Fundación Educación Médica

Educación Médica

Bajo los auspicios de

World Federation for
Medical Education (WFME)

Association for Medical
Education in Europe (AMEE)

Federación Panamericana
de Asociaciones de Facultades
(Escuelas) de Medicina, (FEPAFEM)

Educational Comission for Foreign
Medical Graduates (ECFMG)

Foundation for the Advancement
of International Medical Education
and Research (FAIMER)

Sociedad Española de
Educación Médica (SEDEM)

Associació Catalana
d'Educació Mèdica (ACEM)

Conferencia Nacional de
Decanos de Facultades
de Medicina Españolas

Conferencia Nacional de
Decanos de Facultades
de Odontología Españolas

Conferencia Nacional de Directores
de Escuelas de Enfermeria Estatales

Colegio Oficial de Médicos
de Barcelona (COMB)

ISSN: 1575-1813

IISSN (edición digital): 1579-2099

VIGUERA

Viguera Editores SL

Pl. Tetuan, 7. 08010 Barcelona
Tel. +34 932 478 188
Fax +34 932 317 250
www.viguera.com

Impresa en UE por IG Galileo SA,
sobre papel libre de ácido.

DL: B-46714-2002

Publicación trimestral.

Esta publicación se puede visitar *on-line* en **www.educmed.net** y en **scielo.isciii.es**.

Protección de datos
Fundación Privada Educación Médica y Viguera Editores SL declaran cumplir lo dispuesto por la Ley Orgánica 15/1999, de 13 de diciembre, de Protección de Datos de Carácter Personal.

Suscripciones, pedidos, cambios de dirección
Viguera Editores SL, Departamento de Suscripciones: suscripciones@viguera.com. Fax: +34 932 317 250. El precio de la suscripción comprende exclusivamente los números regulares: Particular 90 € más gastos de envío, Instituciones: España 250 € más gastos de envío. Precio del ejemplar suelto, sujeto a disponibilidad, 30 € más gastos de envío.

ASSOCIATION FOR MEDICAL EDUCATION IN EUROPE (AMEE)

AMEE 2009 Conference

29 August to 2 September 2009

Palacio de Ferias y Congresos. Malaga, Spain

Incorporating the XIXth Meeting of SEDEM (Sociedad Española de Educación Médica)

ABSTRACTS

Association for Medical Education in Europe (AMEE)
484 Perth Road
Dundee DD2 1LR
United Kingdom

Tel: +44 (0)1382 381953
Fax: +44 (0)1382 381987
Email: amee@dundee.ac.uk

www.amee.org

AMEE 2009 ABSTRACTS

SESSION 1

SESSION 2

SESSION 3

SESSION 4

SESSION 5

SESSION 6

SESSION 7

SESSION 8

SESSION 11

Session 1: Plenary

1A Facts and fiction in global health

Hans Rosling (Department of Public Health Sciences, Karolinska Institutet, Stockholm, Sweden; and Gapminder Foundation, Stockholm, Sweden)

Most people store information about the world in a mental model originating from colonial times. This mental model has two store boxes, one for industrialized countries and one for developing countries. Using the Gapminder method to convert statistical time series of health statistics the emerging moving graphics show that there are no longer two categories of countries in the world. The old division in industrialized and developing countries has been replaced by a world with a continuum of socio-economic development. Most Asian countries are presently modernizing twice as fast as West-Europe did in the past when it comes to lowering child mortality, reducing family size and growing the economy. They are clearly catching up. A new dichotomy may form: on the one hand the 4-5 billion people moving through the health transition towards longer lives with cell phones, washing machines and human rights and on the other, 1-2 billion people stuck in vicious circles of poverty and insecurity.

1B Rethinking Medical Education: Some needed, overdue reforms

Hilliard Jason (University of Colorado Denver, USA)

Beyond some admirable innovations in a subset of the world's medical schools (and only in parts of some of those innovative schools), much of what happens too often, day to day, in many medical schools is seriously inappropriate. Our dominant activities and strategies derive from patterns that were established long before there was systematic research about human learning and well before there were journals or other vehicles for sharing and enriching teachers' thinking about their work. As best as we can tell, most teachers in most medical schools, however well-intentioned some of them may be, are insufficiently prepared – and many are temperamentally unsuited – for their work as educators. They have read little about best practices in teaching and learning and they are largely uninformed about the accumulated findings of decades of educational research. Even fewer medical teachers know about the recent, rapidly growing body of evidence from brain research that can now guide many of our instructional, communication and relationship strategies. In this presentation I will offer my sense of some of our more serious flaws and some practical suggestions of what is needed if we take seriously our obligation to prepare the best possible physicians for the future.

Session 2

2A SYMPOSIUM: Ethical issues in medical education research

Chairperson: Steven Kanter (University of Pittsburgh School of Medicine, USA). Panel: John Bligh (Peninsula Medical School, United Kingdom; Brian Hodges (University of Toronto, Canada); Charlotte Ringsted (Centre for Clinical Education, Copenhagen, Denmark)

It is important to treat human research participants in accordance with contemporary ethical standards. However, regulations and policies vary by country and institution. This session will explore the intellectual and moral integrity of medical education research, highlight procedures for ethical approval in selected countries, and discuss options for researchers who do not have access to a formal approval process.

2B LARGE GROUP SESSION: New horizons in simulation

Roger Kneebone (Imperial College London, United Kingdom); Debra Nestel (Monash University, Australia)

This session will present and critique two innovative concepts, locating both within relevant literature. *Patient focused simulation* (the hybrid combination of Simulated Patients with inanimate simulators to create a realistic clinical context) is becoming increasingly influential for learning and assessment of clinical procedural skills. *Distributed simulation* (the use of lightweight inexpensive simulation environments) offers portable high-fidelity simulation without requiring the resources of a dedicated skills centre. These concepts significantly expand the potential of simulation in healthcare education.

2C SYMPOSIUM: Current curricular changes in Spanish Medical Schools

(conducted in Spanish)

Chairperson: Joaquin García-Estañ (President of Conferencia Nacional de Decanos de Facultades de Medicina Españolas, Murcia, Spain). Panel: Deans of Medical Schools

At present, Spanish Medical Schools are involved in a curricular change process in order to adapt to the Bologna Declaration. This process represents an opportunity to modernize the medical curriculum in our country. The aim of this session is to review the current situation in the different Spanish medical schools involved in the process of curricular reform.

2D RESEARCH PAPERS: Stress in students and junior doctors

2D1 Identifying students in trouble by looking at learning strategies and motivational variables

Goetz Fabry*, Marianne Giesler (Albert-Ludwigs-University, Department of Medical Psychology, Rheinstrasse 12, Freiburg 79104, Germany)

Introduction: Academic success in medical education depends heavily on establishing an efficient and effective way to learn. To achieve this, students need to use cognitive strategies to organize, elaborate and critically review the subject matter; metacognitive strategies to plan, control and evaluate their learning; resource strategies to manage internal and external variables like attention and effort or using the appropriate literature[1]. In addition motivational variables are also important since they influence e.g. the perseverance while learning.

Research question: Can we identify unfavorable patterns of students' learning by looking at how they use learning strategies during their first academic year?

Methods: A cohort of medical students (N≈300) completed a questionnaire at three measuring times during their first academic year (longitudinal within-subject design). The Questionnaire for Measuring Learning Strategies in higher education (LIST) was used, which is a slightly modified and abridged German translation of the MSLQ[2]. In addition we measured different aspects of study motivation (strength of motivation, intrinsic vs. extrinsic motivation, motivational regulation) and included the results of the written test in medical psychology as a measure of academic success. We used the learning strategies specified by the students at T1 to conduct a cluster analysis and compared the clusters with respect to

differences in sociodemographic and motivational variables. In addition we looked at the academic achievement at T3.

Results: 171 complete data sets could be used for the analysis. While either a four or a five cluster solution would have been statistically appropriate, we choose the four cluster solution with regard to our conceptual framework. By means of ANOVA and Scheffé post hoc tests we found significant differences in the use of learning strategies among each of the clusters. Three clusters, which comprise the majority of students, exhibit favorable patterns of learning strategies (e.g. frequent use of cognitive and meta-cognitive learning strategies) which result in good academic achievement. However, students in a fourth cluster (N=22) are obviously in trouble. They make less use of all important learning strategies resulting in worse test results.

Discussion and conclusion: We could identify a group of students that needs special attention and support, since their learning behaviour seem to be at odds with the requirements of the learning environment. A tailored intervention oriented at learning strategies might help these students to develop a more efficient learning behaviour to catch up with their peers. However, since the use of learning strategies is the result of an interaction between the individual student and the learning environment, it is important to educate all medical teachers as to how they can foster the use of favorable learning strategies (e.g. by using tasks that reward higher order thinking skills and self directed learning).

References:

[1] Weinstein CE & Mayer RE (1986): The teaching of learning strategies. In: Wittrock MC (Ed): Handbook of research in teaching. London (Macmillan): 315-327.

[2] Pintrich P, Smith DA, Garcia T & McKeachie WJ (1993): Reliability and predictive validity of the Motivated Strategies for Learning Questionnaire (MSLQ). Educational and Psychological Measurement, 53, 801-813.

2D2 Performance of a new screening tool for identifying medical students whose distress places them at risk for suicide or dropping out of school

Dyrbye*, Szydlo, Schwartz, Downing, Sloan, Shanafelt (Mayo Clinic College of Medicine, 200 First Street SW, Rochester, MN 55905, United States)

Introduction: Psychological distress is common among medical students. Students with the greatest degree of distress are at highest risk for developing suicidal thoughts or seriously considering dropping out of medical school. Few students seek help of their own initiative and, for many, distress goes unrecognized and untreated. Expanding class sizes, use of multiple campuses, and the lack of practical screening tool magnify the challenge of identifying students whose degree of distress is placing them at risk for potentially serious consequences. It has been difficult to identify students whose degree of distress places them at risk for serious personal and professional consequences as existing instruments to assess distress are long, cumbersome to analyze, and typically measure only 1 domain of distress. In this study we evaluate the performance of a new screening instrument, the Mayo Well-Being Index(MWBI), developed to assess medical student distress across a variety of domains and identify medical students in severe distress.

Methods: The methods used to develop the MWBI have been previously reported.1 All medical students at 7 U.S. medical schools were invited to answer the MWBI items along with questions about suicidal ideation and thoughts of dropping out. Students were defined as being in severe distress if they endorsed either suicidal ideation or having serious thoughts of dropping out of medical school. This combined outcome was selected as the primary dependent variable for evaluating the MWBI as our prior research has found both these outcomes are strongly correlated with severity of medical student distress.2,3 The diagnostic efficacy of the MBWI was assessed by calculating the sensitivity, specificity, likelihood ratio, and probability.

Results: Of the 4287 medical students surveyed, 2248 students responded (response rate = 52.4%). 18 of the responding students failed to answer the suicidal ideation or drop out questions and were excluded, yielding 2230 students for analysis. 414 (18.6%) students had severe distress (range by medical school site 13.8% to 26.4%). Students with severe

distress were more likely to endorse each of the seven MWBI items than students not in severe distress(all p< 0.0001). The table shows the sensitivity and specificity of the MWBI for detecting students in severe distress. Likelihood ratios for severe distress increased from 1 to 26 with more positive responses to index items.

The threshold score provides a way to estimate the risk of a group of students scoring at or above a score (e.g. score is ≥2, ≥3, etc.) being in severe distress. If the prevalence of severe distress is 18% (i.e. pre-test probability) then students with scores ≥4 would have a 39% post-test probability of being in severe distress; if the prevalence of severe distress is is 14% (the lowest prevalence in our sample of schools) students with scores ≥4 would have a 32% post-test probability of being in severe distress.

MBWI score	Sensitivity	Specificity	Probability of severe distress*
≥0 points	100.00	0.00	18.00
≥1 points	97.83	26.49	22.60
≥2 points	90.58	45.76	26.82
≥3 points	81.88	61.45	31.76
≥4 points	68.36	76.38	38.82
≥5 points	41.55	88.22	43.59
≥6 points	14.98	97.80	59.78
≥7 points	2.90	99.89	85.28

** post-test probability of severe distress given the pre-test probability of 18%.

Discussion and conclusion: The MWBI when used as a screening device could help medical schools identify students whose degree of distress places them at increased risk of serious adverse consequences.

References:

1. Dyrbye LN, Shanafelt TD, Downing S, Sloan J. "A Distress Index for Medical Students: Developments and Findings from a Content Validation Study" Oral presentation, 2008 BMA-AMA-CMA International Conference on Doctors' Health: Doctors' Health Matters - Finding the Balance, London, 19 November 2008
2. Dyrbye LN, Thomas MR, Massie FS, et al. Burnout and Suicidal Ideation among US Medical Students. Ann Intern Med 2008;149:334.
3. Dyrbye LN, Thomas MR, Power DV, et al. Burnout and Serious Thoughts of Dropping Out of Medical School: A Multi-institutional Study. Acad Med In Press, 2009.

2D3 The relation between medical students' stress, self-regulation and reflection

Mirjam van Lohuizen*, Kirsti Lonka, Jan Kuks, Jan Borleffs, Janke Cohen-Schotanus (University of Groningen and University Medical Center Groningen, A. Deusinglaan 1, Groningen 9713AV, Netherlands)

Introduction: Stress and burn-out are major problems in healthcare. Apart from the individual suffering from such a condition, stress and burn-out affect (lifelong) learning, professionalism and even patient safety. The root of stress and burn-out may lie as early as in undergraduate medical education. Earlier studies have shown that good self-regulation and good reflection can enhance learning. There are indications that self-regulation and reflection also affect the stress levels students experience, but so far, empirical evidence is lacking.1 We tested the hypothesis that, conceptually, stress is negatively related to self-regulation and reflection in both a Scandinavian and a Dutch study, using different instruments in each setting.

Methods: The Scandinavian students (n = 1017) filled in the MED NORD questionnaire2, which contains separate scales for stress, self-regulation and reflection. The Dutch students' (n = 144) levels of stress and reflection were assessed using the GHQ-12 and the Groningen Reflection Ability Scale (GRAS) respectively. The Surface-disorganised scale of the Approaches to Learning at Work Questionnaire (ALWQ) was applied to assess self-regulation. In both studies, stepwise multiple regression was used with stress as the dependent variable. In step 1 reflection was the independent variable and in step 2 self-regulation was added as independent variable.

Results: After checking for outliers and influential cases, 1010 students remained in the Scandinavian study and 133 students in the Dutch study. Stress was negatively related to reflection (Scandinavian R2=0.005, βreflection=-0.07, t=-2.27, p<0.05; Dutch R2=0.049, βreflection=-0.22, t=-2.60, p<0.05). Adding self-regulation in the second step significantly improved the model (Scandinavian R2change=0.137, p< 0.001; Dutch R2change=0.051, p<0.01). In the step 2 model, reflection was no longer significantly related to stress while self-regulation was negatively related (Scandinavian βreflection=-0.01, t=-0.45, p=0.652; βself-regulation =-0.375, t=-12.70, p<0.001; Dutch R2=0.101, βreflection= -0.11, t=-1.23, p=0.22; βself-regulation=-0.251, t=-2.72, p<0.01).

Discussion and conclusion: Stress proved to be negatively related to self-regulation and reflection even when different questionnaires are used to measure these three concepts. Literature indicated that reflection and self-regulation might influence stress in medical students.1 The similarities between our Scandinavian and Dutch findings provide some of the first empirical support for this suggestion, though the relations are not independent. These findings make it seem likely that interventions aimed at increasing self-regulation or reflection could also prevent some of the adverse effects of stress.

References:

1. McManus IC, Keeling A, Paice E. (2004). Stress, burnout and doctors' attitudes to work are determined by personality and learning style: a twelve year longitudinal study of UK medical graduates. BMC Medicine Aug 18;2:29.
2. Lonka K, Sharafi P, Karlgren K, Masiello I, Nieminen J, Birgegård G, Josephson A. (2008). MED NORD – A tool for measuring medical students' well-being and study orientations. Medical Teacher 30(1):72–79.

2D4 The effects of stress on the clinical performance of residents in simulated trauma scenarios

Adrian Harvey, Glen Bandiera, Avery B Nathens, Vicki R LeBlanc* (University of Toronto / St Michael's Hospital, 200 Elizabeth Street, 1ES-565, Toronto M5G 2C4, Canada)

Introduction: The effects of stress on performance in acute clinical situations are poorly understood. The goals of this study were to 1) examine the effects of stressful scenarios on the performance of residents in simulated trauma resuscitations; and to 2) determine whether cognitive appraisals1 (subjective assessment of perceived demands and resources) are associated with stress responses and performance impairments during high acuity events.

Methods: Thirteen Emergency Medicine and General Surgery residents were evaluated in high (HS) and low (LS) stress simulated trauma resuscitation scenarios. Each scenario lasted 20 minutes and was run using a Laerdal SimManÒ placed in a realistic trauma bay. A registered nurse and respiratory therapist were present to aid in the resuscitation. Scenarios were matched for difficulty. The pattern of injury in both was similar (closed head injury, rib fractures with pneumothorax, femur fracture, hypotension from splenic laceration), as were the appropriate management steps. Stressors in the HS included negative emotional content (young victim who was 15 weeks pregnant; minor discord between team members), social evaluative stress (presence of a distraught paramedic {victim's boss} who constantly questioned the team's performance) and noise (increased volume of monitors/alarms). Subjective (cognitive appraisals, State Trait Anxiety Inventory [STAI]) and physiological (salivary cortisol) measures of stress were collected at baseline and in response to each scenario. Performance was assessed with global ratings & checklist scores of clinical performance, and the Anaesthesia Non-Technical Skills tool (ANTS). Post scenario recall was assessed by completing a standardized trauma history form.

