



# OTTAWA LYON2022

HYBRID CONFERENCE | 26-28 AUGUST

REIMAGINING ASSESSMENT ACROSS THE CONTINUUM

## Abstract Book



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**\* All abstracts are peer reviewed**



## Online Oral - Postgraduate Assessment

### Online Oral Session 1.1 (0382)

**Date of presentation:** Saturday 27th August

**Time of session:** 04:30 - 04:45

**Location of presentation:** Online Session

### **Implementation of Entrustable Professional Activities (EPAs) in China: focusing on Pediatric Residency Training Program**

Shan Li<sup>1</sup>, Xin Qi<sup>2</sup>, Zhehan Jiang<sup>3</sup>, Haichao Li<sup>4</sup>, Jianguang Qi<sup>1</sup>

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#### **Background**

The development and implementation of Entrustable professional activities (EPAs) in clinical postgraduate training were rarely reported in China, especially in a Chinese pediatric residency training program.

#### **Summary Of Work**

Observational study of pediatric residents of PKUFH over 1 academic year (2020-2021) assessed on CR-EPAs developed by Peking University First Hospital (PKUFH) in 2020. A modified eight-point supervision scale was used, the ratings were conducted bi-annually (Fall 2020 and Spring 2021). The residents were divided into different Postgraduate year (PGY) groups, according to their rotation status in July 2020.

#### **Summary Of Results**

37 residents were enrolled in this study, 111 and 99 trainer ratings were collected in January and July 2021, respectively. The generalizability coefficient was 0.98 and 0.96 in the ratings of Fall 2020 and Spring 2021 respectively. There was a progressive increase in the level of supervision rating by PGY; Performance levels in Spring 2021 were higher than those of Fall 2020 ( $p < 0.05$ ) in most EPAs, except EPA 10 (Obtain informed consent for tests and/or procedures), EPA 13 (Deliver bad news to patients and/or family members), and EPA 15 (Prepare and respond to public health events). At the time of entering residency training, PGY-1 residents were less qualified, significant differences were found between PGY-1 and PGY-2 in the ratings of Fall 2020, except for EPA 10. By the time of graduation, EPA 4 (Develop the comprehensive management plan for patients), EPA 8 (Identify clinical



emergency and critical illness and provide initial management), and EPA15 were the EPAs requiring more supervision for PGY-3 residents.

### **Discussion And Conclusion**

The rating showed good validity and reliability. There are gaps between undergraduate medical education (UME) and post-graduate medical education (PGME). More training is needed to reach the unsupervised practice of CR-EPAs for the graduation of residency training.

### **Take Home Messages**

This study suggests EPAs are a robust workplace-based assessment tool in a carefully designed pediatric residency training program in China.

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## Online Oral Session 1.2 (0405)

**Date of presentation:** Saturday 27th August

**Time of session:** 04:45 - 05:00

**Location of presentation:** Online Session

### **Selection outcomes that count: seven years on from developing selection criteria to create a rural generalist workforce**

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#### **Background**

The Australian College of Rural and Remote Medicine (ACRRM) provides vocational training for doctors who will undertake a broad scope of practice across primary care, emergency and hospital care. Its selection process was developed following literature review and consultation with assessment experts.

#### **Summary Of Work**

Between 2017 and 2020 junior doctor candidates undertook a two stage merit-based entry assessment process in order to join training toward Fellowship with the College.

Firstly, a Suitability Assessment: a written application marked using a rubric to assess the following domains:

- Intention for a career working in rural or remote Australia
- capacity and motivation to acquire knowledge and skills in the ACRRM curriculum
- connection with rural communities
- commitment to meeting the needs of rural and remote communities through an extended scope of practice
- personal characteristics including persistence, adaptability, recognition of limitations, comfort with uncertainty and teamwork



These domains were expected to correlate with future rural practice outcomes.

Secondly, Selection Assessment: candidates deemed to meet the minimum suitability standard undertook an eight (later changed to six) station multiple mini interview, marked using Behaviourally Anchored Rating Scales (BARS) which assessed the same domains as above.

796 records (October 2017 to January 2020) were reviewed with scores assessed for correlations with: success in Fellowship assessments, attrition and rural location of practice.

### **Summary Of Results**

College selection scores for both Suitability and Selection Assessment hold predictive validity for Fellowship assessments comparable to the medical assessment literature.

