Short Communications:
Selection – Postgraduate Training
Location: Argyll III, Crowne Plaza

#9H1 (24701)
Effects of manual dexterity in laparoscopic simulation skills training on medical students’ career preferences

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Background: Laparoscopic simulators enable novice medical students to learn basic surgical skills. We have recently introduced laparoscopic surgical simulation training in a clinical clerkship. In this study, we examined the effects of manual dexterity on career preferences of medical students.

Summary of Work: Two hundred seventy-four fifth-year medical students in Fukushima Medical University who participated in laparoscopic simulation-based learning were examined. Students had three different laparoscopic task trainings (grasping/clipping, bimanual coordination, and spatial recognition) using a laparoscopic simulator. After each training, their performance was objectively measured by 16 parameters such as time taken and accuracy. Students were asked to self-assess their manual dexterity (very clumsy) and to choose a future career preference (internist, surgeon, although there were little differences in the objective parameters.

Take-home messages: Self-assessment of manual dexterity seems to affect future career preferences of fifth-year medical students than objective parameters in simulation-based learning.

#9H2 (26570)
Predictive validity of recruitment into specialty training in public health in the UK – prospective cohort study

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Background: In 2009, national recruitment and selection into specialty training in public health was introduced in the UK. The selection process is competency-based and informed by the person specification. It involves assessment centre (AC), comprised of two cognitive ability tests (for numerical and verbal reasoning) and a situational judgement test (SJT), and selection centre (SC) using a combination of assessment modalities and multiple assessors.

Summary of Work: In a prospective cohort study design, we studied the incremental predictive validity of the selection process in identifying candidates who progress well in public health specialty training. The study cohort included all the 274 candidates who took up an appointment to a training scheme in England and Wales between 2009 and 2012. We linked the standardised T-scores of the AC and SC to indicators of performance in training, as measured by membership examinations Part A and Part B and by portfolio assessment of progress in training. We used logistic regression and Receiver Operating Characteristic (ROC) analyses.

Summary of Results: Higher scores in AC and SC increased the likelihood of better performance in training. The overall AC score discriminated better than individual AC test and the overall recruitment score discriminated better than the AC score or SC score separately. While the ability tests predicted exam performance, SJT and SC better predicted overall progress in training.

Discussion and Conclusions: The selection process into specialty training in public health has good predictive validity. The best predictors are a combination of ability tests, SJT and SC.

Take-home messages: Evidence-based multi-modality selection process is effective in identifying candidates who progress well in training.
#9H3 (27722)
The use of shortlisting and selection centre assessments for recruitment to run-through training in neurosurgery in the UK

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Background: In 2008 the National Neurosurgery Selection Board (NNSB) was established to conduct the application process with support from experts in occupational psychology.

Summary of Work: The development of the selection process comprised four phases, 1. Formulation of person specifications. 2. Development of a short-list scoring matrix. 3. Development of multiple Selection Centre tasks. 4. Review of feedback. At the Selection Centre, professional competencies including technical knowledge and clinical expertise, judgement under pressure, problem solving, integrity and communication skills are assessed in 5 tasks. A sixth station evaluates basic surgical skills (5% of overall score). Feedback has led to developments for 2015 including removal of personal statement shortlist scoring, introduction of a presentation, specific training of telephone task assessors. Overall rank is based upon short-listing (20%) and selection centre score (80%).

Summary of Results: Competition ratios have been between 7 and 12:1 since 2008. In 2014, the slightly negatively skewed normal distribution of selection centre scores indicates room for refinement. Inter-rater reliability and internal reliability were high (r=0.75 and α >0.9). The shortlisting total did not correlate with the overall selection centre score supporting the contribution of both scores to the overall rank. Applicants agreed or strongly agreed that the conduct of stations was fair (94%) and appropriate (92%). Selector feedback was strongly supportive.

Discussion and Conclusions: National Selection for Neurosurgery applications is robust and is considered appropriate and fair by selectors and applicants. Annual review of the process is necessary to effect refinements.

Take-home messages: A robust process of high-stakes selection requires careful review of person specifications and shortlist scoring criteria. Selection centre material must assess specific competencies across several tasks. Feedback is essential to demonstrate fairness and enable future improvements.

#9H4 (27478)
Is the standardized letter of recommendation a useful tool in the pediatric residency admissions process?

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Background: The objective was to develop and provide validity evidence for the use of the Standardized Letter of Recommendation (SLOR) as part of a pediatric residency admissions process (2012-2013).

Summary of Work: Content for SLOR items was based on CANMEDS roles and desired competencies for pediatric residents. Validity evidence was gathered for internal structure, response process, relationship to other variables, and consequences.

Summary of Results: 114 raters completed 142 SLOR forms for 71 applicants. Average overall assessment was 3.0 out of 4 (SD=0.59). Cronbach’s alpha was 0.93. G-coefficient was 0.59. The decision study showed that four SLOR forms are necessary to reach a G-coefficient of 0.73. ICC for the SLOR was 0.51 (95%CI 0.43, 0.59). SLOR scores were correlated with the Structured Interview (r=0.28, 95% CI=0.05,0.51), Global Rating scores (r=0.36, 95% CI=0.13,0.58), and the acceptance decision (r=0.25, 95% CI=0.02,0.46). SLOR scores were not predictive of the admissions decision (OR= 1.67, p=0.37).

Discussion and Conclusions: To our knowledge, this is the first reported SLOR developed for pediatrics. The SLOR was internally consistent but inter-rater reliability was moderate at best. Applicant variance was high (28.5%) indicating differentiation among applicants. SLOR correlated with other selection instruments but scores were not predictive of the admissions decision suggesting that SLOR scores should be weighted less heavily in the admissions decision compared to other selection instrument scores.

Take-home messages: The SLOR may provide more information than the traditional letter of recommendation; however, validity evidence for the SLOR is lacking and further work should address how the letter of recommendation should be integrated into the admissions process.
Analysis of the residency entrance test in Portugal

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Background: In Portugal, access to residency is based on a 100 multiple choice questions test – the same test for all the residency programs. A few months after graduation, and every year for more than three decades, hundreds of recently graduated doctors take this test. That test’s mark sets the order in which each junior doctor gets to choose where and what to specialize in. The validity of this exam has been questioned for long due to bad item writing quality. Despite that, this method of seriation has endured. No data on validity of this exam was previously published.

Summary of Work: Based on previously published criteria for multiple choice questions, exams from 2000 to 2014 where analysed by the authors: a total of 19 exams and 1900 questions. Questions were classified as acceptable or not acceptable using those criteria.

Summary of Results: Summarising results of the analysis of the last 2014’s exam, less than 10% of the questions were acceptable. The main issue was negatively worded stems (75% of the questions). Also, options were invariably very different in length or too detailed.

Discussion and Conclusions: Although not strictly forbidden, negatively worded stems should be used with care, which is a major issue in this case. Unfortunately, other problems were encountered. Some attempts to change this exam have been made recently, even though the new format is not yet known. Being the only method for residency entrance seriation, questions should have followed published recommendations for multiple choice item writing.

Take-home messages: Multiple choice item writing criteria should be seriously taken into account, especially in high stakes exams such as residency entrance tests.