Results: Repeated-measures ANOVAs revealed that post scenario STAI scores, cognitive appraisals and cortisol levels were higher in the HS scenario compared to the LS scenario (p<.05). Similarly, checklist scores and post-scenario recall were significantly lower in the HS scenario compared to the LS scenario (p<.05). Cognitive appraisals were positively correlated with cortisol levels (r=.59, p<.05 {Pearson coefficients}), and negatively correlated with performance in global ratings (r=-.35, p<.05), checklist evaluations (r=-.41, p<.05) and post-scenario recall (r=-.71, p<.05).

Discussion and conclusion: In high acuity events, trainees' cognitive appraisals play a significant role in stress and performance responses to stress: the more a situation is perceived as a threat (perceived demands exceed perceived resources), the greater the stress responses and performance impairments. Therefore, training for acute events that extends, beyond the skills and knowledge required during such events, to include training in coping with acute stressors may further enhance performance and patient safety.

References:

1. Kemeny ME, (2003). The psychobiology of stress. Current Directions in Psychological Science, 12(4), 124-129.

2E SHORT COMMUNICATIONS: Assessment: Written

2E1 Use of an question-specific algorithm decreases variability in examiner cohorts in written assessment

Kelly E, Spooner M*, Cunningham A, Branagan P, Akasheh N, Meagher F, Gunaratnam C, McElvaney NG (Department of Medicine, Royal College of Surgeons in Ireland, Education and Research Centre, Beaumont Hospital , Beaumont Road, Dublin 9, Ireland)

Background: We evaluated a question-specific algorithm in the correction of short-note questions (SNQs) and compared variability in marking between essay type questions (EQ) and SNQs.

Summary of work: 190 students were assessed. The EQ was corrected by 2 specialists (consultants in that area) and 2 non-specialists. A model answer was provided. Each of the nine SNQs was divided between 2 examiners – 1 specialist, 1 non-specialist. A question-specific algorithm was supplied for each SNQ. Examiners rated the usefulness of the marking schemes using a 5-point Likert scale.

Summary of results: In the EQ, specialists gave a higher grade (54.3+/- 0.9) versus non-specialists (51.5+/- 0.7, p=0.01). There was no difference between specialists' and non-specialists' grades in SNQs (54.5+/-0.3 versus 55.8+/-0.3 respectively. 60% of non-specialists described the algorithm as "useful" or "excellent" versus 30% of specialists. 55% of specialists described the EQ model answer as "better" than previous years versus 68% of non-specialists).

Conclusions: We show significant differences between specialist and non-specialist examiners in the correction of EQ but no difference in SNQs, for which question-specific algorithms were provided. The difference may have been due to the contrasting attitudes and thus application of the marking schemes provided.

Take-home messages: Use of a question-specific algorithm decreases variability in grades awarded by distinct examiner cohorts.

2E2 Learning outcomes assesment through Open Book Exams

Claudio Lermanda* (Universidad Católica de la Santísima Concepción, Conde de la Conquista 264, Puerto Domínguez, Alonso de Ribera 2850, Talcahuano 4275585, Chile)

Background: Achievement of quality standards in Medical Education is not easy to assess. Critical thinking and integration of knowledge are issues particularly difficult to evaluate. Open Book Exams (OBE) have been considered as useful tools for this purpose.

Summary of work: A 48 medical students group was divided in two halves in 2008. A written test based on questions to solve sequentially a clinical case was applied twice a year. Control group and study group performed normal test and OBE test respectively. At the end of the year marks for both were compared. An inventory designed to measure critical thinking ability was also applied (TACTT).

Summary of results: Surprisingly, a minority of students used resources or references in both OBE. Besides, no statistical significance was found on measuring critical thinking before - after test. Marks improved, but there was no clear correlation with OBE users.

Conclusions: OBE may be used to assess critical thinking and learning outcomes for PBL methodology. OBE should not be used as the only tool for integrative learning outcome assesment. It must be part of a wider set of evaluation tools.

Take-home messages: Wider research and larger samples must be used when designing a study like this. OBE is useful to assess learning outcomes and critical thinking, but exams must be carefully prepared and always supported by other evaluation tools.

2E3 Using modern measurement theory to assess the quality of Extended Matching Questions (EMQs) examinations

Matt Homer*, Godfrey Pell, Bipin Bhakta, Mike Horton, Jonathan Darling, Alan Tennant (University of Leeds, Medical Education Unit, School of Medicine, University of Leeds, Leeds LS9 2JT, United Kingdom)

Background: EMQs are widely used in medical education, and such high stakes tests must be both reliable and valid. Modern psychometric theory offers a comprehensive approach to evaluating these key characteristics.

Summary of work: Data from a 240 item EMQ exam of 267 4th year undergraduate medical students across five specialities were fitted to the Rasch measurement model. The test was examined to ensure that: all items measured the same construct and provided an appropriate range of difficulties; that distractors worked appropriately; and that there was an appropriate focus of items around the passmark (set separately by an adapted Ebel method).

Summary of results: Initially, there was a degree of misfit to the Rasch model but after adjusting for interdependency amongst some items, data were found to fit (Chi-square=45.4; df=36; p=0.14; reliability=0.86). The items were found to measure the same construct, have a good range of difficulty, and appropriate focus around the passmark. However, many items failed to have meaningful distractors.

Conclusions: The data from the EMQ exam satisfied Rasch model requirements, including unidimensionality. The exam was well targeted, but some items lacked useful distractors.

Take-home messages: Rasch analysis allows examiners to investigate the psychometric characteristics and targeting of their tests, and to identify potential areas for improvement.

2E4 A Simplified MCQs interpretation guide for faculty: a Pakistani School's experience

Mobeen Iqbal*, Sadia Akram, Sabir Tabassum, Syed Alamdar Shah (Shifa College of Medicine, Pitrus Bukhari Road, H-8/4, Islamabad 0000, Pakistan)

Background: MCQs analysis is an important step in quality assurance and student learning. Most of the faculty members are not aware of the processes involved in analysis and hence unable to judge the quality of MCQs.

Summary of work: We introduced an interpretive report and a narrative summary based on analysis of MCQs assessments in a simplified format. These reports were subsequently discussed in formal faculty forums thus refining future assessments and improving student learning. We also conducted a survey looking at the response of the faculty members to these presentations.

Summary of results: Ten assessment reports have been generated so far. The reports comprised of distribution curve & spread of scores, reliability, discrimination (DI) and difficulty (P) indices. MCQs were reported as easy (P>0.70) and hard (P<0.30). MCQs with DI<0.20 were also reported with subcategories of easy and hard based. A narrative summary of these measures suggested explanations and possible remedial measures for coordinators. The faculty members appreciated the reports and thought that these will be helpful in teaching/learning of students.

Conclusions: The interpretation report for MCQs was considered useful and was thought to be helpful in identifying knowledge gaps and refining MCQs structure.

Take-home messages: MCQs analysis can be helpful in quality assurance and assisting faculty members in teaching and students' learning.

2E5 Testing the predictive validity of the students continuous assessment form used at the Aga Khan University

Hasnain Zafar*, Shazia Sadaf, Sadaf Khan (Aga Khan University, Department of Surgery, Stadium Road, PO Box 3500, Karachi 74800, Pakistan)

Background: Students' performance during final year clerkship at the Aga Khan University (AKU) in the disciplines of Medicine, Surgery and Family Medicine is observed and scored on the SCA against a descriptive behavioral anchor rating scale.

Summary of work: The objective of this study was to determine the predictive validity of the Students Continuous Assessment (SCA) form used in final year undergraduate clerkships at the Aga Khan University. Predictive validity was assessed by correlating SCA scores with the End of Clerkship Clinical Examination (ECCE) and the Final Certifying Written Examination (FCWE) results of all the students of the academic year 2007 – 2008 using correlation matrix and the significance of the difference between correlations was calculated using Olkins Z score.

Summary of results: Scores of 82 students were reviewed and analyzed. Analysis of the scores showed good correlation between the overall SCA marks with the ECCE and the FCWE marks. Further analysis of the SCA form showed that the scores obtained on the knowledge component of the form correlated significantly well with the FCWE scores.

Conclusions: The SCA form demonstrates considerable predictive validity in predicting an overall impression of the students' performance at the written examination. This can be further enhanced by effective discrimination between the low and the poor performers on the SCA through the "Frame of Reference Training" for the assessors.

2F SHORT COMMUNICATIONS: Curriculum: Community-based

2F1 Evaluating the impact of distributed medical education on physicians in an underserved region

Neil Hanlon, Greg Halseth, David Snadden, Joanna Bates*, Chris Lovato (University of British Columbia, Rm 11209, Diamond Health Care Centre, 2775 Laurel St, Vancouver V5Z 1M9, Canada)

Background: Evaluations of undergraduate medical education programs in underserved areas have focused on academic outcomes and contribution to physician workforce, and have demonstrated local recruitment of program graduates. We asked: what is the impact on physicians in a medically underserved region of a medical education program prior to this anticipated recruitment?

Summary of work: We carried out the study in northern British Columbia, where an undergraduate MD program was implemented in 2004. We used purposeful sampling to recruit 25 local physicians to the study, both specialists and general practitioners. We conducted individual semi-structured interviews which were analyzed using qualitative thematic coding techniques.

Summary of results: The MD undergraduate program implementation contributed to the recruitment and the retention of physicians to the community, and led to improvements in relations with the local hospital, the health authority, and provincial government. Participants noted more opportunities for professional interaction and professional development, and changes in the physician "sense of community".

Conclusions: Overall, involvement in the program was seen as beneficial in terms of job satisfaction, an enhanced sense of connectedness with the profession, and intellectual stimulation, but these benefits were tempered with concerns about added workload stresses.

Take-home messages: Distributed medical education programs can affect physician recruitment and retention positively early in implementation.

2F2 Implementing longitudinal community-based health education using a sustainable change model

Farmer EA*, Hudson JN, Smith BR (University of Wollongong, Graduate School of Medicine Northfields Avenue, Wollongong NSW 2522, Australia)

Background: The University of Wollongong Graduate School of Medicine provides a 4 year graduate entry medical programme aimed at producing competent graduates with a vocation to serve in rural regional and remote Australia. This innovative programme includes a longitudinal integrated clinical placement for a full academic year in the third phase of the course. All students will live, learn and work in a rural regional or remote community and engage with all health services including primary care, hospitals and extended services. This initiative aims to extend the concept of community based health education and continuity of care as a core curriculum process.

Summary of work: This paper develops a model originally described by Roberto et al. (2004) in a business context for planning lasting change in medical education. The model, describing 4 core processes and enabling conditions for sustainable change, has been applied to the context of community based medical education.

Conclusions: The model has proved useful in designing and implementing community based medical education in rural and regional Australia.

Take-home messages: Change must be sustainable. Change management models are useful in designing, implementing and sustaining innovations in medical education, and may prove useful in extending thinking.

2F3 Social accountability through Distributed Community Engaged Learning: Canada's Northern Ontario School of Medicine

Roger Strasser*, Joel Lanphear (Northern Ontario School of Medicine, 935 Ramsey Lake Road, Sudbury P3E 6J7, Canada)

Background: Recognizing that medical graduates who have grown up in rural areas are more likely to practice in the rural setting, the Government of Ontario, Canada established a new medical school with a social accountability mandate to contribute to improving the health of the people and communities of Northern Ontario.

Summary of work: The Northern Ontario School of Medicine (NOSM) actively recruits students who come from Northern Ontario or similar social and cultural backgrounds. The holistic cohesive curriculum is grounded in Northern Ontario and relies heavily on electronic communications to support Distributed Community Engaged Learning. In the classroom and in clinical settings, students explore cases from the perspective of doctors in Northern Ontario.

Summary of results: The first entering class of 56 medical students began their studies in September 2005 and graduated in May/June 2009. 80–90% of each class come from Northern Ontario, and has a mean grade point average (GPA) of approximately 3.7 on a four-point scale, comparable with other Canadian medical schools.

Conclusions: NOSM graduates are skilled physicians who may undertake postgraduate training anywhere, but have a special affinity for and comfort with pursuing their medical careers in Northern Ontario.

Take-home messages: NOSM is a successful distributed community based medical school.

2F4 Engaging new faculty in a distant community

John Steeves*, Wendy Stewart, Tim Fedak (Dalhousie University, 400 University Avenue, Saint John, New Brunswick E2L 4L2, Canada)

Background: Dalhousie University, Canada is distributing its undergraduate medical program effective September 2010. Implementing the curriculum requires an understanding of our resource pool, as faculty will be drawn from multiple academic settings, geographical sites and health professions.

Summary of work: A questionnaire was designed to identify individuals, their areas of interest in curriculum, gaps in knowledge and barriers to participation. The culture of the target

community created special challenges for survey structure. We identified communication barriers and ethical issues in information acquisition and use.

Summary of results: Lack of teaching skills in family physicians is a barrier to participation. Useful characteristics of our future teaching community were obtained which will guide our faculty development programming and ability to communicate.

Conclusions: In building teaching capacity, we need to identify, engage and develop new faculty. An effective communication structure is needed that crosses multiple professions, geographical sites and administrations. There are cost effective electronic survey methods which can be formatted to provide valuable planning information for faculty development.

Take-home messages: Effectively surveying potential new faculty is challenging but worth the effort for curriculum planning and faculty development in a distance program.

2F5 Using logging to facilitate rural learning and teaching

Moira AL Maley*, Kirsten Auret, Denese E Playford (University of Western Australia - Rural Clinical School (Albany), 48 Frederick St, Albany, Perth 6330, Australia)

Background: A "designed to fit" personal, searchable, web database resource (eLog) for case logging was used by multiple small groups of fith year medical students embedded in rural/remote primary care settings for the entire academic year. A prescribed minimum requirement for case logging was incorporated into the assessment matrix applied to this case-based, integrated, clinical curriculum.

Summary of work: The learning styles and case logging profiles of two consecutive cohorts of students (n=129) in the Rural Clinical School of Western Australia were collated and compared in the context of their learning environment including teachers, previous studies and local clinical case demographics.

Summary of results: Although the students were diverse in their Kolb learning style attributions, convergent thinkers and divergent thinkers were predominant. Generally student logging profiles were not associated with a particular learning style or preference although the way in which their teachers used log-based discussions formatively could facilitate learning.

Conclusions: An appropriately designed and implemented logging tool can improve the efficiency of case based learning in a distributed clinical context.

Take-home messages: Using logging to improve learning outcomes in a case based learning environment requires * teacher "buy in"; * alignment of clinical context / curriculum design / teaching philosophy; * systemisation including incorporation into the assessment matrix

2F6 Putting the caring back into healthcare: examining the impact of a civic engagement pedagogy

Margaret McGrath*, Ruth McMenamin* (National University of Ireland, Galway, Áras Moyola, University Road, Galway, Ireland)

Background: In 2005/2006 we adopted service learning (SL)in order to integrate a civic engagement dimension into undergraduate healthcare curricula. Preliminary evaluations of our work (Mc Grath & McMenamin 2008) indicate positive impacts consistent with previous research (Eyler & Giles 1999). However there is limited information on the impacts of SL in healthcare education. This paper describes an exploration of the impacts of SL on all stakeholders in an Irish context.

Summary of work: Interviews and focus groups were used to explore the impacts of SL from the perspective of key stakeholders - students (n=24), academic staff (n=8) community partners (n=10).Topic guides were based on a systematic review of the literature.

Summary of results: Findings indicate that SL impacted students in key areas including professional and personal skill development; linking theory to practice; increased understanding of societal attitudes towards disability. Interestingly participants described a limited impact on sense of civic responsibility. The discourse of SL and civic engagement does not appear to readily translate to an Irish context.

Conclusions: Significant cultural differences in approaches to both service and education appear to influence the impact of SL. Further research is needed in a European context.

Take-home messages: SL provides opportunities to enhance professional and personal skills; however the pedagogy is not easily transposed to an Irish context.

2G SHORT COMMUNICATIONS: Research in medical education

2G1 Small educational research grants programs increase productivity and collaboration: the Association of American Medical Colleges (AAMC) Central Group on Educational Affairs (CGEA) collaborative grants program

Nehad El-Sawi[1]*, Larry Gruppen[2]*([1]Kansas City University of Medicine and Biosciences, 1750 Independence Avenue, Kansas City, Missouri 64106-1453, United States; [2]Department of Medical Education, University of Michigan Medical School, Ann Arbor, Michigan, United States)

Background: CGEA is a regional organization of 37 medical schools. The purpose of CGEA is to provide scholarly forum and facilitate communication among members. This study evaluates the impact of small educational grants program on research collaboration and productivity.

Summary of work: CGEA sponsors a small grants program for the purpose of promoting collaboration. The effectiveness of such programs has relatively little empirical evidence. We conducted interviews with applicants and compared productivity of grant awardees to those who did not receive the grants.

