used formatively and summatively allowing feedback to students and faculty .
Intended Outcomes: This workshop gives an introduction to progress testing. It outlines a model of progress testing that includes blueprinting, item construction and management, test administration, results scoring and analyses, and feedback, with particular reference to the longitudinal and quality assurance aspects of progress testing. The workshop also focuses on evaluating the test's psychometric properties, analysing qualities and characteristics of test items. It will also give practical information about implementing Progress Testing.
Intended Audience: This workshop will be appropriate for everyone who is involved in assessment and interested in developing a Progress Test or using an existing Progress Test for their own faculty or in a consortium to the best possible extent.
Level of Workshop: Intermediate

6P Posters: Staff Development

6P1
How do doctors develop as teachers?
E Bate, DCM Taylor (University of Liverpool, School of Medical Education, Liverpool, UK)*

Background: In the UK 'Tomorrow's Doctors' and 'Good Medical Practice' state that all doctors should help train future generations of trainees. Consequently many postgraduate deaneries provide clinician teacher training programmes. These range from workshops to Master's qualifications in teaching. Despite this, there is little research into the way that clinicians develop as teachers. The developmental stages that teachers progress through as they train and become more experienced have been studied in school teachers. This project aims to identify how doctors develop as clinical teachers.
Summary of work: A research tool has been identified that allows us to track the behaviours, capabilities and beliefs surrounding teaching in medical professionals. The potential for this instrument to identify the developmental stage of the clinical teacher will be discussed in relation to our preliminary data.
Conclusions: Understanding how clinicians develop as teachers may help to determine the appropriate teacher training required by medical professionals at different stages of their career. This would allow teacher training

programmes to be more closely targeted towards the learning needs of the individual clinician educator. It should also result in a better learning experience for our trainee doctors.

6P2

BOKITO: customized e-learning modules for teacher professionalism within medical education

U.M. Remer*, C.A. Willemsen, N.R. Bos, K. de Crom, T.A. Sijstermans (Academisch Medisch Centrum, Faculty of Medicine, Amsterdam, Netherlands)

Background: In 2008 the AMC-UvA started with a professional teaching certification programme for teachers in medical education. For this programme there is a need for supplementary education for teachers to overcome identified knowledge gaps concerning didactics.
Summary of work: The identified knowledge gaps in the teachers professionalization programme are: assessment, educational methods, IT & communication, and IT & educational settings. After identifying the knowledge gaps four customized e-learning modules were developed.
Summary of results: The teachers can follow the e-learning modules that are most relevant for his/her own professionalization and can use this to build a portfolio for the certification programme. The e-learning modules contain a theoretical part with short exercises, and a final assessment. With the BOKITO e-learning modules teachers can work on their professionalization in his/her own time, pace and location, which makes sure that certain parts can be skipped or repeated when necessary.
Conclusions: The use of customized e-learning modules will not only result in an increase in knowledge about educational subjects but also in an increase of the quality of staff development. The next step is to combine the developed e-learning modules with the already existing plenary trainings and workshops to achieve blended-learning.
Take-home message: Customized e-learning modules can be used to support teacher professionalism.

6P3

A Six Steps Approach for Standardized Student Assessment

M Hassanien (King Abdulaziz University, Faculty of Medicine, Medical Education Department, Jeddah, Saudi Arabia) Presenter: A Al-Hayani

Background: Assessment plays a major role in the process of medical education. It is assessment and evaluation that often drives the curricula of medical schools and students measure their progress through the curriculum by the examinations they have passed.
Summary of work: This work has 2 directions the first one is towards enhancing all assessment procedures through a unique six steps, an exam work sheet was designed to be

filled by concerned departments and cover the six steps approach. The second direction is towards faculty development to master all the principals of effective assessment. This was accomplished through a serial of comprehensive training courses.
Summary of results: Regarding assessment training courses, there is marked increase in knowledge gained in both groups of trained staff. The results of course evaluation by trainee show high staff satisfaction in both groups. Regarding student's perception towards assessment, about half of students are satisfied by the current assessment system and about only third of them agree that there is formative assessment in these courses.
Conclusions: This project made a platform to build upon it and pave the way to be replicated in all courses offered in the current educational program. There will be annual data about implementing the six steps approach, that offer the chance for comparison and evaluating the intended outcomes.

6P4

Medical students' perceptions of junior doctors as bedside clinical teachers

S Palazzo*, K Massey*, S Mallappa, N Patani, A Mahmoud, A Jethwa, J Pitkin, R Soobrah (Undergraduate Department, Northwick Park Hospital, Watford Road, Harrow, London, HA1 3UJ, UK)

Background: The UK General Medical Council identify a professional obligation to train medical students, hence the need to start early. Bedside teaching (BT) is an important component of medical training, but is often underutilised and quality varies greatly among departments.
Summary of work: We assessed third-year medical students' perceptions of first-year junior doctors (FYJDs) as bedside clinical teachers. Twelve groups of students (n=46) were allocated two FYJDs each during their 10-week clinical attachment. They received weekly bedside teaching sessions focused on history taking and clinical examination. Post-attachment experience was gathered through questionnaires.
Summary of results: Students received an average of 6 teaching sessions. 82% found the teaching useful and felt more confident in their examination skills after this programme. 91% reported the FYJDs possessed adequate clinical knowledge and examination skills and would recommend it to their peers. 86% felt the sessions were relevant to their end-of-year assessments. 95% requested an extension of this programme to other teaching hospitals.
Conclusions: Since BT is valuable for learning essential clinical skills, this tailored programme is an effective supplement to senior-grade teaching.
Take-home messages: We have described a tailored programme to improve the frequency and effectiveness of BT at a teaching hospital by involving FYJDs.

6P5

Faculty development for Staff and Associate specialists (SAS grade) in delivering Associate Educational Supervisor (ES) role- project outline from a District General Hospital in United Kingdom

R Subramaniam*, S Mukherjee*, A Simoes (Directorate of Medical Education, East Kent University Hospitals NHS Foundation Trust, QEQM Hospital, St Peters Road, Margate, Kent, CT9 4AN, UK)

Background: Developmental fund was received from local deanery to further individual learning and professional needs of Staff and Associate Specialists (SAS) doctors. We describe an innovative pilot project for developing SAS doctors to act as Educational Supervisor (ES) for trainee doctors to deliver work placed based assessments and supporting trainee doctors.

Summary of work: The local faculty group will select three SAS grade doctors, who have demonstrated an interest in medical education through their appraisal. They will be selected from Medicine, Surgery and Paediatrics and will be paired with three Consultant educational supervisors who will act as their mentor, during the project lasting for one year starting from October 2011. Local academic board will support these doctors in completing Qualified Educational Supervisors Programme (QESP).

Conclusions: Faculty development project of Associate educational supervisors will help in Career and Development opportunities for SAS doctors. Additional numbers of ES with reduction of educational supervisory burden on existing consultant ES and freeing up time for clinical services. Increased access to ES by trainee doctors. Increased 'learning' opportunities for trainees, e.g. out-patient clinics, clinical procedures. Appropriate use of SAS Grant.

Take-home message: Assimilation of SAS grade doctors within the educational faculty within Hospital.

6P6

Webinars and Discussion: A Well Perceived Module of International Faculty Development

A Khidir*, M Baker* (Weill Cornell Medical College in Qatar, Doha, Qatar)

Background: Weill Cornell Medical College in Qatar (WCMC-Q), which uses the same curriculum as its New York campus, is affiliated with the teaching hospitals of Hamad Medical Corporation in Doha, Qatar. Our partnership presents challenges because our faculties have trained in different medical education systems (North American vs. Arab Board). This faculty development project was designed to enhance communication and develop shared goals in delivering clinical training to medical students, using IAMSE webinars followed by locally facilitated discussions.

Summary of work: Twenty four sessions were two-hours in length. In each session participants watched the webinars, shared a snack, engaged in discussions that focused on applying the webinar content to our local teaching environment, and completed an evaluation

Summary of results: Participants indicated that webinars were effective (69%) and triggered good onsite discussion (79%), which enhanced appreciation of topics (77%), and were beneficial (80%). Discussions increased faculty engagement improving local medical education, and strengthened collegial relations, networking and collaboration between institutions.

Conclusions: Webinars followed by discussion is, not only an effective method to use in international faculty development, but also
helped transform medical education culture in medical school and its affiliated hospital.

Take-home messages: Discussions following webinars support international faculty development.

6P7

FAIMER Regional Institutes in India: Expectations of local stakeholders

Anshu*, Stacey Friedman, Danette McKinley (Mahatma Gandhi Institute of Medical Sciences, Sevagram, India AND Foundation for Advancement of International Medical Education and Research (FAIMER), Philadelphia, USA)

Background: The Foundation for Advancement of International Medical Education and Research (FAIMER) runs three fellowship programs in India. This evaluation was conducted to determine if the curricula of these FAIMER Regional Institutes (FRIs) match expectations of local stakeholders.

Summary of work: Data was gathered from six sources and triangulated. The curricula for program years 2005-2010 was reviewed. Directors of FRIs were interviewed. Review of fellowship applications was performed. Focus group discussions were carried out with fellows at the start of the second year of the program. Local faculty, Deans and MEU coordinators of the fellows' institutes were surveyed.

Summary of results: The curriculum review revealed focus on program evaluation, management principles and educational research. Expectations of Fellows, faculty and Deans about the content of the program differed. Fellows expected the curriculum to contain teaching-learning methods and assessment topics, rather than management or leadership. The Deans/ MEU incharges expected Fellows to acquire knowledge and skills for research, improved teaching, assessment, training others and leadership.

Conclusions: Different stakeholders had different expectations regarding program content, reflecting different priorities and needs. Program leadership needs to consider how to address these various perspectives.

Take-home message: Systematically gathering data on the expectations of various potential stakeholders provides program leadership with a better understanding of local priorities and needs, and the opportunity to use this information to inform program management and planning.

6P8

Learner evaluations of teaching from near-peer tutors – how do these compare with a theoretical understanding of peer teaching?

J Currie*, C Russell*, N Salooja (Faculty Education Office, Imperial College London, Charing Cross Campus, Reynolds Building, St Dunstans Road, London, W6 8RP, UK)

Background: Peer teaching has theoretical advantages for student learners compared to teaching by qualified doctors. Ten Cate and Durning (2007) summarise potential benefits to student-learners linked to cognitive and social congruence and peer modelling.

Summary of work: Year 2/3 medical students were asked to evaluate their bedside teaching experiences from near-peer (year 5) students according to the theoretical benefits above. 31 tutees completed a questionnaire about learning experiences in relation to bedside teaching from a near-peer versus a qualified 'excellent' tutor of the students' choice.

Summary of results: Qualified doctors and near-peer tutors were considered equally easy to learn from but the former were rated more highly on a 1-5 Likert scale with mean ratings of 4.2 and 3.6 respectively. Doctor-tutors rated more highly for visualising difficulties and clarifying misconceptions; near-peer tutors rated more highly for a step-by-step approach and giving useful feedback. The majority of students (22/31) were more comfortable about revealing mistakes with the near-peer tutor. Unstructured comments indicated that students valued 1:1 attention from their near-peer tutor and also an exam-orientated approach to teaching.

Conclusions: Although doctors are rated more highly as tutors, this study supports some of the theoretical benefits to the learner of near-peer teaching.

Take-home messages: Student evaluations can be constructed using theoretical approaches.

6P9

Assessing the validation of supportive leadership behavior (SLB) tool for Iranian medical education leaders: Factor analysis

J Mirmoosavi*[1], M Alavinia[2], M Shirazi[3] ([1]Sabzevar University of Medical Sciences, Educational Development Center, Sabzevar, Iran; [2]Bojnourd University of Medical Sciences, Faculty of Medicine, Bojnourd, Iran; [3]Tehran University of Medical Sciences, Educational Development Centre, Tehran, Iran)

Background: An important aspect of leadership often neglected by managers is supportive leadership.

Summary of work: This cross sectional-correlation study based on a secondary analysis of the data collected from 685 nurses at 25 of Tehran University of Medical Sciences (TUMS) hospitals evaluated the psychometric properties of an Iranian version of SLB. A 40-item questionnaire, mainly extracted and translated from Ohio State, Developmental Leadership, and Hersey and Blanchard's Situational Theory Questionnaires, with some new questions based on experts views was developed. This was retranslated into English and sent to Gerry Larsson, an authority in the field, to get his approval. Content validity was achieved by experts consensus and reliability by a test- retest with a 10 day interval.

Summary of results: Kaiser-Meyer-Olkin measure showed 95% of variance was caused by the underlying 5 factors with eigenvalues of 15.31, 3.99, 2.69, 1.48, and 1.38. Although they accounted for 62% of the variability in the original variable, cumulative variability explained by them was about 56%. Consistent with the theoretical conceptualization of the instrument, the 5-factor solution was accepted: building up teamwork, leading coaching, demonstrating respect, recognition, and dictator leadership. The internal consistency of all the factors was 0.90. Discriminate validity was also established. Farsi SLB questionnaire was valid and reliable enough to be confidently used in the Iranian context.

Conclusions: Regardless of the strength of a tool, it should be standardized for every new context.

6Q   Posters: Simulation

6Q1

Shadow Housemanship Oncall Emergency Simulation – Experience With High Fidelity Simulation

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Background: High fidelity simulation provides an avenue to bridge the gap between theory and practical. This concept fairly new and not widely used in medical school in Malaysia. We aim to compare participants perception with regards to their preference and confidence level between video and simulation teaching.

Summary of work: Students who just past their final exam were invited to take part in the Shadow Housemanship Oncall Emergency Simulation (SHOES) session. This program involves a lecture followed by a video presentation of ACLS management. They were then broken into small groups and asked to manage an ACLS scenario on a mannequin. Questionnaires were given after the video presentation and after the simulation session.

Summary of results: 71 participants took part in this session.   77% of them had been involved in resuscitating a patient before. Although the video session was preferred compared to lectures, problem based learning and small group sessions (75%), more prefer simulation session (89%). They also enjoyed the simulation session (91%) compared to video session (77%). The increased in confidence level in dealing with acutely ill patients were higher after simulation session (85%) compared to after video session (77%). However, in terms of feeling more prepared in starting housemanship, there was no difference in either method of teaching.

Conclusion: Simulation using high fidelity simulation should be part of compulsory component in Malaysia's medical school curriculum.

Take-home message: Simulation can enhance medical students learning experience in a safe and controlled environment.

6Q2
Authentic assessment of clinical competence of nursing students at the University of the Free State, South Africa
A Joubert, J de Villiers (School of Nursing, P.O. Box 339 (Int 99), University of the Free State, Bloemfontein 9300, South Africa)*

Background: The School of Nursing, University of the Free State, South Africa, has received a grant worth R16 million to transform its programmes. A teaching and learning model was developed to support the School's venture into authentic high-fidelity simulation and the integration of theory and practice in a safe environment.

Summary of work: The model consists of four components, namely activation of existing knowledge, engagement with learning material, demonstration of competence, and adaptation. Six simulation scenarios were developed using a design toolkit. Criteria to indicate performance requirements or competency were also indicated. To date, four second-year, six third-year and 15 post-basic year students were exposed to the authentic high fidelity simulation scenarios. Permission was obtained to use the footage produced in each session. A quantitative method, using an audit as research technique and descriptive design, is planned. A checklist based on performance requirements will be used to audit the footage and to assess each group's competency, while the researchers will do the initial data analysis. To ensure rigour, the findings will be submitted to the facilitators, as well as the simulation and technology coordinator. The findings will be described and available for dissemination during the conference.

6Q3
Virtually perfect: An action research project to evaluate the effects of a computer software package upon standards of care
Bernie Keenan, Cathy Kitchen*, Katrina Wright*, Nigel Wynne (Faculty of Health & Community Care, Birmingham City University, Room 228 Bevan House, Westbourne Rd, Edgbaston, Birmingham B15 3TN, UK)*

Background: Currently two thirds of UK Acute General Hospital beds are occupied by elderly people and of these the frailest and most vulnerable group are surely the 61% of these who have a psychiatric illness.

Summary of work: Colleagues from both academic and general nursing teams at Birmingham City University and 2 NHS Trusts have been involved in a series of initiatives to achieve more comprehensive and 'patient centred' approach to their care. This has involved a benchmarking study related to the assessment and care of patients with both mental health and physical problems. Part of the response to the issues identified in the study has been the creation of The Virtual Case Creator (VCC). The VCC is software that supports rich, highly interactive, multimedia, online, scenario based learning. The VCC provides a 'safe' environment to make clinical decisions and develop a range of cognitive skills.

Summary of results: Results from the first year of the study indicated areas for improvement in terms of cognitive assessment, care planning and patient involvement in care. The benchmarking was repeated following the introduction of a virtual ward package, results indicate greater improvement in the Trust using the virtual ward package.

6Q4
The value of actors to teambuilding and development of the primary healthcare team
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Background: Actors have been used for many years in the training and formative development of doctors. This project builds on earlier work using actors to help build and develop the wider primary care team. The aim of the training is to give the 'front of house' primary care team experience in dealing with challenging patient encounters, and to test out their responses to emergency situations in a high-impact training session.

Summary of work: An evaluation was undertaken to i. look at the method and process of the sessions and ii. to gather feedback from participants. Observational data was collected at a sample of training sessions, along with

written feedback from participants. The data were analysed to provide an evaluation of the usefulness of the approach and method, and to identify how this type of training may be developed further.

Summary of results: This project is on-going. Findings of the evaluation of this method in relation to the research questions and wider literature will be shared.

Conclusions/Take home messages: The project considers how to harness the potential of simulation training for the wider primary health care team, and how it may be integrated into the working day of a practice.

6Q5

Cost: The Missing Outcome in Simulation-Based Education Research: A Systematic Review

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Background: The costs of technology-enhanced simulation remain unknown. Appraising the value of simulation-based medical education requires complete analysis of cost components. We aimed to summarize studies that contain an economic analysis of simulation-based medical education for training of health professions learners.

Summary of work: Systematic search of MEDLINE, EMBASE, CINAHL, ERIC, PsychINFO, Scopus, key journals, and review bibliographies through May 2011. Original research in any language evaluating the cost of simulation for health professional learners. Reviewers working in duplicate abstracted study quality, information on learners, instructional design, cost components and outcomes.

Summary of results: Of 10,903 articles we identified 967 eligible studies. Only 59 studies (6.1%) reported any cost components and, of these, 15 (1.6%) provided information on the cost of training compared with another instructional approach. Studies reported 11 of 19 possible cost components; 8 essential cost components were not reported by any study. The median number of cost components was two (range 1-9), and the most commonly reported were cost of the simulator (n=42 studies, 71%) and the training materials (n=21, 36%).

Conclusions and take-home messages: Cost-reporting in simulation-based education research is infrequent and incomplete. We propose a comprehensive model for accounting and reporting costs in medical education.

6Q6

Design and Evaluation of a Simulation-Based Clinical Correlation Pedagogy in an Anatomy Curriculum for First Year Medical Students

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Background: Anatomy is the introductory course taught to first year medical students at Perdana University Graduate School of Medicine. It is non-cadaveric, teaching surgical and radiologic approaches emphasizing clinical anatomy. We designed and implemented weekly simulation-based clinical correlations as part of anatomy curriculum.

Summary of work: Students rotate through three stations utilizing high fidelity mannequins and partial task trainers designed around major anatomical regions being taught in anatomy. Curriculum evaluation for each session includes pre- and post-tests and qualitative evaluations of curricular efficacy using questions based on five-point Likert scales.

Summary of results: Twenty-three students completed first session on thorax. Mean pre-test score was 42.8% versus 93.3% on post-test. For each learning objective, ≥ 95.7% of students agreed or strongly agreed that stations met objectives. Themes from qualitative questions: 1) students enjoyed interactive format; 2) stations deepened anatomical understanding, reinforced lectures; 3) sessions enabled students to apply anatomy to "real life" clinical situations; 4) students felt rushed and wanted more time per station.

Conclusions: Simulation-based clinical correlate modules can teach students key anatomical concepts and demonstrate clinical relevance of anatomy in a format that is well-received by students.

Take-home messages: Simulation represents an effective teaching modality within pre-clinical curricula.

6Q7

Fostering students' clinical skills confidence using OB/GYN hybrid simulation

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Background: Medical students can encounter barriers to OB/GYN patients in the Middle East. Due to regional socio-cultural values, students may have limited patient contact to learn basic OB/GYN clinical skills.

Summary of work: Twenty-one OB/GYN Clerkship students at a US medical school in the Middle East participated in breast and pelvic exam simulation workshops. Students then performed in simulated single-patient gynecologic encounters using a hybrid-standardized patient format. Students completed post-encounter surveys to assess their perceived level of preparation and comfort regarding obtaining sexual histories and performing gynecologic exams.

Summary of results: Preliminary data show that most students felt both prepared (67%) and comfortable (81%) to elicit a sexual history, and both prepared (86%) and comfortable (81%) to perform a gynecologic exam. All students thought SP and faculty feedback was helpful, and all students thought the simulation sessions were beneficial to their learning.

Conclusions: This on-going study suggests that OB/GYN simulation training contributes to students' confidence in basic history and examination skills. Students also welcome direct and specific constructive feedback.

Take-home message: A structured simulation curriculum allows students to gain confidence in basic OB/GYN skills that may be difficult to acquire with real patients.

6Q8

Comparison clinical examination training and student satisfaction of learning with using manikins in skill lab with trained on the client's bedside

ZS Hashemi*[1], H Shahdadi, M Heydari, N Masinaei, Sareh Vaymandy (Zabol University of Medical Sciences, Nursing & Midwifery Faculty, Zabol, Iran)

Background: Clinical training has its own problems, such as client rights, respect, lack of consent for repeated examinations etc. We compared education of pregnancy examinations and student satisfaction with using manikins in skill lab with training on the patient.

Summary of work: In this case-control study, sample was 50 midwifery students who had to pass pregnancyt exams unit. They received theory education by a master. Then they divided into 2 groups randomly. Clinical training was applied by a master in 3 sessions for each groups, one group in skill lab on manikins and other in a clinic on clients. Manikins were adjustable for changing the rate and power of the fetal heart. After 3 sessions, 2 groups assessed by OSCE and switched their places. 3 weeks later they assessed on clients in clinic by OSCE, checklist and consent form of education method. Mean scores of two groups were compared.SPSS17 used for analysis.

Summary of results: In first exam, the mean score of case study group was 18.37±.94, as compared with 18.33±.932 for the control group. (p=0.00). Although we found the mean score of case group was higher than control group, there was no significant difference between mean scores of 2 groups in final OSCE exam. 98% of students announced that it would be better if they first trained in skill lab and after trained on clients.

Conclusions: It seems manikins can be used in place of clients in clinical courses.

6Q9

The use of dry bone and cadavers in orthopaedic surgical training: which is more effective?

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Background: Surgery has traditionally been a time based apprenticeship but in recent years due to increasing pressures on training and factors such as the European Working Time Directive there has been a shift towards competency based surgical training. There has also been an increase in the use of skills labs utilising simulators, dry bone and cadaveric teaching to address the shortfall in teaching opportunities. Despite the increased use of expensive cadavers there is little evidence to show that it is more effective than dry bones in teaching orthopaedic surgical skills. The aim of this study was compare the effectiveness of cadaveric versus dry bone teaching in surgical training.

Summary of work: Two groups of trainees were randomly allocated to dry bone and cadaveric teaching. Trainees were then objectively assessed regarding their surgical skills in the fixation of forearm and ankle fractures.

Summary of results: Trainees taught using cadavers had significantly better scores.

Conclusions: Cadaveric teaching while more expensive is superior to dry bone in teaching orthopaedic surgical skills.

Take-home messages: We recommend the use of cadaveric teaching despite the increased cost.

6Q10

Experiences with simulated patients (SPs) in teaching of medical students in the faculty of medicine, university of Colombo, Sri Lanka

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Background: Following completion of introductory basic sciences, students are exposed to clinical work following a short orientation course. Due to lack of experience several difficulties were encountered in proper communication with patients in the clinical setting. An academic programme incorporating stimulated patients was initiated with the objective of giving them basic experiential learning in communication skills.

Summary of work: Students of University of Visual and Performing arts were invited to be SPs. Activity was conducted in ten-student groups with one SP and a tutor. Students interviewed the "patient" individually. Structured feedback was obtained from students, SPs and tutors by using questionnaires. A total of 94 students provided feedback.

Summary of results: Most students (94%) were satisfied with the programme and SPs. 51 % of students were comfortable with SP while 71 % thought the SPs natural. Most students (80%) found the activity helpful and 82 % students thought the programme motivated them. Majority

of the time SPs felt the students attended to the comfort of SP, used appropriate questions, and listened well (86 %, 62 % and 52 % respectively). SPs noted deficiencies in eye contact in 33% of students. Tutors were satisfied with students' initiation of session, information gathering, understanding patient's perspective and building relationship with SPs. (76%, 74%, 79%, and 81% respectively).

Conclusions: Students found the activity to be helpful. SPs found communication skills of students satisfactory, but aspects of rapport (eye-contact) needed improvement. Tutors found the students interacting well with SPs. Take-home message: SP can be used to improve communication skills in clinical settings.

6Q11

Exploring Standardized Patients' Assessment of Students in an OSCE Context

A Jones*, A Shah, R Hatala, J Fletcher, A Busse, M Van Oeveren, G Pachev (University of British Columbia, Faculty of Medicine, 910 W 10th Ave, Vancouver, BC, Canada)

Background: The use of standardized patients (SPs) as OSCE assessors has the potential to alleviate the costs of this educationally valuable examination and allow for more frequent administration and/ or robust blueprinting of the exam. Before using the SP ratings for summative assessment, however, it is important to establish the precision of these scores and the limits of the inferences about students' competencies that can be made on their basis.

Summary of work: To explore these issues, sets of items for the SPs were developed to target aspects of the students' performance related to professionalism, communication and physical exam delivery and then administered in a large-scale OSCE.

Summary of results: This study reports descriptive statistics, reliability estimates and initial exploration of the validity (through comparison to analogous scores by examiners and multiple-regression analyses of SP's satisfaction ratings).

Conclusions: Both SPs and examiners can be used to reliably assess students' professionalism and communication competency. SP and examiner assessments are complementary to each other and measure different aspects of the same competency.

Take-home message: There is value in capturing both SP and faculty-examiner ratings of students' competency.

6Q12

Transfer of urethral catheterization skills from simulation training to performance on real clinical patients: a randomized controlled trial of the additional effect of video instruction

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Background: The aims of the study were to evaluate the short and long-term effect of urethral catheterization (UC) simulated skills training on performance on real patients and to examine whether watching a video of the procedure immediately before assessment enhance performance.

Summary of work: This was an experimental study of the effect of a UC simulation-based skills course on medical students' performance on real patients including a randomized controlled trial of the additional effect of video instruction. Sixty-four students participated in the study, preceded by a pilot study with 24 participants.

Summary of results: The pilot study demonstrated sufficient inter-rater reliability, ICC 0,86, and a significant ability to discriminate levels of competence when using the assessment form, p=0.001. In the study more then 90% of students scored a level of acceptable performance or better when tested on real patients. There was no significant difference in the total score between the 'one-week' and the 'six-week' group and no significant difference between the video and the control group.

Conclusions: Medical students demonstrated good transfer of UC skills learned in the skills lab to real clinical situations up to six weeks after training. An instructional video did not improve clinical UC performance.

6Q13

How to evaluate the role-play of simulated patients: development und validation of a new questionnaire

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Background: Simulated patients are successfully integrated in education at many medical faculties. Yet only few studies address the quality assessment being crucial for the outcome.[1]

Summary of work: We developed and validated a tool to assess the quality of simulated patients' role-play. In collaboration with experts, teachers, simulated patients and students we collected and prioritized criteria of good role-play and operationalized them into a 3-subscale questionnaire. The questionnaire was applied in 2 pre-tests with several video role-plays. After the first pre-test items were refined and the subscales improved by changing items between them.

The final questionnaire was validated during an OSCE in parallel use with the already validated MaSP2 by trained observers.

Summary of results: The reliability of 89 final questionnaires was analysed. Cronbach's alpha was 0.86. MaSP2 reliability was 0.63. Analysis of subscales revealed an alpha of 0.77 for communication (5 items), 0.85 for information (4 items) and 0.69 for realism (7 items). History taking, physical examination and patient management analysis will be presented during the conference.

Conclusions: The questionnaire is a highly reliable tool to assess the quality of simulated patients' role-play and offers new possibilities in quality management.

Take-home messages: Simulated patients should be assessed to evaluate the quality of their role-play and to enhance quality individually.

1 Cleland JA, Abe K, Rethans JJ. The use of simulated patients in medical education: AMEE Guide No 42. Med Teach (2009); 31(6): 477-86.
2 Wind LA, van Dalen J, Muijtjens AM, Rethans JJ. Assessing simulated patients in an educational setting: the MaSP (Maastricht Assessment of Simulated Patients). MEDICAL EDUCATION (2004); 38: 39–44.

6R   Posters: Curriculum Evaluation

6R1

The outcome of graduates from the United States Naval Hospital Okinawa Japanese National Physician Internship Program

Norimitsu Kuwabara*[1], Tadao Okada[2], Matthew A. Broom[3], Noa C. Hammer[4] ([1]Kishiwada Tokushukai Hospital, Osaka, Japan; [2]Kameda Family Clinic Tateyama, Chiba, Japan; [3]St. Louis University School of Medicine and Cardinal Glennon Children's Medical Center, St. Louis, MO, US; [4]United States Naval Hospital Bremert)

Background: United States Naval Hospital Okinawa (USNHO) is the largest overseas Naval Hospital outside of the United States. In 1990, USNHO started the Japanese National Physician Internship Program. This program was designed to acquaint graduates of Japanese medical schools with western medical practices and medical English skills. It also serves as a stepping stone for Japanese doctors interested in overseas medical career.

Summary of work: We conducted a retrospective cohort study of the career record of Japanese intern graduates after USNHO training via e-mail or phone.

Summary of results: Among the 111 graduates, 80 people (72%) pursued work abroad. 72 graduates (65%) soon began work as a practicing clinician abroad. Graduates entered different fields of US residency programs, with Internal Medicine (27 graduates) being the largest specialty followed by Emergency Medicine (10 graduates), Pediatrics (10 graduates), Family Medicine (9 graduates).

Conclusion: In a survey of the program's graduates, it is thought that USNHO JNP Internship enhance the success rate of obtaining residency positions in overseas medical education. Further study is needed to compare the rate of success of matching into US residency positions between JNP intern physicians and their Japanese counterparts who do not participate in a similar transitional immersion internship program.

6R2

The relevance of certain key topics and their delivery pattern in the Ist year of MBChB program at Walter Sisulu University

E.Umapathy*[1], J Iputo[1], B Umapathy[2] ([1]Department of Physiology; [2]Department of Medical biology, Faculty of Health Sciences, Walter Sisulu University, Mthatha, RSA)

Background: The failure rate in the first year of MBChB program is more than any other year and is due to some of the first semester courses. Last year survey identified certain modules in the first year to be problematic. Certain topics covered during this period and their delivery mode also was a major concern.

Summary of work: The present study is aimed to link the causes and effects of the above factors linked to the high attrition rate in the first year of the MBChB program and to compare the responses from this year to last year. 103, First year medical students were asked to fill a similar questionnaire that was used last year which focused on the above problems.

Summary of results: 55% of students found the semester II, to be easier than semester I. Human behavioural sciences (70%) and computer skills (79%) were identified to be the difficult modules in I semester. The GIT block seems to be more easy (65%) than the cell block and the reason being better integration in the GIT block and this is different from last year finding. Content overload is the main reason identified as being difficult in the cell block (80%) and this also is different from last year's findings. Lack of facilities was not identified as the reason for finding a particular block difficult which is different from last year response.

Conclusion: There is urgent need to look at the course content and delivery mode of certain key modules in the first year medical program at WSU.

6R3

Issues and challenges in bringing reform in UGME in developing countries

Rahila Yasmeen (Riphah Academy of Research Education, Riphah International University, Islamabad, Pakistan)

Background: Over the last few years medical schools and health care delivery centers in developing countries facing with the variety of challenges from patients, society doctors and students. In response to this reforming in

undergraduate medical curricula took place. The objective of this paper is to identify the factors (issues& challenges) which can influence the successful implementation of reformed curriculum.

Summary of work: As an ongoing activity of program evaluation at the end of first & second year in 2010, Focus Group Discussions & feedback questionnaire (on 5 point likert scale) comprises of 19 items, duly filled by the teaching faculty, module developers & coordinators, students and medical educationist.

Summary of results: Feedback of faculty & medical educationist identify the 11 issues/factors and challenges. On analysis of quantitative data, 85% of student's favors the integrated system of study, better learning through SGD/PBL as compares to lectures. On analysis of qualitative research, students supports that PBL facilitates & promotes the acquisition of soft skills and generic competencies.

Conclusions and Take-home messages: Curriculum reforming needs careful attention in its planning before its implementation to make its successful. The factors (issues& challenges) which can influence its successful implementation are; all stake holders (BODs, BOGs, Dean, department heads, faculty and students) must be involved in its planning and they should own it and train (faculty development) in its usage and implementation.

6R4

Getting the (Assessment) Balance Right

S Miller*, S Carr (The University of Western Australia, Education Centre, Faculty of Medicine, Dentistry and Health Sciences, 35 Stirling Hwy (M515), Crawley, WA 6009)

Background: A project investigating assessment design and practices of grading was conducted to enhance the educational value in assessment processes and find ways of achieving greater efficiency.

Summary of work: A review of assessment tasks for courses in the Faculty of Medicine, Dentistry and Health Sciences was conducted. This involved identifying the range of summative assessment tasks used and their overall weightings in the each of the programmes. Reports were produced summarising the data and providing recommendations to the Schools. The documents also outlined how effectively the courses met the educational principles of the University and the learning outcomes of the programme. Workshops were then conducted to assist staff members with implementation of any recommendations.

Summary of results: The reports were well accepted by staff in the individual Schools. The major topics centred on examinations, group work and research skills.

Conclusions: The project highlighted that assessment is an integral component of a teaching programme and that a balance of assessment tasks, while not unduly overloading teachers, will enhance the student experience and help to ensure that graduate outcomes are being achieved.

Take-home message: A course perspective of assessment allows educators to reflect on the student experience of learning.

6R5

A Study of Nursing Education Efficiency from the Perspectives of the Nursing School graduates

Shayesteh Salehi*[1], Parastoo Afghari[2], Fariba Taleghani[3] ([1]Islamic Azad University, Khorasgan (Isfahan) Branch, Faculty of nursing and Midwifery, Isfahan, Iran; [2]Isfahan Medical Sciences University, School of Dentistry, Isfahan, Iran; [3]Isfahan Medical Sciences University, Nursing and Midwifery Research Centre, Isfahan, Iran)

Background: One of the important aspects of the efficiency of the educational system is judgment about the effect of the system output in meeting the environmental needs. This study aims at investigating the nursing educational system through studying the status of the graduates and their viewpoints regarding education in the nursing school.

Summary of work: This study is a descriptive analytical research. The sample was 100 graduate nurses.

Summary of results: The average of the points in the section related to professional growth and improvement were 2.13 and ±0.36. Satisfaction with the obtained educational experiences showed 2.08 and±0.48. Achievement of the educational objectives 1.95 and ±0.51 and finally individual improvement were found to be 2.70 and ±0.35.

Conclusions: As for the achievement of the educational objectives the results do not show a satisfactory index. On the basis of the results found in this study, certain changes are recommended to be made in the educational system.

6R6

What aspects do students evaluate favorably or not in clinical training? An analysis of students' comments using the natural language processing technology

S Ishii*, F Takahashi*, K Kameoka, Y Arata, H Kanatsuka (Tohoku University School of Medicine, Office of Medical Education, Sendai, Japan)

Background: Students' comments on educational activities provide precious information for curriculum evaluation. However, it is hard to analyze their free writings when the volume is large.

Summary of work: We applied the natural language processing technology (NLPT) to the analysis of students' free comments on the strengths and weaknesses of clinical training courses at Tohoku University School of Medicine. The analysis using the NLPT successfully yielded both qualitative and quantitative data, and the results were utilized in curriculum reformation.

Summary of results: Software developed specifically for the NLPT was used to analyze approximately 6,000 free comments written in Japanese by 5th-year students who underwent clinical training at Tohoku University Hospital during 2005 and 2006. The NLPT revealed that the strengths of clinical training were #1. "opportunities" plus "perform, can do, see, hear, touch", #2 "doctors" plus "enthusiastic, kind," and #3. "explanation" plus "in-depth, understandable". The weaknesses were #1. "purposeless, neglected" plus "time", #2. "course duration" plus "short" and #3. "explanation" plus "difficult". These results were used as the leverage for major curricular reformation in 2008. The analysis of students' comments after the curricular change is currently in progress.

Conclusions: The NLPT can analyze a vast amount of free comments both in qualitative and quantitative ways, which offers rich information for curriculum evaluation.

Take-home messages: NLPT can be applied to curriculum evaluation.

6R7

Internal Evaluation of Department of Science Faculty, Shahid Bahonar University of Kerman, Iran

F Rafiezadeh*, B Shabiani (Medical University for Medical Education (CME), Kerman, Iran)

Background: One of the methods that has long been applied for improvement of higher education affairs is accreditation. Quality Improvement in higher education affairs are very important and must be carried out carefully. Internal evaluation of educational groups is one way to analyze the quality of education and current status so that measures for quality improvement can be carried out. Access to relevant information and feedback is essential for any program, especially an educational program.

Summary of work: Process (total=250 students, 12 members of faculty, 178 graduates and management), data analysis by spss software.

Summary of results: According to the results, general education system of training sciences group of Shahid Bahonar University of Kerman is in a desirable situation. Getting 60% of total scores was set as desirable, 50-60%, semi desirable and less than 30% not desirable.

Conclusions: Science faculty Shahid Bahonar University of Kerman has a desirable situation but must be improved in factors which didn't get desirable scores such as management, educational programs, and the research process. Feedback must be given to academic staff to revise the different methods of education and also, how and when to do the rotations in other departments.

6R8

Reflection and mentoring amongst foundation medical trainees

YP Liew, AML Yong, ESF Chong, JCS Tan, M Mohidin, DSNA Pengiran Tengah* (RIPAS Hospital, Medical Education Centre, Bandar Seri Begawan, Brunei Darussalam)

Background: Reflective practice and mentoring have been shown to be useful for guiding trainees and form part of our foundation training programme. Our foundation trainees (postgraduate years 1 and 2) have trained in different settings outside Brunei with variable exposure to reflective practice and mentorship.

Summary of work: All trainees in our foundation training programme were sent an online feedback questionnaire to find out their views of reflective mentoring at the end of the academic year.

Summary of results: Response rate was 95% (20/21). More reflected informally than formally on a regular basis (75% vs. 10%). All found reflective practice useful. All were able to reflect with their mentors. Within one year, formal mentorship meetings occurred once for 35%, 2-5 times for 60%, >5 times for 5%. 80% found mentorship meetings quite useful and 20% very useful. Of 5 free text comments, 1 cited geographical distance as a barrier, 3 felt well-supported and 3 raised approachability as important.

Conclusions: The majority found reflection and mentoring useful. Most contacted their mentor on a regular basis. Factors inhibiting and facilitating reflection and mentoring should be studied further in this group.

Take-home messages: Reflection and mentoring is feasible and useful, and should be mandatory in foundation medical trainees.

6R9

Evaluation of the workshop on social accountability in medical education by the Central Committee of the Medical Education Development Center in the fourth summer school students in Shiraz

P Neamatollahi, A Khaledi*, M Bahrami, M Ghorbani Nezhad, N Nasimi (Education Development Center, Shiraz University of Medical Sciences, Shiraz, Iran)

Background: The beginning of the century presents medical school with unprecedented challenges to raise the level of academic practitioners. Regarding the challenges the concept of social accountability was delivered. With the exciting subject of study and related articles we decided to hold aworkshop to transfer the concept and ask students their views.

Summary of work: We had at first brief look at medical education in the past and expressed fundamental principles of social accountability such as: outcomes; competencies and accreditation and evaluation methods. In the second part the WFME standards in the area following topics were investigated: Research-based education, adequate facilities, Scholarship, Alignment, Management and Internationalization. At the end FAIMER model as an example of social accountability-based programs was presented.

Summary of results: Students agreed that based on the information presented was well organized (98.2%). The majority (94.8%) believed that the amount of new material in order to create new attitudes was acceptable and the workshop was able to answer questions related to the topic (96.6%).

Conclusions: Holding workshops on new topics and practical ones are an undeniable part of EDC's programmes. Beside the community planning and training doctors have the ability to respond to the needs of their community, which is the basic concept of social accountability.

Take-home messages: Considering the current state of medical education in the community and the steps in changing health-related needs and improving the educational system with the holding of such workshops will be available.

6R10

Evaluation of an Evidence-Based Medicine Curriculum among the 4th Year Students at the Faculty of Medicine, Suez Canal University

N Hassan*[1], W Talaat[1], S Hosny[2], A Ekram[3] (Suez Canal University, Faculty of Medicine, [1]Medical Education Department; [2]Department of Histology; [3]Department of Occupational Health, Isamilia, Egypt)

Background: The teaching of Evidence-Based Medicine (EBM) has been increasingly integrated into curricula at all levels of medical education. While much previous EBM researches has focused on postgraduate and continuing medical education, free few reports have looked at the undergraduate education. A growing body of literature exploring EBM teaching and learning conform the research deficit in undergraduate EBM education and calls for further work in this area.

Summary of work: The aim of this study was to evaluate the introduced Evidence-Based Medicine curriculum among the 4th year students. The study was an interventional one using pre- and post-test. Students in the fourth year were divided into four educational groups (rotations). Sample was taken by simple random sampling method from these groups.

Summary of results: There were statistically significant increases in students' mean scores in the post-test in all the regarding knowledge, skills, and attitude toward EBM compared to pre-test mean scores. The overall evaluation of the curriculum was satisfactory.

Conclusions: Teaching EBM to undergraduates' students can improve their competences in EBM.

Take-home messages: Introducing EBM to the students during clinical clerkship provides students with an opportunity to practice its skills.

6R11

Pathology for Pharmacy Students: Practical measures that enhance the learning experience

Tan Kong Bing*[1], Nga Min En[1], Chui Wai Keung[2], Teh Ming[1] ([1]Department of Pathology, Yong Loo Lin School of Medicine, National University Health System; [2]Department of Pharmacy, Faculty of Science, National University of Singapore)

Background: The study of the pathological basis of disease forms an important part of the Pharmacy undergraduate programme. Topics such as cell injury, haemodynamic disorders, inflammation and cancer are covered. The authors were appointed as module coordinators in 2009 and introduced a selection of practical measures seeking to enhance the module.

Summary of work: From the 2009 cohort, the emphasis was on *optimizing communication*. Lecturers and core topics were introduced during the orientation lecture. Periodic meet-ups were arranged between the module coordinator and the students. From the 2010 cohort, *enhancing structure and relevance of the course* was the priority. Tutorials were made more structured and clinically-relevant and the textbooks recommended were more concise in nature. The perceptions of the 2009 and 2010 cohorts of students were compared with those of 2007 and 2008. The core module content remained unchanged.

Summary of results: The proportion of the students rating the module as good/ excellent (4-5 out of 5) was 52.7% in 2007/2008 and rose to 64.8% in 2009/2010 (p=0.0171). The proportion of students finding the module difficult/ very difficult (4-5 out of 5) was 86.2% in 2007/2008 and 80.3% in 2009/2010 (p=0.133).

Conclusions: This analysis reveals significant improvement in the students' evaluation of the module, following the introduction of the above-mentioned measures. For the future, the emphasis will be on a *consolidation* theme, concentrating on the streamlining of topics as well as institution of post- continual assessment reviews.

Take home messages: Practical measures that improve teacher-student rapport and that provide clarity and simplicity of the subject material improve students' perception of a course of study.

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SESSION 7   SIMULTANEOUS SESSIONS
1400-1530 hrs

7A   Symposium: Assessment for Selection
David Prideaux[1], Fiona Patterson*[2], Chris Roberts*[3], Ruth Sladek*[1] ([1]Flinders University, Adelaide, South Australia; [2]Work Psychology Group, UK; [3]University of Sydney, NSW, Australia)*

In this symposium there will be further discussion and extension of the idea that selection for medical and health professional courses should be regarded as the first assessment undertaken by students. As such selection processes should conform to the principles of good assessment.
Three key ideas will be discussed. The first is that that selection should be programmatic with different selection variables assessed and combined in an overall programmatic approach from which decisions can be made. The second focuses on the different selection variables and will challenge the concept of a cognitive and non-cognitive divide in selection measures. There will be particular attention to the research evidence on the multiple-mini interview in selection programs. The final key idea is the 'political validity' of assessment for selection. This will be applied to the literature on widening participation in medical and health professional education.
There will be three short presentations with plenty of opportunities for participant discussion. The aim is to build a consensus around the three key ideas to provide an underlying conceptual framework for assessment for selection.

7B   RHIME (Ron Harden Award for Innovation in Medical Education) Presentations 1

7B1
Assessing social accountability in health professional education: development and piloting of an evaluation framework across four continents
Sarah Larkins, Robyn Preston, Rex Samson, Filedito D Tandinco, Iris C Lindemann, David Buso, Marie C Matte, Simone J Ross, Bjorg Palsdottir, Andre-Jacques Neusy (James Cook University, Australia)*

Background: In recent years there has been increasing recognition that medical education institutions have a responsibility to train graduates with the required competencies and attitudes to address health inequities and respond to priority health needs. Eight health professional schools striving towards greater social

accountability founded the Training for Health Equity Network (THEnet) in 2008. THEnet's work was initially hampered by the lack of robust tools evaluating the progress of education institutions towards social accountability. The focus of health professional school accreditation (particularly medical schools) was firmly on the curriculum and teaching, with little attention to governance, community partnerships, distribution of resources or broader outcomes. Thus, the initial priority chosen by THEnet was to develop a comprehensive Evaluation Framework to identify key factors that affect a school's ability to positively influence health outcomes and health systems performance and to develop ways to measure them across institutions and contexts.
Description of the innovation: THEnet evaluation framework was developed and tested collaboratively across six of the THEnet schools. The Framework built on Boelen and Woollard's (2009) Conceptualisation, Production and Usability (CPU) model. The goal of the framework is to assist schools to address the needs of underserved communities through creating an agreed process, set of tools, measures and ultimately standards for assessing the progress of health professional schools towards social accountability. The three sections of the framework consider: How does our school work?; What do we do?; and What difference do we make? The framework includes key components, each linked to a series of aspirational statements, indicators and suggested measurement tools. Five schools have completed pilot implementation of the framework in their own contexts, involving staff workshops, documentary/existing data review and focus group discussions with faculty, students and community members.
Results of the evaluation: Although labour intensive, the framework was useful and applicable at all partner schools, and provided useful findings at individual school level, at network level and to inform the broader debate about socially accountable health professional education. Initiatives to implement the framework more widely are underway.
Applicability and potential educational impact: The framework is not designed as a summative pass/fail exercise, but rather a formative exercise to help schools take a critical look at their performance and progress towards social accountability. The framework effectively aids in identifying strengths, weaknesses and gaps, with a view to schools utilising the findings for continuous self-improvement. The framework has proven effective as an agreed process, set of tools, measures and ultimately standards for evaluating socially accountable health professional schools. The framework is also a comprehensive tool to identify key factors that affect a school's ability to positively influence health outcomes and health systems performance and to develop ways to measure them across institutions and contexts.
Adaptability in other settings: To date, pilot implementation has been successful across a range of

settings in both high and low income countries. Ongoing implementation is expected to confirm the applicability and utility of this framework in a range of settings, potentially including accreditation.