There was a significant positive association between Selection Assessment scores and attrition ( $p < 0.001$ ). Candidates scoring in the 10<sup>th</sup> percentile had a predicted withdrawal probability of 0.30, compared to 0.12 in the 90<sup>th</sup> percentile.

Applicants who score higher in MMI are associated with a higher likelihood of being trained at practices in rural regions.

### **Discussion And Conclusion**

This is the first national selection process at speciality level training which seeks to select for rural practice outcomes. The novel selection criteria correlate with continuation in the program, passing hurdle assessments and training in more rural locations.

### **Take Home Messages**

Select for the workforce distribution outcomes you want.

Develop selection criteria in consultation with experts in the field

Evaluate selection processes against intended outcomes.



## Online Oral Session 1.3 (0431)

**Date of presentation:** Saturday 27th August

**Time of session:** 05:00 - 05:15

**Location of presentation:** Online Session

### **The Correlation Between Knowledge and Psychomotor Skills Assessment During National Board Exam Among Ophthalmology Residents in Indonesia**

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#### **Background**

The National Board Examination is designed to measure the basic knowledge and clinical skills of ophthalmology residents. It consists of two different tests, held by Indonesian College of Ophthalmology (KIKMI), the knowledge test consists of multiple choice questions (MCQ) and the psychomotor test is an Objective Structured Clinical Examination (OSCE) composed of five stations. Passing this examination is one of the requirements to become a certified ophthalmologist. The purpose of this study is to evaluate the correlation between knowledge and psychomotor skills assessment during National Board Exam among ophthalmology residents in Indonesia.

#### **Summary Of Work**

All final-year ophthalmology residents from 12 residency training centers in Indonesia who took part in 2020-2021 National Board Examination were included in this cross-sectional study (n = 235). Written examination and OSCE (Objective Structured Clinical Examination) scores were collected. Pearson's correlation was used to analyze the data.

#### **Summary Of Results**

A total of 235 ophthalmic residents were enrolled; 93 residents in 2020 and 142 residents in 2021. The average knowledge score of the participants in 2020 and 2021 was 70.33 and 67.72, respectively. The mean score of psychomotor skills in 2020 was 78.57 and 76.38 in 2021. Both Pearson correlation test showed a significant positive correlation between residents' knowledge and psychomotor skills



in 2020 ( $r = 0.649$ ,  $p = 0,000$ ) and 2021 ( $r = 0.471$ ,  $p = 0,000$ ). We also evaluated the correlation between knowledge and skills of different topics, including Vitreo-retina, Neuro Ophthalmology, Glaucoma, Reconstruction & Oncology, Pediatric Ophthalmology & Strabismus, Infection and Immunology, Refraction and Cataracts & Refractive Surgery.

### **Discussion And Conclusion**

Our results show that there was a significant relationship between the residents' knowledge and skills; therefore, the residents with a high written score, performed better in OSCE. However, we did not find a significant correlation between the written score and OSCE score of these topics such as Neuro Ophthalmology, Glaucoma, Reconstruction & Oncology, Pediatric Ophthalmology & Strabismus, Cataracts & Refractive Surgery. These results require further evaluation of items.

### **Take Home Messages**

This study shows that residents' oral examination scores are significantly correlated with their written examination scores, indicating having the basic of clinical knowledge will contribute to raise the quality of residents' skills.

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## Online Oral Session 1.4 (0468)

**Date of presentation:** Saturday 27th August

**Time of session:** 05:15 - 05:30

**Location of presentation:** Online Session

### Exploration for interprofessional and team communication assessment criteria for anesthetic residents

Jiaxin Liu<sup>1</sup>

<sup>1</sup> *The first affiliated hospital of Sun Yat-sen University, Guangzhou, China*

#### Background

The six core competencies for standardized residency training in China include communication and cooperation skills. The description of the cultivation of communication and cooperation ability by charged departments is ambiguous and straightforward, and there is no accepted assessment standard. Communication and cooperation competence include patient- and family-centered communication, interprofessional and team communication, and communication within health care systems. Communicating with the health care team is the main form of work in the operating room. Between the anesthesiologists and the surgeons or OR/anesthesia nurses exist close communication daily. We aimed to set up practical criteria in our region for assessing interprofessional and team communication competency of anesthetic residents.