Summary of results: We completed structured interviews for 14 funded and unfunded applicants. The number of scholarly products for the funded group averaged 6.6 and for those of the unfunded group who implemented the project despite the lack of funding, the average was 2.7 products. The percentage of collaborative projects among multiple institutions within the region was 71% for the funded group and 16% for the unfunded group.

Conclusions: The amount of funding was less important to the success of the project than was the commitment to the collaboration that the funding entailed and legitimized.

Take-home messages: Small grants programs appear to have a beneficial effect on research productivity and the development and maintenance of research collaborations.

2G2 Getting the words right: an international code of ethics for medical education research?

Robert V Carlson*, Helen S Cameron, Kenneth M Boyd (Medical Teaching Organisation, University of Edinburgh, Chancellor's Building, 49 Little France Crescent, Edinburgh EH16 4SB, United Kingdom)

Background: The Declaration of Helsinki (DoH) is the World Medical Association's (WMA) statement of ethical guidelines for medical research. The DoH specifically focuses on medical research not on education research. Indeed, there is no international equivalent in generic education research or specific to medical education research. The WMA's 2006 "Statement on Medical Education" doesn't directly mention research. National statements, generic to all education research, have been developed in some countries including the UK and USA. This raises the question of where researchers should primarily look for guidance on questions specific to medical education research; to ethical guidance on medical research, to guidance on generic education research or a mixture. Yet there is peril in simply mixing both without serious and detailed ethical analysis of the underlying principles. Preliminary discussion of these issues in a UK context indicated broad support for guidelines specific to research in medical education. Such research often involves what we term a "complex triad of vulnerabilities" between researcher/teacher, student and patient. In this paper we explore the implications of this triad further and further explore ways in which an international ethical code in medical education research could be taken forward.

2G3 Content analysis of the Journal of Veterinary Medical Education: 1974-2004

Lynne E Olson* (The Ohio State University, 350 VMAB, 1900 Coffey Road, Columbus 43210, United States)

Background: A content analysis of the first 31 years of the Journal of Veterinary Medical Education was performed to discern trends in article characteristics, topics, and authorship.

Summary of work: A random sample of articles, stratified by year, was generated. Twenty-five percent of the journal articles published in each year were selected for review (n=168).

Summary of results: Ninety-six percent of the articles were submitted by authors with university affiliations, most of whom were veterinarians affiliated with US institutions. Collaborations between authors at different universities or between university and non-university affiliated authors became more common after 1990, but represented only 25% of the sample. Only three articles reported approval by an ethics board. Most, but not all, included references. There was a trend by decade toward a greater number of journal articles per year, longer articles and more authors per article, although the modal value for authors/article remained at one. Articles categorized as "program evaluation" were concentrated in the third decade. Articles dealing with professional issues such as the use of animals in teaching, gender bias, and diversity were concentrated in the second decade.

Conclusions: The content and form of publications in the only journal dedicated to publishing manuscripts focusing on veterinary medical education demonstrated some trends, perhaps reflecting an increased focus on the scholarship of teaching.

Take-home messages: The results used content analysis to provide a snapshot of articles in the only journal dedicated to publishing manuscripts focusing on veterinary medical education.

2G4 What can theories of adult development offer medical education?

John F Mahoney*, Eliza Beth Littleton, Steven L Kanter (University of Pittsburgh School of Medicine, M-240 Scaife Hall, 3550 Terrace Street, Pittsburgh, Pennsylvania 15015, United States)

Background: To generate new perspectives and questions that could inform medical education research, curriculum development, and learner support, we explored theories in developmental psychology that predict intellectual, social, and emotional transitions during early adulthood (i.e., the time of life of the typical medical student).

Summary of work: We reviewed major theorists' work in adult developmental psychology with a focus on "post-formal operational" thinking and "wisdom." We also examined medical education articles, particularly on final-year education, which discussed concepts related to post-formal thought, e.g., tolerance for ambiguity. We synthesized this knowledge to yield new questions for medical education research and new approaches to curriculum development and learner support.

Summary of results: We discovered several psychological concepts with the potential to extend and deepen our understanding of how medical students mature intellectually and emotionally. Some deal with the ability to manage uncertainty, reframe difficult problems, think rigorously about paradoxes, and recognize one's own emotions and personal choices in decision-making.

Conclusions: Current theory in adult development psychology offers new insight into defining intellectual and emotional achievement in medical education, and nurturing such maturation in students.

Take-home messages: Medical education can benefit from the richer, more predictive theories of developmental psychology of early adulthood.

2G5 "Lean" medical education

Pamela Mazzocato*, Carl Savage* (Medical Management Centre, Karolinska Institutet, Berzelius vag 3, Stockholm 171 77, Sweden)

Background: Lean thinking, also known as the Toyota Production System, has gained popularity in health care as a way to remove waste and better meet patient needs. Lean offers a philosophy, tools, and methods for how to get work done, create value, reduce waste, and

approach improvement. Medical education also faces time and resource constraints. Lean might offer guidance for medical educators and administrators as they manage change and improvement to question what adds value for students and to remove "waste" from the educational process.

Summary of work: A conceptual analysis of the application of lean thinking to medical education.

Summary of results: Just as with other knowledge intensive industries, lean thinking can offer a way to manage the complexity inherent to medical education. Some of the tools/methods can be directly applied, some not at all, and others require some creativity. Most unique is the overall focus on defining value that can differentiate lean thinking from other quality improvement methods that have been applied to medical education.

Conclusions: Given the potential benefits, it is worth testing and evaluating how lean thinking can be put into practice to improve the process of educating medical professionals.

Take-home messages: Lean thinking can help align and make clear the medical education process.

2H SHORT COMMUNICATIONS: e-Learning and postgraduate education

2H1 Computer-supported collaborative learning in research training for residents

Jakob Ousager* (University of Southern Denmark, Winsloewparken 19/3, Odense DK5000, Denmark)

Background: Research training/introduction to EBM is compulsory for Danish residents. Residents must conduct a small research project and go through a course programme focussing on applied research methodology.

Summary of work: We developed an IT-supported course in research training for residents, mixing traditional face-to-face teaching with computer-supported collaborative learning. The course focuses on the ability to formulate research questions, retrieve information, and read and evaluate scientific papers. First, participants are introduced to the course and to each other online. Then they work with the course's main topics in a one-day traditional face-to-face lecture and workshop setting. Subsequently they work online individually and in groups for a period of 9 weeks in all.

Summary of results: From January 2007 till now more than 400 residents have participated in the course. Initially, many course participants express curiosity and/or reluctancy towards the course concept. However, the vast majority of the course participants are very active in the online periods and give the course very positive evaluations.

Conclusions: The course concept seems well suited for scaffolding participants' active acquisition of knowledge and competencies in applied research methodology.

Take-home messages: The use of computer-supported collaborative learning should be considered as an alternative and/or supplement to traditional course designs in residency training.

2H2 The knowledge, attitude and practice of e-learning by surgical staff for surgical education in Khartoum

Ahmed Hassan Fahal* (Faculty of Medicine, University of Khartoum, Khartoum 11111, Sudan)

Background: E-Learning is the delivery of a learning, training or educational program by electronic means. It involves the use of a computer or electronic device in some way to provide various training, educational and learning material.

Summary of work: This prospective study included 120 surgeons and surgeons in training. It aimed at determining knowledge, attitude & practice of e-learning by surgical staff for surgical wducation in Khartoum. The different components of e-learning were tested. That included the uses of the internet for literature search, teaching, training, assessment, education and in surgical practice in addition to the use of web 2.0, games and simulation for these activities. The use of e-learning for the various continuing professional development activities was determined.

Summary of results: The surgical staff less than 50 years of age has good knowledge and more frequently use the various e-learning activities when compared to staff more than 50 years old and that was statistically significant (P<.05). Some components such as web 2.0, gaming and simulation are not commonly known nor practiced.

Conclusions: The spread of e-learning culture among surgical staff, provision of facilities and training support for them are needed to improve surgical education.

Take-home messages: As the use of e-learning in surgical education increases, the need for better collaboration and communication among educators is badly needed.

2H3 EUROPED European Paediatric Online

Claude Billeaud*[1], Yves Perel[2], Elie Saliba[3] ([1]European Association for Paediatrics Education (EAPE/AEEP), CHU Pellegrin; [2]CHU Bordeaux France; [3]CHU Tours France; Bordeaux 33000, France)

Background: Why a European e-learning platform on paediatric questions? (1) To contribute to the dissemination of common practices through Europe. (2) To offer through Continuous Medical Education (CME) quality and up to date information versus a profusion of non validated information. (3) To offer a learning opportunity to a maximum number of paediatricians and general practitioners.

Summary of work: Where are we at? We've structured editorial content and organization. We've found the first experts (Nutrition, Leukemia,…). We've set up a sustainable financial model. We've found a publishing contractor SYNERGENCE which has already proven experience in Medical e-learning. Involvement in Europed project: We've designed a first mock up of Europed and showed a real internet site (still in progress).

Summary of results: How to achieve CME requirements: A 3-year paediatric course to meet the CME needs in paediatrics - 6 topics available every 2 months. Each team of teachers will update the question every 6 months for 3 years. Each topic covered uses interactive teaching methods through clinical cases.

Conclusions: Each Pediatrician or GP will receive: An objective evaluation form by a Quiz, a certificate of the time spent in working on-line, and a number of CME credit points. Whatever the country of origin of the expert, each question will be translated and adapted into French, English, Spanish and German.

Take-home messages: It is an ambitious project to disseminate the European teaching thought in front of the American imperialist system not adequate for European CME education.

2H4 Experiences in a resident community of learners established to enhance learning in a distance education program

Obura T,* Parboosingh J, Brant WE, Rees J, Miller F (Aga Khan University Hospital Nairobi, University of Virginia, Radiological Society of North America, P.O. Box 30270, 3rd Parklands Avenue, Nairobi, Nairobi 00100, Kenya)

Background: To determine acceptance and utility of a community of learners (CoL) in post graduate education complemented by E-learning.

Summary of work: A CoL created among 10 Radiology residents at Aga Khan University (Nairobi) met weekly face-to-face, worked through cases posted on an FTP site, used email and Google discussion board to share learning experiences between October 2007 and April 2008. WebExTM Internet conferencing enabled pilot mentor to provide a monthly two-hour interactive teaching session from USA. Content and thematic analyses of reflective logs and exit-interview transcripts were undertaken using qualitative methods. Simple quantitative means were used to interpret interactivity and technology surveys.

Summary of results: CoL sessions contributed to resident learning. Observed behaviours typical of established CoL included self –initiated non-hierarchical facilitation, lateral mentoring, voluntary injection of evidence-based literature into conversations and sharing success stories and challenges. Satisfaction with the WebEx sessions and teaching materials was expressed.

Conclusions: The pilot has provided the research team with a vision for the future of radiology education and particularly in support of efforts in international education.

Take-home messages: Residents accepted collaborative learning in community as a method of enhancing distance education and training of physicians in less developed countries.

2H5 PortalEIR: A social network approach for residents training

José Luis de la Rosa*, Alberto Bautista, Rubén Carreño (IAVANTE Foundation, C/ Maria Curie, 16, 1ª, Parque Tecnológico de Andalucía, Malaga 29590, Spain)

Background: Over 1000 residents start their studies in Andalusia each year. Around 1000 tutors, 200 teachers and over seventy administrative staff are involved. The effort for the management of the training is considerable and it takes time away from physicians to focus on teaching and learning.

Summary of work: The IAVANTE Foundation has developed a web application called PortalEIR with a social network approach to: (1) Give and manage courses in e-training format; (2) Share documentation between all involved professionals; (3) Allow residents and tutors to e-collaborate.

Summary of results: Over 250 courses have been given to residents, teachers and tutors with more than 9,000 students. Over 5,000 residents, 200 teachers and 600 tutors are registered in PortalEIR. Over 5,000 satisfaction surveys have been gathered. Over 20,000 mails have been sent from the application. Over 5,000 SMS have been sent from the application.

Conclusions: PortalEIR has become the reference tool for the training of residents, tutors and teachers in Andalusia.

Take-home messages: Training and its managemement can be supported by social network technology to allow professionals to focus on the Teaching/Learning Process.

2H6 Evaluation of a "Morning Report Blog": Combined website metrics and trainee surveys

Isaac Bogoch*, Todd Lee, Suzanne Bridge, Wayne Gold, Danny Panisko, Rodrigo Cavalcanti*(University of Toronto, 399 Bathurst St, Toronto M5T2S8, Canada)

Background: Medical students and residents attending a daily clinical service case-review round: "Internal Medicine morning report" are exposed to various clinical teaching topics. We aimed to improve this teaching experience by creating a freely accessible blog to reinforce and supplement topics. New blog posts are communicated by email to attendees.

Summary of work: Evaluation of this blog's educational impact combined website visit metrics with an Internet survey of trainees' views on the accessibility, usefulness and clinical applicability of blog content.

Summary of results: Forty-three blog posts received 2486 page hits over three months. Traffic evolved from predominantly local origination initially, to worldwide. Direct traffic averaged 1.95 pageviews and 3.5 minutes per visit. Survey responders (45/77) indicated excellent blog accessibility (>90%), usefulness in expanding knowledge (67%) and applicability to patient-care (60%). Forty percent of respondents provided examples of blog content applied to clinical management (Kirkpatrick level 3).

Conclusions: Use and accessibility of a morning report blog can be evaluated by combining web metrics and trainee surveys. Additionally, survey items evaluated trainee satisfaction and self-reported transfer of knowledge.

Take-home messages: Blogs can effectively complement case-based discussions in morning report. Combining web metrics with surveys aids the evaluation of a blog's educational impact.

2I SHORT COMMUNICATIONS: Teaching and Learning: Clinical skills training

2I1 The skills laboratory method: an innovative strategy to facilitate clinical skills training of large student groups at the School of Nursing, University of the Western Cape, South Africa

June Jeggels* (University of the Western Cape, Private Bag X17, Modderdam Road, Bellville 7535, South Africa)

Background: The Department of Education embarked on the restructuring of all the Higher Education Institutions (HEI) during 2002. The University of the Western Cape (UWC), School of Nursing was proposed as one of the two enrolling institutions for the training of undergraduate nurses in the Western Cape. We were faced with an increase in student numbers which proved to be particularly challenging in terms of clinical skills development.

Summary of work: The School of Nursing explored various clinical teaching strategies which could be used with large student numbers. Our international HEI partners, i.e. the University of Maastricht and the Hogeschool of Nijmegen, Netherlands, facilitated the training of a core group of UWC staff members in the skills lab method. The role-out, in preparation for implementation in the undergraduate programme, started in 2006 and we presented a reflective seminar of this process at UWC in 2007. The presentation elicited the interest of our colleagues whom we are supporting to establish skills labs at their HEIs. The presentation is therefore aimed at sharing our experiences with a broader audience and to engage with participants from other countries. The skills lab method has also had a positive impact on self-directed clinical skills development in the under-graduate programme.

2I2 Innovation framework for the first immersive Portuguese Medical Simulation Center

Nuno Freitas*, Francisco Matos, José Martins Nunes (Coimbra Biomedical Simulation Center - Coimbra University Hospitals, Hospitais da Universidade de Coimbra, Centro de Simulação Biomédica - Blocos de Celas - Edificio Ortopedia II - R/C, Coimbra 3000-075 Coimbra, Portugal)

Background: Coimbra Biomedical Simulation Center opened on 9 December 2008 and is the first comprehensive and immersive medical simulation center in Portugal. During the 18-month period of preparation, a framework of innovative perspectives and priorities was implemented based upon international experiences and local needs assessment.

Summary of work: The most innovative features concerns the key factors - high fidelity realistic medical simulation; multidisciplinary educational and interdisciplinary research programs; ethics, critical care and team training focus; and social binding funding.

Summary of results: Funding and social contract - no public funding. Civil foundations focusing on health and science issues were asked to compromise with a community-based project and patient safety new educational measures; Educational Program – multidisciplinary approach with 10 thematic groups: obstetrics, trauma, anesthesia, crisis resource management, bioethics, intensive care, pediatrics and neonatal, medical emergencies, undergraduate and prehospital care; Research program – interdisciplinary projects for patient safety initiatives and team performance assessment; 20 undergraduate medical students and 98 medical and nursing professionals completed the Centre activities (3-months) with a high/very high satisfaction rate.

Conclusions: Innovative framework combining ethical patient-centered actions, new focus on medical continuous education and team training and external partnerships can foster healthcare best practices.

Take-home messages: Patient safety binds innovative medical education to community.

2I3 Basic neonatal resuscitation – training, evaluation and retention of skills

Jette Led Soerensen* (Obstetric, Neonatal and Anaesthesia Department and Juliane Marie Centre, Rigshospitalet University Hospital, (Obstetric, Neonatal and Anaesthesia Department and Juliane Marie Centre, Rigshospitalet University Hospital, Rigshospitalet University Hospital, Blegdamsvej 9, Copenhagen DK-2100, Denmark)

Background: Aim was to assess learning and retention in basic neonatal resuscitation before, immediately after and 9-15 months after simulated training.

Summary of work: At the Obstetric Department, Rigshospitalet, Copenhagen, 220 staff members (midwives, auxiliary nurses, doctors and nurses) were eligible for training in neonatal resuscitation. Period 2003-2006.