7B2

National Assessment of Core Surgical Trainees in England & Wales

H J Scott, V Ridley Pearson (KSS Deanery, London, UK)*

Background of why this innovation is necessary: Core Surgery recruitment and selection has been run locally within the NHS since the inception of surgical training. There was no Quality Assurance or consistency in the process. Since 2007 (MTAS) numerous rounds of assessment and selection took place with an expense to public money. Consequently there were enormous hours wasted by applicants and consultant interviewers.

Description of the innovation: At a Heads of School meeting we volunteered to look into setting up and piloting a National Selection process. A Project Steering Group (PSG) was created with good representation of all stakeholders. A lead deanery managed the project. All 14 deaneries in England and Wales took part. The PSG created a question bank that had clear probes and positive and negative indicators to provide consistency. A national scoring matrix was designed to allow for a clearing process and a national cut-off score was agreed and implemented. Eligible candidates were invited to an interview at their top two deaneries. There were three stations (Clinical, Management and CV/Portfolio) with all areas assessing communication skills. Members of the PSG attended numerous communication exercises throughout the country. A Quality Management Group consisting of 5 Lay Advisors was created to independently review the pilot year. They attended every interview at each deanery providing daily and weekly reports on the fairness and consistency of the project ensuring that the assessment of the candidates were in line with national guidance. Long listing, interview arrangements, preferencing, ranking, online releasing of offers and clearing was centralised. A dedicated website provided candidates understanding of the process and availability of programmes/rotations.

Results of the evaluation: Over a 7 week period approximately 672 Consultants interviewed 1283 candidates over 2319 interviews for 649 posts. 100% Fill rate of all deaneries. The website received over 250,000 hits within 6 months of launch. The Quality Management Report supports national recruitment going forward, increasing transparency, equality and fairness for both deaneries and trainees. National selection has increased the efficiency for assessor and interviewee and the clearing structure has assisted the100% fill. The process will be a full UK venture next year. It has been estimated that with the abolishment of shortlisting and multiple assessment rounds, the national process has saved the NHS £1million.

Applicability and potential educational impact: The results of the selection process will be evident at the end of the 2 years training. The robustness of the assessment process including the focus on clinical, management and commitment to specialty will enable competent trainees to score well.

As consultants are not spending time on multiple recruitment rounds they have more time to train core trainees.

Adaptability in other settings: The Quality Management Report was sent to all Royal Colleges, Dean Directors and the MMC with recommendations on how other specialties may be able to learn from the Core Surgery process. Positive feedback has been received and new national processes and procedures are being implemented. Two nations join the project, to make it a UK process for 2012.

7B3

Workplace based assessment – a project for assessing international medical graduates

Kichu Nair, Kathy Ingham, Ian Symonds, Mulavana Parvathy, Brooke Murphy, Julie Wein (Hunter New England Local Health District, Australia)*

Background of why this innovation is necessary: Almost 25% of our medical staff are International Medical Graduates (IMGs). Any IMG who comes from a non-competent authority country has to do the Australian Medical Council (AMC) exam to qualify to practice medicine in Australia. The waiting period to sit the exam can exceed two years. Due to a shortage of junior doctors, many IMGs are employed in health after only completing the written exam. This often puts the IMGs and their patients at risk. The AMC clinical exam is not indicative of clinical performance on real patients (what they do in real practice). It only checks competence on the exam day (what they can do). Almost 90% of the clinical exam is conducted using actors creating an artificial clinical environment. The AMC clinical exam is done over half a day across all six clinical domains. This situation necessitated the need to meet the gap of IMGs not being assessed on their performance prior to working in our hospitals and consequently the WBA innovation was conceptualised.

Description of the innovation: Our innovation introduced the use of four assessment tools using senior clinicians as assessors during the six month period. IMGs employed by our health service are assessed for six months to check their performance, clinical reasoning, communication, teamwork skills and clinical knowledge using four validated assessment tools mentioned in our abstract. The candidates do 12 mini-CEX, 7 CBDs, 2 sets of MSF and 2 ITAs in six months.

Results of evaluation: The total number of assessments for the 49 candidates who have completed to date are: Mini-CEX 588; CBDs 343; ITAs 98; MSF 1,098; Total number assessments 2,127. All 49 candidates met the criteria to pass the assessments. The WBA:

- Improves knowledge and clinical performance of IMGs
- Drives education and learning
- Evidence based
- Acceptable to the candidates, supervisors and assessors
- Is accredited, reliable and valid.

Applicability and potential educational impact: The applicability of the WBA is critical in the hospital setting. WBA drives education during the six month assessment period. The impact of the WBA methodology motivates and inspires IMGs to pursue education in clinical areas they have not worked in recently to adequately prepare for assessments. Application of WBA in our health system has improved the attitude towards our IMGs. The innovation empowers senior clinicians to take ownership of the assessment process. Senior assessors attend calibration sessions in order to agree on a consistent approach to assessment. This demonstrates that senior clinicians continue to engage in education on assessment. WBA assessors provide immediate constructive feedback to the trainees, highlighting their strengths and weaknesses and together they plan for remediation promoting a heightening desire to learn.

Adaptability in other settings: Workplace Based Assessment is adaptable and sustainable. We estimate that enrolment of approximately 20 candidates every six months ensures that Workplace Based Assessment is run on a cost recovery basis. Centres in Australia are seeking our help to set up similar programs. This project has become a nation-wide benchmark for Health Services, Medical Schools, Colleges and Universities. The validated assessment tools and the methodology can be adapted to other clinical groups

7B4

An Innovation in Continuing Professional Development to Improve Doctors' Clinical Practice in Managing Depression by the Use of Unannounced Standardized Patients

M Shirazi, K Lonka, SV Parikh, R Wahlstrom (Tehran University of Medical Sciences/Karolinska Institute, Stockholm, Sweden)*

Background: Current continuing medical education (CME) programmes are often insufficient in changing doctors' performance, and there is a need to improve CME toward a more comprehensive continuing professional development (CPD). The aim of the study is to assess the effects of a tailored and activating educational intervention on the performance of General Physicians (GPs) in primary care for management of Depressive Disorders (DDs) with a three-stage modified Prochaska model of readiness-to-change.

Methods of innovation: A randomized controlled trial was conducted with 192 GPs in primary care in Tehran. They were stratified by their stage of change, sex, age and work experience. Assessments were made both before and after two months of intervention. The most important

innovation in this study was rigorous design and the use of Unannounced Standardized Patients (USPs) whose total number was the largest for the studies of this kind (365).
Intervention group: GPs in the attitude stage (n¼74) were included in a large education group and those in the intention stage (n¼22) were in a small group in a workshop setting. The emphasis of the former group was on diagnosis of DDs while the latter stressed treatment and differential diagnosis.
Control group: The GPs were divided into a large and small group, with the number tallying the numbers in the corresponding intervention groups. However, diagnosis and treatment of DDs were emphasized in both groups, where current CME methods for small and large groups were applied.
All the measures were validated in Iran. The GPs' stages-of-change were assessed with the Modified Prochaska Questionnaire and their knowledge and skills were assessed by a self-administered questionnaire. The GPs' competence in practice was assessed by USPs who filled in checklists regarding encounters, collected prescriptions and referral notes, if any. The USPs were trained and their portraying of patients with DDs and their use of checklists were validated.

Results of innovations: Significantly more GPs (57/96¼59% vs. 12/96¼12%) in the intervention group changed to higher stages of readiness to change ($P < 0.01$) with the intervention effect of 46% ($P < 0.001$) and 50 % ($P < 0.001$) in the large and small groups, respectively. Their overall mean scores on the knowledge test also improved, with an intervention effect of 12%. Although their attitudes changed in the post-test, the difference between the intervention and control arms was not significant. GPs in the intervention group, when consulted by the USPs', improved their overall mean scores significantly for performances regarding diagnosis, with an intervention effect of 14 % ($P = 0.007$), and treatment and referral, with an intervention effect of 20 % ($P < 0.0001$).

Applicability and potential educational impact: In intervention group an intervention effect of diagnosis was 14% and an intervention effect of treatment was 20%. The largest improvement appeared in the small group: 30% for diagnosis ($P=0.027$) and 29% for treatment and referral ($P < 0.0001$).

Adaptability in other settings: The model was successful in improving both knowledge and practice performance and can be recommended for educational interventions within a CPD context in other countries.

7C   Oral Presentations: Competency-based Assessment 1

7C1

Setting the standards for Australian and New Zealand medical graduates: From Novice to

Proficient for diagnostic and procedural competencies

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Background: From 2006 to 2016, Australian medical school graduates will treble. This expansion is necessary to provide health care for a growing and ageing population. However, it poses challenges regarding clinical training capacity. This paper reports a project that explored how to efficiently use available training capacity and ensure high quality outcomes.

Summary of work: Commencing with graduate attributes defined by the Australian Medical Council, consensus on core diagnostic and procedural competencies was established via a modified Delphi technique involving all Australian and New Zealand medical schools. The competencies were also considered against the Australian Junior Doctor Curriculum Framework. The framework measures competencies at both graduate and post-internship level, utilising a four point matrix modified from the Dreyfuss & Dreyfuss Novice to Expert model.

Summary of results: A framework has been developed that translates graduate attributes into consensus-based core clinical and diagnostic competencies acquired during clinical placements, potentially improving the continuity from undergraduate to postgraduate medical education.

Conclusions and **Take-home message**s: The benchmarking of diagnostic and procedural competencies has provided clarity regarding medical graduate skill development and has assisted medical schools to evaluate their clinical training. The project has increased the mutual understanding of this complex issue by both medical schools and the health care systems in Australia and New Zealand.

7C2

Performance variation of osteopathic students at different educational levels in two essential areas

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Summary of work: The COMLEX-USA series was designed to measure the same competency progressively at three different time points via COMLEX Level 1, Level 2-CE, and Level 3. One of the assumptions of this design was candidates of higher examination levels would perform better than those of lower levels on any topic at any examination level. To verify this assumption, a group of

carefully selected items from all three Level exams were given to candidates of all three Levels. Among them, 31 were Level 1 Scientific Knowledge items and 24 were Level 3 Management items. Each of them was tested by more than 500 randomly selected candidates at each level.

Summary of results: The results indicated that candidate performance on Management items improved from Level 1 through Level 3, whereas the performance on Scientific Knowledge items declined from Level 1 through Level 3. The findings suggested that, while medical students move from lower training levels to higher, the change of their knowledge and ability may not be in a same direction. They may improve on certain areas but decline on others. This raised the question whether medical licensing exams need to test more intensively on the areas medical students tend not to retain well.

7C3

Competency Mapping – The Future of Curriculum Assessment

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Background: Curriculum mapping allows examination of a delivered curriculum and is a valuable method of quality assurance. A formative process, it aims to make the curriculum transparent to stake-holders and demonstrate links between curriculum components10. No standard for curriculum mapping exists.

Summary of work: The opportunity to achieve each competency within the 2010 UK Geriatric Training Curriculum was judged by trainers and trainees to be "red" (no opportunity) "amber" (limited) or "green" (ample), using a questionnaire format with free text space for comments. This system has been used previously. Five UK geographical deaneries took part, individually collating and coding responses for anonymity. A thematic index was developed for categorisation of comments.

Summary of results: There were 99 responses. Mean completion time was 12 minutes. QUANTITATIVE: Perceived opportunities varied between trainers and trainees. The data highlighted some common problem competencies. QUALITATIVE: Most comments were positive, confirming ease and practicality of use. Four main themes were identified: survey content/format, user friendliness, definitional drift, curriculum issues.

Conclusions: Curriculum mapping can empower trainees and trainers by making the curriculum and local training opportunities more transparent, allowing planning of training to meet individual needs, and highlighting competencies that may not be attainable in training programmes. This may influence curriculum design.

As a subjective process, thorough evaluation of medical training requires triangulation from multiple methods.

Take-home messages: The coloured data representation enables capture of the complexity of a programme across large geographical areas without being resource or time intensive, and can be adapted for other areas of curriculum evaluation.

7C4

Using concept mapping to derive graduate attributes for an entry to practice medical program

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Background: The methods by which medical schools derive graduate attributes for their entry to practice medical programs are often difficult to determine and may not sample a broad community view. At the commencement of the development of a new medical program we have taken a more rigorous approach to graduate attribute derivation, yet these attributes should be the ultimate criteria against which students are assessed.

Summary of work: Seven groups were formed of patients, students, bioscientists, doctors, allied health professionals, senior faculty/medical educators and public health practitioners. Each group was asked to describe the desirable characteristics of a graduating doctor and concept maps were constructed using cluster analysis. Results from the seven groups were further examined by a reference group and a faculty workshop and then aligned against national and international standards for medical programs.

Summary of results: Sixty seven graduate attributes were identified and refined during the concept mapping and workshop process. These attributes were attributed to six clusters: self, knowledge, patient, medical profession, systems of health care and society. Subsequently learning objectives for each subject in the new medical program have been developed from the attributes and these have been used in blue printing assessment items.

Conclusion: When developing the outcomes of medical programs, methods that sample a broad range of stakeholders result in rich and more broadly representative graduate attribute statements.

Take-home messages: Qualitative and quantitative methods can be usefully applied to the development of graduate attribute statements.

7C5

Using Competency Based marking in the Objective Structured Clinical Examination (OSCE) for clinical year medical students

SH Wan*, R Canalese (Medical Education Unit, School of Medicine, University of Notre Dame, Sydney, Australia)

Background: The aim of the study was to assess the degree of correlation between competency based marking and global scoring in OSCE and to determine the reliability of this assessment.

Summary of work: The School examined 110 graduate-entry Year 3 medical students. There were 10 stations (total examination time 120 minutes). Competency-based marking was developed to assess the students' abilities to: demonstrate respect and compassion, elicit systematic history/physical examination, formulate working diagnosis and differential diagnoses, develop and interpret investigations and formulate management plans. A score of '0' (failed), '1' (achieved) or '2' (achieved well) was given for each competency assessed. A separate independent global scoring was also given. The Pearson's correlation co-efficient between the competency based and global scoring marks and the reliability score (Cronbach's alpha) was calculated.

Summary of results: The correlation between the competency based and global scoring marks was highly significant (p<0.001). The overall reliability score of the OSCE was 0.7.

Conclusions: The competency based method of assessment is reliable. The examiners gave highly valued feedback on this new marking scheme.

Take-home messages: Competency based marking in OSCE is reliable and can be considered to be used in assessing the clinical year medical students.

7C6

Traditional large group teaching to small group learning strategies – A paradigm shift

Jogenananda Pramanik*, Tanu Pramanik (Allianze University College of Medical Sciences, Penang, Malaysia)

We need to remember that current students are trained in different learning styles with their iPad, Galaxy pad, BlackBerry cell phone dictionary etc. Some of our students respond best to multiple choice exams while others are better at answering essay questions. In the current state of rapid academic transformation, the age-old passive learning process in a traditional large classroom setting has lost its charm and is naturally facing a redundancy crisis. However, we may need to continue with brief concept lecture classes to transmit what we expect from our students at the end of the session. We may use a variety of active learning approaches like PBL (Problem based learning), SGD (Small group discussions), SDL (Self-directed learning) etc., and more closely evaluate the learning outcome during each session according to what is most appropriate for the material being presented. We practice **guided small group learning style** which will be illustrated with a detailed action plan.

7D   Oral Presentations: Communication Skills 2 / Team Skills

7D1

Expert consensus on gender criteria for assessment in medical communication education

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Background: The aim of this study is to determine gender criteria for inclusion in communication skills assessment in medical education.

Summary of work: A three-round Delphi study was conducted by email. The invited 59 participants were experts in the field of gender medicine education (n=28) and doctor-patient communication (n=31) in Europe and North-America. Each Delphi round comprised a questionnaire, an analysis, and a feedback report. Consensus was defined as a 75% panel agreement and a mean of 4 or higher on a 5-point Likert scale.

Summary of results: There was a 61% response in the first round (n=17), an 82% response in the second round (n=27) and an 89% response in the third round (n=24). Of the initial 11 gender criteria proposed in the second round, 4 achieved consensus on both importance and feasibility after the third round. The importance of including the gender criteria in communication skills assessment was rated consistently higher than feasibility of such inclusion. Gender criteria relating to understanding of the patients' perspective and to gathering information from patients were considered the most important. Assessment of communication skills relating to gender and power, i.e. intimate partner abuse, was also regarded as important.

Conclusions: Using a Delphi study, we have developed gender criteria for communication skills assessment and feedback in medical education. Future research should pay attention to the implementation of the gender criteria in assessment and feedback, and to factors which facilitate or inhibit the feasibility.

7D2

The efficacy of a communication skills training program in a medical school in Taiwan

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Background: Communication skills is one of the core competencies for medical education. Empathy is an important element for building up a good doctor-patient communications. The purpose of this study was to understand the efficacy of a communication skills training program on enhancing empathic abilities in a medical school in Northern Taiwan.

Summary of work: Equivalent pre-post test design was applied to the study. One hundred and eight freshmen participated in this study. Students were divided into four classes, which then assigned into two groups, either experimental or control group. Participants in the experimental group received five weekly sessions of 100-minute communication skills trainings. Participants in the control group received no intervention. Standardized instruments included the Trait Meta-Mood Scale and the Jefferson Scale of Physician Empathy–Student Version. Data were analyzed by pre-post t-tests.

Summary of results: This study found no significant differences in physician's empathy scores between pre and post test. However, the experimental group proved to have higher perceived emotional intelligence score after the intervention.

Take-home messages: To develop the ability of awaring of emotions by training can be effective. However, teaching empathy in medical school is a complex process that required more exploration and efforts on instructors and researchers.

7D3

Validity of simulation for assessing teamwork

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Background: Training and assessing teams synthetic environments are frequently used to replicate or even enhance the clinical environment. Instructors observe behaviours and assess the team against structured measures, providing feedback to enhance participant reflection and learning from the experience. This presupposes that the simulation elicits authentic behaviours in the participants. We sought evidence to support this assumption, by comparing anaesthetists' behaviour in an operating room (OR) with their behaviour in a simulated OR.

Summary of work: We videotaped anaesthetic teams in a real OR and in two simulations (routine and crisis). Using observer XT video-analysis tool, 114 video segments of 20 teams in the three settings were coded against a teamwork framework, comprising items for: communication target; situational information; task management; and communication climate. Patterns were compared across the three settings.

Summary of results: We coded 2501 communications. We found no significant difference between the majority of communication patterns between the OR and the routine simulation, but significant differences between both of these and the crisis simulation (p<.05). Individual anaesthetist's patterns of communication correlated across the three settings.

Conclusions: The simulated environment elicits authentic teamwork. Communication patterns differed between routine and crisis conditions.

Take-home messages: Simulation is a valid option for formative and summative assessment of many team interactions.

7D4

Promoting interprofessional learning in community based health care for undergraduate students: a case study in Syarif Hidayatullah Jakarta Islamic State University in Indonesia

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Background: Inter-professional education (IPE) for undergraduate students may lead to team work and collaboration skills. The objective of this study is to evaluate students' experiences from IPE.

Summary of work: In 2011, 97 volunteer students from faculties of medicine, nursing, pharmacy and public health formed groups and worked for the IPE programme. The program encompassed uniprofessional approach to team work, role profession and communication, and interprofessional approach to home visit and group discussion. Students filled out patient record, rating scales about role perception, team work, benefit and satisfaction of program, and open comment.

Summary of results: Mean of total score for each scales showed that male students had higher score (80.57; 103.73; 64.47; 58.60) than female students (78.52; 100.58; 62.12; 57.27). Nursing students gave more positive responses for each scale than the other groups even though there were no significant differences between each group. Each group summarized their findings and made recommendations about promotion, preventive, curative and rehabilitative for patient and family. Students concluded that communication skills, basic knowledge and clinical skills were primary competencies to succeed in this program. This program was beneficial for ongoing learning, future career and society.

Conclusion: Students` experiences and students` needs to run IPE were valuable information for faculty to develop IPE.

7D5

Assessing Psychometric Properties of Inter professional Collaborative Competencies tool among Physician and Nursing Students in Iranian context

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Background: This study addresses one of the most important issues of interprofessional competencies: assessment. The aim of the study is to assess the reliability and validity of the Rubric for evaluating interprofessional collaborative competencies within Iranian context.

Summary of work: The study was investigated through descriptive correlation method. The reliability was calculated based on test-retest and Cronbach alpha approach. Validity was done through three methods including Content Validity, Face Validity and External Validity.

Summary of results: The Content and Face validity was confirmed through two rounds of Delphi. The External validity was assessed based on translation and back translation by one of the native English language experts. A kappa ((κ coefficient for assessing Rubric test-retest approach was 0.9 and Cronbach alpha 0.85.

Conclusions: The results of the study indicated that the Rubric is a valid and reliable tool for assessing interprofessional collaborative practice among health providers in the Iranian context.

Take-home messages: Rubric for evaluating interprofessional collaborative competencies is an applicable tool in different cross-cultural contexts.

7D6

Developing and Assessing the Validity of Dentistry Interprofessional/Interpersonal Communication Skills (IPCS) Rubric in Iranian Context

M Namdari*[1], B Amini, M Shirazi[2], Sh Bigdeli[3], A Dehnad, P Pasalar, A Khatami, H Baradaran ([1]Tehran University of Medical Sciences (TUMS), Students' scientific Research Center; [2]Tehran University of Medical Sciences, Educational Development Center; [3]Tehran University of Medical Sciences (TUMS), Medical Education Department of TUMS, Iran)

Background: Modern health and social care requires excellent teamwork, good communication and understanding of profession roles. Reviewing the literature has revealed that improving IPCS will lead to better medical service in many aspects. But still there is a demand to develop a tool for evaluating IPCS in dentistry.

Summary of work: The tool was developed based on the core competencies of dentistry, written by American Dental Education Association (ADEA), Iranian national curriculum of dentistry and other relevant literature. Validation of tool was assessed based on the Delphi model through two rounds among experts in relevant fields such as medical education, psychology and dentistry. Following that based on the results, the final version was developed. Test-retest and Cronbach's alpha will be applied to assess reproducibility and internal consistency.

Summary of results: Based on the findings the developed tool is valid and easy to utilize in Iranian context.

Conclusion: This study has demonstrated the possibility of assessing dentistry IPCS by the use of valid measurement. Further work is needed.

Take-home message: Assessment of dentistry IPCS is easy to utilize in different contexts.

7E   Oral Presentations: Education Environment

7E1

Assessing Learning Environments: Development of a Trainee Survey to Quality Assure Postgraduate Paediatric Training

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Background: Quality assuring of training programmes has traditionally been accomplished through a generic national trainee survey. As we move to a competency-driven training system, it is crucial to review the quality of training and the delivery of the curriculum at training institutions.

Summary of work: The School of Paediatrics has developed a Trainee Survey exploring the learning environment in which trainees work. The survey was designed over a 12 month period and underwent several cycles of feedback, refining, piloting and testing prior to a phased launch in March 2011. The format included multiple choices, open-ended text and matrix tables including multi-point scales and checkbox/multi-select questions.

Summary of results: The response rate was 91% (763 respondents) with 80% fully completing the survey. Results revealed strengths and weakness of training institutions in various domains including induction, supervision and clinical exposure. Contemporary markers of excellence including leadership, management and education were also detailed.

Conclusion: Analysis showed correlation with the national survey facilitating triangulation. This survey gives thorough, focussed, contemporaneous feedback for paediatric training. Institutions are continually able to identify and implement change.

Take-home messages: This approach allows quality assurance of the environment in which doctors train and demonstrates how a speciality specific survey is utilised to assess various domains in training institutions.

7E2

The Education Environment of TUMS Pharmacy School: A DREEM (Dundee Ready Education Environment Measure Questionnaire) Study

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Background: The success of an educational setting is correlated to students' satisfaction and educational environment influence on their satisfaction. In this regard, DREEM as a widely used questionnaire is applied to assess student perceptions of their educational environment in different countries of the world.

Summary of work: This descriptive cross sectional study is an attempt to explore perceptions of Tehran University of Medical Sciences (TUMS) pharmacy school students of their educational environment. For the purpose of the study, Farsi version of DREEM is distributed among students of pharmacy studied at different levels of education. Population of the study were 400 students from which through stratified method 80 students were selected from both sexes.

Summary of results: The gathered data will be analyzed through descriptive (mean) and inferential (Mann-Whitney) statistics. Also, perception of students in regard to 5 levels of learning, teachers, academic self-perception, educational atmosphere, and social issues will be analyzed according to male and female genders.

Take-home message: Success of an educational institute correlates to students' satisfaction and educational environment potentialities to fulfill students' needs, wants, and desires. Therefore, to improve the existing curriculum and to achieve success in educational programs applying the results of DREEM by curriculum planners and policy-makers, according to their needs, is deemed necessary.

7E3

A measure of the professional culture of training institutions: a validated, theory-based, online tool with self-generated analysis and feedback

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Background: Although understanding professional culture is an essential component of the educational process, the attempts have been hindered by credibility, practicability and cost related issues.

Summary of work: An online inventory was developed to measure professional culture in undergraduate healthcare training environments. The attributes of professionalism were identified by a literature review. A public model of professionalism, which consisted of clinicianship, workmanship and citizenship, was generated by a survey conducted among 958 members of the UK general public. 368 UK medical educators identified 28 attributes to represent these three domains. As professional culture is the collective behaviour of the inhabitants of an institution, in the development of the rating scale, the Theory of Planned Behaviour (TPB) was used as the basis. The inventory was piloted among medical students and academic staff members. Based on the responses, the inventory described the professional culture in relation to patient-centeredness, team-work and social-responsibility.

Summary of results: The inventory was psychometrically rigorous. The respondents perceived that the professional culture illustrated by the inventory represented the institution, and it is effective, practical and acceptable.

Conclusions: An online inventory based on the TPB was valid and reliable in measuring professional culture.

Take-home messages: A theory-based approach to measurement can help understand institutional professional culture.

7E4

Students' perception of educational environment at UKM medical centre

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Background: There is established correlation between educational environment and students' achievement. Scholarly teaching activities like friendliness, co-operation and supportiveness promote learning. The objective of this study was to measure students' perception of educational environment.

Summary of work: It was a cross sectional study conducted on 194 fifth-year medical students in 2011 at UKM Medical Centre, Malaysia. Data was collected utilising Universiti Kebangsaan Ready Educational Environment Measure (UKREEM), derived from Dundee Ready Educational Environment Measure (DREEM). The DREEM has high reliability, tested on students of different countries. It has five sub scales relating to students' perception of learning; students' perception of teachers; students' academic self–perception; students' perception of atmosphere and students social self perception. Under each sub scales there are relevant items measured using 5 points Likerts scale.

Summary of results: Thirty percent respondents were male, 70% were female. The mean score of students' perception of learning was 3.72±SD 0.36, while the mean score of subsequent sub scales were 3.66±SD 0.32, 3.65±SD 0.39, 3.44±SD 0.37 and 3.48±SD 0.42 respectively.

Conclusion: The UKREEM provided useful information on educational environment of UKM Medical Centre. It is capable to compare an institution itself with other institutions using DREEM in order to improve the quality of education.

7E5

Piloting THEnet's socially accountable educational environment assessment framework at JCU

S Ross*, R Preston*, S Larkins, R Murray (James Cook University, School of Medicine and Dentistry, Townsville, Australia)

Background: James Cook University's School of Medicine and Dentistry (SMD) is an inaugural member of The Health Equity Network (THEnet); a group of eight schools with a strong social accountability (SA) mandate. THEnet has now developed an Evaluation Framework addressing the needs of underserved communities. In 2010, the Framework was piloted at six medical schools to assess its applicability for each School's context and the wider community. The presentation discusses the outcomes and recommendations of the SMD pilot study.

Summary of work: Data collection and focus group analysis were conducted to assess the SMD's socially accountable medical educational environment.

Summary of results: Faculty/Staff, community members and students agreed the Framework is a useful tool to measure progress towards SA, and that SA is an SMD aspiration. SMD data measured well against the Framework, though with some recommendations.

Conclusions: SA is strong at the SMD. The education environment across andragogy, clinical, pastoral and administrative areas successfully promoted rural, remote and Indigenous health; though with a few socially accountable, curriculum or administrative recommendations.

Take-home message/s: The framework was found to be successful at the School and together with all THEnet schools we aim to have a consolidated Framework (an evolving tool) with guidelines to implement in all contexts.

7F Oral Presentations: The Student and Trainee in Difficulty

7F1

A schema for successful remediation within allied health programs: practice points based on existing literature

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Background: Trainees in difficulty are commonly found in various allied health programs and may require assistance to improve or rescue their performance. The essential skills for dealing with a trainee in difficulty are largely underdeveloped across curricula and research within the field remains limited. This presentation will review information about the remedial process in academic medicine, and is based on existing literature, which indicates that successful remediation interventions entail a series of multiple steps. These include prompt problem identification, working with the student on an individual basis to develop a learner-centered strategy, involving multiple assessors and a multimodal assessment tool, enforcing rigorous feedback and re-assessment, all underpinned by documentation, written policies and if possible, methods of prevention. Remediation is a universal issue in academic medicine, and is costly and time consuming, both for the student and the program. When designed appropriately, however, or when based on a learner-centered approach, it can be extremely effective and students have been known to overcome their difficulties. Regrettably, some students cannot be remediated and dismissal may be necessary.

7F2

Early Detection of Academic Difficulty: the value of dip and decline

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Background: At the Northern Ontario School of Medicine (NOSM) students were provided with a new form of feedback. The assessment scheme is based upon the progress in cumulative results throughout a year. We discerned a small trend where some students' results dipped during the year or they experienced a general decline in their performance.

Summary of work: A new early detection program was implemented whereby students whose results dipped below the necessary standard (60%) were given an automatic warning letter and an opportunity to discuss the results with their Theme (Course) Chair. This early warning and detailed feedback was expected to influence subsequent work and arrest the possible academic decline. It was anticipated that the procedures would help students both improve subsequent grades and consequently also improve the end of year results.

Summary of results: The progress of Phase 1 students at NOSM was tracked for a full academic year. Students who received an 'Early Detection Program' letter improved on average by 11% on their next examination. In fact, the data demonstrates that only one letter was needed for a number of students to bring up their entire marks.

Conclusions: This marked increase shows the merit of this detection program, and NOSM intends to continue this program as way to ensure students are receiving valuable feedback and support throughout the academic year.

Take-home messages: Early detection of academic difficulty may respond well to simple meaures such as dip and decline notification.

7F3

Longitudinal Analysis of the Relationship between Academic Failure Tolerance and Academic Achievement in Medical School Students and Graduate Medical School Students

SJ Chae, YS Chung (Ajou University School of Medicine, Office of Medical Education, South Korea)*

Background: This study investigated the relationship between academic achievement and academic failure tolerance (AFT) in both medical school students (MS) and graduate medical school students (GMS) using a longitudinal research design.

Summary of work: In 2009, The subjects of this study were 45 MS and GMS who responded using the AFT test. This study analyzed the longitudinal data take from students' achievement scores up to the 2nd year. Finally, this study data was 39 students' achievement scores excluding 6 students failed to advance.

Summary of results: There was statistically significant difference between the score' changes of group (GMS and MS)(p<.001). The scores of GMS increased significantly over time. There was no statistically significant difference between groups in AFTT. GMS's AFTT mean scores was higher than MS's. In regression analysis, it was proved that students' achievement score in 2009-1, group, feeling of AFT were useful variables to predict academic achievement. Especially, students' achievement score in 2009-1 was found to be the most important determinant of improvement of academic achievement (73%).

Conclusion & Take-home messages: The results of this study suggest that it will be helpful to understand the individual attributes of GMS and MS in order to guide their study.

7F4

Does the Transfer of Information (ToI) process from medical school to foundation school identify foundation doctors (FDs) with additional support needs?

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Background: The national Transfer of Information (ToI) process was developed to support transition of trainees from undergraduate to postgraduate training. Trainees self-disclose information relevant to their support needs.

Summary of work: We reviewed files of South Thames Foundation School (STFS) trainees monitored as trainees in difficulty (TiDs) during 2009-10 and their ToI forms, and whether these predicted subsequent difficulties.

Summary of results: 62/1697 (3.7%) foundation year 1 and 2 trainees were TiDs. 28/62 (45%) TiDs had pre-existing issues, predominately physical or mental health. Of these 13/28 (46%) did not include information through ToI; 15/28 (54%) provided adequate information to enable identification of support needs; 34/62 (55%) developed difficulties not predicted through ToI.

Conclusions: 46% of trainees with previous difficulties did not disclose these in ToI. Possible reasons include lack of insight and reluctance to share sensitive information.

Take-home messages: Graduating medical students and their universities should be encouraged to see ToI as valuable and supportive. Greater engagement would aid early identification and subsequent support of TiDs during foundation training, as would including medical school information such as transcripts in the ToI process.

7F5

Trainees in Difficulty – assessment and successful intervention

Maggie Patching (Western Sussex Hospitals NHS Trust, Worthing Postgraduate Medical Centre, Worthing, UK)

Background: 10% of trainee doctors run into difficulty at some point in their training. Year one as a doctor is particularly stressful. Assessment is one identifier. Early intervention ensures a successful outcome. Deanery expects robust support processes.

Summary of work: Emphasis is made at induction on support processes for trainees. Proactive and sensitive monitoring of trainees takes place at induction, particularly year one. Close monitoring of assessments and regular trainee reviews with a triangulated approach, considered from employment and training perspectives. We adopted an open door philosophy for reporting concerns. We designed a structured process for meetings and recording trainee in difficulty data.

Summary of results: In the last three years 47 cases of trainees in difficulty managed; positive outcomes in 85% of cases. One case with a successful outcome will be presented in detail.

Conclusions: Assessment assists in identifying trainees in difficulty. Proactive, early intervention using organised processes with personal empathy ensures successful support for trainees.

Take-home messages: Use assessment data to monitor your trainees but not as the key identifier for trainees in difficulty. Care about your trainees. Enjoy their success and achievements. Get involved personally. Be empathetic and professional. Be organised.

7F6

Does medical school encourage innovative thinking in students?

AA Wahid*, K Mahmoud-Tawfik, AS Sood, J Kossaibati, BM Cox (Imperial College Business School, London, UK)

Background: The NHS cites the ability to be innovative as essential for doctors, but whether innovative thinking is promoted in medical school is unknown. Considering a doctor's professional identity is formed during their education, this study investigates whether medical school encourages students to think innovatively.

Summary of work: Twenty-eight semi-structured interviews were conducted with pre-clinical and clinical students and teaching staff at Imperial College School of Medicine.

Summary of results: Thematic analysis revealed three major elements of the medical school that influenced innovative thinking: teaching, assessments and the environment. The curriculum was perceived to be rigid and information-intensive. Didactic teaching in large lecture theatres, with a lack of engagement was often cited by students as deterrents to innovative thinking. Assessments predominantly encouraged rote-learning due to formulaic marking systems in the pre-clinical years, with a shift in the later years to clinical examinations allowing more lateral thinking. Cross-industry exposure was perceived to stimulate innovative thinking in medical students, whereas the general environment was perceived to be one of conformity, hierarchy and a distinct lack of empowerment.

Conclusions/Take-home messages: Medical school was not generally perceived to encourage innovative thinking. Empowering students through suitable opportunities and moving teaching and assessments away from rote-learning will help provide a new generation of innovative doctors.

7G   Oral Presentations: Psychometrics and the OSCE

7G1

The Utility of the Multi-Facet Rasch Model (MFRM) to evaluate construct validity and examiner effects in a medical school OSCE

I Rothnie (University of Sydney, Office of Medical Education, Sydney, Australia)

Background: Examiner effects such as stringency / leniency are a well known source of measurement error in observed clinical assessments of medical students. Measurement error dictates that we cannot assume that the observed score for any given examinee is a true representation of their level of ability on the observed task.   MFRM is able to identify such sources of error and provide a quantitative description of the effect on individual student scores. MFRM is also used to establish construct validity of assessments by evaluating the fit of data to the Rasch model.

Summary of work: FACETS 3.68.0 software (Linacre, 2011) was used to analyse data from the 2010 and 2011 2nd year OSCEs at the University of Sydney.

Summary of results: The OSCE data showed good fit the Rasch model. Scores given by examiners in the OSCE were shown to reliably differ in severity/leniency and were significantly more variable than station difficulty or candidate ability. Inconsistent scoring patterns were identified. It is noted that the greatest measures of examiner stringency were found to be of less magnitude than the greatest measure of student ability.

Conclusions: This project demonstrates the use of MFRM to evaluate construct validity and examiner effects or biases in the Sydney Medical School OSCE. Although examiners exhibited a wide range of severity/leniency, the results suggest examiners on the whole are "expecting competence" rather than aiming to rank students.

7G2

Skill subsets: an alternative to stations as the standard unit of measurement in OSCE assessments.

G Somers, K Brotchie, S Bullock (Monash University, Gippsland Medical School, Churchill, Australia)*

Background: Eight-station Objective Structured Clinical Examinations (OSCEs) are still the predominant means of testing the clinical skills of medical students at Monash University. Each station is scored against a checklist of skills expected to be performed during that station. The reliability of the examination 'scale' (Cronbach Alpha) is estimated using results from the eight stations as items.

Summary of work: The validity of using the stations as items to determine the internal consistency of the examination is examined. While the scenario-based stations do facilitate the blueprinting process by enabling valid representation of the body systems and clinical skill elements (e.g., history, examination and procedures), each station tests a variety of overlapping skills. Therefore station scores tend to be interrelated. This contravenes a basic tenet of Classical Measurement Theory, which demands that the items of a scale should be not interrelated except through their relationship with the latent variable, in this case, the clinical skill of the candidate.

Conclusions: We propose an alternative scale grounded in Generalisability Theory, which consists of skill subset items and allows for inter-rater error.

Take-home messages: A measure based on skill sub-sets provides more valid, accurate, meaningful and useful reliability scores for OSCEs than on based on stations.

7G3

Travelling examiners in an OSCE – quality improvement?

Tim Wilkinson[1], Mike Tweed[2], Mark Thompson-Fawcett[3], Sarah Jutel[3] (University of Otago, [1]Christchurch; [2]Wellington; [3]Dunedin, New Zealand)*

Background: Travelling examiners may be used in high stakes examination to ensure fairness of standards, and for quality improvement. Yet, the effect on standard setting and reliability is not clear.

Summary of work: Our high stakes 10-station OSCE has 2 examiners/station. Some of the examiners come from campuses different from the students. Standard setting uses the borderline regression method. Over 2 consecutive years we compared inter-examiner correlations, score differences and overall pass standards for "home-away" pairs compared with "home-home" pairs.

Summary of results: The difference between examiners scores, comparing home-home with home-away, was 0.053 (-0.033-0.139) marks out of 20; p=0.23. The difference in standard setting was 0.023 (-0.005-0.85) points out of 7; p=0.08. Inter-rater correlation for home-home examiners was 0.76 compared with 0.71 for home-away examiners.

Conclusions: Travelling examiners did not improve reliability or alter standards.

Take-home messages: Travelling examiners may believe they have increased objectivity by assessing students who are unknown to them, but this is not borne out by the data. Can we justify the cost when we have demonstrated no difference?

7G4

Validity evidence for integrating a component of two high-stakes Objective Structured Clinical Examinations (OSCE)

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Background: Two Canadian credentialing organizations are collaborating to improve their clinical skills assessments with a common OSCE component that will provide Family Medicine candidates with one path to credentials from both organizations in 2013. Data from past exams were shared, enabling developers to better understand how components from the differing clinical assessments might work together.

Summary of work: Merged data for 2327 test takers from four of each organization's examinations were analyzed to examine the relationship between ten-minute OSCE stations and Simulated Office Orals (SOOs).

Summary of results: Total scores from the two exam components were moderately correlated (r=0.46); adding an OSCE component to a shortened SOO increased internal consistency (e.g., α=.57 to 65); and OSCE scores were somewhat predictive of SOO scores (r2=0.23). Assessing the impact on OSCE standard setting of moving a large proportion of test takers to the alternative clinical exam indicated a likely increase in the OSCE cut score. Further analyses are being pursued.

Conclusion: Although only limited conclusions can be drawn from these data, no hindrances to the proposed integration were identified and indicators for where development efforts could maximize benefits of the proposed harmonized assessment for all test takers will be discussed.

7G5

Score variance heterogeneity among examiners in equivalent OSCE stations in different streams

H Onishi*, C Kreiter (The University of Tokyo, International Research Center for Medical Education, Tokyo, Japan)

Background: Students taking an OSCE in a large class were pseudo-randomly assigned to one of three parallel streams each containing the same station content. In some instances the average score of examiners in equivalent stations was not significantly different, but the variances of the examiners appeared to vary widely. This might imply that some examiners used a significantly wider score range than others, and could potentially lead to unfairness. The objective of the study was to assess score variance heterogeneity among examiners in equivalent OSCE stations.

Summary of work: Scores of 140 students on 16-station OSCE in a medical school was re-analysed. Students were allocated to three equivalent streams. Each station had one examiner. After reading the marking scheme, three examiners for equivalent stations discussed any ambiguity. Variance heterogeneity was checked by Levene statistics.

Summary of results: Seven stations out of 16 showed score variance heterogeneity. Three average scores of those seven stations did not show significant difference.

Conclusions: We found score variance heterogeneity without significant difference of average scores among examiners in five out of 16 equivalent OSCE stations.

Take-home messages: Score variance heterogeneity is a useful index for quality assurance among concurrent OSCE streams.

7G6

Advanced Psychometrics: Moving the OSCE into the 21st Century

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Background: In the world of high-stakes medical testing much reliance is placed on the OSCE as a source of information concerning the physical and judgemental skills of medical practitioners. But there are a number of measurement problems surrounding the use of OSCEs which raise questions about their real-world validity. This paper will discuss a number of these issues including inter-rater and inter-station reliability and the validity of global ratings. The relative merits and problems of various methods of standard setting for OSCEs, such as borderline regression and Angoff methods will be discussed. Advanced psychometric techniques to address the key issues will be proposed. Much more use must be made of technology to improve the validity and measurement properties of the OSCE. Technology enables some aspects of the OSCE to be moved to mobile tablets utilising multi-media, interactive, items. This would greatly reduce the risks posed by inter-rater reliability resulting in a more reliable and valid measurement instrument. Data collection and recording can now make use of mobile technology storing candidate scores for later data transfer and future psychometric analysis.

7I   Workshop: Case studies in the assessment of professionalism

Brian D Hodges (University of Toronto, Wilson Centre for Research in Education, Toronto, Canada and Members of the International Ottawa Conference Working Group on the Assessment of Professionalism)

Background: The International Ottawa Conference Working Group on the Assessment of Professionalism at the time of the 2010 Miami conference published a framework assessing professionalism in three domains: as a characteristic of individuals, as part of the teacher-student relationship and as an institutional/system-level phenomenon. The framework has helped to advance thinking about a comprehensive approach to the assessment of professionalism.

Intended Outcomes: The overall objective of the workshop is to ask "How can assessment tools be used to facilitate conversations about professionalism and professional identify formation, of individuals, teacher-student dyads and of institutions?"

Structure: As a companion to the symposium presented by members of the International Working Group at this conference, this workshop will expand on the "three domain framework" created by the group and engage participants in interactive activities designed to elucidate ways in which to align the three domains of professionalism assessment. Using case studies participants will have the opportunity to consider approaches to conflict between the different domains.

Intended Audience: This workshop is intended for anyone interested in the assessment of professionalism and no previous work in the area is required.

Level of Workshop: Beginner

7J   Workshop: International perspectives on assessing professionalism and the extent to which cultural influences play a part
R Hays, R Worthington* (Bond University, Faculty of Health Sciences and Medicine, Queensland, QLD 4229, Australia)*

Background: The workshop leaders have been researching responses to unethical behaviours; from this questions arise around suitable methods of assessment for students and trainees. In the context of professionalism, while common standards can be set, culture and jurisdiction also play a part; questions around jurisdiction mostly involve process and procedure, but cultural issues are more difficult to define.

Intended Outcomes: 1. Better understand when questions of unprofessional, unethical conduct are likely to require disciplinary action

2. Describe ways in which culture can influence the way doctors behave in professional practice

3. Consider the extent to which culture might be a relevant factor when devising assessments.

Structure: Short introduction followed by small group work analysing cases brought by delegates as well as sample cases brought by the workshop leaders. Session to conclude with plenary feedback and discussion to help identify best practice and clarify learning outcomes.

Intended Audience: Subject specialists in personal professional development, ethics and cultural competence; those involved in student fitness to practise and/or assessment of trainees; interested junior doctors.

Level of Workshop: Intermediate

7K   Workshop: Using film vignettes to teach and assess ethics and professionalism
C Johnston (King's College London, School of Medicine, London, UK)

Background: Short film clips taken from mainstream cinema are successfully being used in small-group discussion of ethics and professionalism by medical students, highlighting their relevance in everyday healthcare settings. A 2 minute film clip was commissioned (2011) to be used in an Objective Structured Clinical Examination (OSCE) station for 2nd year students. This proved to be an appropriate and novel format to assess ethics and professionalism. Further funding has been awarded to create new filmed vignettes for ethics teaching. This workshop will promote the use of film vignettes in (i) teaching and (ii) assessment of medical ethics and professionalism using examples.

Intended Outcomes: Medical ethics learning outcomes are matched to appropriate film clips.

Practical know-how will be shared to assess ethics using this format.

Structure: A series of short film clips which are relevant to core ethics topics will be shown. Delegates will be invited to consider how such clips could be used in their teaching. The workshop will include insights into creating and using film vignettes to assess ethics, demonstrated by existing material

Intended Audience: Anyone teaching medical ethics, and those interested in innovative teaching and assessment methods

Level of Workshop: Beginner

7L   Workshop: Simulation for high stakes assessment in the selection centre setting
Thomas Gale[1][2], *Ian Anderson*[1], *Paul Sice*[1], *Kate Holmes*[1], *Alison Carr*[3] ([1]*Directorate of Anaesthesia, Critical Care and Pain Management, Plymouth Hospitals NHS Trust, UK;* [2]*Institute of Clinical Education, Peninsula College of Medicine and Dentistry, UK;* [3]*Dept of Health, England)*

Background: Evidence suggests that multi-station interviews are a reliable and valid method for medical recruitment.1 Simulation provides opportunities for observing how applicants behave in certain situations enabling the assessment of non-technical skills (NTS) which demonstrate aptitude for postgraduate training posts.