Conclusions: Data confirmed that staff valued skillstraining and the multiprofessional approach. Management of neonatal resuscitation were considered stressful and unpleasant by the staff before training and the levels of discomfort were significantly less pronounced following training. Self-assessed scores of confidence for the trained skills improved significantly when measured 9-15 months following training. A significant association between self-assessment of confidence in neonatal resuscitation and numbers of correct answers in a written test was revealed. There was no association between many years of work experience and high numbers of correct answers in the test. The need for organisational changes in the department became visible and an algorithm and new equipment for neonatal resuscitation were implemented.

Take-home messages: Staff was capable of self-assessing their own competencies in basic neonatal resuscitation, and this skill was not learned or retained over time. This indicates that basic neonatal resuscitation needs to be currently (within 15 months) trained.

214 OSCE results after voluntary self-training in a simulation laboratory at Granada Medical School

Chung C*, Florido J, González D, Vilchez A, Peinado JM (Obstetrics and Gynecology Department. Granada University, Spain, 7ª Planta. Pabellon de Especialidades, Hospital Universitario San Cecilio. Avda de Madrid s/n. 1, Granada 18012, Spain)

Background: By 2011, it will be mandatory to perform an OSCE-type evaluation before the beginning of the medical specialization period. Despite personal student motivations, professional competency will be assured only if the teacher and the institution provide the necessary tools for repetitive training.

Summary of work: We analyzed if self-training after programmed teaching, in a simulation laboratory specifically conditioned for that goal, has any effect on student OSCE performance and score. From a total number of 223 students who participated in the OSCE evaluation, only 180 students visited the self-training laboratory before the trials. From those, 138 students visited the lab once (76.66%) and 42 self-trained twice (23.33%).

Summary of results: The analysis of the global OSCE results showed that self-trained students obtained higher score than those that only learned in the programmed training sessions with the teacher. The average score was 58.89 and 58.80 points for those who self-trained once or twice, while the students who did not retrain themselves obtained an average score of 50.75 points. Similar results were obtained for clinical skill stations, being significantly lower in the group that did not visit the laboratory (51.26), compared with those who self-trained once (66.67)or more times (67.58).

Conclusions: The self-training of medical competencies in a simulation laboratory improves students' average OSCE performance and score.

215 Increased computer-assisted ophthalmoscopy training with access to peers' performance data

Peter Åsman* (Lund University, Dept of Clinical Sciences in Malmö, Dept of ophthalmology, Malmö University Hospital, Malmö SE- 205 02, Sweden

Background: A skills lab for training of ophthalmoscopic examination utilizes internet software offering feedback on performance at each examination. Feedback could either include (comparative feedback) or exclude (simple feedback) a comparison between the student's attempts and an empirical learning curve for examination time. The amount of training with and without such comparisons was studied.

Summary of work: Ninth semester medical students examined fellow students and received computer-based feedback after each examination. Each student could examine any number of fellow students any number of times and was asked to do so until feeling confident. Students in a control group (N=55) received simple feedback while students in an intervention group (N=59) received comparative feedback.

Summary of results: The mean number of examinations per student was 10.6 in the intervention group and 8.6 in the control group (P=0.031). The mean number of students examined by each student was 6.9 in the intervention group and 5.8 in the control group (P=0.012).

Conclusions: Feedback containing information on the individual student's performance in relation to peers' increased the amount of training without additional efforts from teachers. The method is currently employed at three of the six medical programmes in Sweden.

Take-home messages: Feedback relating individual results to group performance may increase self-directed training.

2I6 Virtual transesophageal echocardiography: An online simulation of a TEE exam

Meineri M*, Vegas A, Corrin M, Tait G, Beattie WS (Toronto General Hospital, University Health network, Department of Anesthesia and Pain Management, 200 Elizabeth Street, EN3-425, Toronto M5G2C4, Canada)

Background: TEE is used as a diagnostic tool by cardiologists and is also a standard imaging tool in the intensive care unit and intra-operatively in cardiac surgery, as it gives surgeons instantaneous feedback during the procedure on the nature of the cardiac defect and the success of the repair. It is performed both by cardiologists and anesthesiologists. A significant challenge in learning TEE is to obtain the 20 standard views. Few weeks of daily practice are usually required to achieve acceptable level of confidence.

Summary of work: We created a web based module where the user can move a TEE probe in the space and change its scanning angle to display cuts of a human heart using real TEE clips.

Summary of results: Five fully trained echocardiographers (three anesthesiologists and two cardiologists) assessed the usability and face and content validity of this application by filling a questionnaire. All of them agreed that it does simulate a real TEE exam, it is user friendly and accurate.

Conclusions: An online virtual TEE tool can simulate a real examination and can potentially decrease the time needed to practice on real patients to learn the basics of TEE.

Take-home messages: On line virtual TEE may allow faster learning of TEE.

2J SHORT COMMUNICATIONS: Teaching and Learning: Providing feedback

2J1 Effect of feedback on students' mastering of communication skills

Baerheim A*, Jacobsen T (Department of Public Health and Primary Health Care, University of Bergen, Box 7800, Bergen N-5020, Norway)

Background: We have newly established a communication laboratory. Medical students in the first clinical semester do history-taking with a simulated patient (SP), and the SP gives feedback to the student. Aim: to evaluate the immediate effect of one training session.

Summary of work: We conducted an RCT: 50% of 90 students were randomized to extra training two weeks after the first one. Main outcome parameter: SPs' scores on student's achievement on 22 specific learning goals (score possibility: 1-5).

Summary of results: At the second training, students scored 10% better on the combined learning goals, compared to the other students (4,52 v. 4,09, P=0,000). Effects on single skills were: clearer transition statements, more summing up, giving room for patient's worries, and better balancing open-ended and close-ended questions, use of pauses, and empathy (10% - 23% increase, P≤0.01).

Conclusions: The effect found immediate after one training session was substantial, but should be followed up to evaluate changes over time.

Take-home messages: Feedback from SPs may have a substantial effect on medical students' immediate acquisition of central communication skills.

2J2 The Global Procedure Skills Evaluation (GSPE): Development of a tool to improve feedback on procedure performance in residency

Melissa Nothnagle*, Roberta Goldman, Shmuel Reis (Brown University Family Medicine Residency, 111 Brewster St, Pawtucket, RI 02860, United States)

Background: Acquisition of procedure skills requires supervised practice with feedback. Direct observation of residents' procedure performance provides an opportunity for feedback to promote learning. However feedback provided is often of poor quality, and validated instruments to improve feedback are lacking.

Summary of work: Qualitative data from field notes, interviews, and focus groups were subjected to a modified framework analysis to develop and revise an instrument for procedure skills assessment. The development process incorporated research evidence and expert input to ensure validity of the instrument.

Summary of results: The Global Procedure Skills Evaluation (GPSE) was drafted based on field notes and literature on procedure skills training. Family medicine residents and teachers described the current state of feedback and recommended revisions of the instrument. The final GPSE includes a self-assessment prompt, five performance criteria, and a rating scale that quantifies scaffolding by the teacher.

Conclusions: The GPSE is designed to improve procedure training by improving the quality of feedback and promoting learner self-assessment and reflection. The unique rating scale may provide an objective measure of safety and readiness for independent performance.

Take-home messages: The GPSE is designed to improve feedback based on direct observation of procedure performance.

2J3 Mentoring consultation skills through a structured assessment – students' experience and the impact it had on their learning

Marietjie van Rooyen*, Jannie Hugo, David Cameron (University of Pretoria, Department of Family Medicine, HW Snyman Building North Room 7-35, PO Box 667, Pretoria 0001, South Africa)

Background: Mastering consultation skills is one of the objectives of the District Health rotation for senior medical students at the University of Pretoria. These skills are critical in primary care where students are exposed to unselected patients in rural and urban communities. Mentoring of these skills starts as part of the orientation program of the rotation. After receiving feedback each student writes an individual educational prescription(IEP). This IEP is used throughout the rotation, encouraging reflection and a cyclical learning process. In the final assessment the IEP is used to guide the feedback discussion after a consultation with a simulated patient.

Summary of work: Correlating videos of the orientation feedback discussions and the final assessment with the IEP, informs faculty on the impact of the process. Focus group discussions with students enables faculty to understand their experience, and their perception of the impact on themselves and their future practice.

Summary of results: Study still in progress. Preliminary results show a correlation between the learning needs identified and the mastering of skills. Student consultation skills improved.

Conclusions: Structured assessment of observed consultations as part of orientation and assessment promote mentoring of these skills and enhances students self-mastery of consultation skills as they focus on anticipated learning activities.

Take-home messages: Doing structured assessment with feedback and identifying learning needs enhances learning during the block.

2J4 Students' opinions of bedside assessment of clinical competencies in an undergraduate medical programme

Pamela Bradley*, Paul Bradley, Chris Ricketts, Lee Coombes (Peninsula College of Medicine and Dentistry, Peninsula Medical School, The Clinical Skills Resource Centre, Research Way, Plymouth PL6 8BU, United Kingdom)

Background: Observation and feedback on performance of history and examination has been lacking in undergraduate medical programmes. Students need support developing

and applying these skills as they transfer from a protected educational to an authentic clinical environment.

Summary of work: Formative assessment of 12 such skills was introduced in Year 3 and repeated summatively in Year 4 of the 5 year programme. These are observed and marked by a clinician at the bedside. A questionnaire survey was used to collect both quantitative and qualitative data reflecting students' opinion of these assessments. We obtained a 95% response rate from the cohort (n=169).

Summary of results: Learning was enhanced by feedback and students worked harder on preparation before summative assessments. Concerns about assessor variability and the quality of some outcomes were expressed. The frequency was acceptable but in Year 4 there was concern that they might interfere with other aspects of learning. Further analysis of both quantitative and qualitative data will be presented.

Conclusions: Bedside assessment of clinical skills with feedback is valued by students. They have some concerns about the quality of some assessments.

Take-home messages: Repeated observation with feedback is feasible, but assessor training and monitoring is vital.

2J5 Academic feedback: the students' story

Smith KJ*, Rhind SM, McCune V (University of Edinburgh, Royal (Dick) School of Veterinary Studies, Easter Bush Veterinary Centre, Roslin, Edinburgh EH25 9RG, United Kingdom)

Background: Academic feedback is widely regarded as an essential part of student learning yet is consistently rated poorly in the National Student Survey across UK veterinary and medical schools. This project was designed to explore the underlying issues by analysing expectations and experiences in students on a 5 year undergraduate and 4 year graduate entry veterinary programme.

Summary of work: Qualitative and quantitative methodology was used to explore new students' expectations and prior experiences of feedback. Experiences were also tracked across one academic year and through sampling the third and final year cohorts.

Summary of results: Both school and graduate entry first year veterinary students expect no less feedback at university than at school. Verbal feedback and specimen answers were seen as the most useful forms of feedback. Students' experiences of the course highlighted themes of not knowing what is expected; feedback timeliness and a perceived need for more guidance. Perceptions of feedback being insufficient were also prevalent in later years.

Conclusions: Students entering vet school have a good understanding of the varied forms of academic feedback and clear ideas about what they expect; these expectations in general are not being met.

Take-home messages: This study confirms a mismatch in student expectations versus experience. Further work is exploring staff perceptions with the aim of developing mechanisms to bridge the expectations/experiences gap.

2J6 Is feedback after workplace-based assessment constructive?

Chris Harrison, Milli Raizada*, Val Wass (University of Manchester, Rusholme Academic Unit, Manchester Medical School, Walmer Street, Manchester M14 5NP, United Kingdom)

Background: Workplace-based assessments provide opportunities to link assessment with feedback. Previous reports demonstrated tutors focussed on numerical grades at the expense of feedback.

Summary of work: All GP tutors of final-year medical students were trained using experiential techniques to assess and give feedback using the mini-CEX and Case-based discussion (CbD). Forms were designed to encourage written feedback Students were graded as 'needs further attention', 'competent' or 'excellent'. 385 students completed each assessment. The quality of feedback was independently coded as constructive (specific suggestions for improvement), positive (positive comments but no suggestions for improvement) and negative (negative comments without suggestions for improvement).

Summary of results: No feedback was provided in 39% of mini-CEX and 44% of CbD. For students rated competent, feedback was constructive in 35% of mini-CEX and 33% of CbD. Negative feedback was rarely given. For the few candidates graded as needing further attention, feedback was constructive in 82% of both mini-CEX and CbD.

Conclusions: Despite receiving training, many tutors failed to give constructive feedback. Tutors seemed content to grade students as competent and not encourage them to aspire towards excellence.

Take-home messages: We need a better understanding of how to develop effective feedback interventions.

2K SHORT COMMUNICATIONS: Postgraduate Education: different approaches to transition

2K1 Preparing doctors for responsibility: change the person or change the place?

Naomi D Quinton, Sue Kilminster, Trudie E Roberts*, Miriam Zukas (University of Leeds, Leeds Institute of Medical Education, Level 7, Worsley Building, Leeds LS2 9NL, United Kingdom)

Background: Doctors make multiple transitions throughout their training and careers which involve performance at new levels of responsibility. Transitions are associated with increased risk for patients, but little is known about the effects of transitions on medical performance. This research asks what happens when doctors transition to new responsibilities, and what helps or hinders those doctors' performance?

Summary of work: We undertook a collective case study involving observations, interviews (FY1 n=8, ST3-7 n=14) and supplementary interviews with healthcare professionals (n=13).

Summary of results: Drawing on all data sources, the interpretative synthesis identified the following findings: Performance is not just individual but very significantly affected by activity, practices and cultures; The environment is not neutral but is fundamental to performance; There are major differences between expectations and observations of doctors' performance; Relationships with other doctors and healthcare professionals are crucial; The more transitions a trainee has made, the less 'space' they are given in new transitions.

Conclusions: Education and training concentrate on preparing the individual doctor - filling them up with knowledge and skills so that they are 'oven ready and self basting'. Our findings demonstrate that organisational practices, activity and cultures are determinants of performance and this has implications for practice.

2K2 Refocusing introduction of newly employed junior doctors

Carsten Hering Nielsen*[1,2], Lisbeth Rune Schultz[1], Claus Möger[3], Peder Charles[1,2] ([1]Aarhus University Hospital, Aarhus Sygehus, HR Dept.; [2]Centre for Medical Education, University of Aarhus; [3]Aarhus University Hospital, Aarhus Sygehus, Dept. of Orthopaedic Surgery, Aarhus DK-8000C, Denmark)

Background: For many years the introduction of junior doctors to Aarhus Hospital has been performed in the same way on the first days of their employment. Despite good preparations and a deliberate content – there were repeatedly indications that it was not effective.

Summary of work: The task was to rethink the setup. Information was gathered on different theoretical perspectives and all the annoying questions were asked: Why we do it, why it is important, what is working, information strategy, our experiences, what we know the residents need, etc. All this information was important to refocus the aims and content of the programme.

Summary of results: We actually knew about the participants' attention and conception of the introduction. The study revealed the dominant assumptions, preconditions and premises from when the present introductory programme was initially designed. This further drew our attention to the organizational variables that either hinder or facilitate use of the information given and thus their effect upon efficiency of the introduction. This knowledge was used to refocus the introduction.

Conclusions: Joint introduction of all new employees is important to understand the multidisciplinary conditions of the hospital. Application of a simple change management

framework and conclude in 12 Tips for introducing junior doctors to the department (submitted for Medical Teacher).

Take-home messages: Timing is crucial when introducing new doctors to the department. What is important is in the eye of the beholder. Take notice of that when planning your introduction – even if it may appear impractical or too banal to an experienced colleague.

2K3 Start Class: intensive introduction programme

Wagter JM*, Stam F, Koning-Prins J, Eckenhausen MAW (Foreest Medical School at the Medical Centre Alkmaar, PO Box 501, Alkmaar 1800 AM, Netherlands)

Background: Since 2007 all residents at the Medical Centre Alkmaar (MCA) start with a two-day introduction programme "Start Class" (SC). Introducing new residents to the clinic, the culture, each other and the hospital protocols rapidly provides them with the necessary tools. After the programme, residents can mainly focus on patient care. This increases patient safety and residents' own safety and work pleasure.

Summary of work: Highlights of the interactive SC-programme: 'Meet the expert': scheduled interviews with hospital experts, in advance residents complete a case related task, BLS (+AED); Hospital Information System and Protocol Finding; Poster presentations: residents teach each on the important issues learned from the experts; workshop "Work in progress": prevention burn-out.

Summary of results: In 2008 a total of 101 residents followed the programme: A complete evaluation was filled out by 77% of the participants, 64% of them was very positive, 34 % was positive.

Conclusions: Residents mark the SC as useful. Providing every resident with the same information, procedures, rules reduces the time-investment in every single resident and forms a new network of colleagues. The SC indirectly contributes to a safer(patient) environment and to prevent burn-out.

Take-home messages: A Start Class is the perfect place to meet, educate and set expectations.

2K4 One week course helps prepare medical students for internship

Laack TA*, Newman JS, Goyal DG, Torsher LC (Mayo Clinic, 200 First Street SW, Rochester, MN 55905, United States)

Background: Internship Boot Camp is an innovative one-week course designed to prepare final-year medical students for the transition from medical school to internship.

Summary of work: 12 students participated in the course in 2007 as an elective in their final year of medical school while 28 did not. All 40 students were anonymously surveyed after graduation regarding what had best prepared them for internship. The questions were designed to be non-leading and the participants were blinded to any affiliation of the survey with the Internship Boot Camp.

Summary of results: The overall response rate for the survey was 80%. Of those responding to the open-ended question regarding aspects of medical school training that best prepared them for internship, 89% (8/9) of course participants listed "Internship Boot Camp." The next highest response ("subinternship") was given by 45% (9/20) of non-participants and 33% (3/9) of participants in the Internship Boot Camp.

Conclusions: Internship Boot Camp helps with the difficult transition from medical student to resident physician.

Take-home messages: Internship Boot Camp is a unique learning environment that is recalled by new residents as the most helpful of all components of medical school education in preparation for internship.

2K5 Labyrinth and the liminal student

Jennifer Willder*, Michael Begg*, David Dewhurst (University of Edinburgh, Learning Technology Section, College of Medicine and Veterinary Medicine, 15 George Square, Edinburgh EH8 9XD, United Kingdom)

Background: The transition period from undergraduate training to postgraduate "foundation" practice is brief – often only a matter of a few days - but its impact is profound. What was previously a well supported, structured learning environment is suddenly a strange and potentially frightening place where critical decision-making skills, authority and professionalism seem suddenly more relevant than all of the knowledge amassed in undergraduate training. Foundation doctors indicate that the undergraduate experience does little to prepare them for the shock of actual practice.

Summary of work: An emerging initiative within the University of Edinburgh's College of Medicine and Veterinary Medicine is to adopt the easy-to-use authoring tools and principals associated with Game Informed Learning to afford collaborative groups of later year undergraduates and foundation doctors the scope to create learning objects for undergraduates.

Conclusions: Using in-house developed instruments such as the branching scenario authoring tool "Labyrinth", these groups draw on their recent experience of this transition period to create learning objects that not only directly address perceived gaps in the range of learning support activities available to undergraduates but also, using the principals of game-informed learning to situate the activities within realistic contexts, and plausible scenarios which offer an indication of what practice will feel like.

Take-home messages: Learning tools to ease the transition between medical student and doctor.

2L SHORT COMMUNICATIONS: Themes: Patient safety

2L1 Barriers to incident reporting by residents

Martowirono K*, Jansma JD, Wagner C, Bijnen AB (Foreest Medical School, Medical Centre Alkmaar, Wilhelminalaan 12, room 054, Alkmaar 1815 JD, Netherlands)

Background: Incident reporting can contribute to a safer health care. Since the rate of reporting by residents is low, it is useful to investigate which barriers exist and what the role of medical education could be at overcoming these barriers.

Summary of work: This study explored the barriers that residents experience to incident reporting and how these can be solved. Three focus groups were organized. In each group 6-8 residents participated. After three focus groups information saturation had been reached.

Summary of results: Twenty-two residents attended the focus groups. Two of the factors hindering adequate incident reporting are not knowing what and how to report. The barriers that influence the intention to report can be divided into factors related to attitude, subjective norm and perceived behavioural control. The solutions that were mentioned aimed mostly at improving the information supply about what and how to report and at improving the reporting system.

Conclusions: Several factors prevent residents from reporting incidents. It is recommended to integrate the subject of incident reporting in residents' education and to adjust the reporting system to the users' needs.

Take-home messages: Incident reporting should be part of residents' education.

2L2 Improving knowledge about patient safety through the implementation of E-Learning

Alien W Riedstra*, Hanny J Maarleveld, Peterhans J van den Broek (Leiden University Medical Center, PO Box 9600, Leiden 2300 RC, Netherlands)

Background: Patient safety has emerged as a hot issue in healthcare worldwide. Quick-scans in the Leiden University Medical Center revealed that behavior regarding basic hygiene falls short of expectations. It was felt important to teach students as well as hospital employees about precautions that must be taken to avoid healthcare-associated infections.

Summary of work: Eight E-Learning modules have been developed on topics like hand hygiene, personal hygiene, accidental blood contact, cleaning & disinfection, personal protective equipment and isolation measures. These lessons have been incorporated in the second year of the medical school curriculum. During a large hospital campaign, also all employees that work with patients or patient materials were encouraged to take these lessons.

Summary of results: About 60% of the target group actually took the E-learning lessons. Knowledge about precautions that should be taken has increased and students as well as employees know their way to the important protocols on patient safety better than before. The participants felt that E-learning was an efficient way to study this topic. The effect on behavior is followed up by repeated quick scans.

Conclusions: E-learning modules can provide proper training, but practice has to be maintained within the departments.

2L3 Factors influencing the safe use of a Computerised Physician medication Order Entry (CPOE) system in the outpatient clinic: opportunities for tailored educational interventions

Feikje van Stiphout*, Edith ter Braak (University Medical Centre Utrecht, Heidelberglaan 100, Huispost G02.228, Utrecht 3584 CX, Netherlands)

Background: Patient safety is the main reason for implementing Computerised Physician medication Order Entry (CPOE) systems. However, the claim of improving safety only holds with appropriate use. We investigated how physicians actually worked with the CPOE aiming to built a construct of factors that influence its safe use.

Summary of work: Setting: university hospital based outpatient clinic of internal medicine. Subjects: five residents, six specialists. Data gathering: semi-structured interviews. Analysis: qualitative, structuring the data on the basis of literature and extending the model.

Summary of results: Data support that physicians had gaps in knowledge and skills of functionalities and sometimes made wrong assumptions. Information about anticipated advantages, mutual agreements and available assistance were not always present. We identified three predominant types of users with varying attitudes, related to different levels of awareness of potential slips and errors: (1) enthusiasts (positive attitude, limited awareness), (2) reasoners (critical with positive attitude, demonstrating awareness) and (3) stragglers (negative attitude, not aware).

Conclusions: Most factors that influence the safe use of a CPOE system are remediable by education and deliberate practice.

Take-home messages: Differences in attitudes and awareness of safety issues call for tailored educational strategies when implementing a CPOE in clinical practice.

2L4 Interprofessional education in patient safety (II): Controlled trial between interprofessional students groups and medical students groups

Mio Sakuma*, Takeshi Morimoto, Yoshie Kubota, Susumu Seki, Kaori Takada, Atsushi Hiraide (Kyoto University Graduate School of Medicine, Konoe-cho, Yoshida, Sakyo-ku, Kyoto 606-8501, Japan)

Background: Interprofessional education was recently proposed, however, its effectivness in patient safety education was not been well scrutinized.

Summary of work: We conducted controlled trial of interprofessional education in patient safety and evaluated its effectiveness by using questionnaires conducted before and after the class. We assigned 42 medical students to the pharmaceutical mix groups (interprofessional groups), and 56 medical students to medical only groups (medical students groups). The questionnaires consisted of the knowledge and attitude to patient safety as well as benefit of discussion.

Summary of results: The medical students who were assigned to the interprofessional groups considered group discussions were more active (P=0.0071) and beneficial (P=0.0001) than the medical students groups. The knowledge about patient safety and recognitions of its importance were significantly improved after class (P<0.0001), however, there

was no difference between the groups. Furthermore, the students' free comments in the questionnaire showed group discussion with other health professional students provided the medical students with good opportunities to understand the importance of teamwork in patient safety and to obtain new points of view from other students.

Conclusions: This class seemed to provide the students with opportunities to learn the importance of communication with other health professionals and to recognize their own professional roles in patient safety.

Take-home messages: Interprofessional learning is one of the effective ways for health professional students to learn patient safety.

2M SHORT COMMUNICATIONS: The Teacher: Evaluation of the teacher

2M1 Teachers and Courses evaluation by attending students in Genoa (Italy) Medical School

Fiocca R, Bonioli E, Bove M, Lotti A, Maganza C, Frascio M* (University of Genoa, largo R. Benzi 8, Genoa 16132, Italy)

Background: Teachers and Courses evaluation by attending students is a key feature of education system assessment in Genoa Medical School.

Summary of work: Here we report the procedures of online web based anonymous questionnaires that have been completed by students at the end of the courses since 2004. Items of the questionnaire are: a) planning, implementation and strategies of the courses; b) education facilities; c) teacher performance; d) teacher and course perceived quality. Results of personal evaluation are reserved for teachers and are used and taken into account for academic career. Results of course evaluation are discussed with teachers, academic coordinators and the student's representatives to make aware every level of educational system. The vice dean for education discusses individually with each group of teachers leading an integrated course. All the results are used to monitor and improve the quality of medical education.

Summary of results: Since 2004 until now we have analysed 26,520 courses and 103,079 teachers' questionnaires. Statistical evaluation of these data shows a consistent improvement of the overall quality of medical education.

Conclusions: Teachers' and courses' evaluation by students is a key feature to improve the quality of medical education mainly if the results are discussed together with Faculty and students.

Take-home messages: Offering a feedback of evaluation results to teachers and students achieves a better participation of students and a better performance of teachers.

2M2 Are clinical teachers' self-assessment and student feedback effective in improving clinical teaching?

Renee E Stalmeijer*, Diana HJM Dolmans, Ineke HAP Wolfhagen, Lieve van Coppenolle, Wim G Peters, Albert JJA Scherpbier (Maastricht University, Faculty of Health, Medicine and Life Sciences, Department of Educational Development and Research, PO Box 616, Maastricht 6200 MD, Netherlands

Background: Many instruments have been developed to provide feedback to clinical teachers about their teaching performance in the workplace. Research indicates that written feedback alone is not sufficient for teachers to change their teaching. Combined with self-assessment, written student feedback is assumed to stimulate clinical teachers to improve their teaching.

Summary of work: We investigated whether combining written feedback (student ratings) and self-assessment (clinicians' self-ratings) stimulated clinical teachers to incorporate the feedback into their teaching. Thirty clinicians completed a self-assessment, received student feedback and filled out a questionnaire (5-point Likert scale). Twelve clinicians were purposively selected for a semi-structured interview.

Summary of results: 25 clinicians returned the questionnaire (76%). Self-assessment and student feedback were perceived as useful (3.7, SD 1.0), but the latter was considered more

effective. The interviews showed that self-assessment mostly provided a sufficient incentive to improve teaching when combined with student ratings, especially when self-assessment and feedback showed discrepancies.

Conclusions: Combined with student feedback, self-assessment is perceived as a powerful tool to stimulate improvement of clinical teaching. Further research should examine whether these combined tools can actually improve clinical teaching in practice.

Take-home messages: Self-assessment is a useful tool to augment the effectiveness of feedback for clinical teachers.

2M3 Walking the talk: How do clinical teachers' teaching behaviours relate to their knowledge and beliefs about teaching?

Peter Cantillon* (Department of General Practice, Clinical Sciences Institute, Costello Road, NUI Galway, Galway 00001, Ireland)

Background: Clinical education is often described as being of variable quality and inefficient in its use of teaching opportunities. Much of the variance evident in clinical education is likely to be due to differences between clinical teachers. Differences between teachers' pedagogical knowledge and beliefs may explain much of the variance between clinical teachers' behaviours and the quality of the learning environments that they create.

Summary of work: A small pilot study was carried out in Canada and Ireland to examine the relationship between clinical teachers' knowledge and beliefs about pedagogy and their teaching behaviours. Hospital based attending/consultant teachers were observed teaching in ambulatory and bedside settings in Montreal and Galway. Field note data was used to inform topic guides for follow up semi structured interviews which explored teachers' beliefs and knowledge of teaching, learning, learners and the clinical learning environment.

Summary of results: Teachers had well developed implicit theories about learning, teaching and learners that were largely congruent with their teaching behaviours.

Conclusions: Teachers' knowledge and beliefs about learning and teaching are important predictors of clinical teaching behaviour. Attention to teachers' prior pedagogical knowledge and beliefs are likely to be essential elements in future successful models of faculty development.

Take-home messages: Faculty developers need to pay heed to clinical teachers' well developed but tacit knowledge and beliefs about teaching and learning

2M4 The twelve roles of a teacher – a valuable framework for teachers' pedagogical training

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

Background: Harden and Crosby (2000) identified twelve roles for a medical teacher in the changing world of medical education. This role model framework was used in teachers' pedagogical training at the University of Helsinki.

Summary of work: The framework was presented in a 10 ECTS credit course of university pedagogy for medical teachers. The participating teachers (N=22) assessed the importance of the 12 roles, their current personal commitment to each role, and their preferred future commitments.

Summary of results: Teachers scored all the roles relatively high when assessing their importance to the teaching program. Preferences were clear in the teachers' current personal commitment. Role model in the teaching setting (M=3.77) and teacher in clinical or practical setting (M=3.68) scored highest and curriculum planner lowest (M=1.27). When assessing their preferred personal future roles there was a considerable rise in the roles of a mentor and a learning facilitator.

Conclusions: The role model framework motivated the teachers to picture their role profiles as medical teachers and enabled them to identify the roles requiring further development. Their planning and assessment activities definitively require support and training.

Take-home messages: Teacher's role model framework and profile are valuable tools in teachers' pedagogical training.

2M5 Keeping tutors motivation in clinical clerkship: factors leading to satisfaction and dissatisfaction

Masanaga Yamawaki*, Kazuki Takada, Atsushi Okawa, Yujiro Tanaka (Tokyo Medical & Dental University, 1-5-45, Yushima, Bunkyo-ku, Tokyo 113-8519, Japan)

Background: Clerkship tutors participate in service, training and medical education in their clinical settings. This study researches clerkship tutors` attitude with reference to where they place activities along the service/ training/education continuum, and factors that lead them to motivate educational activities in the way they do.

Summary of work: Seventy-nine tutors (fellows and senior residents) in our hospital completed a questionnaire probing areas relating clinical clerkship in 2007 to 2008 in Tokyo Medical & Dental University. The questionnaire included demographics, satisfaction levels, stress experienced, and time spent on educational activities. Statistical analysis were performed by Spearman correlation coefficient.

Summary of results: Overall satisfaction for clinical clerkship was significantly correlated with opportunities for tutors` self-learning, enthusiasm for education, support from supervisors ($p < 0.001$), activity of students and tutors` attending to educational FD ($p < 0.05$). Workload for tutors was correlated with self-learning, support from supervisors, students` participation to physical examination and presentation ($p < 0.001$), activities of students and attending for educational FD ($p < 0.05$). Factors on students` participation to round (discussion and presentation during rounds) and tutors` enthusiasm for education were correlated with quality of patient care ($p < 0.05$).

Conclusions: Our findings indicate that support of supervisors for tutors and student activity appears to serve as an opportunity for maintaining tutors` motivation.

Take-home messages: Steps should be taken to decrease burden in tutors, including policies that promote physician well being as integral to successful clerkship.

2M6 Systematic evaluation of teaching qualities of medical faculty: development and validation of a system combining self- and residents' assessment

Lombarts MJMH*, Arah OA (Academic Medical center, Amsterdam, The Netherlands / University of California, Los Angeles, United States, P.O.Box 22700, Amsterdam 1100 DE, Amsterdam, Netherlands)

Background: Feedback and self-reflection are known to be helpful in improving teaching qualities of clinician-educators. We examined if a valid, reliable and feasible system for the specialty-specific evaluation of teaching qualities of medical faculty could be developed for use in academic medical centers.

Summary of work: We developed a specialty-specific system for the evaluation of teaching qualities (SETQ) of faculty, consisting of (i) web-based questionnaire for residents' assessment of faculty, (ii) web-based self-evaluation for faculty (iii) individualized faculty feedback, and (iv) individualized faculty follow-up support. Both questionnaires were based on the validated SFDP26 instrument. In total, 157 faculty and 152 residents from four specialties were invited to participate.

Summary of results: The response rates were 82% and 78% for faculty and residents respectively. Residents completed 1389 assessments for 152 faculty. Explorative factor analysis identified 5 teaching domains. The internal consistency was high. For reliable feedback to faculty, at least 4 to 9 assessments per faculty were required. Residents were generally positive about faculty's teaching qualities. Self and residents' assessment showed low correlations. Faculty feedback reports were well-received.

Conclusions: The SetQ system appears reliable, valid and feasible for the evaluation of teaching qualities of faculty.

Take-home messages: Effective faculty development includes high quality feedback as well as individual improvement tracks.

2N SHORT COMMUNICATIONS: The Teacher: Peer assisted learning and assessment

2N1 Peer-assisted learning by medical students improves musculoskeletal system examination skills when integrated into the curriculum

Perry ME*, Burke JM, Friel L, Field M (The University of Glasgow, Dept Medical Education, Wolfson Medical School, University Avenue, Glasgow G12, United Kingdom)

Background: This study determined whether PAL can be successfully incorporated into a standard curriculum to improve musculoskeletal system (MSS) examination skill using Gait, Arms, Legs, Spine (GALS).

Summary of work: Over 2 years, 50 year-5 students were trained in use of GALS for examining the MSS during a standard clinical attachment at one Glasgow Hospital. These trainers supervised final year trainees also based at that hospital in use of GALS (n=159). Students were evaluated with pre/post confidence questionnaires, course experience questionnaires (CEQ) and OSCE scores. Results were compared with 230 students undertaking routine curriculum training.

Summary of results: Confidence in use of all parts of GALS increased after PAL ($p<0.005$). CEQs showed that PAL trainers benefitted from improved teamwork and teaching skills. 84% of students in the standard curriculum passed the MSS OSCE station. By comparison, 87% of PAL trainees and 100% of trainers passed. More trainers passed the OSCE than trainees ($p= 0.008$) and standard curriculum students ($p=0.002$). There were no differences between trainees and standard curriculum students ($p=0.33$).

Conclusions: Incorporating PAL into a standard curriculum improves clinical examination skills, generic skills and OSCE exam performance. PAL is a useful additional learning technique.