Intended Outcomes:

1. Familiarise attendees with NTS frameworks used for assessment; 2. Increase understanding of how simulation can be used for selection; 3. Understand differences in

using checklist versus global rating scores; 4. Examine ways of standardising simulation scenarios

Structure: An introductory presentation will cover concepts of NTS assessment at a selection centre including the evidence supporting: 1) Use of multi-station interviews at undergraduate and postgraduate levels. 2) Use of simulation for assessment in multiple specialties. 3) The reliability of NTS frameworks for assessment.

Two "live" simulation scenario demonstrations will follow utilising a simulated manikin, two nurses and an applicant for specialty training (in role play). Participants will be asked to score the applicants during the scenarios using checklist and global rating scores. Facilitated group discussions will follow the scenarios to cover: 1) Appropriate use of checklists versus global rating scores in different contexts. 2) Techniques to standardise scenarios including linear programming. 3) Advantages / disadvantages of simulation stations versus other interview methods.

Intended Audience: Interviewers for undergraduate / postgraduate recruitment

Conveners of interview panels

Simulation providers / experts

Directors of education / simulation / assessment

Level of Workshop: Intermediate

1: Br. J. Anaesth. (2010) 105(5): 603-609

7M   Workshop: Resident Remediation: Tools and Tips for Success

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Background: Remediation of resident physicians remains an ongoing challenge in the competency-based framework of physician training, particular in areas of professionalism, system-based practice, and practice-based learning and improvement. Many training programs struggle with effective mechanisms for tracking resident progress, identifying struggling learners, and developing corrective action plans. We propose an inter-institutional workshop to share the experiences of two training programs. One program has utilized the Weinerth five-step method for organizing, implementing, and documenting remediation plans for over two decades. The other program is relatively early in the process of developing an effective structure and process. Participants will leave with ideas for creating, through various means, processes for identifying, remediating, and tracking residents with performance issues. Presenters from both programs will describe their organizational structures and how they were developed. Additionally, presenters will use de-identified cases of struggling learners to illustrate both successes and pitfalls in the remediation process.

Intended Outcomes: This workshop will provide tools to develop comprehensive behaviorally based remediation plans tailored to the internal medicine core competencies. The information and techniques can be adapted to the internal medicine milestones. A toolbox of available resources for common resident issues will be provided.

Structure: Participants in this workshop will evaluate cases and use tools provided by presenters to develop remediation plans. Participants will discuss these plans with peers and workshop presenters.

Intended Audience: This workshop is intended for both academic and community program directors and associate program directors, and is most applicable to new program directors.

Level of Workshop: Beginner

7N   Workshop: Incorporating elements of cultural and ethnic diversity into OSCEs and SP-based clinical encounters

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Background: Populations within countries worldwide are becoming more diverse, and physicians must be prepared to care for patients of varied backgrounds, ethnicities and cultures. SP-based examinations and OSCEs can be used for the formative and summative assessment of doctor-patient communication skills required to care for patients of diverse backgrounds. When considering case development, incorporating cultural elements within OSCE cases becomes critical.

Intended Outcomes: 1. Appreciate the value of incorporating elements of diversity into OSCEs and SP-based clinical encounters. 2. Learn how teaching and high-stakes testing organizations incorporate elements of diversity in cases. 3. Develop a case which incorporates ethnic and culturally diverse elements.

Structure: 1. Review of current literature regarding teaching and assessment of physicians' ability to care for patients of varied backgrounds, cultures and ethnicities (15 min). 2. Provide examples of how training institutions and high-stakes testing organization approach cultural and ethnic diversity in case development (20 min). 3. Identify the challenges and opportunities of incorporating elements of diversity in case development (15 min). 4. Through small break-out groups, brainstorm and create a case—a case with elements of ethnic and cultural diversity (40 min).

Intended Audience: Those involved in case development for OSCEs and SP-based clinical exams

Level of Workshop: Intermediate

7O   Workshop: Applying 'good assessment principles' in certifying exams under limited resources: How can e.g. small societies or countries accomplish this?

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Background: Certifying exams are almost established in most medical specialties. There is wide range of methods and quality. The validity and reliability are often hardly to quantify or do not conform to the standards. There are the goals for a good certifying process, but there are often very limited resources (financial, lack of assessment knowledge, educated faculty etc.).

Intended Outcomes: After attending this workshop, the learner will be able to: Describe the various methods used in certifying exams; Decide on an acceptable standard for quality; Decide on how the criteria can be achieved; Identify potential necessary measures.

Structure: Content: The session will briefly describe the mean types of methods used in certifying exams (written, oral, practical) and the criteria for quality. It will be discussed how and where the criteria can be applied, which compromises can be made, are there minimal standards. Are there successful models, can collaboration between societies or in regions over the national frontiers help to achieve acceptable levels?

Intended Audience: Educators interested in learning about the assessment of professionalism and interested in developing their own 'best assessment'

Level of Workshop: Beginner

7P   Posters: Technology/Computer-based Learning

7P1

Experience from a "Bridging Course" for Malaysian Pre-medical students - Using In-house Video as a Trigger and Assessment of Interprofessional learning attributes

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Background: Delivering safe, quality and holistic patient – centred care requires effective collaboration among medical and healthcare professionals. Interprofessional education has been recognized as a platform to assist students to achieve these competencies. How best it should be assessed and delivered has been continuously debated.

Summary of work: This study explored the students' perception on their experience during the course using a feedback open-ended questionnaire. A video clip was used as a trigger to create awareness and initiate interactive discussion on interprofessional learning attributes as well as assessing their knowledge, skills and values.

Summary of results: The students perceived the session as useful and allowed them an opportunity to initiate further learning for their future practice. The video clip was viewed as an authentic learning modality and as a non-threatening assessment tool as well as a promising approach to induce interprofessional values and core competencies.

Conclusions: This study result suggests that early exposure to and assessment of interprofessional values and competencies can be made possible and are well accepted even by pre-medical students.

Take-home message: Well-designed teaching and assessment activities will promote learning in the interprofessional context.

7P2

Blended E-learning in Problem based environment: Qassim Medical College Experience

Mohammed Saqr (Qassim University, College of Medicine, Zip 51452 PO Box 6655, Saudi Arabia)

Background: Although living in a revolutionary advance in Information communication technology; the adoption of technology has been very slow in educational institutions and has not matched the pace of development or the availability of potential applications; A problem that is depriving the educational community of a huge potential.

Summary of work: Establishing e-learning in an active problem based curriculum was a real challenge given the paucity of similar experiences, which has been centered mostly on delivery of instructional materials not on interactive environment. In this presentation we are going to introduce our experience in e-learning from learning management system, electronic exams, e-surveys, media systems, e-communication, paperless college and the mobile learning and how e-learning has become the main medium of communication, Problem based learning, e-portfolios, formative assessments, resource delivery, skills learning, e-exams and every other part of the educational process with highlights on procedures, challenges and lessons we learnt.

Conclusions: E-learning is cost-effective, rewarding and offers huge potentials to learning medicine. Without deliberate efforts to coordinate e-learning approaches, we might miss the opportunity to provide effective modern education.

7P3

Blended learning using an e-blog and social media in a medical curriculum: experience from Faculty of Medicine, Colombo

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Background: The digital age has brought new avenues and resources to facilitate learning. The objective was to evaluate use of a blog, thence observe use of electronic medium for medical education.
Summary of work: Students doing clerkship in University medical wards (n=50) were informed to use the blog (medblogmfc.wordpress.com) where anonymous clinical scenarios were uploaded with limited access only to students doing the clerkship. Comments were reviewed daily and new submissions shared using social networks (Facebook, Twitter). Site statistics were used as a tool for evaluation.
Summary of results: Total number of 669 site views was reported over a period of 8 months. Blog was posted in the Facebook 4 weeks after the initiation. On average there were 9 views per week during 4 weeks prior to posting in social network. However this increased to 89 views per week after posting in Facebook. Positive reinforcement from the academic staff to use the blog resulted in an increase from 6 views to 20 views per week.
Conclusion: The results indicate a reluctance of students to use the electronic medium for learning. The use increased substantially with the use of popular social media networks.
Take-home messages: Innovative teaching strategies are required to facilitate student learning with their concerns of interest.

7P4

Multi-modal key feature task with tree structure for medical assessment

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Background: Paper and pencil assessments are not a valid means to measure practical skills and decision competences in medical education. Through integration of multimedia content and introduction of nonlinear assessment paths, computer-based online-assessments are more practice-oriented.
Summary of work: We developed an item type which uses audio in- and output to further increase the assessment validity. The assessment software realizes a multi-modal key feature task with tree structure. This task e.g. simulates a conversation between two physicians (the student and a fictional character (FC)): First, a video of the FC presents the underlying medical case. From now on, the student has to react orally and time-restricted. He participates in a dialogue with the FC. Certain student answers are given in written form and decide which branch of the tree-shape key-feature question is taken next. One intended purpose is the integration in OSPEs.
Conclusions: In a cooperation of two medical institutes, both the feasibility and student acceptance have been shown. Chair staff recognizes an added value in performing and evaluating a high number of semi-oral online-exams.
Take-home messages: It's possible to perform alternative forms of exams with the help of new technologies. Studies have shown a positive impact on the acceptance of all involved.

7P5

The Effects of E-learning - to Psychiatric nurses at Shiraz Psychiatric Hospital, using Mobile (SMS)

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Background: Information and computing technologies promise new virtual learning and communication opportunities within the real communities of health care professionals.
Summary of work: This research is interventional. In this study one questionnaire was distributed to nursing staff working in the Psychiatry ward. The questionnaire was to assess knowledge of the nurses with regards to essential information required for nursing care for patients with Psychiatry problems, Anxiety Disorders, and Depression etc.
Summary of results: The findings of this study showed there was significant improvement in awareness and knowledge of the staff in the CCU ward of Shiraz Psychiatry Hospital before and after sending E-newsletter containing the required information, via SMS. (p <.0/05)
Conclusions: According to the results of this research, development of mobile technology in all parts of our country can be used to forward the latest information to medical, paramedical professionals and to all employees and workers in these sectors, even in remote areas using this technology. The information can even be expanded based on request based on their needs.

7P6

Copyright, consent and policy tools to facilitate sharing learning resources

M Quentin-Baxter*, S Hardy, L Wood, G Brown (School of Medical Sciences Education Development, Faculty of Medical Sciences, Newcastle University, Newcastle upon Tyne, UK)

Background: The move towards sharing digital educational resources in the UK has accelerated institutional understanding of copyright and ethical issues (such as a need for consent for people appearing) in teaching

materials. Whole programmes including curriculum documentation and specific learning resources are now being routinely shared (under licence).

Summary of results/Take-home messages: This session will demonstrate sources of learning resources (and how to safely reuse them) from repositories and aggregation sites, and some of the risk-management tools and guidance developed by the authors (funded by the JISC and the Higher Education Academy in the UK). As more digital resources including recordings of teaching sessions are made available to students, questions have been raised about what happens if students download or otherwise reproduce them. The tools are designed to help schools of health to develop policies and procedures to safeguard themselves against litigation by increasing staff awareness of their responsibilities in relation to, for example, attributing images used in teaching that have been downloaded from the internet.

Conclusions: The resources and tools potentially have international application and could enhance teaching worldwide.

7P7

Assessment of medical curriculum with regard to information and communication technology at Isfahan University of Medical Science and Healthcare, Isfahan, Iran

A Houshyari[1], P Adibi[2], M Bahadorani[2], M Tootoonchi[2] ([1]Seattle University, School of Education, Seattle, Washington, USA; [2]Isfahan University of Medical Science and Healthcare, Isfahan, Iran)*

Summary of work: To assess the medical students' computer literacy and competency in using information and communication technology (ICT) in both academia and practice at IUMS, a research study has been conducted in summer 2011. This mixed method research has assessed the medical students' attitude, knowledge, skills, and usage of ICT as well as their access to computer and internet through both quantitative and qualitative inquiries.

Summary of results: While most of the students know the importance and the crucial role of the ICT in medical education, they are not competent enough to use it effectively. Medical curriculum, faculty's lack of knowledge and use of ICT in academic settings, evaluation system, and finally, inadequate access to computer and internet in that school are main causes.

Conclusions: To better prepare the medical students for their future, considering the fundamental role ICT plays in our lives globally, IUMS should implement a fundamental change in medical curriculum, educating faculty, and facilitating the use of ICT among its stakeholders. Medical schools around the world are faced with ever-increasing information and continuous development of computer technology in this information era. For success in the future

one can only bring about the necessary changes it takes to reform the medical education and practice.

7P8

Intructional videos: The need for a preceding analysis to optimize the pedagogical potential

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Background: There is an increasing use of videos in skill training, but the potential of the media might not be utilized to its full potential. There is an increasing realization of the need for a preceding demand analysis. However, the literature provides no knowledge of how to identify the relevant topics. Cognitive learning theories provides a framework for utilization of the visual and auditive possibilities. Lumbar puncture is recognized as a complex lifesaving skill, which must be performed within minutes.

Summary of work: The aim of this study is to make a demand analysis to identify the topics of relevance for optimizing the pedagogical potential of an instruction video. Furthermore, the effect of the demand analysis will be operationalized. The demand analyse will be based on 18 semi-structured interviews, with doctors in the following three groups: Senior doctors with high experience, residents with minor experience and newly graduates with no experience. The developed video will be tested in a RCT, and the effect evaluated by comparison to a video developed by the present standard approach. This study will provide data on whether there is an effect of a preceding analyse. The study is ongoing, but results will be presented at the conference.

7P9

Estimating the recipient's verbal skill for an adaptive e-learning environment

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Background: Am-Learning project - funded by a grant from the Ministry of Research - aims to develop an adaptive approach to e-learning. The first step was the implementation of tools to assess the recipient's ability to understand a message, to modulate then the learning message and make it more understandable.

Summary of work: LexMeter is the module of Am-Learning system devoted to the automated production of cloze tests (fill in the gaps), based on statistical routines upon a textual database. LexMeter was tested on 562 medical students from the 1st to the 6th year. A questionnaire with

background variables related to the habits of study and reading was also administered.

Summary of results: LexMeter produced cloze tests which were comparable in performance with a control test manually produced. The tests proved reliable at classical item analysis and sensitive enough to discriminate between students of the 1st year or older. The performance of the test increased when the format without a list of suggested words was used.

Conclusions: LexMeter is a powerful and reliable tool for the assessment of verbal skill of medical students.

Take home message: Verbal skill, intended as a function of the number of known words, is a fundamental component of learning competence.

7P10

Annotated video player (AVP) for teaching, learning and assessment

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Background: For many years, educational videos have been used to better illustrate principles previously delivered by lecture or written media. Computer-based educational modular presentations have sometimes contained interactive multi media where students access material as independent learners. Excellent teaching modules have been developed by computer programmers under direction of educators in a multitude of university courses. Each module is usually created for a single educational purpose, and cannot be created or altered by the educator without the assistance of a computer programmer. Our annotated video player (AVP) is a software application that enables the educator to independently insert educational videos into a template and link them to supplemental multi media as a self directed learning module in a web based format.

Summary of work: The AVP is a stand-alone software application that is fully functional, when integrated into a web-based interface such as Learn 9. Media utilized by the AVP can be remote from the player, and have the ability to stream via an internet connection. Once the video is loaded into the player, the educator determines cue points within the video that triggers events to occur. Events include: 1. Pausing the video to pause at predetermined cue points 2. Displaying concurrent annotations during playback that alert the student to watch for events in the video 3. Loading links to supplementary learning materials that the student can activate (audio, video, pictures, web links, library links, feedback, wiki) 4. Linking questions to the video 5. Linking answers to questions once the student submits an answer to the facilitator 6. Displaying a Picture-in-Picture clarification of material delivered in the original video

Summary of results: We have developed one resource titled: TEAMWORK AND COMMUNICATION IN ACUTE CARE: A Teaching Resource for Health Practitioners This teaching resource has been developed to improve patient safety and quality of care. A video dramatization of a pregnant woman requiring emergency Cesarean delivery under general anesthesia is used as a clinical example that emphasizes the importance of teamwork and communication in an acute care setting. This educational module was developed to be used both for self-directed learning and for small group teaching. http://www.medicine.usask.ca/acutecareteamwork/intro/index.php Currently two other resources are being developed by students using the AVP.

Conclusions/Take-home messages: The AVP is an easy to use software that can be utilized by educators to annotate new or existing videos for teaching, self-directed learning and assessment. As more educators adapt the AVP we foresee creation of multiple resources in various disciplines that could be shared within learning communities.

7P11

Perceptual and adaptive learning technology in medical education: the efficacy of pattern recognition in teaching dermatology to medical students

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Background: Currently, medical education is centered on traditional didactic methods, even in topics such as dermatology, where pattern recognition is a fundamental skill for diagnosis. Recent work combining perceptual and adaptive learning technologies has shown great promise to improve pattern recognition[1]. This approach uses accuracy and response time to assess and improve discrimination and classification of patterns.

Summary of work: We demonstrate the efficacy of a 30-minute image-based perceptual and adaptive learning module (PALM) to improve recognition of dermatologic morphology by medical students. The PALM consists of a pre-test, an adaptive-learning module, and a post-test.

Summary of results: 148/162 Year-2 medical students at UCLA completed the module. The pre-test and post-test mean scores were 82.0% and 87.7%, respectively ($p<0.0001$; effect-size 0.74). The pre-test mean response-time of 8.98 seconds improved to 3.70 seconds post-test ($p<0.0001$; effect-size 1.65).

Conclusions: Perceptual and adaptive learning technology had a significant effect on the acquisition of skin morphology recognition skills by medical students. The use

of this technology could be expanded to other pattern-recognition-rich areas of medical education.

Take-home message: Perceptual and adaptive learning technology demonstrates promising effects in teaching basic medical concepts and core skills.

[1]Kellman, PJ et al (2010) Topics in Cognitive Science, 2:285-305

7Q   Posters: The Curriculum and International Dimensions

7Q1

Perceived Impact of Clinical Placements on Students Preparedness to Provide Patient-Centered Care in Malaysia

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Background: Patient-centered care is an innovative approach to the planning, delivery, and evaluation of health care that is grounded in mutually beneficial partnerships among health care providers, patients, and families. This study evaluated the perceived impact of clinical pharmacy placements on students' preparedness to provide patient-centered care.

Summary of work: This cross-sectional study among BPharm final-year students used a validated self-administered questionnaire, administered before and after the students' 9-week clinical pharmacy placements undertaken at ten Malaysian Ministry of Health hospitals. Subjects' responses were rated on a 7-point Likert scale anchored at 1 (not at all) and 7 (very well prepared). Wilcoxon test was applied to assess the differences in mean scores of individual items.

Summary of results: One hundred and six BPharm final-year students agreed to participate in the study. Students were aged between 23 and 25 years and participated voluntarily in the study. Majority of the participants were female and Chinese. Significant augmentation in post placement overall mean scores for therapeutics (4.8 vs 3.5, 38.3% change), psycho-social (4.9 vs 4.1, 19.5 % change) and communications skills (5.05 vs 3.9, 30.8% change) aspects of patient-centered care was noted.

Conclusions: Perceived patient-centered care skills grow as students' complete coursework, and changes to that coursework, including clinical learning, can impact both actual and perceived patient-centered care competencies.

Take-home messages: This evaluation reinforces the need for the development of pharmacy practice skills to include a major element of workplace-based situational learning.

7Q2

Medical and Non Medical Electives: Perspective from International Medical University, Malaysia

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Background: Medical electives together with non medical electives form the non-core component of the undergraduate medical curriculum. While the core curriculum aims to ensure acquisition of basic medical knowledge and competency, the electives are introduced to cater to the different inclinations and interests of the medical students.

Summary of work: Following completion of their electives, the students submit a 2000 word reflective report of their experience. A satisfactory grade is essential for progression in their training; an unsatisfactory grade will count unfavorably during Exam Board review of their Final year exam.

Summary of results: The elective programme has been ongoing since 1999. To date 1190 students have undertaken their electives. For the medical elective from 2010 to 2011, 27 % of the 281 students have done their electives overseas. The 3 top chosen locations are National University of Singapore, National Heart Institute, Malaysia, and Hospital Tuanku Rahimah, Malaysia. For the non-medical electives, the most popular choices are charity homes/ non –profit organizations, learning languages, and touring places to gain knowledge in history and culture. The students who have chosen to do their electives locally, the specialties chosen are cardiology, obstetrics and gynaecology and internal medicine.

Conclusions: Students have given encouraging feedbacks on the usefulness of electives. Among those are they felt that they improved their skills in communication and confidence when adapting to new place, people and environment. They have better opportunities for practical work. Also, it allows exposure to various health related fields and specialties which are not available in the hospitals practiced.

7Q3

Assessing the views of Medical, Pharmacist and Nursing students regarding "Shared Learning" in Tehran University of Medical Sciences

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Background: Shared-learning is a Learning Procedure through which the learners cooperate with each other in different practical levels to gain a shared goal and have sensitivity about their own and other's learning. The

purpose of this research is to determine attitude of Medical, Nursing and Pharmacy Students in Tehran University of Medical Sciences (TUMS) toward Shared-Learning.

Summary of work: In this descriptive cross-sectional study 130 students who were in first year of Internship were selected. Data collection tool is RIPLS questionnaire (Readiness for Interprofessional Learning Scale) content and face validity of which has been confirmed by ten specialists in this field and its Reliability was confirmed by Cronbach's Alpha=0.9; these questionnaires were delivered to students and results analyzed.

Summary of results: All students filled in the questionnaires. Most of them had positive attitude. Nursing & Pharmacy Students acknowledged that learning outcomes would be more useful in shared-learning. Medical students also were confident and sure of their professional roles.

Conclusion: This research corroborates that the students had tendency toward shared-learning and believe that it lead to amelioration of their future profession.

Take-home message: Despite of shared-learning shortcomings and lack of similar works in Iran, students of TUMS felt its necessity.

7Q4

Exporting medical education – The experience of the first graduates of Monash University in Malaysia

Paul Fullerton (Monash University, Clinical School Johor Bahru, Malaysia & Clayton, Australia)

Background: Education is seen as an export industry. Monash University offers the same MBBS curriculum as an undergraduate course in a number of sites in Victoria, Australia and in Malaysia (and graduate-entry program in Australia). The first students in Malaysia completed final year in 2009.

Summary of work: This study describes the experiences of the first graduates as reported during the final week of their course in November 2009.

Summary of results: Looking back, most felt it had not been what they had expected. The dominant expectation was that the course would involve distinct subjects, lots of "hard facts", constant drilling and exams, and one described his expectations that it would be "like a military college" (others agreed). They were surprised about the integrated approach, an emphasis on patients as human beings, and that they were taught to be sensitive to the needs and issues of patients (consent, privacy and communication being particularly mentioned). They had not expected the emphasis on "life-long learning". Most indicated Year 5 was their best year, when the pieces of the puzzle came together, and they were beginning to feel really part of the team. Assessment in Final Year is "downplayed" and students felt this was a definite advantage as they were able to concentrate on gaining ward experience and clinical skills.

7Q5

How much to they retain? The level of retention of Physiology knowledge in medical students of the Faculty of Medical Sciences, University of Sri Jayewardenepura

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Background: The Faculty of Medical Sciences conducted a traditional, subject-based curriculum since its inception. The curriculum was revised to an integrated, system based modular one in 2007. This study aimed to assess the level of retention of Physiology knowledge among the last batch of students following the traditional curriculum.

Summary of work: Ten T/F type applied physiology MCQs taken directly from the end of the 2nd year (2nd MBBS) examination, were administered to final year students. The marks obtained were compared with the marks obtained for the same questions at the 2nd MBBS and with their overall performance.

Summary of results: Of the 169 students who sat the 2nd MBBS examination, 156 sat the MCQ paper in the final year, in which 64.1% scored over 50%. Overall 28.2% scored higher, 12.8% scored the same marks and 60% scored less when compared with the 2nd MBBS. Of the students who scored more than 60% overall in 2nd MBBS Physiology, 64.9% scored 50% or more in the final year ($p<0.05$).

Conclusions: While 40% of students retained Physiology knowledge up to the final year, 60% of them failed to do so.

Take-home messages: Retention of basic sciences knowledge is a factor to be considered when evaluating the curriculum.

7Q6

Intercultural continuing professional education - the importance of formative assessment

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Background: This qualitative study was conducted to look at intercultural professional education from the perspective of learners, as little had previously been done in this area, and intercultural continuing professional teaching is becoming more and more common across the globe. The goals of this study were to identify opportunities for improvement in intercultural continuing professional education.

Summary of work: Seventy-four participants from three different countries - Haiti, Kenya, and India – participated in this study, through semi-structured interviews, using purposeful sampling and grounded theory methodology. They included a wide range of health professionals,

including physicians, dentists, project managers, social workers, nurses, pastoral care and community health/community based rehabilitation workers, physiotherapists, speech therapists, occupational therapists, and others.

Summary of results: Interim results show that at least half of the participants spontaneously mentioned the importance of formative assessments and advised that they constitute part of good teaching. Comments are explored in this paper.

Conclusions: Formative assessments in the form of questioning and short tests are commonly appreciated by health professional learners in several countries, and serve to facilitate effective learning.

Take-home messages: Assessment of learners' knowledge levels is important in enhancing continuing professional education.

7Q7
Using Global Health to teach the principles of medical education and assessment

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Background: The first course for a student selected module (SSM) was taught in 2010 as a collaboration between Cardiff University Medical School and onExamination from BMJ Learning.

Summary of work: We had five students with a keen interest in both Global Health and Medical Education and 2 teachers, one with a background in Public Health and Medical Education and the other a Surgeon with experience of working in the developing world and clinical lead at onExamination, providing learning and assessment materials for medical students and doctors.

Summary of results: Topics covered included Global Public Health, research and the collection of data, the UN, UN agencies and the humanitarian sector, challenges in TB and HIV, surgery in the developing world, medical education in resource-poor settings, how medical students learn, pattern recognition and the principles of assessment. Activities included working on global health related projects for a dissertation from working with local refugees to studying the impact of primary school education on pregnancy and maternal mortality, student debates, presentations and meeting the editors at the BMJ (all a first experience for the students). We had workshops in question writing, literature searches and research method.

Conclusions/Take home message: The course was heralded by the students as a great success. We hope to run this again.

7Q8
Developing proactive and timely alignment of education to future service needs

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Background: Educational curricular developments often lag well behind service expectations for future trainees in General Practice in the UK. This is because there is often no cohesive and formalised strategy for rapid implementation of change and sometimes little appetite form stakeholders, until the majority are involved. Too little selling of benefits results in lack of enthusiasm at ground level There is a slow filtration downwards towards a resisting educator network when top down only approach is adopted or a fragmented mosaic develops if only bottom up.

Summary of work: Using a combined top down and bottom up approach and involving all stake holders in the need for change together with positive selling of the outcome enables changes to be rapidly implemented.

Summary of results: Rapid change in medical education curriculum can be achieved through using a combined simultaneous approach, demonstrated by rapid adoption of non-compulsory changes across the educator network.

Conclusions: Educational Curriculum must be capable of rapid change in the light of changing future service requirements; we need to adopt a combined top down and bottom up approach across the whole educator network in order to achieve this change.

Take-home messages: A clear strategy, an agreed combined approach involving all stakeholders, and simultaneous dissemination with supporting resources made available to all levels in the educator network enables rapid response to future requirements in education and implementation of required curriculum changes

7Q9
Students' perception on the first implemented Objective Structured Clinical Examination (OSCE) in Public Health

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Background: The Department of Public Health performed an objective structured clinical exam in public health. The objective of the study was to see the students' perception of this new exam and hope to improve the quality of the exam in the future.

Summary of work: A questionnaire was designed and administered after the exam. The questionnaire included closed questions and open ended questions. The questionnaire evaluated student perception of the OSCE questions/stations; organization; atmosphere; simulated & real patients; self academic performance. Open ended questions asked their opinion of the exam and ways for improvement.

Summary of results: 33% of students said more time was needed at each station. 61.7% felt that setting at each station was not authentic. 63.4% agreed that the exam was very stressful. 20.3% found the experience disappointing. 60% said examiners were friendly, and 40% of students agreed examiners were intimidating. 53.7% felt they have not been well prepared by the work done in class for OSCE. Open ended question showed that students liked the exam and it prepared them for the clinical disciplines, however some said more training was needed for working with manikins.

Conclusion: Time at each station was adequate, setting and context at each station did not feel real; exam was very stressful and some found the experience disappointing, examiners were friendly. Students felt more training on how to work with manikins was needed.

Take-home messages: Decrease the stress in the environment by reassurance of students.

7R   Posters: Interprofessional Education / Integration of the Basic Medical Sciences

7R1

Assessment of Validity and Reliability of Team STEPPS Teamwork Attitudes Questionnaire (T-TAQ) in Iran

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Background: Effective health care services focus on collaboration and teamwork of group members at the community level, team and interprofessional education to modify educational goals and to change attitudes of health professionals. This study is an attempt to assess reliability and validity of Team STEPPS Teamwork Attitudes Questionnaire (T-TAQ) in an Iranian context.

Summary of work: This cross-sectional survey investigated attitudes of senior students of medicine and nursing in Tehran University of Medical Sciences to health. 33 medical and 34 nursing students were selected through stratified sampling from the study population. The T-TAQ questionnaire was translated and back translated by an expert. Then, a panel of ten experts determined its face and content validity. The reliability measurement is in progress and to determine the reliability, test-retest and Cronbach's alpha coefficient will be used.

Summary of results: Content and face validity of the tool are approved and reliability confirmation is in progress.

Conclusions: In view of the fact that validity of this instrument is approved in an Iranian context, it can be used to measure attitudes about inter professional skills in Iran.

Take-home message: The produced version is applicable in Iranian contexts; however considering cultural and local issues are recommended to apply Team STEPPS Teamwork Attitudes Questionnaire (T-TAQ) worldwide.

7R2

How to develop and run an effective workshop for an interprofessional audience

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Background: Interprofessional collaboration emphasizes the opportunities for health care providers from different professions to work together to provide more effective services for "difficult" patients.

Summary of work: A half-day workshop was designed with the emphasis on education about countertransference reactions that "difficult" patients invoke. Case examples encouraged reflection and reframing the problem from "difficult" patient to "difficult" clinician-patient interaction. Pre-, post-workshop and satisfaction evaluation questionnaire were done.

Summary of results: 100% of respondents stated the workshop was relevant to their work, 87.5% that the workshop will alter their clinical practice. Their self-perceived knowledge of transference and countertransference and strategy to manage difficult encounters improved post workshop.

Conclusions: The workshop has met participants' perceived learning needs.They endorsed increased ability to manage difficult clinician-patient encounters.

Take-home messages: Educating primary care providers and building their skills will improve clinician-patient encounters and health outcomes.

7R3

Interprofessional training in the operating theatre

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Background: To increase interprofessional learning experience among the students we have developed an interprofessional training operating ward. The aim is to increase knowledge about the team work in the operating theatre.

Summary of work: A student team consisting of two medical students and two registered nurses training for their specialisation as operating room and anaesthetic nurses, handle an operation under professional supervision. The students develop a plan for performing the operation and the post operative care, with focus on both team work

and responsibility as regards to each profession. All students participate during the preparation of the operation, but specific tasks (e.g. administering spinal anaesthesia) are performed by the assigned student. One medical student and the operating room nurse student perform the operation supervised by the orthopaedic surgeon. The other medical student and the anaesthetic nurse student monitor the patient.

Summary of results: Patients, students and facilitators were very satisfied. Teamwork and learning was assessed by both the facilitators and the team members. The participants found the training valuable for both training professional skills and for training interprofessional teamwork.

Conclusions: Interprofessional training in this clinical setting was appreciated by the students and lead to increased knowledge about the perioperative teamwork among both students and facilitators.

7R4

Busting out of the Silos: Integrating Interprofessional Competencies Early in Health Science Programs

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Background: Eight Health Science Faculties collaborate to develop and deliver interprofessional education (IPE) based on four IP competencies: communication, collaboration, role clarification and reflection. Aside from one required course, IPE is fragmented across these faculties. As part of a two year study, a launch event was held to introduce 435 first year students from five disciplines to IP competencies.

Summary of work: Student teams were brought together for an afternoon to explore case studies and navigate interactive stations hosted by patients, health care practitioners and professional regulatory bodies.   Surveys and focus groups were conducted to assess student: awareness of IP competencies; epistemological beliefs around IP; IPE attitudes; satisfaction with IPE. Comparison between participants and nonparticipants will be conducted at the end of year one.

Summary of results: Preliminary results of launch satisfaction surveys indicate high level of student satisfaction which was attributed to the experiential nature of the event. Majority of students reported increased knowledge of and motivation to learn about IP practice. Initial surveys and focus groups results will also be detailed.

Conclusions: Analysis will provide insights into benefits and challenges of early integration of IPE across disciplines.

Take-home messages: Learners are engaged when initial IPE is authentic and fun. Multiple delivery methods are required to create engagement.

7R5

Validity and reliability of the "Readiness for Inter professional Learning Scale (RIPLS)" in an Iranian context

M Mirshahvalad[1], B Amini, M Shirazi[2],R Gandomkar, A Dehnad, P Pasalar, A khatami, H Baradaran, Sh Bigdeli[3] ([1]Tehran University of Medical Sciences (TUMS), Students' Scientific Research Center; [2]Tehran University of Medical Sciences, Educational Development Center; [3]Tehran University of Medical Sciences (TUMS), Medical Education Department of TUMS, Iran)*

Background: InterProfessional Education (IPE), is a crucial factor in preparing health professionals to render efficient patient care within collaborative care environments. However, information on IPE in Iranian contexts is rare. Thus, the aim of this study is to adapt the RIPLS for these contexts.

Summary of work: At the first stage of adaptation, forward and backward translations were applied, and an expert panel evaluated face and content validity of the instrument. This version will be tested on a group randomly selected from population of Tehran University of Medical Sciences (TUMS) medical students (N=70). Test- retest and Cronbach◌́s alpha coefficient will apply to assess reliability and internal consistency.

Summary of results: The Farsi version of the RIPLS questionnaire is applicable in Iranian contexts. The confirmation process of reliability is in progress. Considering cultural and social issues in assessing the readiness of professionals for interprofessionalism deems necessary.

Conclusion: In the present study, the RIPLS was adapted for use in an Iranian context. In addition, the analyzed data will indicate readiness of TUMS medical students to reform their interprofessional activities.

Take-home message: The readiness of medical students to take part in IP activities will promote IPE. Moreover, considering IPE in curriculum of medicine positively impacts the future of health care systems.

7R6

Investigating the Role of individuals in Development of interprofessional Education: A Qualitative Study

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Background: Interprofessional Education (IPE) in health care system of Western countries has been increasingly developed in the last decades. However, publications fail to depict such an educational development in the rest of world. This paper aims to draw the role of individuals to drive or restrain IPE development.

Summary of work: Based on a cross sectional survey in all medical and nursing schools of Iran, a limited number of shared learning initiatives showed IPE characteristics. A qualitative case study was undertaken on one of the IPE initiatives. Interview with program organizers and teachers, and also documentary search on the related educational materials were employed to collect data. Five stage "framework approach" introduced by Ritchie and Spencer (1994) was adopted to analyze data.

Summary of results: At the individual level, an "intrinsic inclination to self expression" and a "personal inclination to diversity" [Diversitism], met in an IPE atmosphere, were recognized as drivers toward IPE development. "Low self esteem, mistrust, pessimism, fear to self expression, inertia, less commitment, job dissatisfaction and lack of appropriate communication skills amongst individuals involved in IPE were identified as restraining forces to develop IPE. "Personal motivation" is playing a dual role in both driving and restraining direction.

Conclusion: Based upon the results, much attempts need to be done to tackle restraining forces of IPE development for teachers and learners.

7R7

Medical Basic sciences Teachers: Assessment of integration curriculum in Babol medical School

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Background: Studies have shown that integrated curriculum can be useful to improve the quality of education in medical schools.According to perform of this method in Babol medical School basic sciences teachers' view as the executive of Integration can be helpful. This study has assessed basic sciences teachers' views regarding this plan.

Summary of work: This cross sectional survey carried out in autumn 2010 using a questionnaire including demographic data and questions in Likert scale. Questionnaire validity and reliability was confirmed with a Cronbach alpha 0.9.

Summary of results: Overall, 26 teachers completed the questionnaires. 52.1% believed that this integration will improve the quality of education while 54.5 % believed that basic sciences teachers and other officials of the university are not harmonized with each other for doing this plan. 63.6% said that Integration is time consuming and it needs a lot of time to improve the quality of education. 47.8% of them believe that this plan is effective in increasing the

motivation and interest and clinical efficiency among medical students.

Conclusions/Take-home message: University was not successful in getting the Teachers familiar with the consequences of this plan in improving the quality of education. Therefore making new decisions to resolve the problems is necessary.

7R8

Perception towards anatomy teaching with the cadaver: Students' perspective

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Background: The International Medical University, Malaysia has recently introduced a plastinated cadaver to undergraduate anatomy teaching in conjunction with existing e-learning resources.

Objectives: (i) To determine students' perceptions on the use of a plastinated cadaver; (ii) To explore factors affecting students preferences for teaching anatomy with the cadaver.

Summary of work: Data from a cross-sectional study with medical students in semester 4 was collected from the piloted self-administered questionnaires. Differences in proportions were compared using chi2 test or Fisher's exact test. A logistic regression model was introduced to explore factors affecting their preferences

Summary of results: Of 202 students identified, 133 (65%) completed the questionnaire. Almost all chose medicine as their own choice (99.2%), and the majority felt that they have met their expectations so far (78.9%). Only a few felt uneasy seeing the sight of the dissected cadaver (3.8%) and some thought the use of cadaver is not worthwhile (16.5%). Those students who prefer to learn anatomy with the cadaver are those who felt that they met their expectations so far (p = 0.05), who were not apprehensive about entering the specimen room (p = 0.015) or felt comfortable in there (p =0.005), who do not mind mixed-group learning (p = 0.05) and who preferred system-based learning (p = 0.001).

Conclusion: The findings have implications for the development of the curriculum updating in anatomy teaching. Future studies are recommended.

7R9

Some Assessment Tools That Promote Student Centered Education In Medical Physiology

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Background: Physiology Education in our Faculty, as in most Romanian Universities, is being done for cognitive

domain, based on some traditional assumptions, mainly by curricula centered lectured courses.

Summary of work: We checked assumptions like: our medical students posses all knowledge and skills that are necessary to learn cardiovascular physiology, they are motivated to learn or are capable to improve understanding skills and motivate themselves. We did this by asking them, proper 'what' and 'why' questions repeatedly during first month of cardiovascular physiology course, for two consequent generations: 2009 and 2010.

Summary of results: Assumptions failed. Yet, given a large group of students (more than 300 following a physiology course each year), they are nevertheless characterized by different degrees of knowledge, intelligence and motivation.

Conclusions: We developed a computerized protocol to assess, for each student, these characteristics and consequently provide individually the education to fulfill knowledge holes, to improve understanding skills or to provide education in affective domain, as required.

Take-home messages: Since classical curricula/professor centered education in cardiovascular physiology lead in our faculty, during last 8 years, to an average of only 44 percent of exams passed by medical students, this recommends that our protocol is to be implemented.

7R10
Capturing students' learning experiences and academic emotions in interprofessional clinical settings by using the Contextual Activity Sampling System (CASS)

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Background: Interprofessional education (IPE) in clinical settings provide healthcare students possibilities to develop their professional roles, understanding of other professions, teamwork and communication skills and the quality of patient care. Collaborative creation and development of knowledge is a key goal of Interprofessional Training ward (IPTW) courses. Learning is not simply a matter of cognitive activities; previous research has described how students experience 'academic emotions' which affect engagement in learning and performance in a complex way.

Summary of work: To understand students' perspective of learning and academic emotions in clinical IPE settings, the CASS methodology was used by 37 students to gather qualitative and quantitative data during IPTW-courses.

Summary of results: Preliminary results contribute to our understanding of how students collaborate within the team and other professions to create new knowledge during an IPTW course, which were activities that were significantly related to so called optimal experiences.

Conclusion: The CASS methodology provides understanding of how learning and academic emotions in IPTW settings occur in detail and in context.

Take-home message: Using the CASS methodology to capture information about how learning activities and academic emotions occur in detail in clinical settings is a promising method for understanding IPE.

7R11
Case Based Integrated Teaching for undergraduate medical students

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Background: The traditional method of teacher-centred training is one in which knowledge and intellectual skills are imparted to students in a passive manner through lectures and demonstrations. Departments follow rigid compartmentalization. Direct transfer of basic science learning to clinical case scenarios is less evident than is relearning of same information in a clinical format.

Summary of work: The aim of this study was to assess whether Case Based Integrated Teaching (CBIT) Model can be implemented in Indian set up. We followed a modified Barrow's model of learning. Real clinical cases served as triggers for self directed learning. 72 students were divided into study and control groups. The study group was divided into 4 groups of nine students each. The method was evaluated by individual process assessment, cognitive domain assessment and faculty – student feedback.

Summary of results: Students from study group scored better in short answer questions. Concept maps prepared by students were analyzed and the score was high in the study group. All the participants appreciated the CBIT Model and mentioned that it has enhanced their clinical reasoning skills and that the exercise was self motivating. Students also had an apprehension that it may not help for their traditional examinations. Faculty mentioned that such a model should be implemented in all disciplines. However, they felt that evaluation of students is difficult when they are exposed for a small period to CBIT.

Conclusions: Case Based Integrated Teaching is an effective modality of imparting Medical education with effective integration of various disciplines. It can be implemented in a phased manner and used for formative evaluation of undergraduate medical students.

Take-home message: A student centred, patient oriented approach as a result of integrated teaching helps us to have a much needed "Basic Doctor".

7R12

Designing a Collaborative Interprofessional Educational Model: Chiropractic and Dentistry

Hanan Omar, Saad Ahmed Khan, Michael Haneline, Toh Chooi Gait (International Medical University, Kuala Lumpur, Malaysia)

Background: Early clinical exposure for dental students is an integral part of recent developments in dental curricula [1]. This early exposure requires providing dental students with thorough ergonomics training at both the theoretical and application levels.

Summary of work: As Work related musculoskeletal pain and injury in the dental profession has been reported for over 35 years [2], the dental and chiropractic disciplines at our university designed a collaborative interprofessional educational model where the scope was identified as occupational health for dental practitioners. The first stage of the program involved introducing first year dental students to occupational health and ergonomics through lectures delivered by doctors of chiropractic followed by sessions to address proper practice of ergonomics in the dental clinic, as well as daily exercises to ensure proper posture while working. The aim of this stage was to introduce dental students to the ergonomics foundation as part of occupational health and help them to identify potential health problems related to poor ergonomics. The second stage of the program will be implemented on second year dental students wherein the chiropractic students will assess them for proper practice of ergonomics. They will also be taught to self-assess their postural positions by chiropractors and made aware of the potential to develop future ergonomic-related health problems.

1. Lalumandier JA, Victoroff KZ, Thuernagle O. Early Clinical Experience for First-Year Dental Students. Journal of Dental Education. 2004; 68 (10):1090-5.
2. Green EJ, Brown ME. An Aid to the Elimination of Tension and Fatigue: Body Mechanics Applied to the Practice of Dentistry. Journal of the American Dental Association.1963; 67: 679-697.

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SESSION 8   SIMULTANEOUS SESSIONS
1600-1730 hrs

8A   Symposium: Research in assessment: consensus statements of the Ottawa conference

Lambert Schuwirth[1], David Swanson[2], Hirotaka Onishi[3] on behalf of the Ottawa 2010 Consensus Group ([1]Flinders University, Australia; [2]National Board of Medical Examiners, USA; [3]University of Tokyo, Japan)

At the Ottawa 2010 conference a group of international experts in assessment research were brought together to produce a series of consensus statements on quality of research in assessment. Their draft work was presented to the larger audience at the conference. The input generated here was used to finalise and publish a consensus document.[1] This document contained positions and recommendations on types of research, theoretical and/or conceptual frameworks, study design and methodology, validity and generalisability, cost and acceptability, infrastructure and support and ethical considerations. Such a document, however, is never finished; it needs regular updating. The aim of this symposium is therefore to add on the existing work. First, an overview of the existing consensus statements with their rationales will be given and then a discussion with the audience will be held to seek further input for a revision of the document. The symposium is not only suitable for those with experience in publishing research but also for those who want to learn about it.

[1]Schuwirth LWT, Gruppen L, Mennin S, Onishi H, Pangaro L, Ringsted C, et al. Research in assessment: Consensus statement and recommendation from the Ottawa 2010 conference. Medical Teacher 2011;33(3):224-33.

8B   RHIME (Ron Harden Award for Innovation in Medical Education) Presentations 2

8B1

AppMaster: the Application that Facilitates Educators to move towards Mobile Education

S M Kumta*, JYC Leung, ALK Yung, LAH Critchley, Yan Jin (The Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, N.T. Hong Kong, SAR)

Background: Handheld devices like smart-phones and tablets had become a large part of our everyday lives. By allowing users to be connected to the rest of the world at all time, they changed our behavior on how we gather new information, i.e. we no longer want to wait for information, we want them at our fingertips at all time. This opens a completely new door for us, as medical educators, to be connected with the technology-advanced young generation. Our idea is to use applications (apps) as educational tools, where apps are specially written programs that are stored on the users' handheld devices and allow the users to study whenever and wherever they want; rather they are on the way to school or the short time between classes. However, developing these kinds of apps requires special programming skills that medical educators are not equipped with. Therefore, the Chinese University of Hong Kong developed an app called AppsMaster, on both the Android and iOS platforms, the two largest handheld operating system on the market, that allows teachers to easily convert their own teaching material onto an apps format.

Description: The AppsMaster allows teachers to create their own apps. There are a few options in the ways that the materials are presented: a) as a study guide; b) as a mini formative assessment c) enriched with multimedia links to resources (PDF, Microsoft Office and etc.). The AppsMaster only requires users to submit files in a simple and standardized format. Materials can also be easily updated through Internet as there are built-in notifications for the user whenever new updates are available. Combining with the fact that this apps allows the student's responses to be collected and report to the lecturer, these give the lecturer a better control of the students and adjustment to the course can be made accordingly. At the moment we are in the progress of converting 20+ learning packages that we obtained from different department like Anaesthesia and Radiology, into apps format.

Potential impact and adaptability: The AppsMaster offers great potential in the delivery of learning material in the near future as the mobile technology advancement continues to boom. It saves teachers' time and money for the transitional period in preparing lecture material for mobile learning. The end-product apps can be a study guide for quick access to information, a short quiz before the class to make sure the students come to class with a basic understanding, or it can be a problem solving case study to strengthen decision making skills. Another important note is that the AppsMaster can create questions in the form of locating a certain point on a picture. That is a very useful option especially in developing x-ray examining skills where teachers can set up questions and ask students to locate and identify abnormal features. This project is extremely useful to those who want to prepare material for mobile applications but do not have the skills or time to write apps.