Take-home messages: PAL can be successfully integrated into medical curriculum.

2N2 Senior students compared to faculty members as facilitators in PBL

Ane-Kristine Finbråten*, Are Holen (The Faculty of Medicine,the Norwegian University of Science and Technology (NTNU), Olav Kyrres g. 9 , Medisinsk teknisk forskningssenter (MTFS), Trondheim 7489, Norway)

Background: In the winter of 2008, half of the PBL groups of the second year had two senior student facilitators; the rest had one faculty member and one senior student alternating. The aim was to compare the two strategies.

Summary of work: A focus group of eight students generated 23 items for the survey. Each item addressed facilitation as carried out by student facilitators or by faculty members. There were 240 students in the first two classes; 181 (75 %) surveys were completed.

Summary of results: The overall findings indicated that student facilitators were more appreciated than faculty members. Students were more knowledgeable in conducting evaluations, and they added more to the learning outcome. Student facilitators were also perceived as more skilled in group process.

Conclusions: Students should be regarded as a major resource towards successful group facilitation. They foster both learning and group process.

Take-home messages: The student facilitation in general is regarded as more superior.

2N3 The impact of the 'Harvey' peer-tutor training scheme

Rodrigues JCL*, Rodrigues MA, Lim VG, Fox KAA, Denvir M (The Royal Infirmary of Edinburgh, 51 Little France Crescent, Old Dalkeith Road, Edinburgh EH16 4SA, United Kingdom)

Background: Fourth year medical undergraduates at Edinburgh University can use 'Harvey', the cardiac patient simulator, to give extra-curricular tutorials to third year students providing they complete the requisite training. Here, we evaluate this training scheme.

Summary of work: Pre-training, twelve fourth year undergraduates completed a questionnaire assessing clinical examination, knowledge and teaching skills and undertook a cardiovascular OSCE using 'Harvey'. Training consisted of 'Harvey' sessions, focusing on teaching methods, overseen by a Consultant Cardiologist, lasting 1 hour/week for 8

weeks. Post-training, tutors undertook another 'Harvey' OSCE and completed another questionnaire.

Summary of results: Significant improvements in OSCE scores were noted post-training (97.3+/-0.7% Vs 62.1+/-3.5%, P<0.0001), with significant improvements within every mark-scheme domain. Tutors rated their knowledge (7.8+/-0.2 Vs 6.1+/-0.4, P=0.0013), examination skills (8.0+/-0.3 Vs 6.8+/-0.4, P=0.0092) and teaching ability (7.6+/-0.2 Vs 5.8+/-0.3, P=0.0001), out of 10, significantly higher post-training. All tutors agreed that learning teaching methods is important, yet only 42% felt they had received such teaching prior to this scheme.

Conclusions: Our peer-tutor training scheme provides significant objective and subjective academic benefits.

Take-home messages: Peer-tutor training schemes offer training in teaching methods, which is not traditionally covered at medical school but an integral part of practicing medicine.

2N4 Self and peer assessment in Medical Biology Education – students' learning experiences

Charlotte Silén*, Anders Ljungman* (Karolinska Institutet, Dept. Learning, Informatics, Management and Etichs, Berzelius väg 3, Department of Clinical and Experimental Medicine, Faculty of Health Sciences, Linköping University, Stockholm 171 77, Sweden)

Background: Self- and peer assessment was implemented in a Medical Biology program as "means of learning" towards becoming lifelong learners and reflective professionals. Students made judgments about their own work and their peers and were required to reflect on their own learning.

Summary of work: As an integral part of course work students wrote an essay concerning a molecular technique (PCR) and used negotiated criteria to assess themselves and their peers. Students reflected on the assessment procedure and their own learning. Faculty assessed and gave feedback on the essays and the students' self- and peer assessments.

Summary of results: Students (210 students over three years) improved their understanding of PCR-technique and got insights into the difficulties of assessing and giving constructive feedback. They found that the interpretation of grades and criteria differ between themselves, peers and faculty. The experiences increased their understanding of their own performance, the qualities of an essay and acceptance of more than one way to write a good essay.

Conclusions: Integrated self- and peer assessment exercises are well accepted by students to improve subject matter knowledge and promote lifelong learner skills such as reflection.

Take-home messages: Involving students in assessment procedures, including requirements of students reflections on their learning stimulate them to learn beyond the specific content.

2N5 Peer assessment with pairwise scaling

N Bilge Uzun*, Selahattin Gelbal*, Orhan Odabasi*, Melih Elcin* (Hacettepe University Faculty of Medicine Department of Medical Education and Informatics, Sihhiye, Ankara 06100, Turkey

Background: There are very few studies in the area of the pairwise scaling and peer assessment in our country. The main purpose of this study was to measure and compare medical student's performances in various bnehaivours using pairwise scaling and peer assessment.

Summary of work: In this study, peer assessment was studied using pairwise scaling technique. This research was conducted among 20 of first-year medical students. Students were asked to complete five different scales. In each item students were asked to compare student pairs, markibng the better one. Each scale has 45 pair of the comparision The contents of Scales are: 1. To actively participate in the study and discussion; 2. To help group members to learn; 3. To establish effective communication with friends; 4. To respect contributions of friends; 5. To strive for the solution of problems; After some statistical processes values were obtained for all scales. At the end of the process, the scaling value of each student was represented as a point on the number line.

Summary of results: According to the results of scaling study by pair-wise comparison, it was determined that the best student was "Ulvan" according to peer judgment. Her total scale points was 7.85 (max:10).

Conclusions: Providing data by using peer judgment, students can practice evaluating themselves and improve the ability of criticizing. Using pair wise scaling allows us to obtain more objective evaluations .

Take-home messages: Such kind of studies seem very effective in developing alternative assessment methods and using peer assessment in the classroom.

2O WORKSHOP

Teaching or Assessment? Adapting standardized patient cases for either use

Colette L Scott*, Ann Jobe* (NBME & ECFMG, Clinical Skills Evaluation Collaboration, 3750 Market Street, Philadelphia 19104, United States)

Background: This workshop is part of a series of four workshops (quality assurance, patient note assessment, scoring), presented by the Clinical Skills Evaluation Collaboration (CSEC). The four workshops outline important aspects to be considered when developing assessments of clinical skills using standardized patients. Standardized patient educators are challenged to develop high quality case materials for the teaching and evaluation of clinical skills using standardized patients. By varying outcome measures a single case can be used for multiple purposes.

Intended outcomes: This workshop will train participants in the key elements of SP test development including case format, principles of good checklist and post encounter note development.

Structure: After an introduction to the process of case development participants will be divided into two groups; one group will develop a case for assessment and the other group will develop a case for teaching. The groups will reconvene to discuss approaches to providing feedback for each purpose. An exercise in developing a post encounter note will conclude the workshop.

Intended Audience: This workshop is intended for medical school SP educators who design or would like to learn how to design standardized patient material for teaching and assessment purposes.

Level of workshop: Intermediate

2P WORKSHOP

Evidence-based teaching workshop: articles that will change your teaching practice

Sally A Santen*, John Shatzer, Elza Mylona, Robin R Hemphill (Emory School of Medicine, 1648 Pierce Drive, Suite 452, Medical Education and Student Affairs, Atlanta, GA 30322, United States)

Background: Medicine is has embraced the need for evidence-based practice. And as the field of education research is rapidly growing, medical educators should know the evidence from research on and incorporate it into their teaching practice. The format of this workshop will be to present the data and evidence from selected articles on teaching, learning, and assessment. Articles will include the evidence on expert/novice differences, recognizing prior knowledge, active learning, medical decision making using clinical reasoning and pattern recognition, self-assessment and learning in context.

Intended outcomes: The participants will understand the key concepts of each article and develop a plan how they will incorporate the evidence into their teaching practice.

Structure: The evidence will be briefly presented, then, in small groups the participants will plan learning or assessment exercises using scenarios or their own setting. The workshop will be highly interactive, requiring participants to use both the evidence and apply it to their teaching, learning and assessment practices.

Intended Audience: Educators designing teaching, learning or assessment exercises.

Level of workshop: All

2Q WORKSHOP

Finding a route through an enquiry based Medical curriculum

Tim Cappelli*, Hilary Dexter* (University of Manchester, 186 Waterloo Place, Oxford Road, Manchester M13 9PL, United Kingdom)

Background: This workshop will explore the issues of curriculum administration and development of a complex enquiry-based curriculum. Enquiry or Problem based curricular are typified by the complexity of the interrelationships between the component parts of the programme. Such curricula typically consist of problem-based scenarios, underlying knowledge, skillsets, learning activities, assessments, intended learning outcomes (ILOs) and various other elements which need to be coordinated, connected and maintained in order for the programme to function. This workshop draws on the experience gained by the presenters in developing a curriculum mapping knowledgebase for the undergraduate medical programme at the University of Manchester. This knowledgebase will allow tutors, students and administrators to find individual elements of the curriculum and plot their connections to other related elements. This will allow users to easily update PBL cases, review ILOs or identify gaps in the assessments.

Intended outcomes: An understanding of the problems inherent in navigating and maintaining an enquiry based curriculum and an insight into how a curriculum knowledgebase provides a potential solution.

Structure: 1. Introduction 2. Activity 1: Planning content in a complex environment 3. Demonstration of the knowledgebase 4. Activity 2: Tagging curriculum elements 5. Feedback, Questions and discussion

Intended Audience: Curriculum managers, Quality Assurance managers, curriculum development staff, teacher-practitioners, students

Level of workshop: All

2R WORKSHOP

How to teach students and residents to say "I'm sorry"

Leo Aukes*, Janke Cohen-Schotanus*, Jan Borleffs* (Center for Research and Innovation Medical Education, Antonius Deusinglaan 1, Groningen 9713 EV, Netherlands)

Background: A 'professional' physician should be willing and prepared to express regret. Apologizing usually has a positive effect on doctor-patient and other working relationships. However, often physicians experience great difficulty in saying "I'm sorry" to their patients or colleagues regarding mistakes they made or unprofessional behaviour. The same applies to medical teachers or supervisors in relation to their students or residents. Generally, in medical education little attention is paid to train students how to apologize.

Intended outcomes: This workshop provides the participants with an opportunity to experience what it means for themselves, and for the other person, to apologize in difficult situations, and to learn what the possibilities for training in apologizing are.

Structure: Introduction to the theme, guided personal activities in small groups. Plenary exchange and analysis of experiences. Personal commitment of the participants is vital.

Intended Audience: All faculty involved in medical education and medical care.

Level of workshop: All

2S WORKSHOP

Medicine's social contract with society – an international perspective

Sylvia R Cruess*, Richard L. Cruess*, Yvonne Steinert* (Center for Medical Education, McGill University, 1110 Pine Avenue West, Montréal, QC H3A 1A3 Canada)

Background: Professionalism, which is fundamental to medical practice, must be taught explicitly. It is the basis of medicine's relationship to society, which most observers call a "social contract" which serves as the basis for society's expectations of medicine and medicine's of society. It therefore directly influences professionalism. The role of the healer is universal, but how professionalism is expressed will differ between countries and cultures because of differences in their social contracts.

When professionalism is taught, it should be related to the national social contract. An example: the social contract in the United States, which does not have universal health care, is very different from that of its neighbor, Canada, which does.

Intended outcomes: Participants should understand the concept of the social contract and its relationship to professionalism. Each will be asked to outline the societal and medical expectations for their country.

Structure: A brief presentation will be given on the nature of the social contract and its relationship to contemporary professionalism. Attendees will then be asked to work with workshop participants from their own country in outlining their national social contract and how it can best be taught and report their findings to the larger group. Because of the many countries represented at AMEE, a large group discussion should be instructive and perhaps productive of new information.

Intended Audience: Deans and Associate Deans, Directors of Undergraduate and Post Graduate Programs, and medical educators.

Level of workshop: All

2T WORKSHOP

The use of Gapminder World in medical education

Hans Rosling (Department of Public Health Sciences, Karolinska Institutet, Stockholm, Sweden; and Gapminder Foundation, Stockholm, Sweden)

2U WORKSHOP

In your Face(book): Professional conduct and boundaries in the age of Social Networking Services. How do we advise students?

Joanna MacDonald*, Stephen Sohn, Peter Ellis (University of Otago, Wellington, PO Box 7343, Wellington South, Wellington 6242, New Zealand)

Background: Medical regulations and ethical guidelines largely predate the extensive use of Social Networking Services (SNSs), which are changing the accepted concepts of private and public. Only one previous study has examined this issue for the medical profession. Our recent research showed that young doctors are active users of Facebook, with a considerable number not utilizing privacy options. Some of their material revealed unprofessional attitudes or behaviours, and considerable personal information. Legislators and educators need to consider how to respond to the burgeoning use of SNSs, and its implications for accepted concepts of professional behaviour and boundaries. The aim of this workshop is to provide attendees with an opportunity to consider the implications of the extensive use of SNSs by young professionals; and how to educate students and young doctors so that their use of SNSs is not damaging to the profession or patients.

Intended outcomes: Participants will have increased awareness of the issue and its relevance for medical education and legislation; and begin to formulate educational and legislative responses appropriate to their own setting.

Structure: An initial introduction presenting our recent research, followed by small group work exploring the issues and arriving at recommendations or personal action plans.

Intended Audience: Students, teachers, legislators.

Level of workshop: All

2V WORKSHOP

CanMEDS-Family Medicine: A new competency framework for family medicine education and practice in Canada

Elizabeth Shaw*, Danielle Saucier*, on behalf of the College of Family Physicians of Canada Working Group on Postgraduate Curriculum (College of Family Physicians of Canada, 2630 Skymark Ave, Mississauga, L4W 5A4 Canada)

Background: As competency-based education gains prominence, the College of Family Physicians of Canada has embarked on a project to articulate the competencies required upon completion of residency training in family medicine. CanMEDS-Family Medicine (CanMEDS-FM) is an adaptation

of the Royal College of Physician and Surgeons of Canada's CanMEDS 2005 Physician Competency Framework. The initial phase of this work is nearing completion and it will be important to engage with educators internationally who are working to translate competency-based frameworks into curriculum in medical education.

Intended outcomes: Participants will: 1. Understand the design, and rationale of the CanMEDS-FM framework as a description of the competencies required in the comprehensive practice of family medicine in Canada; 2. Offer input on this and competency frameworks in medicine internationally; 3. Discuss the impact of a competency based approach on: a) designing training programs; b) setting curriculum goals and developing learning objectives for educational experiences; c) Trainee evaluation.

Structure: Primarily interactive discussion. A short presentation will introduce the framework and compare it with others internationally. Large group input on the framework and competency-based residency education will be followed by small group discussion and problem-solving to address the implications for postgraduate training.

Intended Audience: Residency/Postgraduate Program directors, curriculum designers and educators.

Level of workshop: All

2W WORKSHOP

Redirecting unprofessional behaviors: a practical approach

Emily Chai*, Audrey Chun*, Sara Bradley*, Helen Fernandez*, Reena Karani*, Nisha Rughwani*, Rainier Soriano*, David Thomas* (Mount Sinai Hospital/Mount Sinai School of Medicine, One Gustave L. Levy Place, Box 1070, New York 10029, United States)

Background: Professionalism is a focus of medical education around the world. One goal of any comprehensive program in this area must be to provide feedback to those with identified deficiencies in professional behaviors. However, giving effective feedback in the area of professionalism remains a significant challenge for educators.

Intended outcomes: By the end of the session, participants will 1) identify elements of feedback techniques shown to be effective from the literature, 2) practice giving professionalism feedback to colleagues and learners using real life cases, 3) reflect upon their own experiences and develop practical skills to approach challenging cases, and 4) share strategies for providing feedback across different disciplines and professional levels.

Structure: During this workshop, we will use a variety of instructional methods including large group presentation, small group practice, and facilitated discussions.

Intended Audience: This interactive workshop is designed for an audience of educators interested in developing their feedback skills on professionalism. It is intended for educators at all levels and no prior experience is required.

Level of workshop: All

2X POSTERS: Problem-based learning: Case studies and evaluation

2X1 Comparisons between students' and tutors' perceptions of problem-based learning tutorials

Sun Ju Im*, So Jung Yune, Sang Yeoup Lee, Sun Yong Baek (Pusan National University School of Medicine, Beomeo-ri, Mulgeum-eup, Yangsan-si, Gyeongsangnam-do, 626-770 Republic of South Korea)

2X2 On the relationship between students' participation in tutorial groups and study success

Matti Aarnio*, Juha Nieminen, Eeva Pyörälä (Research and Development Unit for Medical Education, University of Helsinki, P.O. Box 63 (Haartmaninkatu 8), Helsinki FI-00014, Finland)

2X3 Problem based learning – a new access for medical students

Moritz Scholten*, Marco Roos, Katja Götz, Joachim Szecsenyi (Department of General Practice and Health Services Research, University of Heidelberg, Voßstr. 2, Geb. 37, Heidelberg 69115, Germany)

2X4 Health problems of population as a guide for developing problem based learning (PBL) modules

José Lúcio Martins Machado*, Valeria Menezes Peixeiro Machado, Joaquim Edson Vieira (Universidade Cidade de São Paulo - UNICID, Rua Cesario Galeno 448, Tatuapé, São Paulo 03071-000, Brazil)

2X5 Problem based learning of immunology in medicine and veterinary degrees

J. Garcia Casado, R. Solana*, R. Tarazona (University of Extremadura and University of Cordoba, Av Menendez Pidal s/n, Cordoba 14004, Spain)

2X6 Teaching radiology using problem based learning

Peter Corr* (United Arab Emirates University, PO Box 17666, Al Ain 0000, United Arab Emirates)

2X7 Experiences of clinical practice in a problem-based learning medical curriculum and subsequent clinical environments

Sarasvathie Reddy* (Nelson R Mandela School of Medicine, 719 Umbilo Road, Congella, Durban 4037, South Africa)

2X8 Implementation of problem based learning curriculum in undergraduate medical curriculum: the Indian scenario

Maloy B Mandal*, Shripad B Deshpande (Institute of Medical Sciences, Banaras Hindu University, Department of Physiology, Varanasi 221005, India)

2X9 Systematic review and meta-analysis of PBL vs. traditional teaching in regards to students' acquistion of knowledge

Richard Partington*, Kirti Jasani, Zaher Toumi (Manchester Royal Infirmary, Oxford Road, Manchester M13 9WL, United Kingdom)

2X10 Smile and style: The student experience and epistemology in a problem-based curriculum

Gillian Maudsley* (Division of Public Health, The University of Liverpool, Whelan Building, Quadrangle, Liverpool L69 3GB, United Kingdom)

2X11 Problems of the problem-based learning: 6th years' contemplation of curriculum reform

Mutsuhiro Ikuma* (Hamamatsu University School of Medicine, 1-20-1 Handayama, Hamamatsu 431-3192, Japan)

2X12 Progress in basic science and clinical knowledge during 10 semesters in a PBL versus classical curriculum: a randomized controlled trial

Thorsten Schäfer*, Bert Huenges, Andreas Burger, Herbert H. Rusche (Büro für Studienreform Medizin, Ruhr-Universität Bochum, MA 0/47, Bochum D-44780, Germany)

2X13 Problem reformulation based on students' feedback is viable in dynamic PBL medical curriculum

El-Barbary M.*, Al-Hoqail I., Al-Rukban M., Khalil M.A. (Faculty of Medicine, King Fahad Medical City, Riyadh 11252, Saudi Arabia)

2X14 Is a PBL curriculum a better nutrient medium for student-generated learning objectives than a PBL island?

Kirsten Gehlhar*, Alexandra Wüller, Hile Lieverscheidt, Martin R. Fischer, Thorsten Schäfer (University Witten/Herdecke, Alfred-Herrhausen-Str. 50, Witten 58448, Germany)

2X15 The effects of PBL sessions introduction to more traditional core curriculum: 12 years after

Jaroslav Mares*, Marcela Klabanova, Eduard Kocarek, Zdenek Sedlacek (Charles University, Institute of Biology and Medical Genetics, 2nd Medical School, V Uvalu 84, Praha 5 150 06, Czech Republic)

2X16 A hybrid PBL model in human biology and medicine degrees through an interdisciplinary subject

Carrió M*, Baños, JE, Berrendero F, Bigorra J, Cardona L, Centeno N, Comas D, Miralles R, Moyano E, Pastor M, Samsó E, Sentí M, Solsona JF, Pérez J. (Faculty of Health and Life Sciences, University Pompeu Fabra, Dr. Aiguader 88, Barcelona 08003, Spain)

2X17 Medical students' attitudes to problem-based learning at Hacettepe University

Sevgi Turan*, Ozcan Demirel (Department of Medical Education and Informatics, Hacettepe University, Faculty of Medicine, Sihhiye, Ankara 06100, Turkey)

2X18 Analysis of students' and tutors' verbal interactions in Problem-Based Learning

Sun-A Oh*, Eun-Kyung Chung, Young-Jong Woo, Jung-Ae Rhee, Hyun-Cheol Lee, Chang-Soo Park, Sam-Yong Lee, Jong-Hee Nam, Young-Il Koh, Jung-Chul Kim (Dept. of Medical Education, Chonnam National University Medical School, 5 Hak-Dong, Dong-gu, Gwangju, Korea)

2X19 Assessing student performance in problem-based learning in the first two years of medical school

Chan LC*, Yip ALM (The University of Hong Kong, Li Ka Shing Faculty of Medicine, Sassoon Road, Pokfulam, Hong Kong 0000, Hong Kong)

2X20 Successful PBL tutoring – know your students. Professional development for PBL tutors in the Bond MBBS program

Christine Tom (Bond University, 2059 The Vistas, Emerald Lakes, 4211 Australia)

2Y POSTERS: Attitudes, ethics and cultural diversity

2Y1 Implementation of biomedical ethics and humanities in medical education: a case study in the Faculty of Medicine, Diponegoro University, Semarang, Indonesia

Ani Margawati*, Hertanto W Subagio*, Soejoto*, Ariawan Soejoenoes (Diponegoro University, Faculty of Medicine, Semarang, Indonesia)

2Y2 In praise of systematic diversity: a new model for medical ethics education

MJ de Bree*, MA Verkerk (University Medical Center Groningen, Expertise Center Ethics in Care, Po Box 196, FA 14, Groningen 9700 AD, Netherlands)

2Y3 Islam and the professional ethic in medicine

Seyed Alireza Moniri*, Ahmad Sadat Kalati, Seyede Sara Moniri* (Shiraz University Of Medical Sciences, Namazi Hospital, Cardiovascular Office, Shiraz 00987176934433, Iran)

2Y4 The association between empathy and specialty interest among medical students

Archchana Radhakrishnan*, Andy Flett (Bart's and The London School of Medicine and Dentistry Centre for Medical Education, Old Medical College Building, Turner Street, Whitechapel, London E1 2AD, United Kingdom)

2Y5 There should be something more than advice: a scenario named "who is right?" for empathy teaching

Nazan Karaoglu*, Muzaffer Seker (Tip Egitimi ve Bilisimi Anabilim Dali, Selcuk Universitesi Meram Tip Fakültesi, Akyokus, Meram, Konya, Turkey; Medical Education and Informatics Department, Selcuk University Meram Medical Faculty, Konya 42080, Turkey)

2Y6 Empathy in medical students: relationships with social anxiety and communication behaviour

Anita Laidlaw* (University of St Andrews, Bute Medical School, Westburn Lane, St Andrews KY16 9TS, United Kingdom)

2Y7 A multiprofessional assessment of empathy and attitudes toward the underserved

Donald L. Gabard*, Stephen Davis, Sonia Crandall* (Chapman University, One University Drive, Orange, California 92866, United States)

2Y8 Web based ethics education in occupational health care

Anne Heikkinen*[1], Timo Leino[2], Susanna Pitkänen[3], Gustav Wickström[4] ([2]Finnish Institute of Occupational Health, Topeliuksenkatu 41 A, 00250 Helsinki; [1]Finnish Institute of Occupational Health, Topeliuksenkatu 41 A, 00250 Helsinki; [3]University of Helsinki, Topeliuksenkatu 41 A, 00250 Helsinki, [4]University of Turku, Department of Occupational Health, 20014 Turun Yliopisto, Finland)

2Y9 Problem analysis of cultural competence course design from teachers' survey

Jer-Chia Tsai*, Peih-Ying Lu, Chun-Sheng Lai (College of Medicine, Kaohsiung Medical University, 110 Shih-Chuan first Road, Kaohsiung 807, Taiwan)

2Y10 Medical Ethics OSCE and workplace performance of rural doctor

Kanokwan Sriruksa* (Khon Kaen Hospital, Srijan Road, Tambol Naimuang, Muang District, Khon Kaen 40000, Thailand)

2Y11 'The Moral Tale Shows' lead medical students to learning in conceptual age

Nitipat Bussabarati* (Bhuddhachinnarat Hospital, School of Medicine, 90 Srithammatripidok, Amphur Meung, Phitsanuloke 65000, Thailand)

2Z POSTERS: Peer assisted learning

2Z1 Teaching at the end of the peer

Juliette King, Vicky Lewis* (Division of Medical Education, Cardiff University, University Hospital of Wales, Heath Campus, Cardiff CF14 4XN, United Kingdom)

2Z2 How do tutors and tutees benefit from peer-tutoring schemes?

Katharine Augustine*, Clare Phillpotts (Southmead Hospital, Bristol North Academy, North Bristol NHS Trust, Monks Park Avenue, Bristol BS9 4DE, United Kingdom)

2Z3 Students teaching students. Role of teaching assistants in early phases of integrated medical curriculum at Mayo Medical School

Wojciech Pawlina*, Nirusha Lachman, Jerry W. Swanson, Joseph P. Grande, Thomas R. Viggiano (Department of Anatomy, College of Medicine, Mayo Clinic, Mayo Medical School, 200 First Street SW, Rochester, MN 55905, United States)

2Z4 Case-based learning to improve clinical reasoning – is peer-teaching as effective as expert teaching?

Stefanie Balzereit*, Diethard Tauschel, Katja Buker, Anja Roeder (Universität Witten/Herdecke, Alfred-Herrhausen-Str. 50, Witten D-58448, Germany)

2Z5 Can peer assisted learning (PAL) be used to reinforce acquired theoretical knowledge in the medical course?

Burke J*, Hart R, Teo UL, Chen SS, Connolly M, Field M (Medical Education Unit, Faculty of Medicine, Wolfson Medical School Building, University Avenue, Glasgow G64 4HJ, United Kingdom)

2Z6 Cross-year medical student tutoring for teaching clinical examination skills on the ward

Rupert Scott* (John Radcliffe Hospital, Oxford University Medical School, Headington, Oxford, OX3 9DU, United Kingdom)

2Z7 Influence of peer-to-peer education in undergraduate education in emergency medicine

Ruesseler M*, Heringer F, Stier M, Marzi I, Walcher F (Department of Trauma Surgery, Goethe University, Theodor Stern Kai 7, Frankfurt 60590, Germany)

2Z8 Can peer-lead case-based conferences improve clinical skills?

Diethard Tauschel*, Katja Buker, Christopher Schmickl, Stephanie Balzereit, Anja Roeder (University of Witten/Herdecke, Integrated Curriculum for Anthroposophic Medicine, Alfred-Herrhausen-Str. 50, Witten 58448, Germany)

2Z9 Peer-assisted Learning (PAL): the trainer experience.

Field M*, Graham K, MacKenzie J, Caplan R, Burke J (Wolfson Medical School Building, Department of Medical Education, University of Glasgow, University Avenue, Glasgow G12 8QQ, United Kingdom)

2Z10 Student-Managed Peer-Assisted Learning (SM-PAL)

James Giles* (Mayo Building, Undergraduate Department, Salford Royal NHS Foundation Trust, Stott Lane, Salford M6 8HD, United Kingdom)

2Z11 Faculty development for peer tutors: what do we want, and how do we want it?

Jayasinghe GS*, Evans DE*, Horton D (St George's University of London, Cranmer Terrace, London SW17 0RE, United Kingdom)

2AA POSTERS: Teaching and learning clinical skills and procedures

2AA1 Creating a Community of Practice of clinical skills trainers in South Africa

George Draper* (Clinical Skills Centre, Faculty of Health Sciences, University of Cape Town, Anzio Road, Observatory, Cape Town 7925, South Africa)

2AA2 A qualitative descriptive study on the evaluation of the clinical skills centre work flow in King Abdulaziz University, Saudi Arabia

AbdulAziz Boker,* Omayma Hamed (Department of Medical Education, Faculty of Medicine, King AbdulAziz University, Jeddah 80205, Saudi Arabia)

2AA3 Factors underlying student extra-curricular involvement: a study in a Clinical Skills Centre

Salgueira AP*, Sousa N, Costa MJ (School of Health Sciences - University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal)

2AA4 Gynaecological emergency skills drills: a cognitive development tool

Deirdre Lyons*, Susan Clark, Jenny Higham (Academic Department of Obstetrics & Gynaecology, Imperial College Healthcare NHS Trust, St. Mary's Campus, North Wharf Road, St. Mary's Hospital, London W2 1NY, United Kingdom)

2AA5 A kinesthetic approach to teaching about cerebrospinal fluid

Jennifer Breckler* (UC Berkeley - UCSF Joint Medical Program and San Francisco State University, 570 University Hall, Berkeley, California 94720, United States)

2AA6 Development of a new radiography clinicial skills facility

England A, Ward A*, Ball B*, Burgess K (Medical Imaging & Radiotherapy, University of Liverpool, Johnston Building, School of Health Sciences, Quadrangle, Brownlow Hill, Liverpool L69 3GB, United Kingdom)

2AA7 Knowledge and skill retention after the advanced cardiac life support workshop – a study in nursing practitioners at the Udonthani Hospital, Thailand

Bussaba Prasanatikom* (Undornthani Medical Education Center, Undornthani Hospital, 33 Potniyom Road, Meung 41000, Thailand)

2AA8 Development of clinical skills in medical students: a comparative study

Leonor-Campos-Aragon* (Universidad Nacional Autónoma de México, Calzada de Guadalupe 120 Mod.23-601 Col. Ex-Hda Coapa, Ciudad de México 14310, Mexico)

2AA9 Efficacy of the educational programme in basic and advanced life support for medical professionals in Croatia

Silvija Hunyadi-Anticevic, Gordana Pavlekovic*, Davor Milicic (Croatian Resuscitation Council, Croatian Medical Association, Subiceva 9, Zagreb 10 000, Croatia)

2AA10 Teaching basic suturing skills to 1st year medical students – introducing clincal skills earlier in the curriculum

Hedda Dyer* (Ross University School of Medicine, P.O. Box 266, Picard, Portsmouth, Roseau, Dominica)

2AA11 Pediatric resuscitation training – a mandatory component of the medical school curriculum?

Farhan Bhanji*, Ronald Gottesman, Willem de Grave, Yvonne Steinert, Laura Winer (Rm T-124 Montreal Children's Hospital, 2300 Tupper St, Montreal, Canada H3H 1P3; Centre for Medical Education, McGill University and Montreal Children's Hospital; Maastricht University, Centre for Medical Education)

2AA12 Phlebotomy training for patient attendants at Queen Elizabeth Central Hospital (QECH), Blantyre, Malawi

Victoria Walker*, Samantha Lissauer, Elizabeth Molyneux, Amanda Goldstein (Birmingham Children's Hospital, Steelhouse Lane, Birmingham B4 6NH, United Kingdom)

2AA13 Structured self-assessment exercises for teaching diagnostic radiology: a comparison of learning outcome, student satisfaction and clinical practice.

Bussaya Sujitranooooch* (Chonburi Medical Education Center, Chonburi Hospital, Chonburi 20000, Thailand)

2AA14 Using a midterm clinical skills examination in the first year of medical school to assess physical examination skill development

Krista Bowers*, Diane M. Ferguson (University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, Mail Code 7879, San Antonio, TX 78229, United States)

2AA15 Plasticast: The next generation of clinical skills videos

Emma Esquillant*, Tim Rattay, Paul Gazzani, Anne-Marie Feeley, Birgit Fruhstorfer, Jamie Roebuck, Uzma Satti, Steven Brydges, Gregory Smith, Peter Abrahams (Warwick Medical School, Warwick University, Gibbet Hill Road, Coventry CV4 7AL, United Kingdom)

2AA16 Experiences of Implementation of "Healthcare Matrix-KMU Edition" in Clinical Medical Education

Su-Shin Lee, Meng-Chum Chen, Ling-Sui Chen, Pei-Ling Hsu, Chung-Sheng Lai* (Kaohsiung Medical University, #100, TzYou First Road, San-Min District, Kaohsiung 80708, Taiwan)

2BB POSTERS: The student in difficulty

2BB1 Self-development groups reduce medical school stress: a controlled intervention study

Mari Holm[1], Reidar Tyssen[2]*, Kirsten Irene Stordal[3], Brit Haver[1] (Dept Behav Sci Med, Institute of Basic Medical Sciences, Faculty of Medicine, University of Oslo, PO Box 1111, [1]Department of Clinical Medicine, Section Pyschiatry, University of Bergen, [2]Institute of Basic Medical Sciences, Faculty of Medicine, University of Oslo, [3]Division of Psychiatry, Helse BergenHF, Oslo NO-0317, Norway)

2BB2 Stress in Pakistan: working towards student well being

Afshan Shahid*, Zareen Zaidi, Mahmood Ahmed. (Defence Housing Authority - DHA Phase 1, Foundation University Medical College, Jinnah Avenue, Islamabad 46000, Pakistan)

2BB3 Development and validation of a questionnaire of quality of life of medical students

Patricia Tempski, Bruno Perotta, Regina A Possi, Patricia L Bellodi, Joaquim E Vieira, Lilia B Schraiber, Milton A Martins* (School of Medicine of the University of Sao Paulo, Av. Dr. Arnaldo 455 sala 1210, Sao Paulo - SP 01246-903, Brazil)

2BB4 An analysis of the types of stress and stress coping strategy of Korean medical students

Bo-Hyun Kim*, Sook-hee Ryue (Department of Medical Education, Yonsei University, 250 Sungsan-Ro, Seodaemun-Gu, Seoul 120-752, Republic of South Korea)

2BB5 Study of exam anxiety of nursing and allied health students

Ahadi F*, Arshadi F, Abedsaidi J, Ghorbani R, Tabatabaii M (Semnan University of Medical Sciences and Health Services, 5th Kilometer of Damghan Road, Semnan 35131-38111, Iran)

2BB6 Screening for depression among medical students at the Pontificia Universidad Católica de Chile

María Inés Romero*, Jaime Santander, Mario Hitschfeld (Santiago, School of Medicine, Marcoleta 434; Pontificia Universidad Católica de Chile, Santiago 8330073, Chile)

2BB7 A study of pre-clinical students' stress levels at Udonthani Hospital, Thailand

Kobchai Uengpitakphan* (Undornthani Medical Education Center, Undornthani Hospital, 33 Potniyom Rd., Meung 41000, Thailand)

2BB8 Stress coping strategies among medical students of a Federal University from southern Brazil

Greice Suellen Batista, Antônio Mazzei Santana, Suely Grosseman*, Laura Berton Eidt, Fernando César Wehrmeister, Valdes Bollela (Campus Universitário sem número, Centro de Ciências da Saúde/ Departamento de Pediatria, Trindade, Florianópolis, Santa Catarina, Brazil; Universidade Federal de Santa Catarina, Florianópolis 88040-900, Brazil)

2BB9 Improving remedial medical students' performance in Clinical Skills Assessment

KS Murthy*, Ged Byrne*, P O'Neill (Medical Education Office, Education and Resources Centre, University Hospitals of South Manchester, Wythenshawe Hospital, I Floor, ATR4, Southmoor Road, Manchester M23 9LT, United Kingdom)

2BB10 Delayed progression in medicine

JWM Chow*, K Anderson* (St George's, University of London, Cranmer Terrace, London SW8 1BH, United Kingdom)

2BB11 Voluntary clinical workshops in the skills lab – do we reach the poorly performing students?