8B2

Using on-line examiner training to improve inter-rater reliability

BS Malau-Aduli*, S Mulcahy, E Warnecke, R Turner (University of Tasmania, Australia)

Background: A crucial determinant of reliability in OSCE is the accurate judgment made by the examiners, particularly if the pass/fail decision is made by a single examiner. Attempts to improve the reliability of OSCEs include organising training sessions to allow examiners carry out their role consistently thereby reducing variability in scoring. However, due to the busy schedule of clinicians and the challenges of getting away from their activities to attend examiner-training sessions, the validity and reliability of the examinations could be compromised.

Description: An OSCE collaboration project was developed between two Australian Universities in 2010 in which three OSCE stations were developed and embedded in the first clinical phase examinations at both schools. To reduce variability in scoring, an OSCE e-scoring tool was developed and set up in a secure on-line Blackboard Learning System

Vista environment. The three shared OSCE scenarios were videotaped and used for on-line examiner training. All internal and external examiners were invited one week prior to the examination via email, given login access and instructions on how to use the program. In their own time, each examiner was able to watch and assess two unlabelled scenarios (poor and good performance) of the OSCE case which they had been assigned to examine on. After completing and submitting their scoring sheets, the examiners were able to compare scores, reflect on their judgments and discuss their decisions on-line. They were also asked to provide feedback on their experiences of the e-scoring program, using an on-line survey.

Results: The e-scoring package gave the examiners the opportunity to standardise their marking by comparing their scores with their co-examiners and reaching consensus on scoring techniques. Similar trends in the results were observed at both schools with high inter-rater reliability, especially with the global scores. Examiners valued the process as it allowed them to set the 'expected standard' for the station prior to the actual exam. They also indicated that this sort of tool should be used more widely in OSCEs.

Applicability: The observed close agreement between examiner scores in this study, despite the different geographical locations is attributed to the e-scoring program because it offered training exercise for both quality assurance and appraisal purposes. The efficacy and ease of use of this novel approach to examiner training indicate the possibility of its wider use in OSCEs.

Adaptability: The importance of the commitment of medical educators to the quality assurance of OSCEs cannot be overemphasised. Results from this study revealed that the e-scoring program has the potential to enhance inter-rater reliability in OSCEs. With increasing student numbers, numerous teaching sites within each medical school as well as time constraints, this tool will afford time-poor clinicians the opportunity to better engage with the assessment process and reach consensus on their scoring techniques, thereby providing validity evidence to all stakeholders.

8B3

Operation Debrief: A SHARP intervention to improve performance feedback in the OR

M Ahmed*, S Arora, S Russ, A Darzi, C Vincent, N Sevdalis (Imperial College, London, UK)

Background: Debriefing is recognised as one of the key educational techniques for optimising learning from every clinical encounter. However there is a dearth of evidence regarding how best to improve debriefings – particularly in a high-performance setting. This study aimed to develop an intervention to improve debriefing, based on best evidence and end-user input, and then to evaluate its effectiveness in the Operating Room (OR) setting.

The Innovation: Development: An extensive literature review was performed to identify best evidence for

effective debriefing practices. Semi-structured interviews with 20 surgeons were conducted to determine what the providers and receivers of debriefing felt were the core components of an effective debriefing. Interviews were analysed by two coders using emergent theme analysis, with member-checking and triangulation of findings. Based upon the findings from the review and the interviews, a panel of experts developed a flashcard with the key features of debriefing designed to fit into a surgeons' pocket. This would act as a prompt for them to cover the key elements of debriefing. The following key elements of an effective debrief were identified and developed into the SHARP mnemonic embedded onto the flashcard : **S**et learning objectives, **H**ow did it go, **A**ddress concerns, **R**eflect on key learning points, **P**lan ahead (Figure 1).

The Innovation: Evaluation: A prospective, cross-sectional pre and post study was conducted to evaluate the innovation. 50 General Surgical Cases were observed using ethnographic techniques to identify the style and content of debriefing provided to trainees by their seniors. Each debriefing was also assessed quantitatively using the validated Objective Structured Assessment of Debriefing (OSAD) tool (minimum score 8, maximum score 40). Following the introduction of the intervention, a further 50 General Surgical cases debriefings were observed and assessed using the same measures. 20% of cases were observed by a second researcher to test inter-rater reliability. Inter-rater reliability for OSAD was excellent (ICC = 0.994). Quality of debriefings as assessed by OSAD significantly improved following the intervention (Pre Median = 19, Range 8-31; Post Median = 33, Range 26-40, p<0.001). Users reported high levels of satisfaction with the SHARP intervention in terms of comprehensiveness, feasibility and future use. Ethnographic observations also highlighted richer, more detailed debriefings between the trainer and the trainee focussing on positive aspects of performance as well as plans for further improvements.

Applicability and Adaptability: The SHARP innovation is grounded in best evidence and end-user input. Our evaluation shows that SHARP is an effective means of improving performance feedback in the Operating Room. Trainees and seniors have responded positively to the innovation and support the implementation of SHARP into routine practice as a means of optimising work-place based learning in Surgery and other high-performance settings (including Anesthetics and Internal Medicine).

8B4

Computerized adaptive test delivery for progress testing: a pilot study

CF Collares, VR Bollela, WL Parizoto Grec, JL Martins Machado (Universidade Cidade De Sao Paulo, Brazil)*

Background: Progress tests (PTs) have been widely used in medical education. However, some disadvantages are acknowledged such as lower reliability for beginners as well as examinees' tiredness when long PTs are used.

Computerized adaptive test delivery (CAT) could decrease length-related tiredness by reducing the number of items while keeping reliability. Other CAT advantages include more precise scores, especially at the extremes of the ability spectrum; enhancement of item formats in order to include vignettes with audio or video; easier result collection and reporting; added security, if overexposure issues are controlled; and better longitudinal score comparisons.

Description of the innovation: Simulation studies using CATSim software were performed to evaluate how different CAT algorithms would perform on test length reduction with different degrees of intended reliability. After observing positive results on simulation studies, a pilot study aiming to evaluate feasibility and applicability of a CAT PT was performed on 50 volunteer students. Approximately 500 items from previous PTs were analyzed using the 3-parameter logistic model. Parameters were calibrated with Bayesian modal correction of maximum likelihood function using XCALIBRE software. A commercially available CAT solution for test assembly, delivery and reporting was used (Fast TEST Web). The algorithm was built in order to avoid under and overexposure issues, as well as to relatively maintain content validity across all medical specialties.

Results of evaluation: In a semi-structured questionnaire, examinees reported mostly positive reactions with CAT. Test length and immediate score reporting were the most cited advantages. The most important negative remark was the impossibility of changing answers. The majority of examinees would prefer CAT PT in the next semester (84%). Mean test reduction was 48% (±17%) when intended reliability was 0,75. Homogeneity of reliability levels across all examinees was achieved.

Applicability and potential educational impact: CAT usage on PTs revealed to be a low cost and practical alternative to paper-based PTs with several advantages. Budget for paper-based and CAT PTs were compared and a CAT solution for PT in our institution would be less expensive than the paper-based PT. Despite the observed advantages, enhanced quality of longitudinal score comparisons for better progress measurement is yet to be demonstrated. Medical school consortiums towards common CAT PTs could allow further cost reduction and better quality assurance for medical schools worldwide.

Adaptability in other settings: CAT PT was shown to be inexpensive and feasible and it could be implemented in any medical school with a standard computer lab with internet access.

8C   Oral Presentations: Competency-based Assessment 2

8C1

The Challenges of Introducing a Competency Based Assessment for Optometrists

Jackie Martin, Ruth Brough* (College of Optometrists, 42 Craven Street, London, WC2N 5NG, UK)*

Background: The College of Optometrists is the professional, scientific and examining body for Optometry in the UK. It provides the Scheme for Registration (SfR) for the General Optical Council (GOC), which is the route by which individuals with an undergraduate qualification in optometry become registered to practice.

Summary of work: A review of the Scheme was prompted by the introduction of the stage two competencies by the GOC. The College encountered a range of challenges including introducing a two stage work-based assessment using patients and different assessors; recording, storage and distribution of results and feedback; replacing a 2 day practical exam with a 14 station OSCE. The biggest challenge lay in convincing stakeholders that the new SfR was fit for purpose.

Summary of results: The process of analysing data and feedback from the new Scheme has begun. Early indications suggest supervisors have continued to take on pre-registration optometrists despite initial fears surrounding the new system; the assessments taking place are following the recommended format and trainees feel supported by their assessors in terms of the feedback and action plans provided after assessments.

Conclusion/Take-home message: The overall pass rate for the first year of the Scheme was 77%. The collection and analysis of feedback continues.

8C2

Competence-Based Teaching in the Undergraduate Medical School Results in Significant and Constructed Learning in Students

M Secchi[1], C de Burbure[2], R Turiela[1], W Bordino[1], N Rodriguez León[1] ([1]Medical School, Instituto Universitario Italiano De Rosario, Iunir, Argentina; [2]Catholic University of Louvain, Belgium)*

Background: It was decided to evaluate the curriculum based on professional. Argentine Resolution 1314/07.

Summary of work: A prospective investigation of assessment of competence in Medicine : 70 professional skills in Medicine were studied (level 1 minimum and level 5 maximum) in prospective investigation. Each learning competence was constructed from 1st year . Students (n=186), graduates (n=40), professors (n=19) and authorities (n=4). Statistical analysis 2011: For the

quantitative analysis of the variables, the normality test was applied. SPSS software version 17 was utilized for all the tests.

Summary of results: Students: In 4th year, the learned skills were between level 3 and 4. In 5th year, they were between 4 and 5. In 6th year, almost all students reached the 5th level. Graduates: 31 were applied correctly: level 4 - 5 (77%). Head and assistant professors: n=19. Since 2006, professors have PROGRESSIVELY incorporated and applied this pedagogical paradigm in a coordinated and harmonic manner in almost all curriculum subjects: 95% in 2011. Authorities: n= 4. The authority's feedback - in qualitative terms - was consistent with that of the professors.

Conclusion/Take-home message: Educational quality can be improved when competence-based learning is applied.

8C3

The factors underlying a CanMEDS in-training assessment

G. Cole (Educational Research Unit, Office of Education, Royal College of Physicians and Surgeons of Canada, 774 Echo Dr, Ottawa, ON, K1S5N8, Canada)

Background: The Royal College of Physicians and Surgeons of Canada requires candidates for its examinations to complete a final in-training evaluation report (FITER) based on the CanMEDS framework. In 2009 264 Internal Medicine FITERs were factor analyzed and correlations with the final certification examination were conducted.

Summary of results: While a principal component analysis revealed one component accounting for 46% of the variance, five factors were labeled as being meaningful in understanding the FITER: procedural skills; professional/communicator/collaborator; medical expert/scholar; health advocate and manager. The Royal College examination is composed of four types of oral scenarios, a simulation station and a written examination. The correlations of the factors to the examination results were lowest for the procedural skills factor(-.01 to .08) and highest for the medical expert/scholar factor (.16 to .36).

Conclusions: The pattern of weak correlations were expected as the examination had almost no procedural content; the reliability of the FITER is likely low and the factors measured by the FITER are quite different from those measured by the examination.

Take-home messages: The CanMEDS in-training evaluation FITER generally results in one factor representing the majority of the variance. However, several other factors are also meaningfully represented.

8C4

Supporting Nurses through a competence review process

Pauline Cook (New Zealand Nurses Organisation, PO Box 2128 Wellington 6140, New Zealand)

Background: The enactment of the Health Practitioner's Competence Assurance Act 2003 has lead to a number of nurses having to undertake a competence review as result of concerns being raised with Nursing Council of New Zealand.

Summary of work: This presentation looks at the suite of legislation that guides the provision of health services in New Zealand. In particular the session will look at the Health Practitioners Competence Assurance Act 2003 and provides an overview of the competence review process and the consequent effects that this process has had on nurses over the six years that the Act has been in place.

Summary of results: Some examples of nurses' experiences of the Nursing Council competence review process and the outcomes are discussed. Data and the trends of nurses undergoing competence review are profiled. This presentation also describes the presenter's experience in supporting nurses and other health professionals through the competence review process.

Conclusions: Lessons for the competence review data indicate that nurses can avoid competence review by actively maintaining their career and managing any potential competence concerns.

Take-home messages: For nurses who successfully come through this competence review process it can be a fresh start to their career, new beginnings and opportunities. It is not the end of their career.

8C5

Birth of a New Profession: Developing written and performance-based examinations for an emerging profession

J. Pugsley, C. O'Byrne (The Pharmacy Examining Board of Canada, 717 Church Street, Toronto, ON, Canada M4W 2M4)

Background: The Pharmacy Examining Board of Canada (PEBC) developed a certification process for Pharmacy Technicians (PTs) at entry-to-practice, based on a new national competency profile. Once registered, PTs are accountable for compounding, dispensing and distributing medications and for appropriately referring clients to a pharmacist.

Summary of work: PEBC developed a blueprint using a focus group method and created a two-part examination, including a performance examination, to assess readiness of a newly regulated professional to assume an expanded scope of practice. The challenges were that there were no practitioners involved in or accountable for the full scope of practice, and many were not trained in accredited programs. PEBC needed to develop examinations using visionary, practising pharmacists to author questions and OSCE-like stations, in both cognitive and technical domains, and to pilot the examination as the first operational certification examination.

Summary of results: PEBC developed a defensible, reliable written and performance examination. A summary of the development of the certification process and research findings will be presented. Lessons learned will be discussed.

Conclusions/Take-home messages: Effective collaboration, communication and addressing of stakeholders' needs are critical in developing an examination for a new profession. Scope of practice needs to be fully defined.

8D   Oral Presentations: Standard Setting

8D1

The practical value of the standard error of measurement in borderline pass/fail decisions – case study in clinical anatomy

Milton Severo*[1,2], Ana Povo[3], Maria Amélia Ferreira[1,3] ([1]Center for Medical Education, Faculty of Medicine; [2]Department Epidemiology, Predictive Medicine and Public Health, Faculty of Medicine; [3]Institute of Anatomy, University of Porto, Portugal)

Background: The standard error of measurement (SEM) is sometimes used as an additional 'safety net' to reduce the frequency of false-positive or false negative classifications.

Summary of work: 267 students took the three clinical anatomy practical examinations in 2011. The students were asked to identify 40 anatomical structures on images and prosected specimens in the practical examination. Cronbach's alpha was used to estimate the SEM. Scores were then divided into four classes (1, 2, 3 and 4): above the pass score, from the 0 to 1 SEM, 1 to 2 SEM and 2 to 3 SEM below the pass score.

Summary of results: The Cronbach's alpha ranged from 0.75 to 0.81 for the 3 practical examinations. The prevalence of class 1, 2, 3 and 4 was 68.2%, 14.2%, 5.2% and 6.4% and the passing proportion in the final examination of clinical anatomy was 96.0%, 88.9%, 70.0% and 37.5%, respectively, $p<0.001$.

Conclusions: The association with the passing proportion in the final examination supports the practical value of SEM in borderline pass/fail decisions in clinical anatomy.

Take-home messages: The SEM is useful 'safety net' to make defensible decisions about the students with borderline scores.

8D2

Changing standard setting mechanisms in high stakes, licensing examinations

Adrian Freeman*[1,3], Richard Wakeford[2,3], Lee Coombes[1] ([1]Peninsula Medical School, University of Plymouth UK; [2]University of Cambridge, Cambridge UK; [3]Royal College of General Practitioners, London UK)

Background: In order to work unsupervised in General Practice in the UK. Doctors must take a speciality training programme which is assessed in three parts. The clinical skills assessment is an OSCE style assessment with high fidelity simulated patients in 13 clinical encounters. Due to changes in licensing arrangements this was a newly created examination which began in 2007. As a new examination a standard setting mechanism was chosen which was hoped to be dependable and significantly transparent. Each candidate had to pass a set number of cases.

Summary of work: After running for a year a formal evaluation took place: a generalisability analysis was carried out; external expert reviews were sought and the advice of the UK regulating body was considered. These all triangulated to a need for a change of the standard setting mechanism. Using existing data modelling could be carried out to predict the effects of change.

Summary of results: Data will be presented showing the generalisibility analyses, the predictions of the modelling models and the outcome analysis of the change to the standard setting

Conclusions: The change has been effective and significant. Proper evaluation of data and modelling supported this major change.

Take-home message: Timely evaluation of new assessments and predictive modelling from data allows change to standard setting of high stakes assessments.

8D3

Are Angoff Values Accurately Reflected by Item Performance?

Margaret Dennett, Dwight Harley, Ronald Damant (Vancouver Community College, Dental Health Sciences, 250 West Pender Street, Vancouver BC V6B 1S9, Canada)*

Background: The "Yes/No" approach is a popular modification of the Angoff process. It is simpler to use than the pure Angoff while providing comparable results. Raters, first reach a consensus about the characteristics of a Minimally Competent Borderline Candidate (MCBC), and then score the item "yes" (1) or "no" (0) for the expectation of MCBC answering correctly. An Angoff value for an item is the average of the ratings across raters. The cut score becomes the sum of the item Angoff values. The purpose of the study is to determine if Angoff values for items are accurately reflected by the performance of the items.

Summary of work: A 200 item examination will be administered to approximately 1,200 candidates. A pass score will be determined using the Angoff method. Data will be selected for those candidates who are within 5 points of the cut score. Item difficulties will be calculated for this subsample and then compared to the Angoff values. The process will be repeated for candidates who are within 4, 3, 2 and 1 points of the cut score.

Take-home message: When reviewing item performance statistics it is critical that the item's Angoff value also be reviewed to ensure that it reflects actual performance.

8D4

Nedelsky Standard Setting for MCQs: Panelists' Perceptions of Usefulness

G Horton, N Paterson, B Walker, A Worthington (University of Newcastle, School of Medicine and Public Health, Callaghan, Australia)*

Background: Nedelsky standard setting for MCQ examinations is one way of setting pass marks according to how well learners apply their knowledge.   Each single-best response MCQ is classified by how many of its options if selected would indicate a significant learning deficit.

Summary of work: Nedelsky panels have been trialled in seven courses of our five-year undergraduate medical program during 2008 to 2011.   Panellists from each of these courses and across our rural and regional sites were asked in semi-structured interviews about their experiences and the usefulness of the process.

Summary of results: Panellists appreciated the justification of cut scores which could be provided by the method. Cut scores derived from the process have mostly been too high to directly determine pass rates, particularly when panels included more new participants.   Perceived reasons for this included panellists not differentiating between the standard expected of practising doctors and the standard required of students at their particular stage in the program.

Conclusions: In order to justify the considerable time involved in standard setting, thorough briefing of participants and mentoring early in the process to ensure that marks are not set too high is important.

Take-home messages: Standard setting can be a useful collegiate activity. Maintaining enthusiasm and involvement depends on achieving practical outcomes.

8D5

A Comparison of the Borderline Regression and Borderline Group Methods in Setting OSCE Standards

K Reid, A Dodds (The University of Melbourne, Medical Education Unit, Melbourne Medical School, Melbourne, Australia)*

Background: OSCEs are an important component of assessment in medical curricula and are often used to establish competence in high stakes contexts. Awareness has grown of the importance of setting defensible standards for performance on OSCEs that candidates must achieve in order to be considered competent.

Summary of work: We describe two empirical methods for determining OSCE cut scores: the Borderline regression method and the Borderline group method in terms of their advantages and disadvantages. We also compare the

outcomes of applying these techniques to OSCE data obtained from medical students undertaking clinical training.

Summary of results: All candidates identified as not meeting the required standard for each station by the Borderline group method were also identified using the Borderline regression method. Numbers of candidates identified as not meeting minimum standards for the station were higher for the Borderline regression method.

Conclusions: There are a number of different methods for setting standards; each of which have strengths and weaknesses, both of a pragmatic and a conceptual nature.

Take-home messages: Arbitrary pass marks are easy to understand and straightforward to apply, but are increasingly difficult to justify because they ignore the difficulty of the test. Ongoing work to compare different standard setting methods using student assessment data is important in allowing educators to reasonably compare the performance and implications of different techniques.

8D6

Monitoring possible effects of examiner leniency/stringency in OSCE with simple statistics

E Tor, J Macnish*, A Wright, C Steketee (The University of Notre Dame Australia, School of Medicine (Fremantle), Western Australia)*

Background: When a conjunctive standard framework is applied for OSCE and students are required to pass every station or a fixed number of stations, the consequential validity of OSCE scores may be undermined by possible effect of examiner stringency / leniency.

Summary of work: The possible leniency/stringency in scoring for each OSCE examiner is monitored post-hoc using simple statistics. The student score in a station (x) is compared to their respective average score across all other stations (y). The average score deviation (d=x-y) for all students is taken as a proxy for relative task difficulty for the station (D). Having taken into account the relative task difficulty, the absolute score deviation for each student in the station is determined (d-D).   Finally, the average score deviation for all students examined by an individual examiner is compared to the standard error of measurement (SEM), to determine whether there is an effect of stringency or leniency.

Summary of results: This statistical monitoring of possible effect of examiner leniency / stringency has helped in enhancing the consequential validity of OSCE test scores, and providing constructive feedback to OSCE examiners.

Conclusion: With the use of simple statistics which can be easily done using EXCEL, possible effect of examiner leniency/stringency can be monitored as part of quality assurance procedures for OSCE results.

8E   Oral Presentations: Professionalism 1

8E1

What influences attitudes to professionalism in the early years of medical school (a social network approach)?

J McAleer[1], R Isba[1], G Vince[1], K Eames[2], A Garden[1] ([1]Lancaster Medical School, Faraday Building, Lancaster University, Lancaster, UK; [2]London School of Hygiene and Tropical Medicine, Keppel Street, London, UK)*

Background: Social network analysis (SNA) is a method of studying the relationships of individuals in a population, in the context of their social structure. Within medical education it can be used to study the relationships and interactions of medical students within the medical school environment. Much acquisition of knowledge, values, and professional behaviours may occur outside of formal teaching activities, and students are often influenced by their peers. SNA therefore allows the visualisation of social networks within the medical school, and may also be used as a basis for future hypothesis testing.

Summary of work: This project is the first part of a study to examine the influences of social networks on the development of attitudes towards professionalism in students at Lancaster Medical School (LMS). A cross-sectional data collection will allow us to map the relationships of all 250 undergraduate medical students at LMS, at a single point in time.

Conclusion: The results of this work may have implications for how students are influenced by their peers within the dynamic, but relatively closed, network of a small medical school. Future work aims to assess the role of this university-wide social network in the acquisition of professional values.

8E2

Does punctuality predict academic performance in General Medicine in final year medical students?

M R Mohideen (University of Ruhuna, Department of Medicine, Galle, Sri Lanka)

Background: Punctuality and regular attendance are important attributes of diligence and professionalism in medical students. The predictive effect of these behavioural aspects to academic performance is poorly studied. Punctuality was strictly monitored during the posting.

Summary of work: The time of arrival to the ward as a marker of punctuality was recorded in two batches of final year medical students doing an 8-week final year posting in general medicine. The performances of students in their continuous assessments during the posting and end of program written, clinical examination were evaluated in

relation to mean time of arrival and grades of punctuality ("early", "on-time" and "late").

Summary of results: Of the 268 students, 90 males and 98 female students in two consecutive batches (91 and 97 students) were studied. One-quarter of students were regularly "late" arrivers. The mean time of arrival was significantly later in male students compared to females (p<0.001) and significantly negatively correlated to continuous assessment performance (r= - 0.360; P<0.001) but not to written (r= - 0.147; P=0.16, clinicals (r=- 0.067; =0.52) and total marks (r= -0.124 ; P=.23).

Conclusions: Late arrival in the ward is associated with poor performance in the continuous assessments but not correlated to end-of program performance.

Take-home message: Punctuality may be a marker of academic performance.

8E3

Do we need to raise a red flag for plagiarism assessment?

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Background: Awareness of plagiarism among students and faculty is one of the professional development programs of the International Medical University. To accomplish this, the faculty uses plagiarism software which is accessible on the e-learning portal. Also available are explanations for monitoring plagiarism and instructions on the software.

Summary of work: We tested students' awareness of plagiarism by checking assignments with and without deducting points. Twenty-seven Chiropractic students were involved in this study. Firstly, the lecturer instructed to the students to submit their assignment after checking with plagiarism software, but without deducting points. Secondly, the students were instructed to submit their assignment after checking with plagiarism software, with the notice that 10% of their points would be deducted. After the first submission, the lecturer met with students whose matching test was within 25% to 49% to discuss any confusion about checking for plagiarism and their professional attitude.

Summary of results: Seven out of 27 students (26%) were within 25% to 49% on their matching test without deducting points, whereas two out of 27 students (7%) were within 25% to 49% when points were deducted.

Conclusions: Punishing undergraduate students for misconduct may not enhance assessment for professional development. However, our study showed that we need to raise a red flag regarding attitudes about plagiarism.

8E4

Using Social Network Analysis (SNA) as a Conceptual and Methodological Device for Studying Medical Education: A Professionalism Case Example.

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Background: Studies of medical training struggle to capture the dynamics of relationships and context in examining professional formation. In this study, we use one window (professionalism) to illuminate challenges in the study of professional identity formation.

Summary of work: During an anatomy block, first year students completed six rounds of a social network instrument to explore the dynamics of peer learning networks.

Summary of results: Students responses identified an emergent network of professionalism role models comprised of highly connected students and outliers. Analysis of hubs and outliers reveals a fascinating web of negative findings -- including a lack of association between faculty ratings of student professionalism (compiled during regular course evaluations) and student/study ratings. Other attributes such as academic performance and student demographics did not discriminate among students' network placement.

Conclusions: While students did identify professionalism role models, they did not default to proxies such as academic standing or to homophily. Instead, they used criteria not captured in this study. Moreover, differences in student and faculty professionalism ratings raise validity questions about assessing professionalism based only on faculty input.

Take-home message: Among first year medical students, professionalism is a dynamic attribute that can be captured using SNA.

8E5

Unprofessional behaviours relating to academic integrity in which students propose no sanction

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Background: The main challenge to deal with lapses of academic integrity is to agree to the appropriate sanctions that can lead to positive effect. This study identified level of sanctions recommended by medical students at Faculty of Medicine, UGM.

Summary of work: A validated questionnaire asking students to propose sanctions level for 41 unprofessional behaviour relating to academic integrity lapses was administered to 222 third year medical students. It ranges from 1 =none to 10=report to professional regulatory body.

Summary of results: Students propose no sanction for accessing old exam papers, which have not been released to the whole class and completing work for another student. Students propose verbal warning for: 1) getting or giving help for coursework, against rules, 2) citing source that have not in fact been read, 3) receiving information about a paper from students who already sat the exam, 4) failing to correctly acknowledge a source, 5) missing lecture frequently, 6) lack of punctuality, 7) signing attendance sheets for absent friends, 8) intentionally paraphrasing text in an assignment, without acknowledging the source.

Conclusions/Take-home messages: There are 2 unprofessional behaviour students propose no sanction. Clear guidance on what kind of unprofessional behavior may be needed.

8E6
Educational culture change: The reflective portfolio as a process

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Summary of work: We assessed students' perception of the e-portfolio system at Imperial College Medical school, then further developed their portfolio and reflective culture. Using grounded theory, focus groups were transcribed and thematic analysis was carried out. A strategy for improved student understanding was designed and implemented.

Summary of results: Analysis revealed a mediocre understanding of the purpose and utility of e-portfolio. Students saw value in portfolios for reflection and job interviews though varied in their understanding of reflection. Many complained about the effort required and technical difficulties. Students appreciated feedback given. Implementation was more successful when tightly-integrated and well-supported by tutors. Based on results, we developed a strategy for improvement of e-portfolio. Users had to understand its purpose and feel ownership. The concept was condensed to a memorable description of activity and utility: "record, reflect, share, feedback=learn" to encourage and maintain student and faculty understanding. An interactive induction session emphasised the value of portfolio as a process and explained reflection through metaphor.

Conclusions: We have developed a strategy for promoting reflection through the portfolio process based on student opinion and literature. It will take time for the reflective culture to be embedded.

Take-home message: Investing in the portfolio culture helps students reap the benefits of this important tool for learning.

8F   Oral Presentations: Undergraduate Selection 1

8F1
Multiple Mini Interviews (MMI) & SKYPE

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Background: Applicants to Sydney Medical School are ranked by performance on a combination of GPA, MCAT/GAMSAT and multiple mini interview (MMI) scores. Although the MMI has been shown to produce reliable results, it places heavy demands on the resources of both faculty and applicants, including domestic and international travel. To alleviate these demands in 2011 interviews with overseas applicants based were conducted via SKYPE™.

Summary of work: 300 overseas applicants were interviewed to establish ranking for 90 potential places. Acceptability of the process and experience is being evaluated via survey responses from participants. A cost benefit analyses showed significant savings to Faculty resources. Results and other data from the SKYPE interviews are being compared with face to face interviews to investigate any differences in reliability by format.

Summary of results: Delivery of the SKYPE MMI occurred smoothly with few technical failures. Initial analyses of student result and interviewer feedback data indicate the SKYPE format is valid and reliable.

Conclusion: Delivery of MMI via SKYPE is feasible and provided significant resource savings to the Faculty. The process is fair, and acceptable to both interviewees and interviewers.

Take-home message: MMI can be reliably conducted over the internet as a cost-effective alternative to face to face MMI.

8F2
UCLA PRIME-developing leaders in healthcare for disadvantaged communities

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Background: One fifth of Californians live in Health Professions Shortage Areas. California responded to calls for increased enrollment by mandating that increases for its five medical schools be targeted toward creating healthcare leaders for underserved communities. Previously the UCLA/Drew program showed that selected for a commitment to, and experience with, the underserved, when subsequently trained as a cohort returned to practice in medically underserved communities.

 Summary of work: After selecting cohorts similar to Drew's, through which explored diverse leadership models,

gave participants experience serving as mentors for undergraduates developing small-group projects, and for a final requirement designed cohort projects that would impact selected communities in a positive way.

Summary of results: Cohorts developed community projects which functioned within horizontal rather than traditional vertical leadership structures. Following the first year, students participated in research projects, relating to improving healthcare. Students in their post-clinical year enrolled in Masters' programs with specific goals of developing skills requisite to improve healthcare in disadvantaged communities.

Conclusions: with a dedicated screening process, complemented by the MMI, and a focused pre-matriculation program, medical programs can augment traditional educational approaches and develop health professionals who will meet the healthcare needs of unique communities and societies.

8F3

Potential influence of selection criteria on the demographic composition of students in an Australian medical school

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Background: Prior to 1999 students entering our MBBS course were selected on academic performance alone. We have now evaluated the impact on the demographics of subsequent cohorts of our standard entry students (those entering directly from high school) of the addition of an aptitude test (UMAT), a highly structured interview and a rural incentive program to the selection process.

Summary of work: Students entering prior to the new selection process (1985 to 1998 - N=1402), were compared to those post (1999 to 2011 - N=1437).

Summary of results: Males decreased from 57% to 45%, students of NE or SE Asian origin from 30% to 13%, students born in Oceania increased from 52% to 69%, students of rural origin from 5% to 21% and those from independent high schools from 56% to 66%. The proportion of students from high schools with relative socio-educational disadvantage remained unchanged at approximately 10%. The changes were associated with higher interview scores in females and lower interview scores in those of NE and SE Asian origin. Total UMAT scores were unrelated to gender or region of origin.

Conclusion/Take-home message: The introduction of special entry quotas for students of rural origin and a structured interview, but not an aptitude test, were associated with a change in gender balance and ethnicity of students in an Australian undergraduate MBBS course.

8F4

Choosing medical students: Talent vs. proven success

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Background: Medical schools continue to seek robust ways to select those with the greatest aptitude for medical education, training and practice. This study compares the predictive validity of a general cognitive test (UMAT) with admission GPA on outcomes in all years of both medical programmes in New Zealand.

Summary of work: Subjects were students (n = 1346) selected using UMAT since 2003. Regression models incorporated demographic data, UMAT scores, admission GPA and performance on programme assessments.

Summary of results: The net predictive power of admission GPA was highest for outcomes at year 2 and 5 of the six year programme, accounting for between 17% and 35% of the variance, with UMAT accounting for less than 10%. UMAT's highest predictive power was 9.9% for a Year 5 written examination. Combining UMAT with admission GPA improved predictive power only slightly across all outcomes.

Conclusions: A measure of past achievement far outweighs a measure of general cognition in predicting later performance in medicine programmes; however, neither are particularly good later in the programme.

Take-home messages: While convenient and reliable as a selection tool, the role of general cognitive tests in selection remains uncertain.

8F5

MMI interviewers – do they bring biases to the scoring?

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Background: While rater bias in medical student selection is widely discussed there has been little research. This study investigates whether gender, personality (the "hawk/dove" effect) and intensive interviewer training have an impact on rater bias.

Summary of work: Volunteer interviewers and applicants attending our nine-station MMI in 2006 and 2007 were recruited for this study. Volunteer interviewers came from the university staff, medical practitioners, and the local community, with 292 participating. They provided demographic and personality data. 506 applicants agreed to participate.

Summary of results: Differences in interviewers accounted for 3.1 to 24.8% of the total variance in applicant scores at

individual MMI stations but intense interviewer training decreased the variance. Interviewers who had high levels of the personality trait of agreeableness gave more lenient ratings than those with low levels of agreeableness. Gender similarity bias (interviewer and candidate of the same gender) did not impact on the ratings.

Conclusion: Significant interviewer bias was reduced by training and added structure but leniency was shown to be linked to a stable individual difference in interviewer personality. This study supports the use of multiple interviewers randomly assigned across MMI stations.

8F6

The student selection Interview in faculty of Medicine, Prince of Songkla University

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Background: Faculty of Medicine, Prince of Songkla University use semi-structured interviews which consist of observation and two-way communication during the interview. The student were interviewed by 3 instructors for 30 minutes. This may take a long time and needs multiple instructors and may have interpersonal variation.

Summary of work: Now, we change the interview process to be multiple mini-interview [MMI] rotating from station to station. A questionnaire was used to evaluate both student and instructor opinion about this process.

Summary of results: 88% of instructors thought this is the good method to assess the objectives of the interview. All of the students believe this process is fair and pleasant.

Conclusions: Multiple mini-interview is a good process to evaluate the student by objectives. Both students and instructors thought it was pleasant.

Take-home messages: MMI is an alternative process for student selection with a limited number of instructors.

8G   Oral Presentations: Revalidation of the Practising Professional

8G1

An exploration of the feasibility of the proposed revalidation (re-licensure) process for UK general practitioners (GPs)

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Background: Revalidation will be introduced for medical doctors in the UK in 2012. The proposed model is designed to assess doctors every five years against the standards of the General Medical Council's Good Medical Practice. Assessment methods will include patient satisfaction questionnaires, multi-source feedback, significant event analysis, reflection on learning, audit and annual appraisal collected as a portfolio of evidence. We piloted the process for the Royal College of General Practitioners (RCGP) to explore its feasibility and acceptability to GPs.

Summary of work: We invited GPs registered with three primary care organisations' (PCOs) to submit evidence collected during the past year for the proposed RCGP revalidation portfolio. Local appraisers rated the portfolios using our score sheet. GPs and appraisers then participated in semi-structured interviews or focus groups.

Summary of results: We received 69 portfolios. The GP appraisers reported a general lack of evidence of reflection on learning activities, and colleague and patient feedback surveys. The GPs reported that the process was challenging and took a great deal of time and organisation, but the majority thought it acceptable.

Conclusion: GPs and appraisers will require further training and support to allow them to engage effectively in the revalidation process.

Take-home message: Revalidation is a complex process and needs careful exploration before implementation.

8G2

What happens to UK doctors who have been directed to undergo a performance assessment?

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Background: In the UK, the GMC has a statutory duty to investigate doctors whose fitness to practice has been called into question. Enquiries about doctors have increased from 2214 in 1996 to 7153 in 2010. In 2010, 50% required no further investigation and 29% had a full investigation. The GMC directs about 100 performance assessments each year in cases where the allegations relate to poor clinical performance. This study investigates what happened to the doctors directed to undergo a performance assessment.

Summary of work: Between July 1997 and November 2008, 820 doctors were directed to have a performance assessment. Using their GMC number, we identified the outcome of the initial investigation and their current GMC registration status using the GMC website.

Summary of results: Following the initial performance investigation, 51.8% (425) continued to be fully registered, 10.2% (84) had been erased, 7% (57) had been suspended and 23.5% (193) had taken voluntary erasure. By May 2011, the number remaining on the GMC register was 45% (369),

11.3% (93) of whom have warnings, conditions or restrictions on practice.

Discussion: The GMC performance processes are effective at detecting doctors with poor clinical performance. Following investigation, approximately half of doctors referred return to practice but a minority continue to cause concern.

Take-home messages: In the UK, the GMC performance processes are effective at detecting doctors with poor clinical performance. Following investigation, approximately half of doctors referred return to practice but a minority continue to cause concern.

8G3

Too old to practice? Too old to learn?

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Background: Current research on aging shows that although age can be an important factor affecting clinical performance, individual characteristics also play an important role in an older physician's ability to provide high-quality care to his patients. This raises the question whether older physicians should be treated equally or differently from their younger counterparts when it comes to evaluation and remediation of their performance problems.

Summary of work: We will present Quebec data collected over a period of 10 years between 2001 and 2010. The entire process of assessment and remediation will be discussed, with a specific focus on age-related differences in performance at the structured oral interview, an evaluation tool developed 15 years ago to assess physicians' competence and education needs.

Summary of results: It will be shown that peer reviews of older physicians tend to result in higher levels of recommendation (e.g. full-time training). At the structured oral interview, despite a slightly significant relationship between age and performance, age accounts for only 7% of the observed variance in the score obtained at the structured oral interview.

Conclusions: Many factors other than age contribute to the ability of older physicians to maintain a high level of quality of practice, including the amount of continued deliberate practice in which they engage and the various adjustments they make to the scope and context of their medical practice.

8G4

"My Practice": A starting point for understanding performance and improvement"

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Background: Accurate knowledge of practice ("what am I doing") is necessary for performance assessment (PA- "how am I doing") and performance improvement (PI – "how can I do better").

Summary of work: We derived practice profile templates for primary care physicians from different practices. Data from multiple sources were exported into a relational data base to describe physician practice at a population level, analyzed and formatted into reports. Physician feedback was used to refine the profiles, reconciling perceived inaccuracies and attribution issues.

Summary of results: Challenges have included obtaining and manipulating data from disparate sources, and gaining engagement of skeptical clinicians.

Conclusions: Practice profiles could help physicians select areas for PI and maintenance of competence, but could also highlight areas of additional knowledge need, and help physicians target their CME activities. Data accuracy; timeliness; interactive physician engagement early in and throughout the process; and actionable, easily-understood performance data with appropriate comparator data are necessary to engage physicians.

Take-home messages: CME providers can play key roles facilitating development of profiles, helping physicians identify learning activities germane to their gaps, addressing identified gaps of the target audience into their CME activities, and providing CME credit for PA-PI activities.

8G5

Formative Feedback of Consultant's Perfomrance and Revalidaton by Professionals who are not Doctors

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Background: Consultants should be continuously innovating and improving their care processes. Consultants in the UK require revalidation of their professionalism. I reasoned that Professionals who are not Doctors could be invited to observe my work performance on ward rounds and provide feedback for service improvement, and evidence for revalidation.

Summary of work: In 2004 I developed a form for structured observation and feedback on my ward rounds. Used initially for SPRs to feedback on my performance – proved of great value for my personal development as ward round leader. 2010 added question "Did you observe this doctor working in a professional manner?" In 7 years I have been observed on 80 rounds with feedback, 20 observers "not Doctor" Professionals, 60 rounds observed by Doctors ranging from Year One to the President of the Royal College of Physicians.

Summary of results: "Not Doctor" professionals can recognise Professionalism, even when they have no medical

background. "Not Doctor" Professionals can provide feedback for improvement – examples will be given. "Not Doctors" may be able to provide evidence for Professional Revalidation.

Take-home message: Try inviting "Not Doctor" and "Doctor" Professionals to observe and feedback to you at work. "Not Doctor" Professionals could be useful in Revalidation.

8G6
Is registered nurses' clinical competence good enough for the complex care needs of older clients in nursing homes?
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Background: With its associated complex health problems, the growing aging population will magnify the need for more complex care in nursing homes. The purpose of the actual study was to describe and evaluate RNs' clinical competence when working in nursing homes.

Summary of work: The design of the study was descriptive with a mixed method approach. 18 RNs were recruited from four nursing homes in eastern Norway in 2011. The participants were divided into four focus groups and interviewed about their experiences of clinical competence and older clients' care needs. Following the interviews the participants assessed their competence using the Nurse Clinical Competence Scale. The qualitative data was analyzed using manifest and latent content analyses and the quantitative data with descriptive statistics.

Summary of results: The RNs possess a positive perception of their own clinical competence, and their competence level sufficiently met the needs of older clients. However, concerning ethical issues, the diagnosis of older clients' diffuse medical symptoms or identification of the adverse effects of pharmaceuticals, their competence level was insufficient.

Conclusions: Older clients' increasing care needs require RNs with advanced clinical competence, including advanced health technology skills.

Take-home messages: RNs' competence level is an issue that nurse managers and politicians should address.

8H   Oral Presentations: Problem based Learning 2

8H1
Self-assessment scenarios using m-learning
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Background: In 2009 St George's replaced its conventional Problem-Based Learning undergraduate course with interactive online virtual patients (VPs) that allowed students to explore optional routes through patient cases, taking management decisions and considering the consequences of their decisions. More recently we have addressed a common PBL issue: that students may concentrate more on the individual case of the week than the wider learning objectives that the case is expected to trigger.

Summary of work: A range of VPs were developed to increase the variety of cases to which students were exposed in a single learning week. These VPs were delivered through a mobile app, and included assessment features such as single best answer and enquiry based questions, with cumulative scoring. The app was released to students in September 2011.

Summary of results: The students have welcomed the app, with description such as 'useful' and 'I learnt a lot'. Full analyses of the study and feedback will be presented.

Conclusions: Self-directed assessment cases can enrich the typical PBL curriculum by allowing students both exposure to a greater number of cases and the opportunity to test themselves.

Take-home messages: "Anytime, anywhere" learning can be supported by developing resources to be used off-line on mobile devices without requiring a constant internet connection.

8H2
Using the interactive clinical images tool for self-assessment
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Background: The clinical year of the MBBS course at St George's University of London carry out Problem-Based Learning (PBL) cases using online Virtual Patients, which provide self-assessment and instant feedback on students' clinical decision making skills, and can be extended through the use of other interactive tools. However, current tools do not allow this on students' ability to read clinical images.

Summary of work: The e-Learning Unit developed a tool called Interactive Clinical Images, allowing students to annotate clinical images such as X-rays, CT scans and ECGs with drawn or text notes. The tool then allows the students to compare their analysis to that of an expert practitioner. The ICI tool has been implemented within the PBL cases for the 2011/12 academic year. Feedback on the implementation of the new tool will be presented. Despite the expectation that clinical results will always be sent to Medics with reports outlining the findings from the results, it is still expected of students to know how to read clinical images. This tool allows students to self-assess their abilities in this area.

Conclusions: Technology can provide simple solutions to enhance some basic skills using self-assessment tools which can provide instant feedback to the student.

8H3

Social networks and achievement: how social divisions impact on medical students' success

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Background: Attempts to explain the persistent underachievement of 'ethnic minority' students in the UK have so far been unsuccessful. Previous research has taken an individualistic, student-deficit approach focusing on assessment. This ignores the impact of experience and relationships on learning.

Summary of work: Social Networks Analysis was used to examine students from within their network of relations. We report a survey of 147 third year medical students at one UK institution with a problem-based learning curriculum. Data is presented through visualised network diagrams, quantitative network measures and qualitative interview narrative.

Summary of results: When interacting in activities important for academic success, students choose others who share their ethnic and religious background. We report on these significant patterns of homophily and examine how different network positions are shaping students' practices. Whilst small group teaching does encourage inter-ethnic interaction, outside these sessions social divisions are apparent.

Conclusions: In a student-led PBL environment, relationships are central in directing students' practices. Social divisions are leading to different forms and levels of competence.

Take-home messages: Medical schools must ensure that the flow of information and resources is not constrained by students' network positions. Aspects of the hidden curriculum currently transmitted relationally must be made more explicit.

8H4

Systematically Measuring What Students Learned (Rather than What Was Taught) Across an Entire Pre-clinical Medical Curriculum

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Background: With students' increasingly instant access to large amounts of information, we must assess what they learn, rather than what we believe we have taught them. Our preclinical medical school program is entirely Problem-Based Learning (PBL) such that students decide what to pursue on each case.

Summary of work: For three graduating classes, we coded all student-created learning objects (LO's) according to the United States Medical Licensing Exam (USMLE) content outline of topics that should be covered in preclinical curricula. Coders were trained and achieved >90% inter-coder congruence before individually coding. Each of the over 3,000 LO's was permitted to have up to 4 codes. We analyzed our dataset to determine if students addressed each of the 615 topics.

Summary of results: Student cohorts covered 95% of the topics. There were 33 topics that were never covered by any of the cohorts at any time during their preclinical years.

Conclusions: Our student-driven PBL curriculum provides ample structure to pursue well over the majority of the recommended topics. We will modify our cases to facilitate students' exploration of the topics that have consistently not been addressed.

Take-home messages: When given the opportunity to drive their own education, students can be trusted to expose and rectify their own gaps in knowledge. In an inquiry driven fashion, trainees consistently pursue nearly all the domains of preclerkship foundational sciences.

8H5

PBL Process Assessment in Malaysian medical schools

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Background: Core PBL objectives of structuring of knowledge and clinical context, clinical reasoning, self-directed learning, and intrinsic motivation are directed at acquisition of the competencies dictated by the curriculum. The PBL process also fosters team working, self-respect and respect for others; improves communication skills, interpersonal skills; instills cognizance of diversities in people and cultures, preparing the learner for their future work environment. Thus, many schools in Malaysia assess the PBL process.

Summary of work: Methods of PBL process assessment in five Malaysian schools were reviewed for the areas assessed and the indicators.

Summary of results: It is summative in three schools; formative in one ; a safety net\in another. Common areas assessed were communication, active participation, presentation (comprehension), evidence of team spirit,

respect for others, knowledge acquisition2. Professionalism was assessed in only two schools; leadership in two. Some rubrics were too detailed, and it is unlikely that the Facilitators found them user-friendly. In the school that uses it as purely formative, student perception on the usefulness of this exercise was not encouraging, achieving low scores in all courses.

Conclusions: It is useful to assess whether the objectives are met, but timely feedback would maximize benefits. Professionalism and leadership should also be included in the assessment.

8H6
Practice Based Small Group Learning for Continuing Medical Education in Wessex

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Background: Practice Based Small Group Learning (PBSGL) was devised at McMaster University in Canada over 30 years ago, and is used by over 4000 GPs in Canada. A team in Scotland ran a successful pilot of PBSGL in 2006, subsequent to which it has been taken up more widely, with over 1000 established Scottish GPs (one quarter) using PBSGL for Continuing Medical Education (CME).

Summary of work: Two groups of eight Wessex GP registrars ran four PBSGL sessions (two pre and two post qualification). A questionnaire was used before and after the pilot to assess the benefit of PBSGL as transitional CME for the participants. An online learning environment was also created to complement the PBSGL sessions.