Niemi-Murola Leila*, Kuusi Timo (Development and Research Unit for Medical Education, University of Helsinki, P.O. Box 63, Haartmaninkatu 4, Helsinki FIN-00014 HY, Finland)

2BB12 Impact of a student support initiative for medical students in their clinical years

Marietjie de Villiers, Martie van Heusden, Ben van Heerden* (University of Stellenbosch, Faculty of Health Sciences, PO Box 19063, Tygerberg 7505, South Africa)

2BB13 Who needs a mentoring program among medical students?

Seung-Min Oh*(Yonsei University Medical Center, 134, Shinchon dong, Seodaemun gu, Seoul, Korea., Department of Medical Education, Yonsei University College of Medicine, Seoul 134, Republic of South Korea

2BB14 A tutorial program for first year medical students in the School of Medicine of Malaga

Santos I*, Lara JP, Barbancho MA, Villalobos A, Villena A, Pena JM, González-Barón S (School of Medicine of Malaga, Boulevard Louis Pasteur, 32 , Málaga 29071, Spain)

2BB15 Counseling medical students: students' evaluation of an experience at the fourth year of the career

Jaime Labarca*, Katherine Droppelmann, Constanza Godoy, Carolina Grau, María Inés Romero (Lira 63, Pontiicia Universidad Católica de Chile, PO Box 114-D, Santiago RM, Chile)

2CC POSTERS: Continuing medical education/continuing professional development

2CC1 Using interactive webinars to deliver continuing professional development to dental professionals

Madeline Campbell*, Bryan Burford (Northern Deanery, 10-12 Framlington Place, Newcastle-upon-Tyne NE2 4AB, United Kingdom)

2CC2 Comparison of UpToDate and DynaMed regarding methodological type and publication year of their retrieved references: an analytical cross sectional study

Ladan Sayyahensan, Masoomeh Faghankhani*, Anna Javanbakht, Hamidreza Baradaran (Medical Education and Development Center, Iran University of Medical Sciences, Next to Milad tower, Hemat Highway (west to east), Tehran 14155-5983, Iran)

2CC3 Syllabus for on-going training, in relation to the professional profiles of the recipients and the healthcare environment in which they carry out their activity

Calzada MI*; Campos-Garcia T, Yera T, Cortes-Martinez C (Andalusian Regional Ministry of Health, Avenida De La Innovacion S/N, Edificio Arena 1, Sevilla 41071, Spain)

2CC4 What a public health service can and should expect in the 21st Century, in light of the on-going training concept

Calzada MI, Yera T*, Campos-Garcia T (Andalusian Regional Ministry of Health, Edificio Arena 1, Avenida De La Innovacion S/N, Sevilla 41071, Spain)

2CC5 Learning needs assessment of general practitioners in Rawalpindi and Islamabad

Saima Iqbal*, Kashaf Aziz, Nida Latif, Akhtar Ali Qureshi (Shifa College of Medicine, Sector H-8/4, Pitras Bukhari Road, Islamabad 7500, Pakistan)

2CC6 Effectiveness of an educational intervention on frequent attendance in primary care

Ramos A*, Dolado R, Cobos A, Joaniquet X, Ancochea L (Colegio Oficial de Médicos de Barcelona, Paseo de la Bonanova, 47, Barcelona 08017, Spain)

2CC7 Initiating tools for a national CPD framework in Finland

Topi Litmanen*, Kristiina Patja* (Pro Medico, PO Box 49, Helsinki FIN-00501, Finland)

2CC8 Continuing professional development of dentists in rural areas of Thailand – what did they do?

Supranee Eamrucksa* (Undornthani Medical Education Center, Undornthani hospital, 33 Potniyom rd., Meung 41000, Thailand)

2CC9 CPD needs analysis of a pharmacy population

Hall M, Adair CG*, Murray S (The Queen's University of Belfast, NI Centre for Pharmacy Learning and Development, 97 Lisburn Road, Belfast BT9 7BL, United Kingdom)

2CC10 Believing in ongoing training

Jose Manuel Rodriguez Montes* (Servicio Andaluz De Salud (Public Andalusian Health Service), Av. Jerez, S/N, Sevilla 41013, Spain)

2CC11 FMOQ – Self-Managed Continuing Professional Development Plan (SCPDP) – The results two years after implementation

Claude Guimond*, Pierre Raîche (FMOQ (Federation of General Practitioners of Québec), 1000, 1440 Sainte-Catherine Ouest, Montréal H4H 2S2, Canada)

2CC12 The construction of a tailor-made questionnaire to predict burnout and work engagement in Dutch veterinarians

Nicole JJM Mastenbroek*, Evangelia Demerouti, Debbie ADC. Jaarsma, Peter van Beukelen (Faculty of Veterinary Medicine, Utrecht University, P.O. Box 80163, Utrecht 3508TD, Netherlands)

2CC13 Medical education changes in Tyumen, Russia

Zhmurov Vladimir, Bredneva Nadezhda, Petrushina Antonina, Khvesko Tamara*, Masterskikh Svetlana (Tyumen Medical Academy, Odesskaya Street, 54, Tyumen 625023, Russia)

2CC14 Heart to Heart: A continuing professional development course teaching communication skills essential to palliative care

Anita Singh*, Dori Seccareccia, Kerry Knickle (Temmy Latner Center for Palliative Care, University of Toronto, 60 Murray Street, fourth floor, Toronto M5T 3L9, Canada)

2CC15 Continuing training as a tool for change in caring for people at the end of their lives

Ruiz-Barbosa C, Rabadan A* (Servicio Andaluz De Salud, Avenida De La Constitucion S/N, Sevilla 41071, Spain)

2DD POSTERS: Medical education: Education research, management and leadership training

2DD1 A new model for narrative inquiry research in medical education

HJ Scott* (Kent, Surrey and Sussex Deanery, The School of Surgery, 9 Bermondsey St, London SE1 2DD, United Kingdom)

2DD2 On the quest for patients: The model curriculum at Hannover Medical School (MHH)

Volkhard Fischer* (Medizinische Hochschule Hannover, Presidents office, OE 9103, Carl-Neuberg-Str. 1, Hannover D-30623, Germany)

2DD3 Students' satisfaction of a nation-wide web-based course registration system in Hamadan Medical University in Iran

Alireza Kazemi*, Saeid Bashirian, Johan Ellenius, Leila Masoomi, Uno G Fors (Medical Informatics Group, Karolinska Institutet, Department of Learning, Informatics, Management, and Ethics (LIME), Solna Campus, Berzelius vag 3, Stockholm SE-17177, Sweden)

2DD4 The tuition fees debate: impact of higher fees on medical education

Noorie Boodoo*, Adam Hafez, David Byrne, Helen Graham (Division of Medical Education, King's College London School of Medicine, Sherman Education Centre, Guy's Campus, London SE1 9RT, United Kingdom)

2DD5 How can future capacity for medical and nurse training in General Practices in Wales be ensured?

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

2DD6 Roles of class teacher system for medical students: a national survey in Japan

Kazunobu Ishikawa*, Gen Kobayashi, Tetsuhito Fukushima, Kenneth Nollet, Koji Ohtani, Hitoshi Ohto, Tatsuo Suzutani, Teizo Fujita (Center for Medical Education and Career Development, Fukushima Medical University, 1 Hikarigaoka, Fukushima 960-1295, Japan)

2DD7 Evaluation of exchange system between Spanish Universities: our experience at Faculty of Medicine, University of Malaga

Villena A, Bermúdez R, Aguirre JA, Ruiz-Cruces R, Cabello M, Blanes A* (School of Medicine of Málaga, Boulevard Louis Pasteur 32, Málaga 29071, Spain)

2DD8 Developing leaders in healthcare education: supporting the professional development of senior clinical educators in Hospital Trusts

Lesley Young*, Ed Peile, Neil Johnson, Jane Kidd (University of Warwick, Warwick Medical School, Gibbet Hill Road, Coventry CV47AL, United Kingdom)

2DD9 Developing successful leaders: a model for graduate medical education

Wilhelmine Wiese-Rometsch*, Ingrid Guerra-Lopez, Heidi Kromrei* (Department of Graduate Medical Education, Wayne State University School of Medicine, 540 E. Canfield, Detroit, Michigan 48201, United States)

2DD10 Turning up the volume: developing the voice of doctors-in-training

Susan Kennedy*, Symon Quy* (Kent & Canterbury Hospital, East Kent Hospitals University NHS Trust, Ethelbert Road, Canterbury, Kent CT1 4AN, United Kingdom)

2DD11 The role of communication in medical leadership and possibilities for its promotion

Michael Henninger, Christina Barth* (Pädagogische Hochschule Weingarten, Kirchplatz 2, Weingarten 88250, Germany)

2DD12 What are the internal barriers in research activities at universities?

Zahra Karimian*, Zahra Sabbaghian, Bahram Saleh Sedghpour (Shiraz University of Medical Sciences – Shiraz, Iran; Education Development Center, Shiraz, Iran)

2DD13 Net-Value Measurement: enhancing the understanding of satisfaction studies

Glenna J Ewing* (Des Moines University, 3200 Grand Avenue, Des Moines, Iowa 50312, United States)

2EE SECRETS OF SUCCESS (1)

2EE1 The effectiveness of web-based anatomy instruction in radiation oncology

Joanne Alfieri*, Yvonne Steinert, Peter McLeod, Lorraine Portelance (McGill University, Centre for Medical Education, Lady Meredith House, 1110 Pine Avenue West, Montreal, Quebec H3A 1A3, Canada)

Short description of innovation: Knowledge of pertinent anatomy for treatment planning is key for success as a Radiation Oncologist. Paradoxically, there is a serious lack of educational resources of this nature for radiation oncology residents. Multidisciplinary experts collaborated to develop an interactive, web-based learning module on radiological anatomy. The objective was to evaluate the effectiveness of this learning module at improving residents' knowledge and application of key anatomy and treatment planning concepts.

What will be demonstrated: We conducted a randomized controlled study to test the learning module's effectiveness. Thirty-seven radiation oncology residents participated; 20 were granted access to the module while 17 control trainees had no access. Pre- and post-tests and a demographic survey were administered to all participants. Courseware evaluation and retrospective performance surveys were administered to the intervention group.

What is particularly interesting about the innovation: The pre- and post-test mean scores were 35 % and 52 %, and 37 % and 42 %, for the intervention group and the control group respectively. The mean improvement in test scores was 16% ($p<0.05$) for the intervention group and 5% (p=NS) for the control group. Survey data revealed that the majority of residents are enthusiastic about web-based learning. They found the module to be relevant, interactive, easy to navigate, and effective for learning. Retrospective performance surveys showed a statistically significant change in all measured objectives.

How could It be implemented: The web-based learning module is an effective learning tool for radiation oncology residents.

Why participants should come to the demonstration: Web-based learning is an effective way to enhance radiation oncology residents' knowledge in anatomy and treatment planning.

2EE2 Enhancing Anatomy teaching via e-learning

Maria Toro-Troconis*, Adam W. M. Mitchell, Anthony Firth, Julie Edwards, Michael Barrett, Jenny Higham (Imperial College London, Sir Alexander Fleming building, South Kensington campus, Room 161, London SW7 2AZ, United Kingdom)

Short description of innovation: A series of e-learning materials focused on imaging and living anatomy were developed to support the delivery of Anatomy in the Graduate Entry Programme at Imperial College London.

What will be demonstrated: A large bank of living anatomy still images and video-clips were designed as an interactive e-module. The functionality offered by the Picture Archiving and Communications System (PACS) was also replicated in four different interactive imaging modules covering (thorax, knee, shoulder and abdomen). Each module offered three views: Explore, Interact, and Test. The explore view allows student to use the zoom facility. The Interact view offers a series of video clips in which the lecturers explain the images displayed within the 3 different planes. The test view offers self-assessment questions.

What is particularly interesting about the innovation: The students' evaluation (n=25) showed more than 96% of responders found the Anatomy course a positive e-learning experience. The living anatomy e-module was ranked as the best e-learning material (28%) followed by the thorax imaging tool (12%). The Living Anatomy e-module was reviewed by the responders between 1-5 times by 76% of the responders. On the other hand, the imaging e-modules had a lower uptake, reviewed by the responders between 1-5 times: shoulder (12%), knee (8%), abdomen (52%), and thorax (56%).

How could It be implemented: The delivery of the Anatomy e-learning materials has proved to be an effective engaging learning experience. However, it is worth pointing out the importance of embedding the use of e-learning materials. This may be the reason why the living anatomy e-module had a higher uptake than the imaging ones.

2EE3 Evaluation of a new interactive online teaching aid for transesophageal echocardiography (TEE)

Gordon Tait*, Annette Vegas, Massimiliano Meineri, Michael Corrin, Jo Carroll, Candice Silversides, Christohper Feindel (Toronto General Hospital, Department of Anesthesia and Pain Management, Eaton North, 3-427, 200 Elizabeth Street, Toronto, Ontario M5G 2C4, Canada)

Short description of innovation: Transesophageal echocardiography (TEE) is a standard imaging tool used intraoperatively in cardiac surgery and in cardiology. Trainees in anesthesia, cardiac surgery and cardiology have difficulty learning to translate the 2D echocardiography images into the 3D anatomy of the heart. Traditionally, this skill is taught using patients. We have developed an online application that allows trainees to view the 20 standard TEE diagnostic views in conjunction with an interactive 3D heart model showing the position of the TEE probe and the echo plane. The model can be rotated and sectioned along the echo plane to show the internal structures represented in the TEE image.

What will be demonstrated: We evaluated the face and content validity, usability and construct validity of the application. Multiple choice tests were administered before and after 3 days of access to the Standard Views application.

What is particularly interesting about the innovation: 10 subjects (4 anesthesia, 3 cardiology and 3 cardiac surgery Fellows) had a 31% improvement in scores from 51% to 81% ($p < 0.001$).

How could It be implemented: This application produced significant learning and was highly rated as an important, useful and easy to use resource.

Why participants should come to the demonstration: This application is now freely available on the Web (http://pie.med.utoronto.ca/tee) and is being translated into Chinese, Japanese, Russian, German, French, Italian, and Polish.

2EE4 Interactive three-dimensional Virtual Brain Model as a companion to Neuroscience Education

Wieslaw L. Nowinski*[1], Wojciech Pawlina*[2] ([1]Biomedical Imaging Lab, Singapore Bioimaging Consortium, Agency for Science, Technology and Research, Singapore; [2]Department of Anatomy, Mayo Medical School, College of Medicine Mayo Clinic, Rochester, MN, United States)

Short description of innovation: The implementation of student-centered education and outcomes-based curricula in the last decade has profoundly changed the paradigm for teaching and learning in medical schools. Basic science courses were redesigned to be more attractive and effective to medical students possessing a variety of learning styles. While the medical education environment undergoes continuous changes on many fronts, the demand for technological innovations in education remains constant and intense. To facilitate learning and teaching of brain structures, an interactive 3D model derived from multiple 3 and 7 Tesla magnetic resonance imaging (MRI and MRA) scans of brain was created and displayed in digital media environment. The virtual 3D cerebral model contains detailed rendering of brain surface, internal structures, cerebral vasculature and ventricular system. The vascular anatomy comprises the labeled cerebral arteries with their branches and cerebral veins including dural sinuses with their tributaries. All structures are interactive and designed for intelligent exploration of this organ. The entire 3D model of the brain or any region is able to be rotated, zoomed, and panned in real time. The brain can be virtually sectioned in any of the three planes with anatomical landmarks of clinical importance displayed and labeled on each section. Vasculature may be extracted from the tissue, as well superimposed on the anatomical structures. In addition, the program generates automatically objective learner's evaluation in varying difficulty settings, individualized self-learning assignment, and evaluation of outcomes.

This application is suitable for self-directed modules, classroom presentations, preparing of teaching materials, and student self-assessment.