Summary of results: Data is still being gathered (the last phase is November).

Conclusions /Take-home messages: Early results indicate that support for the research into the Scottish PBSGL, and that newly qualified GPs found the sessions valuable in the transition to independent practice. An evaluation of the online learning environment supporting the sessions will also be reported.

8H7
Validation of Tutor Assessment of Student (TAS)-Tool for PBL process assessment

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Background: PBL is a suitable platform to assess medical students' attitude and behaviors. A tool to assess observable behaviors of students in the PBL tutorial sessions has been developed and validated.

Summary of work: The medical school identified 29-attributes, which was revised to 12-measurable attributes for its medical graduates. The 47-item Tutor Assessment of Student (TAS) tool was developed to assess the non-cognitive attributes of its medical students. It was pre validated among the senior high school students. The TAS-tool was revised to 32-item after psychometric analysis of PBL data obtained from the Introductory Course module of undergraduate medical education program.

Summary of results: Principle Component Analysis with Varimax rotation on 514 completed 47-item TAS tools accumulated over 6-month from 7 PBL groups, 5 cycles with 2 tutors in each group extracted 3 latent variables – immersed, communicator and professional - explaining 40.5% of variance with internal consistency of 0.920.

Conclusions: The 32-item TAS tool was found to be psychometrically sound for PBL process assessment. Thus, it was started to implement in the basic science years.

Take-home messages: Development and validation of PBL process assessment tool locally is important as it enables medical educators to assess non-cognitive behaviors in small group teachings.

8I   Workshop: OSCE Question Writing and Development of Marking Schemes with Scoring Rubrics

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Background: This workshop will be part based on our forthcoming AMEE guide on 'setting up OSCE assessments; practical consideration'. OSCE techniques are widely used for assessment purposes in both undergraduate and post graduate programmes. To the best of our knowledge a comprehensive instruction manual does not exist in peer reviewed literature addressing the practical issues in relation to development of OSCE questions, setting up and running the examinations. This workshop will help to equip OSCE examiners and facilitators with the skills to develop OSCE questions and marking guidance writing skills and development of scoring rubrics.

Intended Outcomes: 1. Delegates will develop OSCE stations using standardised templates. 2. Delegates will complete an exercise on developing scoring rubrics, and consider pros and cons of Analytical versus Holistic scores. 3. Delegates will run the OSCE developed and mark it using the scoring system they had developed.

Structure: Introductions; Introduction to question writing and marking schemes; Parallel Group Activity: Group A: Question Writing; Group B: Development of Marking

Guidance and Scoring Scheme; Mock OSCE and Scoring; Discussion and Close.
Intended Audience: Academics Involved with OSCE question writing.
Level of Workshop: Intermediate

8J Workshop: Is your curriculum working for you? Applying the client-centered approach to health professions curriculum evaluation

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Background: Evaluation is vital to curriculum development, if education is to genuinely respond to the needs of the learning community. Stufflebeam identified the client-centered approach or Stake's responsive evaluation (1983) as one of the most robust evaluation approaches in the 21st century due to "an increasingly balanced quest for rigor, relevance, and justice." (Stufflebeam, 1999) It places the perspective of stakeholders at the heart of the evaluation process, by using standards and issues raised by the stakeholders themselves as its advanced organizer, vis-à-vis the curriculum's desired outcomes. Its primary strength is its deliberate openness to multiple perspectives by referencing the stakeholders' points of satisfaction and dissatisfaction, thus unearthing both intended and unintended outcomes of the curriculum. In the end, a comprehensive statement of how the curriculum is perceived, from varied and sometimes, conflicting viewpoints of the stakeholders, would serve as a concrete basis for decision-making in addressing its strengths and weaknesses.
Intended Outcomes: The workshop will enable participants to develop a curriculum evaluation plan using the client-centered evaluation approach
Structure: After an introduction to the client-centered approach, participants will identify relevant stakeholders, frame evaluation questions and plan data collection
Intended Audience: Individuals involved in curriculum planning, curriculum development, and curriculum management.
Level of Workshop: Beginner

8K Workshop: Utilising ICT in assessment data management, standardisation, implementation and feedback in a geographically dispersed undergraduate medical education programme

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Background: The Monash University medical degree is conducted across metropolitan and rural Victoria (Australia) and Kuala Lumpur and Johor Bahru (Malaysia). Each year, several hundred staff and over 2000 medical students participate in identical assessments tasks within year levels that are implemented simultaneously across multiple sites, regardless of geographical location. The need for standardisation, the substantial volume of examination data, short timeframes between assessment implementation across and within year levels, and subsequent progression decision meetings required the adoption of systems and technologies to ensure efficient and quality assessment management.
Intended Outcomes: Participants will leave this workshop with an understanding of the importance of a systems approach to assessment, and of the applicability of accessible IT products to significantly increase assessment quality, often with reduced economic cost, within their home institution
Structure: This interactive workshop will demonstrate the processes and technologies we have implemented to ensure quality management of all aspects of our undergraduate medical assessment, from blueprint to progression decisions, across our geographically dispersed curriculum equivalent programme. These include Google Apps (Education) as the highly secure platform for collaborative item generation (using Google Docs), OSCE examiner and simulated patient standardisation (using Google Video), electronic scoring of OSCE (using handheld devices), data management and analysis (using SPSS), and direct email of individualised student performance feedback (via Adobe).
Intended Audience: This workshop will be particularly relevant to medical educators working at the coal face of undergraduate health professions assessment. It will be especially relevant to colleagues involved in the assessment of curriculum equivalent and geographically dispersed programmes.
Level or Workshop: Intermediate

8L Workshop: 'Excellent' student performance in undergraduate medical education: can we describe it, should we record it and how can we set the standard?

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Background: Many undergraduate medical courses make categorisation decisions other than Pass-Fail. The category of 'excellence' (excellent, merit, outstanding, distinction) is awarded for achievement beyond that required for passing, but few have reported use of criterion-referenced methods to set standards for this. This challenge has been explored by two Australian and New Zealand medical schools with competency-based assessment programmes. Each has used the same standard setting procedure and datasets, as for pass-fail decision making, to set the standard for excellence. The excellence cut-point and decision making has proved more problematic.

Intended Outcomes: Participants will 1) explore the concept of 'excellence' in competency-based assessment; 2) participate in standard setting process to generate 'pass-fail' and 'pass-excellent' cut-points; 3) consider the benefits and potential issues related to defining excellence, setting standards and assessment formats.

Structure: 1) large group introduction, the concept of 'excellence' and standard setting methods; 2) individual work to set the standard for 'pass-fail' and 'pass-excellent' using the same set of written short-answer questions; 3) consensus reaching on the cut-points; 4) debate on setting the standard for, and use of, the category of 'excellence'.

Intended Audience: Those with interest and/or some experience of assessment standard setting

Level of Workshop: Intermediate

8M Workshop: No SIM Center? No Problem! Authentic Assessment Using In Situ Simulation

Norbert Werner (Northern Alberta Institute of Technology (NAIT), School of Health Sciences, Edmonton, Alberta, Canada)

Background: Many post secondary institutions that teach allied healthcare programs do not have access to state-of-the-art simulation centers. However, an increasing number of simulation educators are embracing the power of in situ simulation as one solution for a lack of physical simulation center space as well as for authentic assessment of the learner(s). The NAIT School of Health Sciences has embraced in situ simulation for these reasons and will share their experiences in this workshop.

Intended Outcomes: 1. Describe the advantages of In Situ SIM compared to traditional simulation centers in the context of authentic assessment. 2. Discuss In Situ SIM Considerations and Challenges in the healthcare setting. 3. Apply the powerful case examples of paramedic and other healthcare in situ simulations from NAIT to your own discipline

Structure: •Interactive discussion specific to the questions and outcomes above with a powerful presentation of in situ simulation pictures and examples. •Allow participants to apply several concepts of in situ SIM as well as other simulation integration strategies to their specific discipline/workplace to enhance teaching and learning strategies as well as authentic assessment.

Intended Audience: Healthcare educators and practitioners, simulation educators, researchers in simulation and pedagogy, clinical educators, interprofessional education interests

Level of Workshop: Beginner

8N Workshop: Using simulation to meaningfully assess core competencies

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Background: Healthcare educators are increasingly focused on the teaching and learning of core competencies (e.g.: CanMEDS, ACGME, JRCPTB-UK). Ideally, core competency assessment strategies should be systematically aligned to curricular outcomes, by not only measuring student cognitive achievement, but also by evaluating performance. Simulation-based assessment is particularly well-suited for this task and helps to facilitate the iterative cycle of teaching and learning. Simulation offers a unique learning environment that challenges learners to perform in an authentic clinical encounter with no risk to patient care. Well-designed simulation also offers the opportunity to evaluate students' performance through multiple core competency "lenses" - with the potential for rational linkage between what students are taught (curriculum) to curricular outcomes, and ultimately, via attention to the authenticity of the design, to their practice as professionals.

Intended Outcomes: Upon completion of this workshop, the participants will be able to: 1. Describe approaches for the integration of simulation-based assessment into health professions' education. 2. Develop simulation-based evaluation strategies to assess core competencies. 3. Develop a preliminary personal plan to implement simulation-based assessment

Structure: •Interactive case studies designed to incorporate simulation-based evaluations into core competency education. •Small group exercises. •Wrap-up
Intended Audience: Educators interested in incorporating simulation into student and resident assessment.
Level of Workshop: Beginner

8O   Workshop: How to use interactive audience response systems in large group sessions as a tool for increasing teaching quality. Interaction, feedback and formative assessment
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Background: Audience response systems (ARS) provide a means of infusing interaction into a traditional didactic lecture format or other large group teaching situations thus enhancing student's attention and learning. It can be used in a variety of ways, with both large and small audiences, to evaluate participants' knowledge, attitudes, and opinions, to verify student attendance at a lecture or to provide feedback to students. Moreover ARS can be used for formative assessment within lectures or any other courses. The technology of ARS has markedly improved over the years resulting in systems that are less costly and easier to use. Due to these facts ARS give us the chance to increase teaching quality.
Intended outcomes: At the end of this workshop participants will (1) know three possibilities to use ARS within large group sessions and will have tested these possibilities in small group action; (2) know how to use ARS for formative assessment and as a feedback tool for students and teachers; (3) appreciate the advantages of ARS as a tool for quality assurance in teaching large groups.
Structure: The aim of this workshop is to introduce teachers and faculty members into the versatile possibilities to implement ARS in large group sessions to increase interactivity, use it for formative assessment and give feedback as well as get students' feedback. The session will be devided into plenary and small group work sections.
Intended Audience: Teacher and faculty members with or without any previous knowledge. Especially people who are interested in increasing the interactivity of large group sessions.
Level of Workshop: Beginner

8P   Posters: Communication and Clinical Skills

8P1
Does a patient questionnaire enhance the students' reflective evaluation of their communication skills
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Background: Final examinations at Liverpool University are completed in fourth year. Fifth year, the 'apprenticeship year', students take on team roles in each attachment. In Primary Care, students will see patients on their own, before discussing the case with the GP. Tomorrows Doctors 2009 (23f, 43b, 51) has made receiving feedback from patients a requirement of the programme.
Summary of work: In this study, the CARE[1] questionnaire was given to patients after seeing students. The students then wrote a short reflective piece on the results. This was presented with the results, at the final Professional Education and Training Assessment (PETA) GP meeting, along with the communication assessment form completed by a team member. Several GPs were interviewed.
Summary of results: The results for the CARE questionnaire, the communication assessment form and the GPs final PETA assessment showed overall consistency. GPs reported the process facilitated the student assessment.
Conclusions: The study proved the existing assessment methods are valid, however the reflective submission by the students yielded the richest data.
Take-home message: The educational impact of the project shows that it channels the students learning appropriately, encouraging them to think about their consultations being patient orientated.
1 Mercer SW, Family Practice 2005

8P2
Education in writing English manuscripts for Japanese medical students
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Background: Writing English manuscripts is often difficult for Japanese medical doctors. However, there have been no reports of established programs in Japanese medical schools. The aim of our study was to investigate whether an intensive program can prepare medical students to write case reports in English.

Summary of work: From January 2006 to February 2011, 16 medical students (fourth-year students) had selected our program for their elective course. This was a three week course consisting of a total of 45 hours (3 hours per day.) Our program included: indicating clinical case, usage of Pub med online, selecting references, five -minute discussion every morning on the day's to-do list, an everyday e-mail report to the teacher and submitting case reports to websites.

Summary of results: All students could write at least one or more manuscripts during the period. Out of the 23 manuscripts submitted, 19 were accepted and published. Five English journals (Endoscopy, Digestion, Journal of Gastroenterology and Hepatology, Internal Medicine and Digestive Endoscopy) accepted our manuscripts for publication. Total impact factor of published manuscript was 41.37 (average: 2.177, median: 1.77, minute: 0.333, maximum: 5.545).

Conclusion: An intensively designed program enables Japanese medical students to write case reports in English.

8P3

Assessing the interprofessional communication skills of nurses, from nursing students' point of view in Tehran University of Medical Sciences

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Background: Interprofessional education is a name given to a team working procedure in which multiple health groups learn information about each other's duties and roles in order to cooperate better to cure patients more efficiently. The aim of the study is to assess the ideas of intership nursing students about interprofessional skills in the health team.

Summary of work: This descriptive-analytic study was performed in Tehran University of medical science. Data were gathered with Rubric. This tool was validated further in an Iranian context. The research sample included 50 internship nursing students and questionnaires were filled out by them following the showing of a standard movie regarding interprofessional communication skills. We used SPSS and descriptive analytics in order to analyze data.

Summary of results: The data have been gathered (50 persons), the data entry finished but the analysis is still in progress. The exact result will be reported.

8P4

Assessing accuracy of medical communication among first responders and medical command operators

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Background: Medical communications are essential infrastructure linking first responders and first receivers. Accurate information exchange is essential for appropriate patient care and resource utilization. Communication accuracy was assessed by measuring adherence to a trauma acronym: Mechanism, Injuries, vital Signs, Environment & Response.

Summary of work: Fourteen coders were trained in trauma prioritization using the M.I.S.E.R acronym and randomly assigned to one of three presentations of radio communications occurring over a sixty day period. Communication exchanges were presented to coders as either audio recordings, transcripts, or audio recordings and transcripts.

Summary of results: Ability of a coder to correctly identify trauma prioritization was a direct function of the degree to which proper M.I.S.E.R. information was detected during each communication. Coders having audio recordings without transcripts significantly outperformed those presented with transcript only or audio recordings plus transcript in correct trauma prioritization determination.

Conclusions: Training in correct trauma prioritization is improved by standard information exchange protocols.

Take-home messages: Current technology of single channel (audio only) communications to relay information from first responders to medical command operators is not only sufficient, but seems to be optimal compared to an alternative channel (transcript only) or redundant channels (audio plus transcript).

8P5

Assessment of Residents' Communication Skills by Direct Observation in Shiraz University of Medical Sciences

L Bazrafkan*, Seyed Ziaeddin Tabei Armin Atar (Shiraz University of Medical Sciences, Education Development Center, Iran)

Background: This study was aimed at determining the impact of logbook on the students' reflection and cooperation in their own views and finding out how the predetermined objectives are fulfilled

Summary of work: In this descriptive study, a logbook was designed for recording and analyzing the ideas in order to prevent the residents from forgetting and to help them reflect in practice. A questionnaire was prepared in order to assess the students' views. It was validated for content validity and approved by experts. Its reliability coefficient was proved to be 0.76%, using Cronbach ά coefficient.

Summary of results: 36% of the respondents had used the logbooks and 64.2% of them evaluated them as effective or very effective. The students who used the logbook recorded their ideas in it after 2 months of using it. 46.7% of the students did not record any ideas in the logbook and the reason was expressed to be lack of motivation and low mood.

Conclusions: Due to the fact that only 25% of the students used the daily schedule section of the logbook, it seems that they are not familiar with time management strategies and they usually lose their time; the problem is not lack of time. However, in spite of the fact that using logbooks by the students is beneficial, educational workshops on time management and also devising concept and mind maps from the ideas are necessary.

8P6

Development of a tool for assessment of medical student and junior doctor's patient-centred capabilities and integration of consulting skills

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Background: Assessment of clinical consultation skills is challenging, about which much has been written. We developed a tool for use in our patient partner teaching program, a program which emphasises the development of partnerships and a patient centred approach to patients. The tool was developed to meet local needs and focuses on assessment of the integration of competencies within a clinical consultation. External interest in the tool for summative assessment has prompted research into its psychometric qualities.

Summary of work: Methodology included 2 phases: 72 doctors from a variety of specialists provided feedback and refinements were made; 40 videotaped ½ hour consultations with real patients were assessed by five different trained assessors. Assessments were made on an internet based platform which was also evaluated for usability. Analysis, yet to be undertaken, will focus on determining inter-rater reliability, construct validity, internal consistency, possible weighting of items and item redundancy.

Summary of results: Survey results demonstrate face validity and provide clinician insights into aspects of the tool. Our experiences when training assessors and preliminary results of phase 2 will be presented and discussed.

Conclusions: Face validity and feasibility of our tool has been established; however its use in summative assessment requires ongoing investigation of its psychometric properties.

Take-home messages: Assessment of consultation skills is complex; the development of a tool takes years. We are part way along that pathway and wish to share our experiences.

8P7

A Qualitative Study of Faculty Members' Lived Experiences In Ward Round Teaching In Isfahan University of Medical Sciences

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Background: The ward is one the most important settings for teaching medical students. lLiterature review shows that despite its importance, clinical round teaching has decreased. This study aimed to determine faculty members' experiences (major groups) in ward round teaching.

Summary of work: This qualitative study is phenomenology oriented. Data gathering is done through semi-structured in-depth interviews with clinical faculty members in educational hospitals of Isfahan University of Medical Sciences. Sampling was maximum variation and continued to get saturated data. Interviews were transcribed word by word. To confirm the accuracy of collected data (4 scores of Guba & Lincoln: Credibility, Dependability, Confirmability, Transferability), the researcher used some methods such as allocating enough time for data gathering, consulting with 2 experts in qualitative research in the stage of coding and analyzing data and referring to candidates to verify data.

Summary of results: Basic themes include ward round teaching pathogenic factor, strategies for ward round teaching and learning from ward round teaching.

Conclusions: Negative experiences show effects of pathogenic factors on ward round teaching; on the other hand, faculty could improve teaching in this setting by exploring these factors and implementing effective strategies.

8P8

Observation of patient-pharmacist role-plays revealing unspoken feelings: a new educational method for patient education for undergraduate students

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Background: Some Japanese students are too shy to be involved in role-plays for communication education. Observation of patient-pharmacist role-plays revealing

unspoken feelings is a new method for patient education to undergraduate students.

Summary of work: In June 2011, 271 first-year pharmaceutical students in Kobe Gakuin University participated in the educational session for patient education. Four volunteer students played the roles of a patient, a pharmacist and two persons to reveal unspoken feelings of the patient and the pharmacist for each scenario. Two scenarios were used and each was played two times; one for normal dialogue and the other for revealing unspoken feelings.

Summary of results: Observer students significantly lowered the evaluation score for drug usage instruction by the acting pharmacist after knowing the unspoken feelings. Both acting and observer students were satisfied with the class and perceived the importance of patient-pharmacist relationship positively. However, observing students had a tendency of lower interest in playing a role in the class.

Conclusions/Take-home messages: Observation of patient-pharmacist role-plays revealing unspoken feelings is one of the alternative methods for teaching patient education for undergraduate students, especially for students who are too shy to be involved in a role play.

8P9
Short, time bound outpatient case summary discussions

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Background: Undergraduate final year students have learnt theoritical aspect in lectures, skills development at laboratory. Problem based learning helps in decision making, under theoritical setup in classrooms. Consultants can impart practical decision making knowledge by a five minute discussion on complaints and condition of patients in the outpatient department.

Summary of work: The consultant in outpatient department addresses four to six final year students. Students observe not only different clinical conditions but also varying degrees of severity of similar conditions. The consultant then queries about their plan of further management. The consultant then summarizes the management decisions for these patients. The dynamics of decision making tailored to suit these patients with subtle differences in severity or presentations can be imbibed by the students and this is assessed.

Summary of results: The consultant assesses the increasing precision in decision making process of the students over their subsequent interactions on a weekly basis for four to six weeks in the pre-discussion query. The students give a feedback on their level of confidence achieved. This is analyzed on the Likert scale, one to five.

Take-home message: Quick case based realistic situation discussions sharpen students' decision making ability and increase their confidence.

8Q   Posters: Postgraduate Education

8Q1
Small group work and curriculum coverage for the Royal College of GPs' assessment

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Background: General Practice (GP) trainees must pass the Membership of the Royal College of GPs (MRCGP) before practicing independently in the UK. Trainees must prove adequate Curriculum coverage as part of the assessment process. Certain areas of the Curriculum are difficult to cover "on-the-job" or through lecture-based learning. We aim to use regular, timetabled small-group work to provide coverage of these areas in support of the trainees for their assessment and subsequent independent practice.

Summary of work: Areas of the Curriculum were identified that lend themselves to small-group work. A set of learning objectives and resources were created to support small groups of trainees (plus facilitator) to adequately cover each Curriculum area, e.g. by using interactive/problem-based/case-based discussion.

Summary of results: We present results of the scheme to prove Curriculum coverage, plus trainee opinions on the usefulness of the scheme.

Conclusions: The Curriculum is extensive and daunting, but GP trainees must prove adequate pan-Curriculum coverage in order to pass the MRCGP before independent practice. Small-group work is of benefit in covering certain Curriculum areas, and supports trainees for this part of their assessment.

Take-home messages: Small-group work is useful in the coverage of the Curriculum and provides support for GP trainees to successfully navigate the assessments necessary for independent practice.

8Q2
How to …. never miss any teaching session – confirming attendence

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Background: Limitation to time trainees can work and changes in their working patterns has highlighted the need for alternative forms of delivering educational material. We describe video recordings and assessment of educational sessions used at Worthing Hospital.

Summary of work: Foundation curriculum is delivered in 12 half day mandatory, themed sessions. The attendance is 50 -60 % for variety of factors. A training folder has been developed on the Intranet, accessible to all trainees. We

record each session with a time line along the video recording. Power-point presentations by speakers are also held on file. The two 'sessions' can be played simultaneously so as to give audio to the slides. Trainees who cannot attend watch the session online. Each trainee has to provide feedback for a credit for their overall attendance – minimum of 70% - as per STFS guidelines. Feedback comprises of: What was good? Which part of the video could be deleted? What did you learn? What could be improved?

Summary of results: 10 trainees have received credits for their education session. The facility is found useful by the trainees.

Take-home messages: Technology allows alternative delivery of teaching curriculum. Video recording improves use of trainers time. Need an enthusiastic IT department.

8Q3
Impact of a mentoring program using coaching skills on junior level medical residents

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Background: Although mentoring is recognized as an essential instructional strategy for nurturing next generation of physicians, few studies have been done to assess the impact of a mentoring program. There are also few studies of the use of coaching skills for mentoring medical residents.

Summary of work: First, a mentoring program was structured through a literature review of studies. Then, semi-structured interviews were conducted to explore how the mentoring program affect junior level medical residents during and after a mentoring program and to construct a theoretical model. Two researchers analyzed the transcriptions of 28 residents by structure construction qualitative research method.

Summary of results: A resident-centered mentoring program using coaching skills affected their attitude and performance even after the program. The key elements of the theory constructed were: an emotional change just after the mentoring which related to motivational improvement, a longitudinal acceptance of the outcome of the mentoring that drives self-directedness, communicativeness and maturing self-concept, and finally development of the self-coaching attitude.

Conclusions: A theoretical model on residents' cognitive and behavioral change was constructed. A resident-centered mentoring program using coaching skills had short term impact.

Take-home message: A concept of coaching for residents should be applied more.

8Q4
School induction programme for Acute Care Common Stem - how it can support work based assessments for trainees. KSS Deanery experience from United Kingdom

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Background: Acute Care Common Stem (ACCS) is a two-year core training programme in UK to train in the acute specialties of Acute Medicine, Emergency Medicine and Anaesthesia/Intensive care before entry to higher specialist programme. Curriculum changes in 2010 and enhanced work based assessments meant it was vital to arrange for school induction (SI), rather than depending on the nine participating training units to ensure key messages and content.

Summary of work: SI has moved from traditional didactic lectures to more hands on practical interaction with trainees, which they designed. The induction day was organised by Head of school, training programme directors and trainee representatives. Practical sessions on e portfolio, suturing and plastering, airway management skills with trainee representatives, survival guide to cope with assessments, Curriculum mapping and how to navigate through all the competencies required were included.

Summary of results: 22 trainees attended alongside three trainee representatives. Feedback was obtained and the interactive practical sessions scored the highest. Trainees felt they had contributed to the learning process as their colleagues with better understanding of the survival guide, designed the induction programme.

Take-home message: SI can support learning objectives and assessments when trainees actively participate on its design and delivery.

8Q5
Performance in knowledge assessment in Intensive Care Medicine: A global experience

Reinhard Westkaemper*[1], Marie-Denise Schaller[2], Marco Maggiorini[3], Swiss and European Examination Committee, on behalf of the Swiss Society and the European Society of Intensive Care Medicine ([1]University Bern, Switzerland; [2]University Lausanne, Switzerland; [3]University Zürich, Switzerland)

Background: The written Exam of the European Diploma of Intensive Care Medicine and the Swiss written Specialist exam are part of the Certifying exams for Medical specialist in ICM. Both societies of ICM agreed to make a joint effort in assessing competence and knowledge of physicians in ICM training. Since 2005 they run a common exam.

Summary of work: Aim of the present study is to describe our experience during the last 3 years.

A written MCQ-exam was conducted twice a year in different places at the same time with 100 questions, created and validated by the Swiss and European Expert Committee with support of a specialist in assessment.
Summary of results: Since 2008 there have been 1363 candidates, increasing in number over the years, with more than 30 countries sitting the exam. Most candidates (2010) are from the UK (nearly 20%). The first extra-European exam site was Kuala Lumpur where the number of candidates sitting the exam increased from 18 to 88. The success rate among countries with a formal ICM-training (e.g. US, UK, Switzerland) is >80%, while the overall rate is about 70%.
Conclusions/Take-home messages: Knowledge assessment is globally applicable, efficient, helps in quality assurance, sets global standards of competencies, offers the chance for self assessment and certification for individuals.

8Q6
Implementation of a consulting continuity clinic for senior pediatric residents: an educational model for professionalism, transition to practice, and assessment

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Background: Resident continuity clinics have been demonstrated to improve resident learning and autonomy, better resident-patient relationships, enhance patient satisfaction and compliance in US models of primary care pediatric clinics. Although most Canadian pediatric residency programs offer continuity clinics, the benefits and challenges of implementation have not yet been documented in the literature.
Summary of work: Senior residents have spent one half-day monthly in a pediatric consultation clinic within a tertiary care children's hospital since 2006. Each clinic is composed of two senior residents, a supervising pediatrician, and a clinic nurse. Residents are responsible for pre-reading, completing timely patient assessments, case review with supervisor, counselling, documentation/communication with referral source and billing.
Summary of results: Feedback quality and quantity to residents has improved with a minimum of one mini CEX during each clinic. Multiple CanMEDS competencies are incorporated beyond 'medical expert' including: 'professional' 'manager' and 'communicator' and allows for directed mentorship in transitioning to practice. Continuity of care continues to be challenging with a current rate of 37.5% - due to rescheduling at family request, resident illness, elective rotations, and night call responsibilities.
Conclusions: A dedicated outpatient pediatric consulting clinic for senior residents allows for directed feedback and teaching opportunities around multiple CanMEDS

competencies. Providing continuity of care in this environment continues to be challenging.

8Q7
Postgraduate surgical examinations drive alternative learning approaches in surgical trainees

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Background: Approaches to learning have been poorly studied in the postgraduate setting where the competing curricula of workplace-based learning and study for postgraduate examinations meet. Personal study and reflection on practice is a key element of both of these environments.
Summary of work: Semi-structured interviews were carried out based on a previously published interview schedule. Domain descriptors for each learning approach were applied to the transcribed interviews.
Summary of results: Results are based on the responses of 10 surgical trainees in the initial stage of surgical training in the UK (FY2 – ST2). Participants adopted a predominantly vocational approach to learning based on workplace environments but changed their learning approach to a predominantly strategic approach when learning for postgraduate exams.
Conclusions: The context of the learning task significantly influences approaches to learning in the postgraduate environment. The most significant influence on learning in the postgraduate setting amongst surgical trainees is postgraduate examinations
Take-home messages: Postgraduate examinations should be integrated more closely with the overall postgraduate curriculum to prevent trainees adopting a less effective strategic approach to learning.

8Q8
Neonatal Mock Code: Reviewing Trainees' Performance

N Ben Fadel, N Rouvinez-Bouali, GP Moore, E Ferretti, T Daboval, SL Lawrence (University of Ottawa, Children Hospital of Eastern Ontario, Department of Pediatrics, Division of Neonatology, 401 Smyth Road, Ottawa, Ontario K1H 8L1 Canada)*

Background: Many newborns need resuscitation at birth. Successful resuscitation depends on a knowledgeable, skillful and efficient resuscitation team. One method to acquire and maintain skill is the use of neonatal mock codes.

Summary of work: Performance of our trainees during neonatal mock codes was evaluated using the 2006 Neonatal Resuscitation Program Megacode Assessment Form (Advanced) – Canadian Adaptation. We retrospectively reviewed and analyzed data collected between 2008 and 2010 to assess steps performed correctly, outcome of the code, year of training, and number of previous codes lead.

Summary of results: We assessed 65 trainees. Performance on key steps was as follows: 89% appropriately checked equipment, 85% correctly indicated the need for positive pressure ventilation, 63% demonstrated correct chest compression technique, 49% took appropriate corrective action when heart rate was not rising and chest was not moving, 48% administered the correct dose and route of epinephrine and 30% administrated oxygen appropriately. Only 17% of trainees passed the mock code on the first attempt. Overall 'pass' rate was 30% for year 1, 39% for year 2-4 and 22% for neonatal fellows.

Conclusions: We have identified several areas of mock code performance that need improvement. Using these results, and those obtained from a trainees' needs assessment survey, we are working to institute a new standardized neonatal mock code program to improve trainees' resuscitation skills.

Take-home messages: Considering the importance of attaining the skills of Neonatal Resussitation, formal training with a strong curriculum should be available to all those who are involved in the care of critically ill newborns.

8Q9

A qualitative research using 'very simple question' for dental clinical training

T Obayashi[1], H Nishi[1], Y Tanaka[1], M Ohara[1], T Sasaki[1], K Kajitani[2], Y Nagatani[2], N Taguchi[3], T Ogawa[1] ([1]Department of Advanced General Dentistry, Hiroshima University Hospital; [2]Dental Hygiene Section, Clinical Support Department, Hiroshima University Hospital; [3]Department of Dental Education, Kagoshima University Graduate School of Medicine, Japan)*

Background: The purpose of this study is to determine how dental trainees change reflection in action during a training period. However, it is not easy to determine using a questionnaire. We report having tried qualitative analysis using 'very simple question'.

Summary of work: In the current fiscal year, we asked them to complete a questionnaire looking back upon five months and submit by WebCT. It is important that a questionnaire is brief and easy to answer. The contents of the simple question are that 'write the event which remained in your heart most.' Then we made them describe 'why you dare to have written it out of many occurrences.' We coded these texts in the qualitative

analysis method of SCAT (Steps for Coding and Theorization, Otani, 2008). In addition, we classified them into a positive image and a negative image. Then, we subdivided each set of contents and analyzed the result.

Summary of results: Many residents wrote about their own failure, and such as 'I am saved mentally by words of gratitude from a patient.'

Conclusions: The words of gratitude from a patient, and an advising dentist's zeal supports the mentality of dental trainees in the middle of training.

8Q10

Education and Training in New and Innovative settings

Ali Bokhari, Elizabeth Roberts, Kevin Kelleher (South London Health Care NHS Trust, London, UK)*

Background: Healthcare demand and cost is increasing. Services, in UK, are divided into primary, secondary and more specialised care. The demand for healthcare, especially secondary care, is rising and with it the cost of care.

Summary of work: We studied learning by trainees in innovative settings designed to decrease demand upon the secondary sector. We chose Polysystems, Paediatric Ambulatory Care, Sub-acute medicine and Elective Surgical Care. We chose competencies from the current speciality curricula for each work stream related speciality area and also chose further themes which we felt could be delivered in addition in these settings. Our project studies a group of trainees throughout the period.

Summary of results: A set of representative competencies can be taught and learnt in these settings. There are further themes which can be taught, be better learnt in these settings and should form part of future curricula. We also found that a more detailed version of CbD (CbD plus) can be used as a teaching and summative assessment tool and can be the basis of developing many trainee professionalism domains.

8Q11

Postgraduate medical students' self perceived assessment of their competencies in relation to their level of confidence and learning methods

Ye Phyo Aung, Tun Tun Win, Kaeithi Phone Naing, Marlar Than (Medical Education Committee members, Defence Services Medical Academy, Yangon, Myanmar)*

Background: Self assessment is the involvement of learners in judging whether learner identified standards have been met. Many researchers and educators have identified self-assessment as a vital aspect of self-regulation. Having a clear and concise concept of one's strength will allow the learner to set a realistic expectation of oneself, be confident and avoid failure. The identification

of a weakness can help a learner to decide what needs to be learnt, and what to accept as within or outside one's scope of competent practice. The principal aim of the three years postgraduate M Med. Sc (Internal Medicine) course at the Defence Services Medical Academy in Myanmar is to produce "competent" consultant medical specialists. This study aims to find out the postgraduate students' self perceived assessment of defined domains of competencies, in relation to their confidence and learning methods.

Summary of work: We undertook a cross-sectional study to evaluate the self perceived competence in the defined domains of competencies, among postgraduate students who were just two months away from their final year examination. Additionally, their self confidence and to what extent their methods of learning enhanced their preparations for achieving the competencies were explored by means confidential, self administered questionnaires containing 25 items under 8 main domains (Appropriate Professional attitude, Effective communication skills .Proficient Clinical Skills, Adequate Medical Knowledge, Patient management, Information management, Medical Ethics and Good Medical Practice, and Life Long Learning).

Summary of results: Thirty six (97%) of students completed the questionnaires. Total scores rated in each of the eight domains ranged from116/180 (64.4%) to 130/180 (72.2%). Students rating themselves in the Low, Average and High scores of competencies in each domain, ranged from 3-25%, 39-69% and 16.6-27.7% respectively. There were 9 (25%) 18 (50%) and 9 (25%) students with Low, Average and High levels of confidence. The association between their levels of confidence and the perceived competencies in the methods of learning was not significantly different except in two domains.

Conclusion: These results suggest that students are aware of their own strengths and weaknesses. The findings will be compared with their objectively assessed final grades in the coming final examination.

8Q12

Selecting examiners for a national family medicine examination

ML Denney, P Foreman, A Rughani* (Royal College of General Practitioners, London UK)*

Background: The MRCGP exam is a high-stakes licensing assessment at the end point of family medicine training (GP) in the UK. Selection of examiners, principally for the clinical OSCE, and their subsequent training is potentially key to making the assessment reliable.

Summary of work: The role of the examiner was broken down into the required knowledge, skills and attitudes. A variety of selection methods were chosen, mapped against these domains, and potential new examiners were required to meet minimum standards in the tasks both before a selection day and on the day itself. These are described.

Summary of results: Potential examiners who were experienced GPs and GP trainers were not necessarily suitable for the role of examiner and around 30% were rejected. Structuring the day around the specific selection tools used, and using trained and experienced observers, enabled selection of future examiners for training using defensible methods, needing to be justified to the un-selected.

Conclusions: Systematic processes of selection using appropriate tools supported the reliability of the exam and minimised prevalence of examiner deselection, an embarrassing consequence of inadequate selection.

Take-home messages: Postgraduate medical exams should invest in their selection processes for examiners; accepting applicants on the traditional basis of availability and enthusiasm is not enough.

SESSION9   SIMULTANEOUS SESSIONS
0830-1000 hrs

9B   Oral Presentations: Feedback 1

9B1

Simple provision of feedback is no guarantee that it is being used

CJ Harrison[1], KD Könings*[2], VJ Wass*[1], CPM van der Vleuten*[2] ([1]Keele University School of Medicine, UK; [2]Maastricht University, Netherlands)*

Background: There is little research into how to deliver summative assessment student feedback effectively so it is used constructively to improve performance.

Summary of work: Students completed a validated questionnaire about goal orientation, motivation and attitudes to feedback. Detailed breakdowns of OSCE scores were delivered via a website to clinical students. Information was offered in various ways. Individual website usage was related to performance.

Summary of results: 132 students (95.7%) viewed the website. The number of pages viewed ranged from 2 to 377 (median 102). Higher-performing students viewed significantly more webpages than weaker students, focussing on examiner global judgements and detailed comparisons with other students. Use of webpages breaking down skills within stations did not relate significantly with performance. Students with performance avoidance goal orientation or more positive attitudes to feedback viewed more pages.

Conclusions: Higher performing students appeared to use the feedback more for positive affirmation than for diagnostic information. Poorer performing students appeared less likely to engage. Students' goal orientation appears to influence their use of feedback.

Take-home messages: We need to better understand how different types of students receive feedback after summative assessment so that students who need the most help will engage more effectively.

9B2

The development of an instrument to measure students' non-verbal behaviour in feedback situations

JMM van de Ridder[1], HEC Collast-van Dijk[2], L Govers[3], KM Stokking[2], TJ ten Cate (Albert Schweitzer hospital, Department of Education, Dordrecht, The Netherlands; [1]Utrecht University, Faculty of Social and Behavioural Sciences, Utrecht, The Netherlands; [2]SBK, Training and Advice, Helmond, The Netherlands; [3]University Medical Centre, Netherlands)*

Background: Not all feedback is effective, for example because the message is not 'received' by a learner. We hypothesise that non-verbal behaviour of the feedback recipient gives an indication whether or not a feedback message comes across. Instruments to measure non-verbal behaviour in feedback dialogues are lacking.

Summary of work: Based on 68 video recordings of feedback dialogues between supervisors and medical students' non-verbal behaviour was identified. An observation list was constructed.

A second study investigated the content validity of the instrument. A systematic literature review on non-verbal behaviour was performed. The instrument was adjusted based on the review outcomes, and used to analyze 77 video recordings. Two raters independently rated a sample of respectively 10 and 4 feedback dialogues.

Summary of results: The initial instrument consists of eleven categories of movements and positions: head, lips, mouth, eyes, arms, upper body, hands, fingers, body position, upper body position, and head position. The literature revealed no new categories, but behavioural descriptions within categories were slightly changed. The inter-rater reliability in the first and second version of the instrument was respectively $r=1.0$ and $r=0.97$.

Conclusions: This instrument has good content validity and high inter-rater reliability. Expert validation will be the next step in the developmental process.

9B3

Combining assessment *for* learning and assessment *of* learning in one Assessment Program: is it possible?

A.D.C. Jaarsma, G.J. Bok, L.F.H. Theyse, N.J. Rietbroek, H. Brommer, C.P.M. van der Vleuten (Academic Medical Centre, University of Amsterdam, Meiburgdreef 9, PO Box 22660, 1100 DD Amsterdam, The Netherlands)*

Background: Assessment at the clinical workplace is challenging. Both feedback and high stake decisions are needed for students to develop their performance and to ensure they are ready for 'practice'.

Summary of work: An assessment program was developed combining high quality feedback and robust and defensible decision making on students' performance by use of a new generation web-based e-portfolio. This type of portfolio facilitates the active collection of feedback using digital versions of the developed instruments. Meaningful aggregation of all single instruments takes place at the competency level and high stake decisions are made by a judging committee. The longitudinal performance growth per competency domain is measured.

Summary of results: Positive evaluation is on the quality of feedback students receive and the feasibility of the e-portfolio. Screening of the portfolio at the competency level demonstrated that it is possible to make robust judgments of the individual student. Observation still remains difficult for all competency domains in the clinics.

Conclusions: Combining assessment for learning and assessment of learning is possible within one assessment program, however, still more information/research is needed on how to optimize it.

Take-home messages: Paying attention to assessment *for* learning (e.g. feedback, students' development) at the clinical workplace is crucial to students' learning and development.

9B4

Helping students help themselves using an SMS (student-initiated moderated self-reflection) system

S Sarraf-Yazdi[1,2], HN Koong[2] ([1]Duke-NUS Graduate Medical School, Medical Education, Research, & Evaluation Department, Singapore; [2]National Cancer Centre, Department of Surgical Oncology, Singapore)*

Background: A surge in popularity of self-reflection practices in medical education notwithstanding, encouraging learners to delve into unadulterated reflections without proper feedback can lead to potentially misguided ones.

Summary of work: On our 8-week core surgical clerkship, we initiated the SMS (student-initiated moderated self-reflection) system, aiming to help inform students' clinical perceptions with faculty guidance. Two to 3 times weekly, students select a supervised clinical encounter and send the faculty a summarized narrative of learning points via mobile phone on the same day, excluding patient identifiers. They incorporate any identified gaps, emphasizing history taking and physical examination skills. Faculty either validates the observations or asks for revisions until a satisfactorily accurate snapshot is captured.

Summary of results: Use of this learner-driven approach has promoted exchange of nonjudgmental and transparent feedback on specific behaviors and skills, in a timely, albeit not "real-time", manner. Incorrect learner perceptions are uncovered that may otherwise have gone undetected. The exchanges have armed the clerkship director with a repository of collated data for discussion during formative feedback sessions with students.

Conclusions: The SMS system employs a learner-initiated, formative feedback format applicable to any educational endeavor.

Take-home messages: Self-reflection without feedback can be dangerous. Longitudinal faculty development on acknowledging feedback as an indispensable learning tool remains a chief concern.

9B5

Students' feedback-seeking behaviour in a competency-based clinical clerkship

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Health, Medicine and Life Sciences, Maastricht, the Netherlands; [3]University of Amsterdam, AMC, Amsterdam, the Netherlands)

Background: Internationally, there is a shift towards designing curricula which incorporate several instruments in a body of programmatic assessment. In these curricula, students are responsible for collecting sufficient evidence of their competency development. Therefore, they have to collect and document feedback from a variety of feedback providers. In order to gain insight in this feedback-seeking behaviour of students in the clinical environment we conducted this study.

Summary of work: We conducted an explorative qualitative study using semi-structured interviews. The interview structure covered students' goals and motives to seek feedback, the characteristics of the feedback-seeking behaviour and the factors influencing this behaviour.

Summary of results: We found that students' feedback-seeking behaviour is founded on a set of predictors which results in specific behaviour mediated through a cost/value-analysis.

Conclusions: While students are seeking feedback regarding their performance on a specific task in the clinical learning environment, there is a constant interaction between personal and contextual factors that influence students' feedback-seeking behaviour.

Take-home messages: Competency-based assessment programmes rely on students' ability to find proof of their ongoing performance. Enabling students to seek feedback requires a student-oriented learning environment and the availability of supervisors with expertise.

9B6

Web-based video and feedback in the teaching of cardio-pulmonary resuscitation

A Rowlands[1], T Bowden*[2], M. Buckwell[1], S Abbott[2] ([1]Barts and The London School of Medicine and Dentistry, Queen University London, Center for Medical Education, London UK; [2]City University, School of Community and Health Sciences, London, UK)*

Background: Knowledge and skills relating to cardiopulmonary resuscitation tend to be lost over time. It is therefore important to find teaching methods that encourage the retention of knowledge and skills.

Summary of work: The project used a patient simulator and METIVision™ , a digital video and audio management system. Students were able to access, via the web, video records of the simulation session together with physiological data, events and pharmacology logs and patient monitoring data. Tutors were able to insert written feedback alongside the video record. Learners were able to view all data for debriefing, assessment and evaluation.

Summary of results: Students used the online material in a variety of ways and found that the addition to their learning

was significant. Their memories of the simulation session and of the feedback received immediately afterwards were incomplete and repeated viewing enabled them to identify good and poor practice and to reflect on their own and others' practice. Teachers found it easier to give more detailed feedback when given the chance to watch the video than immediately after the session.

Conclusions: A web based video feedback system assists the transfer and retention of knowledge over traditional methods of teaching cardiopulmonary resuscitation.

9C   Oral Presentations: Simulation 1

9C1

Assessment by Simulation – Is It Fair?

D Brooke*, G Coakley (Emergency Department, Queen Elizabeth Hospital, South London Healthcare NHS Trust, Stadium Road, Woolwich, London SE18 4QH, UK)

Background: The use of high-fidelity simulation in medical training is increasingly common. It may be a suitable assessment tool for high stakes examinations. There is an unwritten assumption that it is equally effective for all learners. Research from other fields of learning suggests that this may not be so.

Summary of work: Through a series of 11 semi-structured interviews and an online questionnaire completed by 38 subjects, the authors identified features inherent in learners that were perceived to indicate that simulation might be a less effective method of assessment for them.

Summary of results: All learners enjoyed simulation; however, most feel that some individuals may be disadvantaged by its use as a form of assessment. The characteristics perceived as disadvantaging the learner were being introverted or older.

Conclusions: This work suggests that introverted learners may benefit from different aspects of simulation-based training than extroverts. Introversion, and increasing age, may disadvantage the learner when it comes to using simulation as form of assessment.

Take-home messages: There is sufficient concern about perceived inequalities in the acceptability of simulation in varying learners that its use in high stakes assessments should be carefully implemented and may be open to challenge. This work leads to testable hypotheses for prospective exploration.

9C2

A theoretical framework for assessing transfer of learning from simulation to practice

T Gale[1], A Koczwara[2], M Kerrin*[2], F Patterson[2] ([1]Peninsula College of Medicine and Dentistry, UK; [2]Work Psychology Group, UK)

Background: Whilst simulation is a widely used educational tool, there is limited understanding of how best to assess the mechanisms with which learning is transferred to practice. A new theoretical framework for assessment is offered focusing on three core learning outcomes: behaviour, cognition, and affect.

Summary of work: This study demonstrates the design of this framework for assessing learning outcomes and how they are transferred from simulation to practice. Using a longitudinal study, 14 trainee doctors and nurses were interviewed prior, immediately after and six-weeks following simulation training. Interview transcripts were thematically analysed using Template Analysis methodology.

Summary of results: Analysis was guided by a-priori themes from previous research and then extended, with themes organised hierarchically to provide an in-depth framework for assessing transfer of learning. The full framework will be presented at the conference. Evidence of transfer was found in terms of behaviour changes including skill development (e.g. delegation, and prioritisation), changes to cognition, such as knowledge consolidation and development of strategies to aid recall, and affective outcomes, including increased self-confidence, willingness to reflect, and intentions to apply learning.

Conclusions/Take-home messages: Results suggests that reviewing changes in behaviour, cognition and affect provides an effective framework for assessing if and how transfer of learning from simulation to practice has occurred.

9C3

A national program for simulation education and technical training – The AusSETT program

P Brooks[2], D Campher[3], K Freeman[4], J Greenhill[5], B Jolly[1], D Nestel*[1], H Owen[5], L Rogers[5], C Rudd[4], C Sprick[5], B Sutton[1], M Watson[3], M Bearman[1] ([1]Monash University, Victoria, Australia; [2]University of Melbourne, Victoria, Australia; [3]Queensland Health & Queensland University, Queensland, Australia; [4]Edith Cowan University, Western Australia, Australia; [5]Flinders University, South Australia)

Background: Simulation-based education (SBE) has seen a dramatic uptake in the last decade. SBE offers learning opportunities that are difficult to access by other educational methods. Competent faculty are seen as key to high quality SBE. A consortium of Australian universities was commissioned by Health Workforce Australia (HWA) to develop a national training program for simulation educators and technicians/coordinators – the AusSETT program. HWA is responding to a significant national health workforce issue – the need to facilitate the quality of SBE.

Summary of work: AusSETT is an intensive train-the-trainer program, which offers two to three intensive days of 4-6 modules, underpinned by an electronic portfolio permitting

peer assessment of skills. Modules are designed to take between four and eight hours, and include online options. AusSETT will be offered across all professions in all states. Topics include: core foundations of train-the-trainer; a basic introduction to SBE; manikin based SBE; simulated patient methodology; and audio visual training.

Summary of results: AusSETT will be delivered during December 2011 and March 2012 to 230 participants. Preliminary evaluation results will be presented.

Conclusions: The development of a national training program to support a competent simulation educator and technician/coordinator workforce is feasible.

9C4

Assessment in Simulation Formative Feedback to Summative Sign-off

S Quy*, M Parry*, A Gisvold (KSS Deanery (University of London), 7 Bermondsey Street, London SE1 2DD, UK)

Background: The Simulation and Assessment for Foundation Enrichment (SAFE) project is operational within the Kent, Surry and Sussex Deanery's Simulation Network. The research centres on developing best practice in teaching and learning in simulated environments and exploring its implications for Work Place Based Assessment in clinical contexts.

Summary of work: All Foundation doctors in South Thames Foundation School participate in simulation as part of their training entitlement. The development of effective assessment practices within teaching faculties is crucial to maximising learning opportunities in time-constrained teaching programmes. Our research has explored the varying perspectives of learners, faculty and educationalists in advancing simulation practice.

Summary of results: Trainees and teaching faculty benefit from clarity of purpose and understanding in using formative and summative assessment strategies. A training video entitled 'Curriculum-Led Simulation' has been developed. Simulation provides key opportunities to enrich assessment practices in: learner briefing; the 'professional conversation' and written reflection for portfolios.

Conclusions: Foundation simulation is an ideal opportunity to embed robust assessment practices and enhance understanding of formative feedback strategies.

Take-home message: An increased awareness of formative assessment strategies is simulation teaching will enhance the effectiveness of Foundation doctor performance in clinical contexts.

9C5

Assessment of stress level using Cortisol and Alpha-amylase: repetitive testing in scenarios with high-fidelity-simulation and standardized patients

SK Beckers*[1,2], B Siegers[1], M Skorning[1], S Bergrath[1], D Rörtgen[1], C Fitzner[3], M Müller, C Kirschbaum, R

Rossaint[1] ([1]Department of Anesthesiology, University Hospital Aachen, RWTH Aachen University, Aachen, Germany; [2]AIXTRA – Aix-la-Chapelle Interdisciplinary Centre for Medical Education, Skillslab of the Medical Faculty; [3]Department of Medical Statistics)

Background: This pilot study aims to investigate repetitive performance and stress in scenarios with high-fidelity simulation (SIM) and standardized patients (SP) in pre-hospital setting of emergency medical system (EMS).

Summary of work: Interprofessional Teams with 1 EMS-physician & 2 paramedics had to run through SIM and SP sessions consecutively (Study approved by the local institutional ethics board). During 5 standardized scenarios (each lasting 10 min) overall 14 saliva samples were taken before, during as well as after scenarios, and alpha-amylase and Cortisol were measured. Statistical analysis: ANCOVA for repeated measurements.

Summary of results: Totally 48 participants (16 EMS-physicians, 32 paramedics) were evaluated: Alpha-amylase and Cortisol did not differ significantly between professions. Cortisol values showed adaption over time; alpha-amylase activity but not Cortisol concentration showed reproducible and significant movements ($p < 0.00038$) in 5 of 13 paired comparison of SIM and SP sessions.

Conclusions: SIM and SP scenarios produce stress in interprofessional EMS-teams. Stress response measured by salivary Alpha-amylase but not Cortisol was reproducible in scenarios. Alpha-amylase might be a reliable parameter for easy measurement of stress levels in simulated settings.

Take-home messages: Biochemical markers, especially salivary Alpha-amylase might be reliable parameters for easy measurement of stress levels in simulated settings.

9C6

Patient outcomes in simulation-based medical education: results of a systematic review

D Cook[1], R Brydges[2], S Hamstra[3], R Hatala[4], J Szostek*[1], A Wang[1], B Zendejas[1] ([1]College of Medicine, Mayo Clinic, Rochester, MN, USA; [2]University of Toronto, Toronto, ON, Canada; [3]University of Ottawa, Ottawa, ON, Canada; [4]University of British Columbia, Vancouver, BC, Canada)

Background: Linking educational efforts with patient care outcomes encourages accountability, focus on systems, and concentration on what really works to help providers help patients. Authors have lamented the paucity of studies measuring such outcomes. We sought to quantify the prevalence and magnitude of patient outcomes in simulation-based medical education (SBME).

Summary of work: We conducted a systematic review of SBME, identified studies reporting patient outcomes, summarized the outcome measures, and pooled results using meta-analysis.

Summary of results: We identified 967 studies comparing SBME with no intervention, non-simulation instruction, or an alternate simulation approach. Of these, 48 (5%) reported patient-level outcomes including procedural success, patient discomfort, complication rate, and patient survival. In comparison with no intervention, SBME was associated with moderate benefits on patient care (pooled effect size 0.50 [95% CI, 0.34-0.66; p<.0001], N=32 studies]). In comparison with non-simulation approaches the effect size was small and not statistically significant (0.36 [95% CI, -0.06 to 0.78; p=0.09], N=9). Studies comparing two simulation approaches showed mixed results.

Conclusions. Patient outcomes are infrequently reported in SBME research. When measured, the impact of SBME on patient outcomes is small to moderate.

Take-home messages: Patient outcomes can be measured in SBME, and should be when appropriate.

9D   Oral Presentations: Mini-CEX in Undergraduate Education

9D1

Validity and reliability of the mini clinical evaluation exercise (mini CEX) for assessing clinical performance of undergraduate medical students in community practice

S McKenzie, T Sen Gupta (James Cook University, School of Medicine and Dentistry, Townsville, Australia)*

Background: The assessment of performance of undergraduate medical students in real clinical encounters is important to provide students with feedback about their clinical skills but it also important that such assessments correlate with the expectations of formal structured examinations. Undergraduate medical students at James Cook University in Northern Australia, complete five mini-CEX assessments during their general practice placements in year 5 of their course. In 2011 these replaced in-course structured simulated assessment tasks but they continue to undertake an objective structured clinical examination (OSCE) at the end of the year.

Summary of work: Descriptive analysis of completed mini-CEX forms from 36 students to assess reliability and validity in the context of their general practice placements. Average scores for each of the domains assessed in the five mini-CEX forms completed for each student were then compared with the examination scores for the same domains in the general practice stations from the end of the year OSCE.

Summary of results: Descriptive statistics and correlation coefficients along with Kappa scores for inter-rater agreement will be presented.

Conclusions: We hope to demonstrate strong correlation between mini-CEX assessments and OSCE in a cohort of undergraduate medical students.

Take-home messages: Formative assessment tasks should demonstrate strong correlation with the expectations of formal summative assessment tasks.

9D2

The Utility of Mini-CEX

S Jones[1], J MacLachlan[2] ([1]Newcastle University Medicine Malaysia, 1 Jalan Sarjana 1 Kota Ilmu, Educity@Iskandar, Nusajaya, Johor 79200, Malaysia; [2]Durham University, Stockton on Tees, UK)*

Background: The Mini Clinical Evaluation Exercise (mini-CEX) is widely used in assessing medical undergraduates and post graduates. However, the Utility[1] is rarely completely considered.

Summary of work: A systematic review of the literature was conducted with pre-defined criteria. Data were abstracted from 24 original quantitative studies, using a structured pro forma. 24 studies were included.

Summary of results: There were significant differences between studies using classical test theory and generalisability. In the latter, reliability was variable, with numbers of encounters needed ranging from 4–6 to 30–50. Reliability was influenced by examiner factors, and case complexity. There was modest supportive evidence relating to concurrent and predictive validity, but little relating face validity. Mini-CEX is acceptable to assessors and those being assessed, although around 20% strongly dissent. The mini-CEX does not appear to be acceptable to medical schools, used by only 28% of medical schools in the USA. Educational impact is only suggested through trainees welcoming feedback. There are no data in relation to the cost.

Conclusions: Overall utility of the mini-CEX derived from the quantitative literature is modest.

Take-home messages: The mini-CEX should only be used in combination with other assessments of clinical skills.

[1]Schuwirth LWT, van der Vleuten CPM. How to choose the best approaches to assessment. How to design a useful test: the principles of assessment. Edinburgh: Association for the study of Medical Education; 2006. p. 1-6.

9D3

Indonesian undergraduate students' perceptions of the Mini-Clinical Evaluation Exercise (Mini-CEX)

Y Suhoyo[1], Jan B. M. Kuks[2], Janke Cohen-Schotanus[2] ([1]Universitas Gadjah Mada, Faculty of Medicine, Department of Medical Education, Yogyakarta, Indonesia; [2]Center for Research and Innovation in Medical Education, University of Groningen, Netherlands)*

Background: The Mini-CEX is a commonly used method to assess students' clinical skills through direct observation and to provide constructive feedback. To establish the Mini-CEX as an appropriate assessment tool for an Indonesian clinical setting, its practicality and impact on learning has to be investigated[1]. Therefore, we assessed students' perceptions[2].

Summary of work: This study was conducted at two departments of the Gadjah Mada University in Yogyakarta. Participants were 203 students, of whom 99 worked at the Department of Medicine and 104 at Neurology. They completed a 19-item questionnaire, divided into two categories: practicability of the mini-CEX (5) and its impact on learning, which – in turn – was divided into general impacts on learning (11) and professional development (3). We used a Mann-Whitney U test to analyze the data.

Summary of results: Students perceived the Mini-CEX as a practical assessment tool (M=3.94), affecting their learning in an average to good way (M=4.12) and good enough to develop professionalism (M=3.99). We found no significant differences between both departments (p=0715).

Conclusions: Indonesian students found the Mini-CEX a practical assessment tool with a positive impact on their learning.

Take-home messages: The Mini-CEX is an appropriate assessment tool for an Indonesian clinical setting.

[1]Shumway, J.M. & Harden, R.M. The assessment of learning outcomes for the competent and reflective physician. Medical Teacher. 2003: 25: 569–584

[2]Malhotra, S., Hatala, R. & Courneya, C.A. Internal medicine residents' perceptions of the Mini-Clinical Evaluation Exercise. Medical Teacher. 2008: 30: 414–419

9D4

Assessment in Longitudinal Integrated Clerkship: mCEX results from The Rural Clinical School of Western Australia

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Background: There are many dimensions to clinical assessment in medicine, only some of which are encapsulated by discussions of validity and reliability. Also important is assessment's relational-feedback, aspects, and its ability to capture trainees' drive to demonstrate peak performance in a professional environment. The latter aspects are particularly significant for longitudinal integrated clerkships.

Summary of work: Aware of the reported benefits of mCEX for workplace feedback, we employed mCEX as a core clinical assessment for undergraduate medical students being trained in rural and remote Western Australia for an entire clinical year.

Summary of results: The mCEX tool was used in hospitals, private GP surgeries, and in Aboriginal medical services. From 2008 - 2010, 216 students generated more than 5,500 mCEX. They were assessed by junior medical officers, resident medical officers, consultants and GPs. We report mCEX validity and reliability in this real-world setting, and focus on medical students' development over the longitudinal year.

Conclusion: In a longitudinal integrated clerkship, the mCEX assessment can be academically useful in ways that are not captured in standard assessment.

Take-home message: Longitudinal integrated clerkship requires a new look at assessment programmes. Existing tools can be effectively employed.

9E   Oral Presentations: Professionalism 2

9E1
Teaching medical professionalism: How can attitudes be assessed?

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Background: Teaching professionalism became part of current curricula in many medical schools world wide. Whereas the focus lies often on teaching and assessment of skills, e.g. communication between doctor and patient, we need more inside on teaching and assessment of attitudes.

Summary of work: At the Medical Faculty of the Ruhr-University Bochum (Germany) medical professionalism is taught and assessed for 5 years in different structures and settings. We present new empirical data on teaching and assessing medical professionalism. Knowledge is tested via written exams; skills are tested in OSCE stations using simulated patients, but testing attitudes turned out to be problematic.

Summary of results: While trying to implement methods for assessing attitudes in medical professionalism we experienced several problems e.g. definition of teaching goals, lack of objectivity concerning the impact of favoured behaviour, power of social desirability and conflicting ethical opinions.

Conclusions: Taking into account practical, methodological and ethical implications of assessing attitudes in medical professionalism we argue that attitudes can not been assessed within the regular medical examination system. Medical faculties should develop new methods and social structures for dialogue based assessments or should abstain from testing attitudes within medical professionalism.

Take-home messages: Knowledge and skills of professionalism can be assessed adequately, but there are many ethical and methodological difficulties when assessing attitudes.

9E2

Empathy Skills come off the hidden curriculum

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Background: Outside the field of medicine, empathy implies an understanding with emotional resonance. In contrast, medical educators teach professional empathy as a detached cognition of the patients' emotions. On the hidden curriculum this clinical nuance (portrayal empathy but with appropriate professional detachment) is not necessarily made overt. Indeed studies do indicate that clinical empathy declines with training. The aim was therefore to research teaching, learning and retention of clinical empathy skills.

Summary of work: This prospective longitudinal cohort-control study follows year 5 & 6 medical students and new medical graduates. There are two intervention cohorts. The interventions were: exposure to an Empathy teaching innovation and exposure to an entirely new undergraduate medical curriculum. The dataset includes validated empathy tools (JSPE and JSPPE), a brief intervention assessment tool (BECCI), OSCE results, video footage of skills, peer-/tutor-/ & self-rated skills performance.

Summary of results: The first intervention resulted in significant improvements in JSPE ($p<0.05$), BECCI ($P<0.001$), OSCE both tutor-rated ($P<0.05$) and student self-rated ($P<0.01$) performance. Analysis also raised questions about differing cultural perspectives on empathy and the use of patent perceptions in assessment. These are now also being researched along with analysis of the second intervention.

Conclusions: Elements of clinical empathy portrayal can be "taught", but this concept deserves further exploration. Inter-professional and international research collaborations are now underway.

Take-home messages: Implications for empathy in undergraduate teaching and postgraduate competence will be discussed.

9E3

Assessing Professionalism in PBL: what are the indicators?

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Background/Summary of work: Whilst open to interpretation, the professions' contractual obligation to society lies at the core of "professionalism" it is not enough for students to master competencies in curricula but should also imbibe the values woven into the "hidden curriculum".

Terms like "mutual respect", "punctuality", "dress code", "non-judgemental", "recognition of limitation of one's ability", "reflection" are encountered repeatedly in literature, but the indicators are very varied; particularly in classroom settings. Our aim was to identify the indicators of these values and compare the perceptions of students and Faculty. PBL Facilitators in the Medical Sciences Course in IMU and Semesters 1 to 5 students were interviewed in groups of 4 to 12. Four structured questions were used to discuss on what professionalism is; the values embedded; the indicators; behavior that might predict unprofessional behavior later.

Summary of results/Conclusions: The values and indicators identified by staff and students were comparable; with the most commonly identified being mutual respect, teamwork, appropriate language, helping each other, conscientious effort, recognising limitations.

Take-home message: There is general agreement between Faculty and students .However, these aspects should be emphasized and feedback given to students.

9E4

Medical Decision in Adolescence: An Empirical Ethical Research

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Background: With the advances of medical technologies, the related ethical issues are becoming challenging. In Taiwan, adult patients have full right to make medical decision, while little is known for adolescents. Traditionally, Taiwanese parents made medical decisions for their children.

Summary of work: The purpose of this research is to understand how experts handle the issues of adolescents' medical decision making, and to suggest strategies for ethical problem solving. This is a qualitative study. To extract experts' thoughts, we used a hypothesized case that involved an amputation operation for a 12-year-old adolescent. Think-aloud interviews and Script Concordance Test were used to collect verbal and text data. Three experts were invited for think-aloud interviews, and thirteen for written Script Concordance Test.

Summary of results: The experts believed "age" is not an only factor that determines medical decision capacity of a child. Listen to the minors is important for evaluating their capacities. When parents' decisions violated the best evidence in medicine, the experts would put more efforts on communication.

Conclusions: Communication, involving both minors and parents, and careful evaluation for children's capacity on

medical decisions are important to defend for children's best interests.

Take-home messages:
For the greatest interest of adolescence patients, communication with both minors and parents is important.

9E5
Exploring Physician Responses to Typically Challenging Professional Situations

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Background: While most physicians embrace professional values, many experience challenges to exhibiting consistent behaviors in practice.
Summary of work: This qualitative study explored physicians' responses to vignettes designed to stimulate reflection on typically challenging professional situations.
Summary of results: Analysis revealed a number of guiding principles that influence physicians as they face professional dilemmas. Although these principles are contextually dependent, they emerged as strong indicators for explaining professional behavior that is discordant from physician values as defined by the Physician Charter on Medical Professionalism. Our results suggest, for example, that physicians may choose against evidence based medicine (EBM) or bend personal rules of conduct if they feel the action serves the patient's best interest. Physicians are driven to keep patients healthy and happy while ensuring a financially viable practice and building and sustaining positive relationships. This is especially true for patients with whom physicians feel bonded to, or with whom they have had long standing relationships. Satisfying patients is potentially influenced by a number of contextual factors, including physician guilt, obligation to treat non-patients, patient adherence or insistence, potential risk to the patient, or how acute or complex the encounter is.
Conclusions/Take-home messages: These preliminary results help to explain the discordance between professional values and behaviors in clinical practice.

9F   Oral Presentations: Undergraduate Selection 2

9F1
Selection and retention of medical students: an international comparison

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Background: As Belgian ministers propose to abolish free entry to all French-speaking medical faculties and look to neighbour selection systems (examination, lottery, ...), a workshop was held at AMEE 2011 in Vienna with the aim to publish an international comparison of selection models and their respective retention rates, as there are no such comparative data in the literature.
Summary of work: The 24 workshop participants from 20 universities (4 continents) presented their various selection methodologies. After AMEE, all participants were sent a questionnaire concerning selection and retention data of their medical faculty from 2000-2001 to 2010-2011, specifying curriculum cycles and length, total number of applicants, selection process used, final number of selected students, actual intake (year1 & year4), total number of graduates and precise number of those actually selected initially, for each academic year.
Summary of results: Most universities use combined selection methods, some stimulate retention by interesting initiatives eg valorising medical competency acquisition. The complete data and statistical analysis of the relationships between selection methodologies and retention rates will be presented and discussed at the conference.
Conclusions/Take-home message: Retention data should be linked to an appropriate selection, indicating most efficient use of medical faculty resources towards quality medical training.

9F2
Medical student selection process and its pre-admission scores association with the new students' academic performance in Universiti Sains Malaysia

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Background: This article describes a medical student selection process conducted by Universiti Sains Malaysia (USM) and its pre-admission scores association with their academic performance.
Summary of work: A total of 600 shortlisted applicants, based on their past scholastic achievement and psychometric test results were called for interview and 196 candidates were selected to enter the medical course. This cohort of students were followed up and appraised with regard to their academic performance in medical studies against their past scholastic achievement, and psychometric and interview scores

Summary of results: Students who obtained high interview scores demonstrated good academic performance (p < 0.05). High School Certificate (HSC) students obtained good marks across the examinations (p < 0.01). The CGPA and psychometric scores were not associated with academic performance (p > 0.05).

Conclusions: The interview scores show a promising predictive capacity in selecting suitable candidates for the first year of medical course. The psychometric assessment should be reconsidered as it lacked predictive capacity for the first year examinations. The effectiveness and usefulness of the student selection is yet to be seen in the future.

Take-home messages: The USM student selection process showed predictive capacity for first-year student performance.

9F3

Predictive values of admission criteria on first year medical students psychological health

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Background: There is considerable evidence that emotional intelligence (EI), previous academic achievement (i.e. CGPA) and personality are determinants of success in various occupational settings. This study evaluated the predictive values of these variables with psychological health of year 1 medical students.

Summary of work: A one-year prospective study was done. EI, CGPA and personality were measured prior to admission. The validated USMEQ-i, USMaP-i and DASS-21 were used to measure EI, personality and psychological health (i.e. stress, anxiety and depression) respectively. The psychological health was measured during the year 1 summative assessment.

Summary of results: Multiple linear regression analysis showed Neuroticism predicted stress level (B = 0.51, R2 = 0.118, p < 0.001). Anxiety level was predicted by Neuroticism (B = 0.51) and Emotional Expression (B = 3.76) (R2 = 0.102, p < 0.001). Depression level was predicted by Neuroticism (B = 0.43, R2 = 0.091, p < 0.001).

Conclusion: Neuroticism was the strongest predictor of psychological health during the most stressful period (i.e. during the summative assessment). Psychological health was not predicted by Cumulative Grade Point Average (CGPA).

Take-home message: Medical educators should seriously consider the EI and personality aspects for student admission apart from their previous academic results.

9F4

Predicting outcomes in an Australian graduate entry medical programme

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Background: Graduates entering the MBBS at The University of Western Australia since 2005 have undertaken a 6-month bridging course, before joining the undergraduate-entry students for Years 3 through 6 of the medical course. Students were selected using their Grade Point Average (GPA), GAMSAT scores (Graduate Australian Medical School Admissions Test) and an interview score.

Summary of work: Six cohorts of students (n = 290) were studied. They had entered the programme between 2005 and 2010 and had completed at least the bridging course. The three entry scores, plus age and sex, were used in linear regression models with two outcome measures: the weighted average mark in the core units of the bridging component and Year 3 of the course.

Summary of results: GPA (p<0.01), score in GAMSAT Section 3 (Reasoning in the biological and physical sciences) (p<0.01), score in GAMSAT Section 2 (Written communication) (p<0.05), and age (p<0.05), were significant predictors of both outcome measures. Conclusion: GPA, GAMSAT scores and age together predict outcomes in the early stages of this graduate entry medical programme.

Take-home messages: The Graduate Australian Medical School Admissions Test is an effective predictor of early outcomes in this programme.

9F5

JCU MBBS graduates: Where have they gone over the first 5 years?

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Background: Maintaining an adequate rural medical workforce is a global challenge. The regionally-located medical school at James Cook University (JCU) has addressed this challenge by committing to the selection, education and rural exposure of medical students prepared to work in rural and remote locations. This presentation collates destination data for the first 5 JCU medical graduate cohorts (2005-2009) to show the emerging trends in choice of practice location and specialty.

Summary of work: Graduate destination and training data was collected (n=350; 97% response rate) via Australia's Medical Board website AHPRA, or personal communication using 'Facebook' or contact details obtained from "Year 6 Exit Survey".

Summary of results: Across Post Graduate Years (PGY) 2 to 5: 41% of graduates practised in outer regional or remote locations (ASGC-RA 3 to 5); and 45% practiced in the medical school's reference area of northern Australia. 4% more graduates began practising in outer regional or remote locations. Most common training was 'General Practitioner' and 'Rural Generalist' specialities.

Take-home messages: Regionally-based medical education works. The high proportion of graduates working rurally and/or training as a general practitioner or rural generalist bodes well for the future medical workforce in northern and rural Australia.

9F6

A Predictive Validity Study of the Aga Khan University Medical College Admission Test and Other Admission Criteria Employing Latent Variable Path Analysis

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Background: This study was done to determine the effectiveness of admission criteria used by the Aga Khan University Medical College for predicting students' performance during medical school, and 2) to identify a parsimonious model for admission decisions that is most predictive of students' performance using latent variable path analysis.

Summary of work: Data of three cohorts of students was followed till graduation. Exploratory Factor analysis, linear regression and structural equation modeling was used to study latent variable path models assessing the impact of the independent variables on dependent variables.

Summary of results: A three factor structure was identified for predicting validity of admission decisions for achievement in medical school employing Maximum Likelihood (ML) estimations. English language had the greatest predictive power for performance in medical school.

Conclusion: Study supported similar results from North America. The written tests of cognitive ability used for admission and progress during medical school had adequate validity, but measure of non cognitive ability need further improvement.

Take-home messages: There is a need to use to use more valid methods for assessing the non cognitive attributes of medical school applicants.

9G   Oral Presentations: Technology-based Assessment

9G1

Can Virtual Patients Be Used to Assess Clinical Reasoning? The Affect of Different Grading Metrics

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Background: Virtual patients (VPs) can be used to assess clinical reasoning. Grading metrics applied to VP exams may include scoring for appropriate differential diagnoses, proposed therapy, and the learner's approach to the case. The learner's inquiry of medical history, physical exam, and lab/ancillary tests utilized during the exam can all be graded. However, the best grading metric used to assess clinical reasoning for VP examination is unresolved.

Summary of work: Results from two groups of students assessed by VP-based examination (n>300) were used as a basis to evaluate different grading metrics. These grading models were also compared with results of other traditional student examination performance.

Summary of results: Each method of grading had both pronounced advantages and disadvantages with none considered ideal. However one grading metric was perceived to perform slightly better. None of the scoring methods had a direct correlation with four traditional exam formats to which they were compared.

Conclusions: Each grading metric used in this study had advantages and disadvantages. Medical school exams employing VP-based exams need to define what should be assessed for reliable utilization.

Take-home messages: Objectives of VP-based examination are essential to measure learner competency in an appropriate context. Traditional exams do not necessarily measure the same aptitude that VP-based exams measure.

9G2

Using VPs for assessment of clinical competence in postgraduate Paediatric Nurse Education

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Background: Studies with students and experienced clinically active nurses have shown that it is possible to use Virtual Patients (VP) to assess clinical competence in Specialist Nursing Care. The experienced nurses'

performance has been the basis for creating a semi-automatic scoring and grading model using VPs. It is important that students know what question to be asked, how to prioritize and that they can present an informed clinical decision for patient safety.

Summary of work: Paediatric cases for nursing were implemented in a VP system and an assessment module was developed. This study tested the preliminary scoring and grading models using VPs for an examination in three different courses in postgraduate Specialist Nursing Paediatric Care.

Summary of results: The result gave information regarding scoring paediatric nurse students´ abilities to prioritize among interview question and what kind of physical exams they had chosen in the VP-based exam. The result also indicated how students' suggestions of diagnoses, treatments and the motivations (which were in free text) could be weighted in the assessment module.

Conclusions: Nursing schools need critically discuss how to score and grade VP-based exams.

Take-home messages: VP-based exams need to be scored and graded with care.

9G3

Assessment of functional and clinical anatomy using an on-line image based examination.

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Background: Assessment of topographical anatomy has traditionally been via "spotter" examination that has an inflexible question format and inherent problems of reproducibility, with little scope for student feedback on performance or areas of weakness.

Summary of work: An online clinical assessment including, (i) spotter-type items, (ii) functional /clinical image-based questions, was developed for MBBS 1-4 inclusive where learning objectives from early years were re-examined in later years. The extensive question bank developed meant questions could be released with immediate comprehensive feedback. These assessments were trialed formatively for four years prior to use summatively. The utility of the assessment tool was evaluated via focus-groups and surveys of students and clinical tutors.

Summary of results: Qualitative and quantitative data on the perceptions and retention of anatomical knowledge by students [n=96] and clinical tutors [n=23] resulted in an overwhelming positive response. The clinical tutors [92%] perceived the students to have a better grounding in anatomy than previous cohorts. Indeed, 97% of students used the released past examinations as part of their revision, with 88% of respondents finding the immediate feedback useful. The clinical students reported they were encouraged to revisit prior anatomy learning as preparation for clinical attachments and assessments.

Take-home message: Learning and assessing anatomy in clinical context is advocated for reinforcing the application of knowledge.

9G4

A formative evaluation of user experience of a unique technology based junior doctor's induction

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Background: In the United Kingdom all hospital based junior doctors complete a mandatory Induction programme (NSHLA 2010; NPSA 2004). Leeds Teaching Hospitals NHS Trust led the design and delivery of a non linear scenario based e learning platform for junior hospital doctors. The module mapped 34 mandatory induction elements using four interactive patient scenarios. Completion of the module is dependent on appropriate clinical decision making and knowledge of hospital policies.

Summary of work: The module was piloted and evaluated within the Leeds Teaching Hospital Trust prior to launch across all hospitals within the Yorkshire and Humber region. Currently it is being considered as a national model for online junior doctor induction.

Summary of results: Qualitative and quantitative data was collected from over 500 doctors, analysed and triangulated with very favourable early results. Users reported a high level of satisfaction, relevance, interactivity and engagement with module material.

Conclusions: We conclude that this new scenario based online approach is an appropriate method for delivering technology enhanced learning for hospital junior doctor induction.

Take-home message: Using technology to enhance the delivery of this aspect of mandatory hospital training has highlighted the potential for this clinical focused transferable flexible learning. This delivery method is an efficient and effective use of resources.

9G5

New web-tool for Finnish physicians to manage CPD

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Background: Medical profession requires multiple skills and there is a growing need to document and assess professional's development. One key feature is to acknowledge work environment as a major learning environment. Web-technologies provide a flexible way to document CPD.

Summary of work: Taitoni-platform is a personal web tool designed to manage and support physician CPD. Its' core function is to encourage physicians to set learning goals and to document their development in formal and informal

learning activities. The tool is accompanied and linked with a national CME-calendar and with official data of individual qualifications and work-place history. Taitoni proposes educational activities according to the physicians learning goals. This is implemented by using MESH-keywords and predictive text input.Platform use and usability is being tested in Helsinki primary health care centre with fit to their competence management process. Employers will get reports of groups of physicians in numbers and in graphics. In future Taitoni may form a national CPD assessment tool.

Take-home message: Taitoni is linked to employer and work environment. This is because, if personal development lacks vivid contact and support from the work environment and health care organization, it carries a risk for becoming an individual's mission.

9G6

Teaching Pattern Recognition in Medical Education: A perceptual and adaptive learning approach

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Background: From discriminating different heart sounds to diagnosing illness presentations, much of medicine is centered on pattern recognition. Expertise in pattern recognition is associated with accuracy and fluency (i.e. short response times) in classifying new case presentations. Perceptual and adaptive learning methodologies[1] are a promising approach to increasing the rate of development of expertise in illness-related pattern recognition.

Summary of work: We have developed an approach, using computer-based perceptual and adaptive learning modules (PALM's), to enhance, maintain and assess accuracy and fluency in the ability to diagnose new instances of disease-related patterns. We illustrate this approach using two PALM's introduced to pre-clerkship medical students: recognizing pathologic processes in histopathology images and identifying skin lesions.

Summary of results: The 160 first-year and 162 second-year students who completed the 20-minute modules demonstrated large (mean effect sizes >0.7) and highly-significant (p<0.0001) increases in accuracy and speed in categorizing previously unseen images. Eight-week-delayed post-test results suggest slow decay of these gains.

Conclusions: Computer-based PALM's are an effective method for enhancing disease-related pattern recognition in medical education.

Take-home message: Perceptual and adaptive learning technology provides a promising approach to accelerate development of expertise in pattern-recognition-based areas of medicine.

[1]Kellman, PJ et al (2010) Topics in Cognitive Science, 2:285-305

9H   Oral Presentations: Standardized Patients

9H1

Are real patients necessary for a 4th Year Clinical Performance Exam?

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Background: Duke-NUS, a US-based curriculum, introduced the highly reliable Standardized Patient (SP) exam to assess 4th year clinical performance. Singapore's existing final year assessment tradition uses real-patients (RP) to also assess student's ability to elicit abnormal signs.

Summary of work: We explored if a newly designed hybrid of these two systems assessed different elements of student performance. We administered a 5 station SP exam modeled after the USMLE Step 2 Clinical Skills exam and a 5 station RP exam, similar to an MBBS Short Case. Examiners assessed candidates via structured checklists.

Summary of results : There is no significant difference for SP and RP overall mean scores, and SP and RP scores showed weak correlation at r=0.515 (p<0.01). Two SP stations with PE showed no correlation with their corresponding RP station (Abdomen r = -0.329 (p=0.109); CVS r = -0.303 (p=0.141)).

Conclusions: While the two exams were mildly correlated, the PE components highlight the divergence despite shared checklist items. Examiners noted better performance of PE on RP exam and students acknowledged intensified preparations for RP exam suggesting an anecdotal difference in the two components.

Take-home messages: Both exam formats are needed to assess candidates more thoroughly.

9H2

Design and implementation of a standardized patient- based Clinical Skills exam in the new Swiss Federal Examination in Human Medicine (FEHM)

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Background: To ensure the quality of its undergraduate medical training (based on the new 2006 law on University Medical Professions training), Switzerland had worked since 2008 in the design and implementation of a new Federal Examination in Human Medicine (FEHM). The exam, administered at the end of the undergraduate curriculum,

serves as a verification process of the students' use of knowledge, clinical competencies and professional behavior. It qualifies students for their Federal diploma in Medicine and certifies their eligibility to apply for postgraduate specialty training.

Summary of work: In addition to a renewed clinical vignette- based multiple-choice examination, the FEHM introduces a standardized patient-based Clinical Skills (CS) examination. The design, development, scoring and implementation of the FEHM have started since 2008. With a total of 59 developed cases in both the French and German versions, the 10-stations CS exam was administered for the first time in 2011 at the same time at the five Swiss medical universities.

Summary of results: The FEHM- CS results are presently analyzed and will be presented and discussed within the context of its validity, generalizability, feasibility and implications for future examinations.

Conclusions: The adoption of the CS examination suggests that a wide acceptance and participation of the main stakeholders in the project as well as a recognized certification body with a dedicated budget are the key ingredients for its development and implementation.

Take-home messages: Necessary conditions and processes leading to the implementation of the FEMH-CS examination will be presented and discussed.

9H3

Accuracy of portrayal by standardized patients for a high stakes OSCE exam

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Background: The purpose of this study was to assess the accuracy of portrayal by standardized patients. In a 10 station high –stakes OSCE 4 stations across 4 tracks were video-taped.

Summary of work: Examiners and SPs were taped and results used for the study. Two assessors were trained to assess the portrayal on a checklist designed to assess the SP portrayal of scripted cases. Each item of portrayal including, history-taking response on physical examination and counselling was rated on 6 criteria: un-assessed, not asked by the examinee, correct or incorrect response for a spontaneous repose by SP and correct or incorrect response on inquiry by the examinee.   All SPs were trained by the same trainer and had been doing this work for at least the second time.

Summary of results: Generalizability analyses of data with Ep2 coefficients indicated that there were significant differences in accuracy of SP portrayal across all tracks and time of exam within each track, resulting in a variance component of approximately 20%.

Conclusions: Variation of trained SP portrayal of the same OSCE contributes substantial error to OSCE assessments.

Take-home message: SPs require extensive training that needs to be standardized for SPs portraying the same case.

9H4

Clinical Teaching Associates: the developing wave of teaching and competence assessment support for sensitive examinations in medical education.

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Background: The importance of clinical skills education for medical students is well established. Sensitive examinations are recognized as difficult to acquire. Many medical schools are developing programs to support medical education with Teaching Associates, also known as Clinical Teaching Associates (CTA's), who are men and women from the community, specifically trained to teach students appropriate sensitive examination.

Summary of work: The University of Tasmania CTA program has evolved to incorporate a program focused at male sensitive examination to complement the successful woman's program. The current results demonstrate improved student confidence and competencies to work with men.

Summary of results: In 2011, 130 third year medical students progressed through the program. Evaluation revealed 98% believed learning sensitive examination was very important, and is best delivered through a CTA program. Students also commented on learning male examinations as highly valuable in improving their understanding of men's health issues.

Conclusion: Clinical skills are fundamental to acquire in undergraduate education. CTA's are ideal to teach and assess sensitive examination, with increasing recognition to the benefits they offer to support demands on medical education.

Take-home message: Medical school are developing male examination programs to support men's health. Innovative programs involving CTA's support the student learning and achievement of competencies in a competitive challenging healthcare environment.

9H5

What is the impact of a Certificate Program for Standardized Patients on the end of year assessments?

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Background: A trained standardized patient (SP) provides student feedback to enhance student's communications skills. Feedback is core to the student's understanding of effective patient management. Inter-observer reliability and validity among SPs in these encounters is key to the standardization of feedback. This study tracked the

reliability and validity among SPs in MS III end of year assessments.

Summary of work: 35 SPs took the ninety hour Certificate Program. Using active learning to deliver these unique sessions, each SP was filmed pre and post training. Debrief both individual and group enhanced performance. Analysis was completed of recorded student encounters detailing inter-rater reliability.

Summary of results: Initial data suggest improvement in inter-rater reliability among these SPs. Review of MS III year end assessment showed in a comparison of the cohort to traditional SPs, 50% of the cohort increased their inter-rater reliability while 70% of the regular SPs showed a decrease. The inter-rater reliability was up a significant 87% over last year's comparison.

Conclusions: Targeted training enhanced the inter-observer reliability and validity of the SP / Student encounter. Future studies will include a self analysis of SP responses to student encounters.

Take-home messages: Inter-rater reliability assures a more standardized assessment of student performance.

9I   Workshop: How to write a medical interview OSCE that rewards purposeful questioning

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Background: Although OSCEs are in widespread use for assessing medical interviewing skills, it is still challenging to write an OSCE that rewards efficient, purposeful questioning and astute diagnostic reasoning. We have developed an approach to OSCE writing that uses a diagnostic algorithm and template to structure an OSCE. We use evidence to give added weight to purposeful questions on our OSCE checklists. Post-encounter questions are included in our OSCEs to probe a student's diagnostic reasoning.

Intended Outcomes: Participants will leave this workshop with an understanding of the use of a diagnostic algorithm and OSCE template to write an interview OSCE that better rewards purposeful questioning techniques. They will gain an appreciation of how to use evidence to reward discriminating enquiry by students.

Structure: Participants will be introduced to the concept of using diagnostic algorithms to structure an interview OSCE. They will then view two OSCE scenarios on DVD and mark with a traditional checklist and then with our structured mark-sheet. The differences between the approaches will be discussed. In small groups, participants will be able to

work on constructing their own OSCE based on a diagnostic algorithm, using our template

Intended Audience: New OSCE writers and experienced writers who want to extend their skills

Level of Workshop: Intermediate

9J   Workshop: Curriculum design: adapt an existing curriculum or start with a clean slate?

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Background: The recent expansion of medical education has seen many schools choose between buying an existing, accredited curriculum from an established school or designing a new curriculum. Further, many established curricula are being revised due to changes in educational technology, the impact of globalisation and the need to incorporate newer topics such as professionalism. This raises questions about how different curricula should be from each other and the resource implications of designing or adapting a curriculum.

Intended Outcomes: Participants should be able to: 1. Better understand the principles of curriculum design, including deciding the content, designing the delivery, selecting assessment practices and building in evaluation. 2. More clearly describe the advantages and disadvantages of buying vs designing a new curriculum. 3. Consider the extent to which culture might be a relevant factor in terms of devising assessments.

Structure: 10 minute introduction, followed by small group work analysing cases brought by delegates as well as sample cases brought by workshop leaders. Session to conclude with plenary feedback and discussion to help identify best practice and clarify learning outcomes.

Intended Audience: Health professional educators with responsibilities or interest in curriculum management. The presenters have experience in designing curricula in medicine, dentistry, veterinary science and pharmacy.

Level of Workshop: Intermediate

9K   Workshop: How to integrate and measure the ACGME core competencies at the undergraduate medical education level: An international perspective

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Background: During the past decade, a great emphasis has been placed in introducing and measuring the ACGME core competencies at the graduate medical education level in North America. However, not much work is done for introducing these competencies earlier at the undergraduate level. This workshop will briefly introduce and demonstrate a process for integrating and measuring the six competencies at the undergraduate level.

Intended Outcomes: At the conclusion of the workshop, participants will be able to: 1. Understand the ACGME 6 competencies in an international context. 2. Apply a process for integrating these competencies at the undergraduate level. 3. Select appropriate measurement methods for assessing two of the six competencies. 4. Apply the concepts in their own settings.

Structure: The workshop will include short presentations, individual and group exercises, and focused discussions. Participants will selecting the most appropriate assessment methods for two of the six competencies - Professionalism and Practice Based Learning and Improvement –and discuss methods to assure perfect alignments of objectives with assessment methods.

Intended Audience: Health professionals interested in introducing and assessing the ACGME competencies at the undergraduate level.

Level of Workshop: Beginner

9L Workshop: The Clinical Competency Committee: a critical component in the assessment of Internal Medicine trainees

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Background: Internal Medicine training program directors are responsible for the assessment and certification of the clinical competency of their trainees. Although traditional sources of evaluations include teaching faculty, peers and non-physician members of the health care team, an effective clinical competency committee can serve as a "clearing house" in the coordination of trainee evaluations. The competency committee—comprised of clinical faculty and program leadership—meets regularly to review the progress of each trainee as well as to make recommendations to the program director both about advancement but to also address remediation and/or disciplinary actions for underperforming trainees.

Intended Outcomes: To appreciate both the design and methodology of an effective clinical competency committee in the evaluation of post-graduate internal medicine trainees.

Structure: A series of illustrative cases of trainees in difficulty will be presented in an interactive forum and the facilitators will demonstrate how the competency

committee evaluates each case and offers specific recommendations: remediation and/or disciplinary action. The facilitators will also share specific details regarding the creation, composition and implementation of a competency committee.

Intended Audience: Faculty, program leadership and senior trainees involved in the assessment of clinical competency in post-graduate Internal Medicine trainees.

Level of Workshop: Intermediate

9M Workshop: RESME Course (closed workshop)

9P Posters: The Student and the Student in Difficulty

9P1
A remediation programme using formative OSCE for students who fail in the early clinical years
Douglas Lothian, Adrienne Kirk, Angela Rowlands, Annie M Cushing, Olwyn M. R Westwood (Barts and the London School of Medicine and Dentistry, Queen Mary University of London, Garrod Building, Turner Street, London E1 2AD, UK)*

Background: Some students, particularly in their first clinical placement year, need extra coaching in appropriate skill sets for successful transfer from university to work-based learning contexts. Here we discuss mechanisms for remediation following unsuccessful end-of-year assessments, together with guidance and coaching on how to improve their learning experience in the workplace.

Summary of work: The students are provided with sessions that include self-reflection on reasons for failure, and an explanation of standard setting for OSCEs. They are then asked to design OSCE stations that test different skills [communication, procedures, clinical examination] which they undertake as formative assessments and take turns at being the 'candidate' and the 'examiner'. Faculty members take on the role of patient in both history-taking and clinical skills, so students receive immediate expert feedback, and they also provide each other with peer feedback according to the mark schemes they developed. These sessions run concurrently with a 2-week placement on clinical firms that have offered to give remediation.

Summary of results: The qualitative and quantitative outcomes of this type of remediation programme are discussed in relation to student progression and the positive impact on subsequent assessments in their degree.

Take-home messages: Targeted and student-centred interventions improve self-appraisal and subsequent performance in assessments.

9P2

Evaluation of a weighted scoring method in grading of underperforming medical students on a medical neuroscience course

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Background: To investigate the effect of a weighted scoring method in grading of three groups of medical students with different learning performances.
Summary of work: Raw and final weighted scores of institute A, B, and C-based medical students (161, 80, and 107 students, respectively) on the same medical neuroscience course were compared. The composite score was weighted: lab study, 12.5%; problem-based learning, 12.5%; team-based learning, 12.5%; multiple-choice question (MCQ), 50%; and lab examination, 12.5%. Final scores of all 348 students were graded using a norm-referenced grading method.
Summary of results: Comparison of raw scores showed differences in MCQ between group A and C students ($p<0.001$), and B and C ($p<0.001$); in lab examination between B and C ($p<0.01$); and in total scores between A and C ($p<0.01$), and B and C ($p<0.001$), suggesting that group C students were underperforming. Weighted score comparison showed the same results with more statistically in total scores between A and C ($p<0.001$). When compared to final raw scores, weighted scoring reduced the number of students, whose scores were > 75 percentile, of about 8.6% of total students. Maximal reduction of students was found in group C students, followed by group B and A, with percentages of the reduction of 30.8%, 23.8%, and 19.0%, respectively.
Conclusions: Students with underperformance evaluated using raw scores were more affected from a norm-referenced grading method when weighted scores were applied.
Take-home messages: The use of score weighting for grading should be re-evaluated if a group of students is mixed of students with different performances.

9P3

Cause and outcome of medical students' delayed graduation in Tohoku University School of Medicine for the past 33 years

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Background: There have been few studies investigating the cause and the long-term outcome of delayed graduation of medical students due to failing to pass on to the next grade.
Summary of work: We investigated the numbers and the current occupations of students with delayed graduation in Tohoku University for the past 33 years mainly using the list of the alumni association.
Summary of results: Among the 3637 students who entered Tohoku University between 1972 and 2004, 494 students (13.6%) could not graduate within the regular six years: 354 graduated with one-year delay, 62 with two-year delay, 44 with three-year delay, and 34 (0.93% of all students) dropped out of school. The rates of delayed graduation were high during 1972-1988 (13.4±3.5%), low during 1989-93 (9.0±1.9%), and high again during 1994-2004 (16.4±4.5%). Among the 460 students who graduated with delay, 452 (98.3%) passed the national certificate examination, and among those traced, 405 (98.8%) were working as medical doctors including 10 professors.
Conclusions: The overall outcome of delayed graduation was good. Possible factors associated with delayed graduation such as major curriculum reformation that took place in 1993 will be discussed.
Take-home messages: Delayed graduation might have positive as well as negative effects.

9P4

Does student revision style affect outcome of written and practical examinations?

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Background: Medical students undertake revision prior to written or practical examinations. Revision styles vary and data is lacking on whether there are differences in performance between students who revise alone and those who revise in groups.
Summary of work: A questionnaire was distributed to all year 2 and 3 students at Brighton and Sussex Medical School asking about what predominant strategies students used when revising. These strategies were correlated with performance in written and OSCE examinations in year 2 and 3.
Summary of results: 139/280 students responded to the questionnaire (49.6%). 68% respondents revised alone, 23% revised in informal peer groups, 3.5% used junior doctors as a revision resource and 5.5% used a mixture of the above strategies for written/practical examinations. In written examinations, the mean score for those that revised alone was 68% vs 66% for those revising in groups. In practical examinations, the mean score for those revising alone was 75% vs 76% for those revising in groups. $p>0.05$ for both examination types
Conclusions: Solo or group revision style does not affect outcome of written and practical examinations. Further

work needs to be done to see if revision styles change over time.

Take-home messages: 1. Schools should not be prescriptive and allow students to develop their own revision strategies

9P5 Withdrawn

9P6

Predictors of Stress, Anxiety and Depression among Preclinical Medical Students

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Background: A few studies have highlights on worsening distress among preclinical medical students which lead to impairment in academic performance, mental health problems and burnout.

Summary of work: A cross-sectional study and convenient sampling survey was conducted to investigate the psychological wellbeing status and coping strategies among the preclinical medical student .The differences in style of coping strategies between those who had good psychological wellbeing and those who had poor psychological wellbeing were identified. A group of preclinical medical student (n=123) were asked to complete the translated and validated Bahasa Malaysia versions of the Depression, Anxiety and Stress Scales-21 (DASS-21) and COPE questionnaires.

Summary of results: From DASS-21 stress subscale scores, of all the respondents scored as having stress 23 (18.7%), anxiety 69 (56%), and depression 21 (17%). By comparing the stress and family ties, subjects who have good family ties shows absence of stress (p<0.001). Further, students who had poor psychological wellbeing used significantly more 'emotion venting' (p< 0.05) and 'behavioural disengagement' (p<0.05) coping strategies.

Conclusions: Preclinical medical students have greater prevalence of anxiety. Family ties and coping strategies influenced the students to manage their psychological distress productively.

Take-home messages: Emotion focused coping styles are common coping strategies used.

9P7

Evaluation of stress and coping strategies in first year medical student in a new medical school - a pilot study

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Background: Prior research suggest doctors who report they are stressed or burnt out said the same thing as medical students. This descriptive study aims to determine self-reported factors that cause stress in first-year medical student and strategies they use for coping.

Summary of work: A self-administered questionnaire survey was conducted just prior to a Mental Health Awareness Campaign at the Taylor's University in September 2011. The pioneer batch of 20 first-year medical students were invited to participate.

Summary of results: Only 18 responded; out of these 6 were male and 3 were international students. Preliminary analysis showed 78% of the students perceived themselves as generally healthy though the majority reported as somewhat stressed (83%) or extremely stressed (11%) . Conversely, an online quiz on study(work)-life balance, 44% of the same students scored as "barely coping", 6% as "life out of balance" and only 50% as "on the right tract". Analysis of the open comments regarding stressors and coping strategies revealed some key themes which are highlighted in this paper.

Conclusions: This study implicates early detection and mitigation of stress factors with adequate support mechanisms may improve work-life balance and welfare of medical students. More detailed study with larger sample size is warranted.

9P8

What influences medical student performance? A natural experiment at a small medical school

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Background: Lancaster Medical School graduated its first cohort in July 2011. Whilst students studied at Lancaster, they followed the University of Liverpool's curriculum and were assessed with Liverpool's student body (n=300+). The Lancaster cohort (n=50) was made up of students who were rejected during selection or hadn't got the grades necessary to take up an offer from Liverpool. They could be considered the lowest-performing students at entry to medical school.

Summary of work: This work was part of a study comparing the skills/attitudes of the Lancaster/Liverpool cohort. Ethical approval was obtained prior to commencement. All 350 students were ranked at the end of their penultimate year (based on overall performance), in preparation for applications for postgraduate training. Data from individual written exams/OSCEs are pending.

Summary of results: Of the original 50 Lancaster students, 32 graduated in 2011, seven intercalated, seven repeated a year and four left the course. Thirty-nine students were therefore ranked with their Liverpool counterparts and were no longer the lowest-performing students – only 14 remained in the bottom quartile.

Conclusions: The findings of this "natural experiment" have implications for student selection, the learning

environment, and multi-site education. Future work will include following this cohort through their early careers.

9P9

Identification of factors affecting the career preferences of undergraduate medical students

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Background: This study aimed to identify the factors affecting the career preferences of third year undergraduate medical students in a private medical university.

Summary of work: A preliminary study of a larger cross-sectional study. A piloted self-administered questionnaire was used in this cross-sectional study to collect data from the medical students (ME2/09) in semester 3 enrolled at the International Medical University in Malaysia. Both descriptive and inferential statistics were used for data analysis.

Summary of results: A total of 133 students responded, and 99.2% (132/133) had ranked their own interest in medicine as the reason for undertaking medical degree studies. Of these, 62% (82/132) of the respondents stated that they would enter a hospital-based career as their choice of first career setting, while ~one third (31%) ranked the research-based career first. On open discussion, the top extrinsic factors in selecting a career destination were self-care, patient-care and high salary expectation.

Conclusions: Undergraduate medical students were most interested in hospital-based practice as their first career step upon graduation.

Take-home messages: 1. The great majority had undertaking medical degree studies on their own interest. 2. They preferred hospital-based career as their first choice.

9P10

Profile and career preferences of IMU medical students in Australia: a snapshot from the Medical Schools Outcomes Database & Longitudinal Tracking (MSOD) Project

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Background: The MSOD provides data on demographic, training experience and career intentions of students enrolled in all medical schools in Australia and New Zealand. This report covers data collected from 29 IMU students enrolled in an Australian medical school between 2007 and 2010.

Summary of work: Data are available from IMU students who commenced in two medical schools between 2005 and 2009. Demographics, internship and career intentions of these students were analysed.

Summary of results: 45% males, 55% females. Career preferences indicated at commencement in Australia were Surgery (17%), Adult Medicine(33%) and Emergency Medicine (33%) and in the final year remained similar: Adult Medicine (30%) and Emergency Medicine(33%). Majority of IMU students indicated a preference to undertake internship and to work in Australia. 50% indicated an interest in medical teaching and one-third an interest in research.

Conclusions: The MSOD allows assessment of location and speciality of internship and career preferences of IMU students. A majority of IMU students have indicated a preference to undertake their internship and to practice in Australia.

Take-home message: The MSOD database would help plan appropriate strategies for further training of IMU graduates and future IMU students in the workforces in both Australia and Malaysia.

9P11

Assessing influences on residents' career path decisions: homogeneity among a multinational cohort

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Background: AAMC Graduation Questionnaire data suggests that achieving work/life balance is more influential than financial factors in United States medical students' career-planning decisions. This study examined intended career paths of residents who attended medical school in the US (US-MD) and elsewhere in the world (INT-MD), and the reported influence of fifteen intellectual, financial, and personal factors on that selection.

Summary of work: 21 item survey sent to all residents in a 20-hospital system.

Summary of results: 70% of residents (678/968) responded from all 40 specialty programs (US-MD – 527; INT-MD – 151). Career intentions were: university faculty – 56% US-MD, 68% INT-MD; private practice – 15% US-MD, 15% INT-MD. Mode debt level was "$200,000 or more" for US-MD and "no debt" for INT-MD. For all residents at all debt levels, intellectual challenge and work/life balance ranked higher than financial concerns. "Desire to do research" was among top influences for residents planning academic-research careers.

Conclusions: Residents are more influenced by intellectual and personal preferences than by financial concerns. US- and internationally-trained residents are comparable, in spite of cultural and indebtedness differences.

Take-home message: Priorities of millennial-era trainees, particularly personal and intellectual preferences, should be considered by institutions aiming to develop tomorrow's physician-scientists.

9P12

Does undergraduate performance in medical sciences predict overall performance in first year medical school examinations?

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Background: In a traditional medical programme prior academic performance is a good indicator for success. We aimed to determine whether performance in year one correlated with undergraduate performance in Medical Science in our integrated curriculum.
Summary of work: Prior performance in anatomy, biochemistry and physiology was accessed for students who had attended the University of Wollongong for their undergraduate studies. Performance was correlated with examination results achieved in year 1.
Summary of results: Seventy six students enrolled in Medicine (2007-2010), had completed their undergraduate degree at UOW taking subjects in anatomy (n=63), biochemistry (n=69) or physiology (n=69). Prior performance in each discipline significantly correlated (P<0.0001) with overall performance in a year 1 integrated-examination (r2=0.33-anatomy, 0.21-biochemistry, 0.38-physiology). Current and prior performance was significantly correlated within each discipline, however, physiology (r2=0.31, P<0.0001) correlated more strongly than anatomy (r2=0.07, P=0.04) or biochemistry (r2=0.08, P=0.017).
Conclusions: Undergraduate performance in medical sciences correlated with academic performance in year 1. Undergraduate performance in physiology had the strongest correlation, suggesting that learning in physiology was able to prepare students for learning in an integrated curriculum.
Take-home messages: Prior academic performance in medical science can be predictors of student performance in first year medical exams.

9P13

Impact of an attendance policy on the academic performance of first year medical students at the University of the West Indies (UWI), Barbados

D Cohall*, D Skeete* (University of the West Indies, Faculty of Medical Sciences, Cave Hill, St. Michael, Barbados)

Background: In January 2010, the Faculty of Medical Sciences, UWI, started enforcement of the attendance policy "students must have an attendance rate of 80% of all timetabled sessions to sit final course exams". The objective of this study was to determine if enforcement of the attendance policy improved the performance of first year medical students in the 'Fundamentals of Disease &

Treatment (FDT)' course, a year-long, preclinical course in the MBBS programme.
Summary of work: The results of in-course and final course assessments, and attendance rates for the FDT course were recorded and analyzed for first year medical students.
Summary of results: There was significant increase in attendance during semester 2 of the academic year 2009/2010 (Student's T test; N = 63; p < 0.05). However, there was no increase in the averaged class's academic performance in the course assessments (Student's T test; N = 63; p > 0.05). There was a positive association between the final course grade and overall course attendance.
Conclusions: This significant improvement in attendance was not reciprocated with an improvement in academic performance in course assessments.
Take-home messages: In the preclinical setting, class attendance, even though critical to the learning process is not the single most important factor in the academic performance of students.

9Q   Posters: Written/Self-Assessment

9Q1

Reliability of Summative Assessments using Multiple Choice Typed Questions in a Pharmacy Curriculum

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Background/Summary of work: The End-of-Semester examinations for several modules in IMU BPharm previously employed a combination of MCQ, SAQ or Essay. While the latter two were mainly used for testing reasoning and writing skills, MCQ mainly tested factual recall. Concerns regarding assessment fatigue and subjectivity in marking have led to a review of assessment formats. MCQs of various types are used as the only assessment tool for testing knowledge and application.
Summary of results/Conclusion: Analyses were carried out on the End-of-Semester results of two cohorts of students for each module, one based on a combination of MCQ, SAQ or Essay and the other based on MCQ alone. The class means are compared, and T-test is used to determine the significant difference between the performances. Preliminary results have shown that in some modules, the class means differed by less than 5%, though the difference was statistically significant. Appropriately constructed MCQs are crucial for an examination that is designed for testing higher order thinking.
Take-home messages: While MCQ is a reliable tool for assessing knowledge and application, a variety of assessment tools are still necessary for a comprehensive assessment of outcomes including critical thinking and writing skills.

9Q2

Assessment of Cognitive Competence by Using Modified Essay Questions

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Background: Faculty of Medicine (FoM), Universiti Teknologi MARA (UiTM) uses Modified Essay Questions (MEQs) to assess the analytic skills and decision making and problem solving abilities of its students.

Summary of work: By using Buckwalter's taxonomy for evaluation of cognitive performance, we analysed 10 MEQs that were used in final MBBS examinations between 2008 and 2011 in terms of their (i) coverage of understanding the illnesses and patient management and (ii) level of assessment of cognitive performance.

Summary of results: Based on the weightage/marks criteria, majority of the scores were related to the management of the patients and pathophysiology of illnesses. Regarding cognitive performance, 46% of scores were related to the recall of knowledge, 30% to the comprehension and interpretation and 24 % to evaluation and synthesis.

Conclusion: MEQs broadly covered different aspects of the illnesses and patient management. However more questions are needed to adequately address the areas of making diagnosis and prevention of illnesses and to assess the problem-solving abilities of students.

Take-home message: Analysing MEQs on regular basis helps to find out if they are serving their desired role of assessing the higher cognitive functions of students. FoM, UiTM needs to take appropriate steps to address the deficiencies in the construction of MEQs.

9Q3

Pharmacy and Health Science Students' perceptions on open book examination: A preliminary study in IMU, Malaysia

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Background: Open book examination emphasises on conceptual understanding and application of knowledge, rather than regurgitation of memorised material. The present study aims to investigate the students' perception on open book examination, reasons for their preference and their views on the use of reference books and online resources in an open book examination.

Summary of work: In the examination, students were required to analyse and interpret Ultraviolet–Visible spectroscopic data. Upon completion of the examination, students were asked to fill in an online questionnaire. Correlation between the students' perception on their performance and their actual results were analysed.

Summary of results: Analyses indicated that 95% of students preferred open book examination. The reasons for their preference were mainly due to less anxiety, less memorisation, more time for logical thinking and problem solving. There was also a correlation between perception on their performance and the actual results.

Conclusions: Students' examination experience and perceptions of open book examinations provide reassurance that the current use of the open book examination should be retained.

Take-home messages: Open book examinations assess students' ability to organise, retrieve and analyse information. It is suitable for assessing critical thinking and problem solving skills.

9Q4

Quality analysis of the 2,200 MCQs used in the exit examinations at a medical school in Japan

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Background: Tohoku University School of Medicine started a comprehensive exit exam in 2006, in which 1,000 to 1,200 multiple-choice questions (MCQs) were used per year.

Summary of work: We employed the classical test theory to review the 1,200 MCQs used in 2009 and 1,000 MCQs used in 2010.

Summary of results: All MCQs were newly created except for 60% of the MCQs used in 2010 that were taken from old items. 106 sixth-year students took the exam each year. Mean difficulty indices (P-values) of the MCQs used in 2009 and 2010 were 0.710 and 0.702 (P>0.5), while mean discrimination indices (DIs) were 0.228 and 0.275 (P<0.00001), respectively. In the exam of 2010, P-value of the reused items was significantly higher, but DI was lower, than their values in previous tests. However, DI of the reused items was higher than that of newly created ones in 2010. The reliability coefficient of the exams exceeded 0.96. The Spearman-Brown formula predicted that 400 MCQs would allow the reliability of 0.9.

Conclusions: Our exit exams yielded extremely high reliability. Reutilization of old items improved the quality of the exam. The exam could be downsized by 60% without losing defensibility.

Take-home messages: Reutilization of old items can be effective if their quality is carefully monitored.

9Q5

An analysis of multiple choice questions feedback for improving their quality

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Background: Multiple choice questions are the most common tests in medical education. The goal of our study was improvement of test quality.

Summary of work: This is a descriptive-analytical study. A questionnaire was designed in order to assess MCQs of 40 faculties among 4 departments including internal, pediatrics, gynecology and neurology. We used Mylman checklist for quality. First MCQs were reviewed and then feedbacked to faculties.The next test was given and questions examined again. Data were analyzed by SPSS.

Summary of results: 50% of faculty were women and 63.7% with less than 10 years experience. The hard, good and easy questions were 15.9%, 38.9% and 45.1% respectively. Statistically, there wasn't any significant difference between question difficulty and sex (P=0/666), also there was a significant difference between questions difficulty and specialty (P=0/014). Turkey test indicated that internal department questions were hardest. There wasn't any significant difference between difficulty index and experiences. However after providing feedback to faculties, the questions were designed better but statistically no significant difference before and after feedback (P=0/911).

Conclusions: Regarding importance of test question in student assessment and learning, faculties should pay attention to question design. Therefore, for improvement of question design, workshops should be implemented for faculties.

Take-home messages: Feedback giving and organization of workshops for examiners in order to improve their skills in test questions design is strongly recommended.

9Q6

Evidence-based medicine learning in undergraduate education: a final-year written assessment

Li Ching Lee[1], Toh Peng Yeow*[1], Samuel Easaw[1], Wai Sun Choo[1], Amir Khir[1], Jacqueline J Ho[2], Richard Li-Cher Loh[1] ([1]Medicine Department, Penang Medical College, Malaysia; [2]Paediatric Department, Penang Medical College, Malaysia)

Background: Teaching evidence-based medicine (EBM) is increasingly important for undergraduate medicine. We have incorporated a curriculum where EBM is systematically taught in the clinical years and have sought to evaluate the application of EBM by our final year students.

Summary of work: Answers to 6 open-ended questions based on a truncated abstract provided for a clinical question posed following a case scenario by 112 students were evaluated.

Summary of results: Most students (78.6%) answered the PICO search strategy correctly but only 32.1 % correctly established that the study presented was a double-blind randomized control study. A proportion (36.6%) of the students were able to explain the appropriateness of study design, almost half (45.5%) did not seem to understand the basis of the study design. 29.5% interpreted the result accurately while 21.4% merely stated the obvious finding without interpreting the result. When asked to critique study limitations, 22.3% gave irrelevant answers and 20.5% gave "standard answers" that were clearly irrelevant to the current study design. Most students (84.8%) affirmed that the study was applicable but only 43.8% of them provided the right reasons.

Conclusions: Despite our recent systematic efforts in our curriculum to teach EBM, the students still appear lacking in their grasp and usage of EBM. Reasons for this need to be further explored.

Take-home messages: How to effectively teach EBM for undergraduate students remains challenging.

9Q7

Guidelines for Developing High Quality Multiple-Choice Assessments

M Tarrant*[1], J Ware[2] ([1]University of Hong Kong, School of Nursing, 4/F, William M. W. Mong Block, Li Ka Shing Faculty of Medicine, Hong Kong; [2]Kuwait University, Centre of Medical Education, Safat, Kuwait)

Background: Multiple-choice questions are frequently used in high-stakes assessments across health science disciplines. Many teachers, however, lack the necessary knowledge and training to develop these tests. This paper will discuss test development guidelines to help teachers produce valid and reliable multiple-choice assessments.

Summary of work: We reviewed the assessment literature and identified relevant research papers on issues of quality in multiple-choice tests. We then synthesized this research literature and developed a set of sequential quality assurance processes that teachers responsible for test development can use as a guide or an organizational framework for multiple-choice test construction.

Summary of results: The guidelines for multiple-choice test development can be divided into three categories: (1) pre-test planning, (2) test development practices, and (3) post-test review. The relevant research is discussed for each recommendation and practical issues are highlighted.

Conclusions: Quality in educational assessments of health science professionals is an issue receiving increased attention as a result of a greater focus on outcome based assessments in tertiary educational institutions and the increased accountability the public is demanding from institutions that produce health professionals. Hence, clear research-based test development guidelines are required.

Take-home messages: By following multiple-choice test development guidelines, teachers will be able to develop high quality multiple-choice tests that assess instructional learning objectives and higher cognitive domains.

9Q8

Analysis of Reliability in Portfolio Assessments in a Medical School

Jaejin Han[1], Dong-Mi Yoo[1], Mi Hye Park[2], Lee Hee-Seung[3], Eun Kyung Eo[1], Ivo Kwon[1], Soonnam Lee[4] ([1]Dept. of Medical Education; [2]Dept. of Obstetrics and Gynecology; [3]Dept. of Anesthesiology and Pain management; [4]Dept. of Internal Medicine, Ewha Womans University, School of Medicine, Seoul, Korea)*

Background: Portfolio has advantage not only in enhancing self-directed learning skills but also in assessing developing process. Standardization and rater's subjectivity cripple the reliability of the assessment.

Summary of work: After developing semi-structured portfolio composed of 4 domains with 3 items in each domain, six physicians-professors rated 11 portfolios respectively and one educator rated all 66 portfolios. Then, five other portfolios were marked every rater all together. We calculated Cronbach-α for internal consistency and the coefficient of correlation together with Kappa for rater's reliability.

Summary of results: Cronbach-α was .9. Inter-rater reliability calculated from the five portfolios above marked by all raters showed high relation($r>.5$) in the domains 'Goal', "Processing' and 'Reflection'. Reliability(r) excluding two extremities increased .01-.26. Kappa showed substantial coincidence of .73 within the item of 'Level of self-assessment' and .66 within 'Motivation' of 'Reflection' domain.

Conclusions: Our semi-structured portfolio showed high internal consistency. Inter-rater reliability calculated by coefficient of correlation in 3 domains was high and when calculated in Kappa, 2 items in 'Reflection' domain showed substantial coincidence.

Take-home messages: In overcoming the weaknesses of portfolio such as reliability and work-load, various analyses were helpful by making the assessment tool more suitable and reliable for the users.

9Q9

Formative feedback for Psychiatry in undergraduate medicine

A Chur-Hansen[1], P Devitt*[2], L Koopowitz[1] ([1]University of Adelaide, Discipline of Psychiatry, School of Medicine, Adelaide, South Australia; [2]University of Adelaide, Discipline of Surgery, School of Medicine, Adelaide, South Australia)*

Background: We designed a Multiple Choice Question (MCQ) formative examination and administered it as part of a learning exercise to all students enrolled in Years 4 and 5 of the undergraduate MBBS at the University of Adelaide. The examination was administered to all students: 50% who had the opportunity to access and study a series of on-line learning cases in Psychiatry (e-medici), and the other 50% who did not have access. The aim was to explore the efficacy of the on-line learning module on performance in the MCQ exam.

Summary of work: Fifty MCQs were written based on the e-medici material. The MCQs were administered over a 90 minute session, after which feedback was given for each item. Researchers retained the raw data, which was anonymous, and had a solely formative function.

Summary of results: The performance on the MCQs was compared to ascertain (a) the baseline knowledge in Psychiatry of Year 4 and 5 MBBS students and (b) the impact of the on-line learning modules on knowledge.

Conclusions: Quantitatively, the impact of the e-learning intervention will be reported (data collection still in progress). Qualitatively, students report the exercise as valuable.

Take-home messages: On-line learning and formative feedback are valuable learning tools in learning Psychiatry.

9Q10

Undergraduate nursing students' self-assessment of midwifery competence

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Background: In 2005, the School of Nursing, University of the Western Cape, introduced the outcome-based and case-based curriculum in the four year undergraduate nursing programme. In the third year, students spend six months in midwifery placement for their theoretical and clinical learning. Formative and summative assessments are conducted by teaching faculty to evaluate the theoretical and clinical competence of the students. However, there has been no study to determine whether students feel competent to practice as midwives as the end of the six months midwifery placement. This study seeks to determine the level of congruence between the faculty and student self-assessment of competence in midwifery.

Summary of work: A quantitative study will be conducted between 21 October and 30 November 2011 to look at the student's self-assessed midwifery competence in terms of knowledge, perceptions and confidence, at the end of their six months midwifery placement.

Summary of results: The results will be available at the end of January 2011.

Conclusions: It is anticipated that the results will inform teaching and learning practices in midwifery.

Take-home messages: Student self-assessment of competence should be utilised regularly to inform teaching and learning practices.

9Q11

A qualitative exploration of students' approaches to self-assessment of exam performance

Gabrielle M Finn*, Marina A Sawdon, Thabo W Miller (Durham University, School of Medicine and Health, C143, Holliday Building, School of Medicine and Health, Durham University (Queen's Campus), University Boulevard, Thornaby-on-Tees, TS17 6BH, UK)

Background: Students' inability to self-assess is a widely cited phenomenon, yet little is known about how students conduct self-assessments. This qualitative study investigates students' approaches to self-assessment of exam performance.

Summary of work: First and second year medical students (n=74) self-assessed exam performance across multiple domains following end of year summative exams. Each self-assessment was accompanied by free-text justifications of students' predictions. Comments were analysed using a grounded theory approach.

Summary of results: When self-assessing, students employ a multi-faceted approach. The major considerations offered by our students included; their exam technique, their knowledge of course content and the standards required to pass, their performance in relation to that of their peers' and their previous experience, education and exam performance. Further analysis is underway to determine whether the strategies employed differ across students' self-assessment abilities and demographics.

Conclusions: Our data provides a unique insight into how students' self-assessments are complex and often informed by their experiences prior to medical school. This presents a challenge for faculty as factors out with the immediate learning context appear to impact on students' ability to reflect on their performance.

Take-home messages: Further insight into students' self-assessment techniques will enable faculty to provide targeted support, which in turn may enable students to become better reflective practitioners.

9Q12

"Recurrent workshop days for professional development" – a mentoring program for undergraduate medical students

S Kalén*, S Ponzer, A Seeberger, A Kiessling, C Silén (Department of Clinical Science and Education, Södersjukhuset, Karolinska Institutet, Stockholm, Sweden)

Background: Different types of mentoring programs to promote medical students´ professional development have been reported. A mandatory group mentoring program during the whole medical program was introduced at Karolinska Institutet in 2007; 4 students meet their mentor once a term at a "Workshop Day for Professional Development" (WS-day). The intention is that students shall watch a video with a difficult patient consultation and then reflect together about the doctor's professional role. Before the WS-day they shall complete a self-assessment of their professional competence, and together with the mentor formulate an action plan for improvement. The students shall also shadow their mentor in her/his clinical work.

Summary of work: As a first step in a research project about the meaning of this mentorship an electronic survey was sent to all mentors (n=242) to investigate how the WS-days are implemented in relation to the intentions (RR 82%).

Summary of results: The video sessions were well implemented (98%) while self-assessment (67%) and shadowing (22%) was less well implemented. Practical problems were most often related to mentors´ difficulties to get allocated time.

Conclusions/Take-home messages: A continuous group mentoring program can be implemented. Allocated time for the mentors stand out as crucial for success.

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SESSION 10 SIMULTANEOUS SESSIONS
1030-1200 hrs

10A   Symposium: Assessment: What Students Feel

Chair: Elango Sambandam (International Medical University, Malaysia), Gemma Dovey (Brighton & Sussex Medical School, UK), Abdul Wahid (Imperial College, UK), Justin Lee Zon-Ern (Malaysia), Zia Shah (Malaysia)

This session will explore the students' perception on the present assessment system. Are they over/under assessed? Is there a good mix of formative and summative assessments? Does the present assessment system facilitate their learning? Does the assessment system give students' an idea where they stand in comparison to their peers? Do they get timely feedback? Does the feedback promote their learning? Are your progress continuously monitored in your school? Do you feel that the examination system is fair? What type of assessment will be appropriate to assess the capabilities of a future doctor? What changes would you like to see in assessment that will facilitate student learning?

The speakers for this session will be students from around the world. There will be four speakers (1 from IMU, 1 from Asia, 1 from USA and one from UK) and each one will be given 10 minutes for their presentation and 20 minutes for the discussion. The speakers will focus their presentations on a few areas in assessment based on the guidelines.

Guidelines: The presentation will focus on these areas: 1. In your country, is the assessment system balanced. Do you feel that you are over assessed/ under assessed? Is there a good mix of formative/ summative assessment? Does the assessment system facilitate your learning? Is your system exam centered? Do you think you have enough time to reflect on your learning? 2. Does a student in your country know where they stand in terms of their peers? Is your progress monitored continuously and appropriate feedback given? Do you have to monitor your progress by yourself? Is the feedback given useful to promote learning? 3. Is the exam system in your country fair? Is it discriminatory? 4. In your opinion what changes would you like to see in the assessment which will facilitate learning?

10B   Oral Presentations: Feedback to the Learner 2

10B1

Criteria for feedback facilitator performance in multi-source feedback in specialist training

B Malling, G Eriksen, G Bjørg, H Ehlert (Center of Medical Education, Aarhus University, Department of Human Resources, Aarhus University Hospital, Denmark)*

Background: Personal feedback enhances trainees' benefit from multi-source feedback in specialist training. However, it has not been investigated how the feedback facilitator should deliver the feedback. The purpose of this study was to develop a criterion list for "good" feedback facilitator performance.

Summary of work: Based on the literature and focus-group interviews a tentative criterion list of feedback facilitator performance was developed. Video-recordings of four feedback sessions were analysed and related to the criterion list.

Summary of results: The criteria for feedback facilitator performance in MSF can be divided into six themes: 1) Physical setting, 2) Presentation of report, 3) Analysis and interpretation of data, 4) Developmental plan, 5) Language and means and 6) Overall impression. The criterion list developed was applicable in the analysis of feedback facilitator performance.

Conclusions: The criterion list for feedback facilitator performance developed in this study was usable in the assessment of feedback facilitator performance in a pilot study. The presented criterion list might be used as a tool in

the education and continued training of faculty members in performance of multi-source feedback.

Take-home message: The developed criterion list describes feedback facilitator performance and might be used to assess feedback facilitator performance objectively.

10B2

A student-centred feedback model for health professional educators

JR Rudland[1], T Wilkinson[1], A Wearn[2], P Nicol[3], T Tunny, C Owen, M O'Keefe ([1]Faculty of Medicine, University of Otago, Dunedin, New Zealand; [2]Faculty of Medical & Health Sciences, University of Auckland, New Zealand; [3]School of Paediatrics and Child Health, University of Western Australia, Perth, Australia)*

Background: Effective feedback is instrumental to effective learning, whether informal or part of an assessment process, but current feedback models tend to be educator-driven rather than learner centred. To date the focus has been on how the supervisor should give feedback. The authors considered that a new approach was required, emphasising the theoretical principles of student-centred and self-regulated learning.

Summary of work/Results: This work considered current models of feedback and a theoretical learner-centred model of feedback devised. The three-phase model (before, during and after feedback) was generated to encapsulate the situated role of the learner in seeking, responding and maximizing feedback. The characteristics of the learner includes the need to be reflective, receptive and proactive.

Conclusions: The student-centred, self-regulated model of feedback places the learner at the centre of feedback while acknowledging other features that contribute to effective feedback, for example how feedback is given.

Take-home messages: Educational institutions should consider how students are encouraged and enabled to maximise the many feedback opportunities available to them. Research is required to validate the proposed model and to determine how students can be supported to adopt self-regulatory learning with feedback as a central platform.

10B3

How are Junior Doctors performing? What the Assessors are saying!

S E Carr, T Celenza, F Lake (University of Western Australia, Faculty of Medicine, Dentistry and Health Sciences, 35 Stirling Highway, Perth, Western Australia)*

Background: The performance of Australian junior doctors' clinical, communication and professional skills is assessed up to five times in their first postgraduate year (PGY1). However, little is documented on the comments assessors

make and feedback given to junior doctors. This qualitative descriptive study explores assessors' comments around performance of junior doctors in PGY1.

Summary of results: Of the 303 junior doctors in the study, 237 (78%) participated, resulting in 780 individual assessments. Only 7 junior doctors scored lower in all three skill areas. 31 had lower scores in clinical skills, 10 in professional skills and only 2 in communication skills. Half of the assessors documented comments to substantiate their assessment ratings. More positive, reinforcing or constructive comments were made than negative comments. Initial thematic analysis identified an alignment between assessors' lower ratings in clinical skills with negative comments. In terms of areas to improve, recurring themes included time management, problem solving, hanging back, teamwork and specific medical knowledge.

Take-home messages: Analysis of assessor comments suggests concern about performance in communication and teamwork skills as indicators to further evaluate the junior doctors' performance. Only 60% of written comments were documented as being fed back to the junior doctor indicating a significant lost opportunity for their development.

10B4

Personality traits and susceptibility to feedback during assessment

R.A. Tio, M.E. Stegmann, J. Koerts, J. T.W.D.P. van Os, J Cohen-Schotanus (University Medical Center Groningen, University of Groningen, Groningen, The Netherlands)*

Background: We employ an assessment strategy in which an assessment consists of three cumulative, compensatory tests, with feedback after each test. In this study we explored whether personality traits influence the susceptibility of students to this form of feedback.

Summary of work: Students (n=383) participating in a 10 week bachelor course in medicine were asked to fill out the Temperament and Character Inventory questionnaire (TCI). During the course knowledge was tested cumulatively at the end of weeks 4, 8 and 10. The effect of feedback on the next performance was analyzed in relation to scores on the questionnaire.

Summary of results: A total of 295 students filled out the questionnaire. 74% of the students below the median on the first test improved during the second test; 69% improved on the third examination. Students who scored low on the TCI scales 'harm avoidance' and 'persistence' were less responsive to improve their test results.

Conclusions: Temperament seems to influence students' reaction to feedback on test results.

Take-home messages: The TCI, combined with low test results, can be used to identify students at risk for failing.

10B5

Capturing core concepts through face to face feedback following formative assessment: utility of user-friendly high impact learning-assessing tool in a small group setting

Nyunt Wai (International Medical University, School of Medical Sciences, Kuala Lumpur, Malaysia)

Background: Multiple choice questions (MCQs) force learners to choose one option through reasoning or guessing. There is no way the assessor nor the learner could know or record how ignorant, misguided or well-versed the learner is in that particular issue. For an active learning activity where immediate feedback by way of discussion on the learners' performance is planned, a novel "on- the-spot learning-assessing tool" is required.

Summary of work: The tool comprises 10-16 statements (e.g. "Adrenaline causes skin vasoconstriction though alpha-adrenergic receptors"), and 5 choices for each: "definitely false","may be false", "no idea", "may be true", or "definitely true". After the open-book assessment, the tutor discussed each item by way of giving students immediate feedback. Three sessions have been carried out.

Summary of results: All students actively participated, consulting books, and jotting down notes as discussions proceeded, transforming the assessing tool into a learning tool for their future use.

Conclusions: The developed tool is user friendly (only one page) and has high pedagogic impact (covers over 10 core items within a short time frame; involves active learning; immediate self-feedback).

Take-home message: Effective conduct of face to face feedback immediately following formative assessment requires custom-made versatile tool.

10B6

Multi-Source Feedback as summative assessment: An international comparison

L Young[1], M Greco[2], D Prideaux[3], R Murray[1,4] ([1]School of Medicine and Dentistry, James Cook University, Townsville, Queensland 4811, Australia; [2]CFEP, PO Box 588, Everton Park, QLD 4053, Australia; [3]School of Medicine, Flinders University, Adelaide, SA 5042 Australia; [4]ACRRM President)*

Background: Feedback about performance is integral to a doctor's training and on-going professional development. Usually this is obtained from single source ratings from supervisors. However, clinical performance is multilevel as doctors in training work with supervisors, colleagues, junior medical staff, medical students, nurses, other health professionals and patients. Multi Source Feedback (MSF) is one way of assessing multilevel interactions at both clinical competence and interpersonal levels.

Summary of work: MSF is used for summative assessment of registrars undertaking their General Practice training

with the Australian College of Rural and Remote Medicine. It uses the Colleague Feedback Evaluation Tool (CFET) for colleagues and the Doctors' Interpersonal Skills Questionnaire (DISQ) for patients to obtain feedback on both clinical competence and interpersonal patient skills.

Summary of results: Feedback from 1355 colleague evaluations and 4505 patient evaluations for a sample of 101 registrars are described. Results for an Australian sample are compared with a UK cohort. Nearly 50% of evaluations are by clinicians and each doctor is rated by a minimum of seven different clinicians. Results confirm the validity of MSF using CFET and DISQ as summative assessment tools in both Australia and the UK.

Conclusion: CFET and DISQ are reliable and valid summative assessment instruments for Australian and UK GP registrars and provide an accurate synthesis of their clinical competence and interpersonal patient skills from multiple perspectives.

Take-home messages: MSF validly assess both clinical competence and interpersonal patient skills for summative assessment purposes during registrar training.
MSF is valid for international use.

10C   Oral Presentations: Simulation 2

10C1

A simulation-based evaluation tool for assessing nurses' clinical competence

Sok Ying Liaw[1]*, Albert Scherpbier[2], Piyanee Yobas[1], Jan-Joost Rethans[3] ([1]Alice Lee Centre for Nursing Studies, National University of Singapore, Singapore; [2]Institute for Education, Faculty of Health, Medicine and Life Sciences, Masstricht University, The Netherlands; [3]Jan-Joost, Rethans, Institute for Education, Faculty of Health, Medicine and Life Sciences, Masstricht University, The Netherlands)

Background: The importance of nurses to recognize and respond to deteriorating patients has led educators to advocate for increasing use of simulation-based training for developing this competence. However, there is a lack of evaluation tools to objectively assess simulation performance. The study aimed to develop and test the validity and reliability of a simulation-based assessment tool, known as RAPIDS (Rescuing A Patient In Deteriorating Situations) tool to measure student nurses' simulation performance in assessing, managing and reporting of clinical deterioration.

Summary of work: The study was conducted in three phases. Phase 1 began with development of items for the RAPID-Tool from the basis of a literature review and a panel of national experts' consensus. Phase 2 established the content validity of the RAPID-Tool by a panel of international experts and by undertaking a pilot test. Phase

3 involved testing the psychometric properties of the RAPID-Tool, on 30 video-recorded simulation performances, for construct validity, inter-rater reliability, and correlation between two scoring systems.

Summary of results: The process of development and validation produced a 42-item RAPID-Tool. Significant differences ($t = 15.48$, $p < 0.001$) in performance scores among participants with different levels of training supported the construct validity. The RAPIDS-Tool demonstrated a high inter-rater reliability (ICC = 0.99) among the three raters and a high correlation between the global rating and checklist scores ($r = 0.94$, $p < 0.001$).

Conclusions: The RAPIDS-Tool provides a valid and reliable tool to evaluate nurses' simulation performances in clinical deterioration.

Take-home messages: The RAPIDS-Tool proves useful for future studies that investigate outcomes of simulation training.

10C2

Authentic Assessment for Active Learning in Simulation – a multidisciplinary reflection.

J Smithson*[1], R Sealey*[2] ([1]School of Pharmacy and Molecular Sciences, James Cook University, Townsville Australia ; [2]School of Public Health, Tropical Medicine and Rehabilitation Sciences, James Cook University, Townsville, Australia)

Background: Assessment must reflect the combined technical, non-technical and procedural competencies expected in the profession in order to promote workforce readiness. The pharmacy and Exercise Physiology curriculum at James Cook University expose students to simulated and real patient scenarios specifically designed to improve workforce readiness. This pedagogy requires assessment tools that help students prioritise their learning, reflect upon accepted industry standards and promote critical reflection.

Summary of work: This project critically reflects on the assessment process in our simulated environments and unpacks the common themes for success across the two disciplines as well as the role of assessment in simulation.

Summary of results: The themes identified for discussion are: 1 Assessment tools that engage students, tutors and subject coordinators; 2 Authenticity and validity of assessment; and 3 Interplay between the assessment FOR and OF learning.

Conclusions/Take-home messages: Well developed assessment and feedback processes maximise the opportunities afforded by simulation-based pedagogies. Assessment methods need to be transferable into future practice, feel real and be responsive to the needs of the individual student.   This cross-disciplinary approach has identified 3 critical aspects to consider when designing assessment in simulation, which are transferable to a broad cross section of health degrees.

10C3

Interrater agreement of specialist assessors and nurses embedded within simulation scenarios for high stakes assessment

Kate Holmes[1], Thomas Gale[1,2], Martin Roberts[1,2], Ian Anderson[1] ([1]Directorate of Anaesthesia, Critical Care and Pain, Plymouth Hospitals NHS Trust, UK; [2]Institute of Clinical Education, Peninsula College of Medicine and Dentistry, UK)*

Background: Use of simulation for assessment is increasing with evidence of good reliability and validity, however the utility of using simulation as an assessment tool is affected by cost implications. The aim of our study was to compare ratings of specialists with those from nurses embedded in simulation scenarios as part of a process for recruitment to anaesthesia training posts.

Summary of work: Nurses in role play were incorporated into a medium fidelity simulation station testing situation awareness, teamwork and working under pressure, as part of a six-station selection centre in the Peninsula Deanery from 2009-2010. 125 applicants were assessed by pairs of nurses and pairs of consultant anaesthetists. Nurse assessor ratings were not included in the overall selection score for the purposes of recruitment.

Summary of results: Interrater agreement for nurses (kappa = 0.61 – 0.81) and consultants (kappa = 0.65 – 0.86) was high for all domains scored over two consecutive years. Agreement for all raters including both nurses and assessors was lower (kappa = 0.52 – 0.75). Rank ordering was analysed dependant on nurse or consultant ratings with a low effect on final rank order.

Conclusions/Take-home messages: Nurse ratings are just as reliable as consultant ratings but nurses may be observing different aspects of behaviour during the scenarios which account for slight differences in scoring.

10C4

Development and psychometrics testing of a Simulation-based Assessment Tool (SAT)

T Khoon Kiat, L Sok Ying*, I Jeanette, P Sabrina, MD Rabian, M Sandra (Alice Lee Centre for Nursing Studies, Yong Loo Lin School of Medicine, National University of Singapore)*

Background: The clinical nursing skills assessment has been focused on isolated technical skills. The actual clinical encounters with patients, on the other hand, demands integration of knowledge, technical skills and attitudes. To be more reflective of the real clinical practice, the study aims to develop and test a simulation-based assessment (SAT) tool that provides holistic assessment of the student nurses' clinical performances in a simulated clinical setting across six core competencies: 1) critical thinking; 2) communication; 3) technical skills; 4) management of care; 5) professionalism; 6) safe practice.

Summary of work: The study is currently in work process and will be conducted in three phases. Phase 1, which has been completed, involved the development of items for the SAT from a panel of faculty experts of an institution. Phase 2 is currently underway for the establishment of content validity by a panel of experts from a variety of institutions and by undertaking a pilot test. Phase 3 will involve testing the psychometric properties of the SAT for inter-rater reliability.

Summary of results: The process of developmental phase has produced a 40-item SAT. The result of the content validity will be reported using content validity index. The inter-rater reliability will be calculated from the SAT scores rated by two raters.

Conclusion: The SAT will provides a valid and reliable tool to evaluate nurses' clinical performances across multiple domains and holistic approach.

Take-home message: The SAT will be useful for future studies that assess the outcomes of simulation training.

10C5

Agreeing which endoscopy trainer attributes to include in an evaluation toolkit: a Delphi study

*L Macdougall *[1], S Corbett[1], M Welfare[1], C Wells[2], J.R Barton[1] ([1]North Tyneside General Hospital, Education Centre, North Tyneside General Hospital, Rake Lane, North Shields, NE29 8NH, UK; [2]University Hospital of Harlepool, Cleveland UK)*

Background: An extensive list of attributes for endoscopy trainers previously identified from interviews with endoscopists and trainees was reviewed and reduced using a Delphi process to develop a formative evaluation toolkit.

Summary of work: In round one, four sub-groups (experts, trainers, nurse endoscopists and trainees) were invited to suggest modifications and rate on a Likert scale the suitability of each item for two types of evaluation: for a single session (DOTS: directly observed teaching skills) or a rotation (LETS: long-term evaluation of teaching skills). Criterion for acceptance of an item was 77% agreement. Modified items were entered into round two alongside those not clearly allocated to the DOTS or LETS but met the 77% criterion. Participants were then asked to choose from the options DOTS or LETS, both or neither.

Summary of results: 62 participants (89%) completed both rounds. Of 88 statements, 18 were excluded in round one; with 8 statements automatically allocated to the DOTS and 9 to the LETS. Similar statements were amalgamated. In round two a further 12 statements were allocated to the DOTS and 8 to the LETS.

Conclusions: We anticipate that consultation with stakeholders through the Delphi method will encourage adoption of the toolkit whilst also contributing to content validity.

10D   Oral Presentations: Mini-CEX in Postgraduate Education

10D1

Associations between personal characteristics and assessment using mini-CEX

A.F.Norbart*, C.C. Vink, I.L. Maas, T.M.P.A. van Kempen (Leiden University Medical Center, Postbus 9600, 2300 RC Leiden, The Netherlands)

Background: At the Leiden University Medical Center interns are assessed by residents, using mini-CEX forms. In a one day Train-the-Trainer course residents learn how to do this by watching a video of an intern, taking the history of a young girl, followed by filling out the mini-CEX and small group discussion. These discussions seemed to point out a relation between grading and personal characteristics of the assessor.

Summary of work: In order to examine these differences, we gathered the filled-out forms plus information about the resident's age, gender, parenthood, year of residency and the fact whether residents were being assessed themselves using mini-CEX forms. We did an ANOVA considering the following items on the form: history taking, professional behavior, patient communication and effectiveness.

Summary of results: The analysis (N=98) showed no significant differences between most characteristics. The only differences were found within the characteristics gender (on the item of effectiveness) and being assessed with mini-CEX (on the item of history taking).

Conclusions/Take-home message: Assessment of interns by residents using mini-CEX seems for the most part to be independent of assessor's characteristics as gender, parenthood, age and year of residency.

10D2

MiniCEX assessments: the patient perspective

A Amaladoss (University Department of Psychiatry, Academic Centre, College Keep, 4-12 Terminus Terrace, Southampton SO14 3DT, UK)

Background: The miniCEX has been extensively researched in terms of its utility, application and reliability but there has not been any research exploring the patient perspective about participation in these assessments.

Summary of work: 20 psychiatric patients were interviewed after they had participated in a miniCEX assessment. The patient narrative was examined for any themes that emerged.

Summary of results: Patients participated for a variety of reasons.They were on the whole pleased to be assisting in the education and training of future doctors, and were able to be honest and open. Most that they could have been more involved, for example in giving direct feedback to the students. Most felt that they were listened to attentively

and some thought that the students were better listeners than their regular psychiatrists.

Conclusions: Understanding the patient perspective might allow these assessments to be structured differently. It could also be used for faculty development.

Take-home message: Patients are keen to participate in teaching and learning, and efforts need to be directed to making this mutually beneficial.

10D3

Mini Clinical Evaluation Exercise (Mini-CEX) as a learning tool: the provision of reflective feedback

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Background: The main advantage of Mini-CEX as an assessment and learning tool is that it encourages the provision of immediate feedback to the student from the assessing clinician. This study aims to document the types and quality of feedback given in the Mini-CEX, with a view to developing guidelines for assessor feedback.

Summary of work: The study involved the observation of Mini-CEX encounters between final year medical students and assessors during a clinical clerkship. Detailed notes of the interaction were taken, concentrating on the feedback from the assessor to the student, using a structured guide.

Summary of results: Feedback provided by Mini-CEX assessors was analyzed according to predetermined categories. Most feedback given was in the form of recommendations. Students were unlikely to be asked to reflect upon their learning experiences and develop further learning plans.

Conclusions: The lack of reflective feedback from teachers may diminish the function of Mini-CEX as a learning tool. Therefore, teachers should be encouraged to provide reflective feedback.

Take-home message: The educative function of Mini-CEX needs to be re-emphasized by using it to provide reflective feedback upon which students can act to improve their learning.

10D4

Is the formative assessment process for surgical residents reliable?

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Background: The reliability of (formative) assessment increases when trainees are observed regularly and

assessed for different competencies by different supervisors in different situations. We studied whether the assessment process for surgical residents based on the Mini-Clinical Evaluation Exercise (Mini-CEX) and the Objective Structured Assessment of Technical Skills (OSATS) is reliable.

Summary of work: Mini-CEX (n= 51) and OSATS (n=253) were analyzed in digital portfolios of nine residents by determining frequencies of collected Mini-CEX and OSATS, the different situations in which they were collected, the number of different supervisors and the number of rated competencies.

Summary of results: Residents collected between 4 and12 Mini-CEX and 12 and 51 OSATS. The number of different supervisors involved ranged from 4 to7 in Mini-CEX and from 9 to 11 in OSATS. Mini-CEX was observed during clinical care (41%), in the outpatient clinic (27%), in scholar activities (18%) and during sign out (14%). In general, surgeons rated all seven competencies. OSATS were observed during a wide range of different operations of operative procedures.

Conclusions: The assessment process in the Surgical Department seems reliable. When supervisors focus on only two or three competencies, the reliability of the Mini-CEX may be further increased.

Take-home message: Evaluation of the assessment process enhances the quality.

10E   Oral Presentations: Professionalism 3

10E1
Positive Expectations of Professional Behaviour as an Academic Assessment
E Flynn (Medical Education Unit, Melbourne Medical School, University of Melbourne, Melbourne, Australia)

Background: Medical schools worldwide have developed assessment protocols for students' Professional Behaviour, related to concerns of continuance of unprofessional behaviour after graduation.

Summary of work: Professional Behaviour is formally assessed in Melbourne Medical School's new graduate entry course. An assessment framework was developed from the literature, and then wide consultation across the school including senior academics, both basic sciences and clinical, non-academic staff and senior students ensured that the framework was extensively reviewed and modified.

Summary of results: The University Academic Board required that Professional Behaviour be assessed for all students in all subjects as an academic assessment, expecting that almost all students will be graded satisfactory. A Fitness to Practise Committee and remediation processes were also implemented. Tutors

were trained and students introduced to the processes and expectations at course commencement, with information widely available.

Conclusions: The multiple inputs and reviews provided robust and practical assessment criteria. The processes are embedded in the course. The prior input of the Academic Board input ensures that decisions of the Fitness to Practise Committee will be upheld.

Take-home messages: Professional Behaviour as an academic assessment adds weight to the process. Students' and tutors' knowledge and acceptance of the system is vital.

10E2
Dealing with Medical Incompetence: Identifying and Intervening with "At Risk" Students
C Stenberg (Student Affairs and Admissions, Duke-NUS Graduate Medical School Singapore, 8 College Road, Singapore 169857)

Background: One of the major challenges medical schools face is assuring that their graduates are competent to practice medicine.

Building on assessment and interventional tools first established at Duke School of Medicine, Duke-NUS has developed a rigorous approach to teaching professionalism and ethics, while at the same time providing students with support and guidance specifically designed to help them with their professional and ethical development.

Preliminary data suggest that this approach is having a significant and positive impact on student professional, ethical, and personal development.

Primary prevention strategies are critical to graduating students who are at low risk for unprofessional or unethical behavior. These strategies include adopting admissions processes which select students who exhibit strong moral character as well as designing medical school formal and informal curricula to nurture empathy (which declines significantly in most medical schools by the point in time when clinical training begins). Integrating professional and ethical development into each course helps prepare students for the many moral challenges faced by physicians. In addition, early identification approaches which detect "at risk" students, combined with aggressive intervention, are important strategies that medical schools should be employing to help their students.

10E3
Medical students' self-reports of professional misconducts for the application of the National License Examination (NLE)
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Background: Professional habits, attitudes, moral, and ethics are the vital competence for the medical graduates. Declaration of professional conducts has been introduced to the applicants for each step of NLE since 2010.

Summary of work: Self-report questionnaire containing 10 professional misconduct events related to the Medical Council of Thailand regulations was designed. It must be submitted with application forms for each step of NLE.

Summary of results: The reported misconducts occurs in 5-7% .The three most common events of applicants for Step 1 NLE were violation of the law, cheating in examination, and disclosure of patient's confident information; for Step 2 - disclosure of patient's confident information, violation of the law, being dishonor and not respecting the dignity of colleagues; and for Step 3 - disclosure of patient's confident information, not patient with courtesy, and violation of the law.

Conclusions: The misconducts of pre-clinical students mostly related to their own matters, whereas the events of clinical students related to patients' issues.

Take-home messages : The medical school should seriously take care and focus on ethical issues learning along the whole curriculum.

10E4

Professionalism evaluation in first year medical students

F Shersad (Dubai Medical College, Dubai, UAE)

Background: Assessment of professionalism and self-reflection has been used as a tool for improving student attitudes at Dubai Medical College.

Summary of work: Evaluation of professionalism is embedded in the 10 hour course conducted in the first year of medical school. In every session, students evaluated themselves and their peers and differentiated between acceptable and unacceptable behavior. Following the interactive discussions, their feedback was collected with informed consent.

Summary of results: 92.85 % and 85.71% knew basics of professionalism and empathy respectively. Students scored (>95%) knowledge, clinical skills, attitude, communication skills and professionalism as highest priorities for success. Statistically significant (p<0.05) attitudinal improvement towards misbehavior was demonstrated by pre and post-tests. The student assessment by faculty failed to show any improvement in behavior and attitudes which culd be due to the short duration.

Conclusions: This shows that even in the first few months in the medical school, students demonstrate competencies of self-awareness and evaluation skills.

Take-home messages: A professionalism course with self and peer-evaluation of attitudes in the first year of medical school has demonstrated student competencies through self-reflection. Early introduction of such courses can help students retain empathy which otherwise tend to wane in professional life.

10G   Oral Presentations: Programme of Assessment

10G1

Sequential testing: theory into practice

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Background: Institutions have conflicting pressures of quality, feasibility and cost in the assessment of undergraduates. Students desire a demonstrably fair assessment which is, ideally, completed by all within a single academic year.

Summary of work: The theoretical case for sequential testing, including cost benefits and increased reliability in the critical area of the just passing student, will be presented. This discussion will be followed by the analysis of actual OSCE and written performance for final year medical undergraduates in a new sequential testing format.

Summary of results: This will include a detailed analysis of the delivery of the sequential format, including the proportion of students who failed to pass the first part of the sequence, together with how they performed overall in the full sequence. We will also detail any important issues that arose during the implementation of sequential testing, and compare the theoretically modelled outcomes with those actually achieved.

Conclusions: Based on our data and experience, the practicalities of delivering sequential testing and its tangible benefits are in line with expectations.

Take-home message: Theoretical models of sequential testing require careful implementation to fully realise benefits.

10G2

Students' perceptions of the impact of assessment on approaches to learning: a comparison between two medical schools with similar curricula

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Background: The aim of the study was to investigate students' perceptions of assessment and the resulting learning styles.

Summary of work: Qualitative semi-structured interviews were conducted with 14 students and 8 clinical supervisors from Sydney Medical School and 12 students and 13 clinical supervisors from King Saud bin Abdulaziz University. Both institutions have similar curricula but a different

assessment approach. The interviews were transcribed and analyzed using thematic analysis. Interview transcripts were stored and analyzed using ATLAS.ti.

Summary of results: Three themes emerged from analyses of the interviews: the function of assessment, learning outcomes and, finally, authentic assessment in the clinical environment. Various personal, cultural and contextual factors seemed to contribute to students perceptions.

Conclusions: Cultural differences and emotions can affect students' perceptions of assessment and learning styles.

Take-home messages: A combination of formative and summative assessment based on learning objectives is required. This combination should take into consideration students' cultural background, values and the implemented education system. This balance should be sufficient to motivate students in order to maintain their focus and attention, and reduce the potential negative impacts of a hidden curriculum. The experience of authentic assessment was a powerful motivator for students' approaches to learning.

10G3

Alignment of learning with assessment: using educational research to set the agenda

S Ahmad*, I McMullen*, M Maier (London Deanery, UK)

Background: Alignment is an important way of gauging the educational value of the learning environment. In our context of postgraduate training for psychiatry in the UK we wished to explore the quality of learning. Using principles of alignment we wished to identify the different components of the learning system.

Summary of work: We began by identifying the institutional drivers of the learning environment and mapping out these roles and relationships. This was used then to create a list of the components of training via a Delphi expert consensus process. This process was repeated for a trainee representative group and results compared.

Summary of results: The Royal College sets the educational standards, the Deanery commissions the learning and provides educational governance, the NHS Trust (hospital) provides the physical learning environment via a primary service provision role. We identified a list of components of learning – some strong correlation was noted between experts and trainees.

Conclusions: Institutions involved with training have different agendas that do not always align. By identifying the components of the learning environment we can start to align with assessment processes.

Take-home messages: Explore the relationship between assessment and the learning environment.

10G4

Assessment to support preparation for practice in final year medical students: a case study

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Background: Ensuring assessment in the final year of medical school promotes active and life long learning while also preparing for practice in changing health care and professional environment is always a challenge in particular when high stake exams still dominate.

Summary of work: This is the case study describes a collaboration between a medical school course and assessments leaders, health care placement providers and an internship school (a UK Foundation school) describing strategies employed to create an assessment "package" or portolio that complemented the introduction of student assistantships. Students and junior doctors representatives were vital to these developments.

Summary of results: Through close working between the various parties we developed a "package " that combined best practice in work-place based assessment, mentoring and formative and summative OSCEs and written tests. Some areas were less successful and need further development. This will be described.

Conclusions/Take-home messages: Close and on-going work through a partnership proved constructive and creative generating a successful assessment package.

10G5

Are we grading our students fairly?

Dwight Harley*, Margaret Dennett, Ronald Damant (0-001 Katz Centre, University of Alberta, Edmonton AB T6G 1E7, Canada)

Summary of work: As no single instrument can assess the complex array of learning outcomes in a single course, an accurate picture of student achievement can only be established by using a variety of assessment tools. The results of multiple assessments are weighted and combined to establish a score that is converted into a final grade. This grade is intended to reflect the quality of the achievement of the student, the impact of which may be career or life altering. Due to the critical consequences of assigning grades, it is essential that the calculations on which they are based be accurate. Summing the component scores to obtain an overall score is only appropriate if the components have or have been transformed to have the same variability. When scores are weighted and added together without adjustment for unequal variances, each score will contribute to the composite in direct proportion to its standard deviation. Although this is basic, this part of the grading process is often skipped. Our purpose is to demonstrate the impact of weighting and combining

measures without first establishing a common variability.

Summary of results: The results demonstrate that errors in calculation caused by not establishing a common variance have substantial impact on assigned grade.

10G6

Continuous assessment: A way of improving students' performance

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Background: Continuous assessments have been found to improve performance in medical students. This study is a retrospective analysis of a series of continuous assessment tests and the final professional 1 examination (pro-1) for 108 medical students in their first 2 years of medical curriculum. The objective of the study was to find out the correlation between the scores in continuous assessment tests and the pro-1 exam after 2 years in the integrated medical curriculum.

Summary of work: Records of scores of 108 students in the series of assessments were analyzed, after taking permission from the examination unit, using SPSS version 19.0. There were four end-semester assessments which came after 5-months each before the pro-1. All these assessments included various types of questions viz Multiple- Choice Questions (MCQ), Problem-Based Questions (PBQ), Short-Essay Questions (SEQ), Objective-Structured Practical Questions (OSPE) from basic medical sciences. Only the overall scores in each assessment were compared to and not included in the final pro-1 scores.

Summary of results: A correlation of the end semester assessments was found to be significant with performance in pro-1 (r=0.859, P<0.01). Students who performed well in final professional examination also had good scores in the continuous assessment, hence it might be concluded that end semester tests helped them achieve high scores in the final pro-1.

Conclusion: Continuous assessment as the end semester tests need to be seriously considered for improvement of final examination performance.

10H   Oral Presentations: Progress Test

10H1

Relationship between the perceived relevance of questions and student results in a progress testing setting

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PO Box 960, Leiden, The Netherlands; [2]Radboud Medical Center Nijmegen, The Netherlands)

Background: Medical students of four Dutch universities participate four times per year in a national progress test of 200 MC questions. Although the questions meet the end criteria of the national blueprint for medical schools, not all questions are perceived as relevant for a future physician. In this study we investigated if relevance of questions affects the results of students on those questions.

Summary of work: In two universities 800 questions from four progress tests were judged by an expert panel in three areas of relevance: 1) the daily practice of a graduated medical student; 2) scientific background; 3) understanding of medical subjects. This relevance was combined with mean test results.

Summary of results: The relevance scores in the areas 1 and 3 did not differ significantly between both universities. In one university the scores on scientific relevance were much lower than in the other, although the mean results on the progress test appeared to be higher. Overall no significant relationship was found between item relevance and mean test results.

Conclusions: There is no correlation between the relevance as judged by an expert panel of questions and the test results in the two universities.

Take-home message: Test results are not affected by perceived question relevance.

10H2

Progress test as driving force for reforms in medical education

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Background: Progress test is widely used to test individual retention of medical students' knowledge over the years of study. We hypothesized that there are some systemic factors influencing academic performance which can be modified through the reforms in medical education and used progress test as diagnostic tool for these factors.

Summary of work: We administered progress test to over 2300 medical students of second to fifth year, and to over 600 medical interns of Karaganda State Medical University. We analyzed such factors as GPA, home region, language of instruction, health status, gender, social and living conditions during study-time, changes in curriculum over the years, individual learning style by Kolb's inventory.

Summary of results: The results of the study are currently being processed, but there is preliminary data for correlation of environmental factors with academic performance. There is evidence that students from rural areas show significantly lower performance than students from urban areas.

Conclusions: After the complete analysis of the results, we plan to adjust our present curriculum to meet needs of

students more, and give recommendations to Ministry of Health for further reforms in medical education.

Take-home messages: Progress test can be a driving force for changes in medical education.

10H3

Comparison of Progress Test and Cumulative Acquisition Testing in the Early Stages of a Graduate Entry Medical Course

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Background: Progress testing against final outcomes has been utilised in undergraduate medicine for a some years. Progress testing is however considered to be a weak tool to identify poorly performing students in the early years of a course. Cumulative acquisition testing is commonly used as it is constructively aligned test, blueprinted directly against the cumulative, intended learning outcomes of the course.

Summary of work: The results of constructively aligned tests were compared with the scores for a progress test to determine whether a correlation exists between the performances in both tests of students in years one and two of a graduate entry programme.

Summary of results: No significant correlation of student scores was observed in year one and year two students taking both a progress test and cumulative acquisition test at the end of each year.

Conclusions: A progress test set at final outcomes is a poor predictor of student progression and understanding of the intended learning outcomes in the early years of a graduate entry medical course.

Take-home message: Reliance on progress testing in the early years of a graduate entry medical course may not provide a good predictor of learning.

10H4

Predictive and concurrent validity of progress testing

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[2]*Universidade de São Paulo, Faculdade de Medicina de Ribeirão Preto, Ribeirão Preto, Brazil; 3Universidade São Francisco, Curso de Pós-Graduação em Psicologia, Brazil)*

Background: Progress tests (PTs) are considered to assess life-long, meaningful learning. Nevertheless, evidence regarding PT validity is scarce.

Summary of work: A PT comprised of 120 multiple-choice items was analyzed after application to 462 medical students. Last year students also underwent International Foundations of Medicine (IFoM) examination. Reliability

was studied by both internal consistency and local precision from item response theory (IRT). Concurrent validity was studied by correlation between PT and IFoM scores. Logistic regression models were used to determine PT predictive validity towards residency admission.

Summary of results: Cronbach's alpha was 0,80. Local precision was above 0,60 even at the lowest theta levels. Progress test and IFoM were highly correlated, both in raw scores (r = 0,637, p < 0,001) and IRT scores (r = 0,626, p < 0,001). All logistic regression models were significant; however, only the IRT score model had a meaningful odds ratio (OR = 5,240, p = 0,004).

Conclusions: PT was shown to have a good degree of reliability as well as concurrent and predictive validity. IRT usage qualified PT for establishing the probability of residency admission of undergraduate students.

Take-Home messages: Considering their low cost and feasibility, psychometric analyses of PTs could provide valuable information to curricular governance.

10H5

Progress testing in the early postgraduate period
C Woffindale, L Coombes, E Kay, E Heffernan, J Bennett (Derriford Dental Education Facility, Peninsula College of Medicine and Dentistry, Tamar Science Park, Research Way, Plymouth PL6 8BT, UK)*

Background: Progress testing (PT) is a comprehensive longitudinal tool used to regularly assess students against defined curriculum objectives. We have presented data to show that PT can be applied effectively in a Dental postgraduate setting. Shortly after graduation, new dentists (Foundation trainees or F1's) show a stepwise increase in knowledge over senior undergraduates. However, there are little data on how knowledge changes during this first postgraduate year. To investigate this we have administered progress tests, set at the standard expected of a graduating class, sequentially to new graduates over this period.

Summary of work: Following thorough briefing, 2 progress tests, each of 30 questions were delivered at 6 month intervals to 154 F1's working in compulsory schemes offering structured introduction to general dental practice.

Summary of results: Scores achieved by the F1's were normally distributed. When pairing the 1st and 2nd results from individual F1's the scores were significantly increased. Conclusion: F1's readily accepted PT as an aid to their continued learning with evidence of knowledge change during the first year after graduation. The exact nature of this change is unclear.

Take-home message: PT is potentially valuable in the longitudinal evaluation of a clinical programme after graduation during the transition to the professional workplace.

10H6
Gender and guessing on a negatively marked progress test

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([1]Peninsula Medical School, Institute of Clinical Education, University of Plymouth, UK; [2]Peninsula Medical School, Institute of Clinical Education, University of Exeter, UK)

Background: It is often reported that males have an advantage over females when it comes to multiple choice questions due to the different genders using different exam strategies. Males are generally considered to be more willing to guess than females, so where exams have negative marking ensuring the fairness of the exam for both genders is vital.

Summary of work: Data will be presented that summarises 9 years of progress test data. This will examine the overall score and rate of guessing by both genders on individual tests and longitudinally using analysis of variance.

Summary of results: The difference between genders appears to increase over time but analysis of test score shows very few significant differences individually, and no differences longitudinally. These findings are repeated when the number of 'Don't Know' responses are analysed.

Conclusions: The results of this study suggest that negatively marking a progress test does not disadvantage female students. The difference between male and female scores and response levels changes over time but not significantly.

Take-home message: Conceptually, forcing a student to guess may be poor practice for their later career so common sense may be the most important factor when considering whether negative marking is appropriate.

10I   Workshop: Generalised yet Personalised: Mind Mapping to Enhance OSCE Feedback

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Background: Provision of constructive feedback during OSCEs proves to be a challenge to the examiners within constraints of time. Candidates ask for high quality feedback to enable them to improve their performance. This workshop will focus on a process of standardisation of OSCE marking schemes and the development of Mind Maps linked to these standardised marking domains designed to maximise the constructive feedback given to the candidates sitting the OSCEs.

Intended Outcomes: The workshop will allow the delegates hands on practice in the process of standardisation of OSCE marking domains and development and use of linked Mind Maps using both, IPADs and paper versions.

Structure: Introduction; Background to Standardisation and Mind Mapping; Hands on development of a standardised marking domain; Hands on development of a Mind Map linked to the marking Scheme developed earlier; Generation of Feedback using Video exercise, IPADS and paper.

Intended Audience: This workshop will be suitable for delegates who have academic roles in development and conduct of OSCEs as question writers or examiners.

Level of Workshop: Intermediate

10J   Workshop: Measuring the Canadian Interprofessional Health Collaborative (CIHC) National Competency Framework for Interprofessional Collaboration

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Background: The development of the CIHC National Interprofessional Competency Framework (2010) provided a means for practitioners, educators, and students to identify consistently with the key concepts that underpin interprofessional collaborative practice. The framework comprises six interconnected competency domains: patient-centred care, interprofessional communication, role clarification; team functioning, collaborative leadership, and interprofessional conflict resolution. The challenge in measurement is ensuring that the items to assess each domain are reflective of not only interprofessional collaborative practice but also of cultural relevance to a variety of health settings and across several countries. The outcomes of the Ottawa Conference workshop will inform the next phase of an International Working Group in ratifying the items generated and developing measurement metrics.

Intended Outcomes: 1. Participants are familiar with the CIHC Competency Framework and its development, past and future. 2. Through a Delphi rating process, changes to the items are identified to reflect the competency domains more accurately. 3. Measurement indicators and strategies are identified.

Structure: 1. Presentation of competency framework. 2. Small and large group work related to one or more competency domains and revision to items. 3. Small and large group generation of strategies for measuring competency attainment.

Intended Audience: Researchers and educators involved in interprofessional health education and collaborative practice.

Level of Workshop: Advanced

10K Workshop: Essentials of Values-based Practice

EB Peile, KWM Fulford* (Warwick Medical School, University of Warwick, Coventry CV4 7AL, UK)*

Background: Our values are our beliefs and preferences. Often unrecognised, they affect interpersonal interactions and clinical decision-making. Values-based practice (VBP) supports balanced decision making within a framework of shared values based on a premise of mutual respect. It relies on good process rather than pre-set right outcomes. Values-based practice describes 10 well-defined, interlinked processes which are of particular importance in situations where values are complex or conflicting.

Intended Outcomes: You will appreciate how the processes of VBP draw on existing clinical and communication skills and develop ethical reasoning. You will have evidence of how clinical reasoning improves by being values-based as well as evidence-based. You will learn some new skills (like dissensus) for handling situations where values are in conflict. You will be able to teach and formatively assess learners' ability to identify the values at play in clinical situations.

Structure: Using examples of common medical problems (eg back pain; the acute abdomen; acne; sub-fertility; and end-of-life care), participants will practice linking the 10 VBP processes in consultation-based scenarios. The facilitators will identify and explain the processes outlined in the forthcoming book "Essentials of Values-based Practice" (Cambridge University Press.)

Intended Audience: Educators interested in developing teaching and assessment of communication skills, ethics, clinical reasoning, and professionalism.

Level or Workshop: Advanced

10L Workshop: Educating & assessing residents: the tension between passion, professionalism and rules in resident training

GA Blok[1], G Dirksen-Detombe*[2], F Scheele*[3], JA Baane[4], BJA de Leede[5], SJ van Luijk[6], AK Meininger[7], H Mulder[8], HE Sluiter[9] ([1]Reinier de Graaf Teaching Hospital, Delft; [2]Erasmus University Medical Centre, Rotterdam; [3]Sint-Lucas Andreas Teaching Hospital and Free University Medical Centre, Amsterdam; [4]Amsterdam University Medical Centre, Amsterdam; [5]Leiden University Medical Centre, Leiden; [6]Free University Medical Centre, Amsterdam; [7]University Medical Centre Groningen; [8]University Medical Centre Utrecht; [9]Deventer Teaching Hospitals, Deventer, The Netherlands)*

Background: The educational reform in resident training to competency based education requires new approaches towards teaching and specifically towards assessment. Some clinical teachers wonder whether they can 'really' prepare residents for professional practice in this way. Others think the bureaucracy resulting from new assessment procedures does not outweigh gains in quality and may become less motivated. The pressure of daily practice usually does not leave time to reflect on this issue; this workshop does.

Intended outcomes: At the end of the workshop participants will have a better grip on how they can stay passionate about teaching & assessing residents, whilst adhering to new requirements regarding resident teaching and assessment.

Structure: In the workshop participants are invited to reflect on their roles of clinical teachers and their ideas about postgraduate training with the help of the Seven Habits of Stephen Covey for effective (personal) leadership. A structure is offered in which participants are facilitated to find answers to questions like "What is my mission as a clinical educator?" and "How do I want to educate young professionals?" During the workshop individual, small group and plenary activities are alternated.

Intended audience: medical specialist educators, medical managers

Level of workshop: Intermediate

10M Workshop: The role of open-book tests in medical curricula

JBM Kuks, J Cohen-Schotanus, EA van Akkeren, M Heijne-Penninga, J Borleffs* (Dept of Neurology, University Medical Centre Groningen, PO Box 30.001, 9700 RB Groningen, The Netherlands)*

Background: When learning one disease a day 30 years are needed to study all knowing diseases (Glasziou, 2007). Although there is no need to know all possible diseases, this is a good illustration of the situation medical curricula have to deal with: a huge body of knowledge that stays on changing and growing. This growing body of medical

knowledge implicates a change in medical curricula and, consequently, in the assessment programme. One possibility is to include open-book tests next to closed-book tests. Generally, open-book tests refer to students' use of reference sources while taking the test. The possibility to consult sources makes it most important that teachers construct questions on higher cognitive levels. In this workshop the role and construction of open-book tests in medical curricula is discussed.

Intended Outcomes: More insight in the possibilities of open-book tests and the characteristics of open-book test questions.

Structure: The workshop starts with discussion and information about the role and advantages and disadvantages of open-book tests. After that the construction of open-book tests will be discussed and practiced.

Intended Audience: Teachers and educationalists who are involved in assessment and construction of tests.

Level of Workshop: Intermediate

10N   Workshop: The use of games and exercises in education groups; Let your fringe down!
JF "Shake" Seigel*, EJ "Bitty" Muller, M Denney (Alrewas, Staffs, UK)

Background: The philosophy and practice of whole person education can often be swamped by intellectual dominance in academia. Here is a chance to explore the theory and practice of integrating Right Brain with Left Brain approaches to achieve an enjoyable educational climate. We will address ice- breakers to get groups going, and then more in-depth games to help groups work more deeply. We will then end with a variety of closing games and exercises to provide a sample menu of choices to use in your own practice.

Intended Outcomes: This is a chance to participate in a workshop that will "Walk it's Talk" by using exercises and games to reinforce the learning . This will be experiential learning at its most enjoyable. By the end you will know what to do, and when and why, in group facilitation; The theory and practice of "Games in Groups

Structure: This will be run as a group session facilitated by experienced facilitators with a love of fun and creative thinking. This will be highly interactive with gentle physical exercises, and a risk of laughter.

Intended Audience: Anyone interested in learning and facilitating the learning of others.

Level of Workshop: Intermediate

10P   Posters: Selection/Management

10P1
Graduate Entry Medicine in Malaysia: A new model
K Rampal*, N Shilkofski, C Wiener (Perdana University Graduate School of Medicine, MAEPS Building, MARDI Complex, Serdang, Malaysia)

Graduate Entry Medicine (GEM) programs are becoming more common outside the United States. Perdana University Graduate School of Medicine (PUGSOM) in collaboration with the Johns Hopkins University School of Medicine (JHUSOM) started Malaysia's first GEM Doctor of Medicine (MD) Program in August 2011. The challenges for PUGSOM introducing a new education model included obtaining approvals from the MQA and MMC, recruiting faculty to implement the Genes to Society curriculum and attracting qualified students with a first degree in science. Being new in the country, information on GEM was disseminated through individual University visits, newspaper advertisements, local publicity, and online with Google ads, Facebook, Twitter. PUGSOM's admissions process followed the US model requiring multiple written personal statements and faculty interviews. 31 students were admitted with 24 enrolling (70% female). The average age is 24 years (range 21-29). 23 students are Malaysian, most graduating from UPM. 4 students have degrees from a US university. The average university GPA is 3.75. Success of the GEM model in Malaysia will require further education of the public, students, university faculty and administrators, and government regarding the advantages and opportunities of this alternative pathway into medicine from the current undergraduate model.

10P2
Student Selection Interview: is it valid and reliable?
Wai Phyo Win*[1], Sow Chew Fei*[2], Meenakshi Akhilesh[3], Katrina Azman[4] ([1,3]Centre for Medical Education, International Medical University; [2]Department of Clinical Science, International Medical University; [4]Department of Pathology, Faculty of Medicine, International Medical University)

Background: Selection of students who wants to join a medical university is a complex process. Students are chosen based on their previous academic achievements and the current performance in the interview. In IMU, each applicant was examined by two independent interviewers and graded individually using the guidelines and scenarios.

Summary of work: Questionnaire composed of 16 questions was developed and distributed to the faculty members who had involved in the interview. It was set up to identify the background experience of interviewers (5 questions), their perceptions toward the interview process and the factors that may affect the grading of the

applicants (11 questions, including one open-ended question).

Summary of results: Statistical analysis was carried out after getting back the questionnaire. Response rate was 79.8% (N=70) and result showed that most of the interviewers did not have the formal training to conduct the interview. Although, there was a guideline for grading, there is an intra-observer variation: gender is the most significant bias factor. Majority (74.28%) stated that current practice of penal interviews should be modified, as the grades given were subjective.

Conclusion: The marks given to the applicants during the selection interview were subjective and reliability is doubtful.

10P3

Factors influencing applicant choice of osteopathic and allopathic medical schools

J Meron, T Levitan* (American Association of Colleges of Osteopathic Medicine, Chevy Chase, MD, USA)

Background: Admission to medical education is highly competitive. But many applicants are accepted to multiple medical schools so the decision rests not only with the medical school but with the applicant who must decide which school to attend.   In the US the decision may be further complicated by the options of osteopathic or allopathic medical education.

Summary of work: The American Association of Colleges of Osteopathic Medicine surveyed its applicants after they had made a decision on which school to attend to identify factors influencing their choice of medical school. The goal was to better understand factors influencing medical school choice and the applicants' understanding of osteopathic and allopathic medicine. Applicants to offshore medical schools were also included in the study.

Summary of results: The study found similarities across applicants to all three types of medical schools and acceptances across all three types. Key factors influencing selection varied across the types of medical schools of enrollment. The "approach to teaching and learning" and "geographic location" were most important for applicants selecting osteopathic medical schools and "geographic location" and "cost" were most important for applicants selecting allopathic medical schools.

Conclusion: This information can guide medical schools in their efforts to recruit and select students.

10P4

Can entry qualifications predict future academic performance of IMU medical students?

Lai Ming Leong (International Medical University, No.126, Jalan Jalil Perkasa 19, Bukit Jalil, Kuala Lumpur, Malaysia)

Background: As the pioneer of private medical education provider in Malaysia, students with different entry qualifications have applied and been accepted by IMU medical school. The different nature of various pre-university examinations together with its curriculum and subjects offered may produce an effect on IMU medical students. This paper aims to investigate if different types of entry qualifications and the subjects taken during pre-university years will have a predictive value on IMU medical students' academic performance in medical school.

Summary of work: Statistical analysis was conducted using SPSS on all cohorts of IMU medical students from 1993 to 2008 to examine the trend in entry qualifications over the years, to determine whether various entry qualifications are significantly different in predicting the performance of medical students in End of Semester examinations and to determine whether the presence or absence of certain subjects during pre-university years has predictive value on performance in End of Semester examinations.

10P5

Invigilation of Examination in Faculty of Medicine, Universiti Teknologi MARA

RH Malik*, AS Malik (Level 20, Menara 1, Faculty of Medicine, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia, 40450)

Background: Faculty of Medicine (FOM), UiTM appoints its regular academic staff as invigilators with varying level of experience. There is no formal training to equip them with invigilation skills. Most of them are also the subject experts, invigilating their own students. Furthermore, many invigilators are not clear about their role and responsibilities as well as the powers they can exercise under special circumstances.

Summary of work: 1. A questionnaire survey was conducted in the FOM, to gauge the awareness of the invigilators of their roles and responsibilities. 2. Based on the analysis of the questionnaire, discussion involving a focus group was conducted to identify the apprehensions and problems faced during the process of invigilation and the suggestions were sought to overcome them.

Summary of results: Some problems and apprehensions identified: 1. Time commitments; 2. Long invigilation hours; 3. Lack of understanding of the flow of process; 4. Unawareness of the roles and responsibilities. Recommendations: 1. Training for invigilation; 2. Recruitment of specific staff for invigilation from other faculties/sources.

Conclusions: There is a great degree of apprehension among the academic staff about the process, their roles and responsibilities and their preparedness for invigilation.

Take-home message: Invigilators need to be trained to perform their duties efficiently. Non-faculty members may be appointed as invigilators.

10P6

Certification of ICD 10 Coders Malaysia

S A Khadzir*, MS Ismat, AAA Wahab (Health Informatics Centre, Planning and Development Division, Ministry of Health Malaysia)

Background: ICD 10 code error rate study for Ministry of Health Hospitals for 2009 showed 37.5% error rate for 4-digit coding and 21.3% error rate for 3-digit coding. As a result, certification for medical record officers was conducted by Health Informatics Centre, Planning and Development Division, Ministry of Health Malaysia to: i) Assess the ICD 10 diagnostic coding expertise of Medical Record Officers (MRO), ii) Therefore identify who are eligible to code or code under supervision.

Summary of work: Eight expert coders identified as evaluating officer to conduct the certification. Candidates consist of Medical Record Officers, Assistant Medical Record Officers, and Record Clerks. The 3 levels of certification based on application of ICD 10 rules and guidelines: 1st level is single diagnosis coding; The 2nd level is combination diagnosis coding; 3rd level is based on real diagnosis from PER PD 301 (local admission/discharge form).

Summary of results: Total of 1035 candidates identified, 718 sat for the certification. 208 candidates (28.97 %) pass 1st level. Out of 208 candidates, 1% passed the next level. Unfortunately, nobody managed to pass the third stage. Conclusion: Candidates who didn't pass level 1 and 2 had poor application of ICD 10 Rules and Guidelines.

Take-home messages: 1. Ensure training of all MRO followed by certification; explore international certification for expert coders; 2. Develop module and exposure of medical terminologies; 3. Improvement for documentation of diagnosis by medical practitioners.

10P7

Ethics and global health policy: *A distinctive student exchange*

Roger Worthington*[1], Robert Rohrbaugh[2] ([1] Keele University School of Medicine, UK; [2]Office of Global Medical Student Education, Yale University School of Medicine, USA)

Background: The authors have developed a medical student exchange program devoted to researching medical ethics and comparative health policy. While the ethical underpinnings of medicine are quite similar, differences in health policy and systems mean that ethical issues often play out differently in the two countries. These differences provide students with an opportunity to think deeply about the values underpinning respective elements of healthcare policy and systems.

Summary of work: The program includes a clinical elective in a discipline where the ethical issue under investigation is likely to be observed, as well as a mentored research component that results in the submission of a thesis as part of the medical degree program at their home institution. The program operates between schools of medicine at Yale University in the USA, and Keele University in the UK; to the best of our knowledge no such opportunity currently exists featuring these elements. Grants are available to support students, and the range of topics covered is wide.

Summary of results: Student outputs to date include publications and conference presentations; the program is linked to the publication of a book containing contributions from several former students[1]. Total numbers who have taken part currently stand at 24. Students often make career decisions based on these experiences and some continue academic investigations in their postgraduate programs.

Conclusions: Medical ethics is commonly taught in medical schools and global health rotations are increasingly common, but linking ethical and policy analysis while on a global health elective provides students with a special opportunity.

Take-home messages: The authors believe that key elements of the Yale-Keele program could be replicated elsewhere.

[1] Worthington RP and Rohrbaugh MR. *Health policy and Ethics: A critical examination of values from a global perspective*. Radcliffe Publishing (2011).

10Q   Posters: Quality Assurance/Teacher Evaluation

10Q1

Problems with the use of the GMC trainee survey in quality assessment of higher medical training

V Bravis, J Soong*, D Smith, K Le Ball, JB Levy (London School of Medicine, London Deanery, London WC1B 5DN, UK)

Background: Quality assurance(QA) of higher training is an important aspect of Deanery work. A potential source of data is the annual GMC trainee survey.

Summary of work: We analyzed the higher medical specialty data from the 2010 national trainee survey for London Trusts, to investigate its utility in training QA.

Summary of results: There are 21 medical specialties in 331 training locations across London. The National survey only reports on a specialty at any location with ≥3 trainees. 37%(121/331) locations generated reports in 2010. The proportion of locations with reports varied greatly(0-78%), depending on specialty. If 2010 and 2009 cases are merged, 81% coverage (270/331) is achieved. If trainee response rate were 100%, only 80% of locations would generate reports. Specialty coding and location coding inconsistencies created problems. For dual qualification specialties(n=9), it is unclear which component of training

was reported. Incomplete or retrospective reporting decreased reliability.

Conclusions: It is currently not possible to utilize the national trainee survey for assessing individual posts in higher medical training.

Take-home messages: Improved coding is needed at national level. Deanery-visit data, curriculum mapping and a more selective end-of-post, locally collected trainee data tool need to be incorporated in QA.

10Q2

Driving up departmental quality standards in medical documentation

A Chinoy*, Z Refai, A Mathew* (Department of Paediatrics,Worthing Hospital, Lyndhurst Road, Worthing, West Sussex BN11 2DH, UK)

Background: Maintaining high professional standards for prescribing practices and documentation in paper-based medical records is critical for governance and patient care. Author identification is central to clinicians' accountability with unidentifiable authorship a serious concern.

Summary of work: Poor compliance with National and Local guidelines on authorship, led our Trust in 2010 to pilot a self-inking name and GMC number stamp for all doctors, concurrently a campaign on its use was initiated. Legibly hand-printing these details was an acceptable alternative. This was extended to all new doctors in 2011. Audits were carried out in the Paediatric department, prior to and after the introduction of the stamp and then again a year later, to compare differences in documentation, and measure campaign compliance.

Summary of results: Documenting a legible name and GMC number in medical entries and prescriptions rose steadily from 2010-2011, with SHO's consistently demonstrating high standards.

Use of the stamp increased in the year, but registrars demonstrated a clear preference to hand-print their details.

Conclusion: This audit demonstrated improvements in securing identifiable authorship partially achieved by the introduction of an innovation – the stamp; but perhaps more importantly as a result of a high profile campaign.

Take-home message: Driving up clinical standards requires clear, consistent leadership and effective campaigning.

10Q3

Happy Sheet 2.0? - beyond student/teacher evaluation

K Sundberg*[1], J Nordquist[1], L Kihlström[2] ([1]Karolinska Institutet, Medical Case Centre, Huddinge, Sweden/Karolinska University Hospital, Residency Training Program, Solna, Sweden; [2]Karolinska University Hospital, Residency Training Program, Solna, Sweden)

Background: Within the realm of both graduate and postgraduate medical education, student/teacher evaluations of courses are traditionally focusing on quality monitoring of teachers' performances . How can we move from a student reaction level focusing on quality monitoring to a more holistic focus on quality development of courses?

Summary of work: A three-part evaluation model for quality development of courses (students' reactions and attitudes/teachers' perceptions/assessment results) was tested on two pilot courses in the residency training program at Karolinska University Hospital. The aim of the model was to stimulate and encourage quality development while engaging a maximum of stakeholders.

Summary of results: The usage of the model involved stakeholders in a positive manner and encouraged both teachers, students and other stakeholders to reflect on quality development of specific learning outcomes in connection to target audience as well as the course as a whole.

Conclusions: A model for evaluation of courses integrating students' views with teachers' perceptions and assessment results can be used as a tool supporting the departure from happy sheets focusing solely on good/bad, and moving towards a sought after focus on quality development.

Take-home messages: Happy sheets encourage quality monitoring but used as one part of a three-part evaluation model, quality development is possible to reach.

10Q4

Effectiveness in Individual Teacher Performance Evaluation in Competence Based Curriculum

Soegianto Ali (School of Medicine, Atma Jaya Indonesia Catholic University, Pluit Raya No. 2, Jakarta 14440, Indonesia)

Background: Since 2006, School of Medicine, Atma Jaya Indonesia Catholic University has implemented Competence Based Curriculum (CBC). In the CBC, topics are grouped in blocks and faculty members from departments contribute. As part of internal quality assurance,university conduct survey on performance of each faculty members. Questionnaire on teacher's performance and their compliance to blocks' plan are assessed. The questionnaire are designed for all study programmes which implement conventional curricula. Based on the results, performance are ranked and yearly incentive are disbursed accordingly. The effectiveness of such questionnaire in CBC were assessed in this study.

Summary of work: A total 60 of 15 randomly selected students from each year were recruited. Questionnaire on students' opinion on the relevancy of the standard survey and their answering method were assessed. Data were analyzed using SPSS v13.0.

Results and conclusions: CBC with blocks system involving contributors from departments and majority of the

students are confused in answering the standard survey. CBC needs a different assessment method of teachers' performance for internal quality assurance. Concordantly, disbursement of incentive should be based differently.

Take-home message: The implementation of CBC differentiate school of medicine from other study programme. Accordingly, internal quality assurance should be conducted differently using different tools.

10Q5

Assessing the correlation between readiness to change and burnout among faculty members of clinical sciences in Tehran University of Medical Sciences (TUMS)

Zeinab Arvandi[1], Mandana Shirazi[2,3], Amir Hossein Emami ([1]Tehran University of Medical Sciences (TUMS),Students' Scientific Research Center; [2]Tehran University of Medical Sciences, Educational Development Center; [3]Tehran University of Medical Sciences (TUMS), Medical Education Department of TUMS, Iran)*

Background: The medical education curriculum has some deficiencies. It should be modified based on the ACGME recommendations. One of the important components for reforming the curriculum is clinical faculties' readiness to change (attitude, intention and action stages). Faculty's burnout is another factor which affects their performance. Hence, assessing the correlation between these two factors among faculties is our research question.

Summary of work: The analytical-descriptive method was used. The readiness to change questionnaire was developed based on two important themes; faculty duties in TUMS and their readiness to change stages. The number of questions was 14 likert items. The psychometric characteristic of the questionnaire was confirmed in an Iranian context. The second questionnaire was the Maslach burnout inventory. The stratified RCT method was used. The number of participants was 86 from 19 different clinical department in TUMS.

Summary of results: The distribution of participants in different stages of change: 53% action, 44% intention and 2.3% attitude stage. There was a strong and significant correlation between stages of change and burnout among faculties ($p<0.05$).

Conclusion: The clinical faculties' readiness to change is correlated with their burnout. It means when they are under a workload they can't improve their performance.

Take-home messages: Considering clinical faculties' readiness to change and their burnout for reforming the curriculum in cross cultural medical school is inevitable.

10Q6

Attitudes and perceptions of medical students regarding teaching carried out by postgraduate trainees

D G Chathumini[1], A Abayadeera[1], G Ponnamperuma[2], A de Abrew[2] ([1]Department of Surgery, Faculty of Medicine, University of Colombo, Sri Lanka; [2]Medical Education and Research Centre, Faculty of Medicine, University of Colombo, Sri Lanka)*

Background: Attitude and perceptions of medical students regarding teaching by postgraduates is useful for planning teaching activities and for utilization of them for undergraduate education.

Summary of work: Self administered questionnaire was used on medical students doing clinical appointments in Faculty of Medicine, University of Colombo, Sri Lanka during July-August 2011.

Summary of results: 485 undergraduates with a male: female ratio of 45%: 55 % participated. Majority were taught by PG trainees 2-4 times a week. Teaching times lasted 30-60 minutes. 80% considered PG teaching important and enjoyed it. Most considered it useful to learn clinical and short and long case examination skills. 33% thought it important to learn theory. 90% mentioned that all PG trainees do not take equal responsibility and 51% thought that teaching by male and female PG trainees were of equal standard. 40% mentioned that males are better. 66% noted a difference between teaching by registrars and senior registrars. 80% thought that PG trainees teach for their self satisfaction and knowledge. 75% because of the consultant's request. 63% of the students think that lack of time is the main cause for them not to teach. 60% mentioned that >50% of the time, classes are patient oriented. 74% thought a time table would be useful to improve teaching activities by PG trainees.

Conclusions: Undergraduates largely favour being taught by postgraduates.

Take-home messages: PGs are an effective personnel source for undergraduate training.

10Q7

Developing the abilities of Medical School teachers of Kazakhstan

G.Kemelova, R.S.Dosmagambetova (Karaganda State Medical University, Director of Center of Medical Education, Karaganda, Kazakhstan)*

Background: Modern technologies are used to develop medical education in Kazakhstan and to develop the competencies of teachers in medical schools. In our University the ability of high school teachers is developed using modern methodologies of teaching and innovative medical education technologies.

Summary of work: In the University there is a 3 level program for training and development of teaching

competencies. There are six basic competencies of teachers necessary for professional development. Competencies are: Assessment/examination, Research, Information literacy, Teaching, Communication skills and Professionalism.

Summary of results: 57 persons have been trained on 1 level of the program to develop the abilities of teachers. The analysis of feedback and an assessment of efficiency of the program have shown that the program develops teachers' competencies to a professional level.

Conclusions: The training program to develop basic competencies of high school teachers allows the introduction of best practice in the education process for basic medical education and clinical teaching.

Take-home messages: Assessment of efficiency and effectiveness of the teacher training program are important.

10Q8

Medical student and academic staff perceptions of role models: an analytical cross-sectional study

Leila Bazrafkan, Seyed ziaeddin Tabei*, Leila Amirsalari (Shiraz University of Medical Sciences, Shiraz, Iran)

Background: The aim of the study is comparison of the perceptions of students and the perceptions of academic staff about the characteristics of the medical teacher as a role model at the Shiraz University of Medical Sciences (SUMS).

Summary of work: Staff and students were questioned about the characteristics of their colleagues and lecturers, respectively, by a valid and reliable questionnaire. They were asked about 24 characteristics under four headings: personality, teaching skill, group working and overall performance as a role model.

Summary of results: The level of meaningfullness of the research findings showed that university students, among four aspects of stated characteristics in the questionnaire, give the first priority to the aspect of professor's professional obligation, with a value of 3/58 and they give next priorities to communication skills with a value of 3/48.

Discussion and Conclusion: According to the results of this survey, in addition to knowledge, professional obligation and ability in communication are two of the most important criteria for acceptance and selection of professors. Also through training sessions and conferences, we can draw attention to the duties of a professor as a role model for students and as an ethical professional.

10Q9

The relationship between medical faculty members' spiritual intelligence and teaching competency in Iran

Karimi moonaghi Hossein, Akbari Lakeh Maryam*, Makarem Abbas, Esmaieli Habib Allah, Ebrahimi Mahdi , Ashoori Ahmad (University of Mashhad Medical Sciences, Faculty of Medicine, Mashhad, Iran)

Background: Recently, promotion of spiritual intelligence has been introduced as a factor in improving the quality of the performance of employees. In order to investigate this issue more carefully, this study aimed to determine a) the level of spiritual intelligence, b) the level of teaching competency, c) the relationship between spiritual intelligence and teaching competency in medical faculty members in Iran.

Summary of work: This is a correlational cross-sectional study with 160 medical faculty members as subjects in one of the medical universities in Iran. King's Spiritual intelligence questionnaire and teaching competency assessment instrument of Alabama University were used. The data were analyzed with the software spss 11.0.

Summary of results: The results showed that the mean score of spiritual intelligence was 63.0±1.2, which was moderate; the median score of teaching competency was 92.0 with the minimum score of 39.0 and maximum score of 112.0. There was a significant relationship between spiritual intelligence and teaching competency (rs=0.31).

Conclusions: Promoting spiritual intelligence provides promotion of teaching competency.

Take-home messages: Raising spiritual intelligence with proper training can be a shorter pathway for educational planning.

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SESSION 11   PLENARY
1245-1430 hrs

11A   The top 10 myths on standard setting
Dr André De Champlain (Medical Council of Canada, Ottawa, Canada)

Standard setting constitutes a critical activity for any organization or school involved in assessment. This is especially true in medicine where there is a need to assure the public that graduates, as well as license and certificate holders, possess the skills and knowledge necessary for safe and effective patient care. Furthermore, research has suggested that performance on certain examinations is related to the likelihood of committing egregious acts in (future) practice. Therefore, standard setting impacts not only the "here & now" but also future quality of care. The goal of this presentation is to outline 10 common standard setting myths which will hopefully contribute to a more defensible use of methods and valid interpretation of results.

11B   **Widening perspectives on assessment**
Professor Cees van der Vleuten (Maastricht University, Netherlands)

Assessment is area in medical education that has evolved enormously across the recent decades. The literature is dominated by studies on reliability and validity of assessment methods. However, this represents mainly one discourse or perspective on assessment: the psychometric perspective. Yet assessment can be approached from different perspectives, each providing interesting lessons from its discourse and its research. This plenary will review each of these perspectives and sketch the implications for the practice and the research of assessment.

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