#### Summary Of Work

We pooled the collaborative and communication requirements from the Chinese residency training program and the contents of the Chinese residency core competency framework, the communication competency assessment criteria in ACGME milestone 2.0 and CanMEDS 2015, and selected consistent assessment items that fit the cultural and medical backgrounds of this area. We applied The Oxford NOTECHS assessment tool to develop an interprofessional and team communication assessment for anesthetic residents.

#### Summary Of Results

The assessment criteria for interprofessional and team communication competency for anesthetic residents are as the following table:



| Operating-theatre team NOTECHS             | Level 1                            | Level 2   | Level 3  | Level 4                                      | Level 5   |
|--|------------------------------------|---|--|--|---|
| <b>Leadership and management</b>           |                                    |   |  |  |   |
| Leadership                                 | Accessible                         | Involves  | Reflects on suggestions                                    | Motivates                                    | Inspires  |
| Maintenance of standards                   |                                    | Subscribes to standards                             | Demonstrates desire to achieve high standards              |  |   |
| Planning and preparation                   | Team participation in planning     | Understanding confirmed                             | Plan is shared   | Changes in consultation                      | Projects  |
| Workload management                        | Monitors                           | Tasks are prioritised                               | Allocates adequate time                                    | Responds to stress                           | Distributes tasks                               |
| Authority and assertiveness                | Advocates position                 | Values team input                                   | Persistent   | Appropriate assertiveness                    | Takes control ( in some cases)                  |
| <b>Teamwork and cooperation</b>            |                                    |   |  |  |   |
| Team building/maintaining                  | Does not compete                   | Polite/Friendly                                     | Relaxed/Open   | Supportive                                   | Inclusive/Uses of humour                        |
| Support of others                          | Helps others                       | Gives feedback                                      | Offers assistance  |  |   |
| Understanding team needs                   | Listens to others                  | Gives personal feedback                             | Recognised ability of team                                 | Condition of others considered               |   |
| Conflict solving                           |                                    |   | Keep calm in conflicts                                     | Concentrates on what is right                | Suggests conflict solutions                     |
| <b>Problem-solving and decision-making</b> |                                    |   |  |  |   |
| Definition and diagnosis                   |                                    |   | Uses all resources   | Analytical decision-making                   | Review factors with team                        |
| Option generation                          |                                    | Asks for options                                    | Confirms options   | Suggests alternative options                 | Reviews outcomes                                |
| Risk assessment                            |                                    | Estimates risks                                     | Estimates patient outcome                                  | Considers risk in terms of team capabilities |   |
| Outcome review                             |                                    | Seeks feedback from others                          | Makes time for review                                      | Reviews new options                          | Objective, constructive and timely reviews      |
| <b>Situation awareness</b>                 |                                    |   |  |  |   |
| Notice                                     | Checks and reports changes in team | Encourages vigilance/Asks for or shares information | Consider all team elements/Aware of available of resources | Updates/Requests reports                     | Discusses team constraints/Shares mental models |
| Understand                                 | Speaks up when unsure              | Cross-check above                                   | Knows capabilities   | Updates other team members                   | Identifies future problems                      |
| Think ahead                                |                                    |   | Anticipates requirements                                   | Discusses contingencies                      |   |

If the resident had shown one of these items during the assessment process, the assessor ticks the item after, and the most ticked level is the resident's interprofessional and team communication competency level.

### Discussion And Conclusion

The criterion is a combination of the currently accepted standard for assessing communication. Through residents' specific performance, it assesses the interprofessional and team communication competency. It shifts the quantitative score of Oxford NOTECHS to a qualitative rating of competency level. Next, we will examine the feasibility of using this criterion to assess anesthetic residents' interprofessional and team communication competency through scenario simulation and clinical settings.

### Take Home Messages

To assess anesthetic residents' interprofessional and team communication core competency by setting up criteria that meet our culture and medical environment.



## Online Oral Session 1.5 (0668)

**Date of presentation:** Saturday 27th August

**Time of session:** 05:30 - 05:45

**Location of presentation:** Online Session

### **Resilience and Emotions of Frontline Obstetrics and Gynaecology Healthcare Workers During the Novel Coronavirus-2019 (COVID-19) Pandemic: Cross-sectional Retrospective Descriptive Study**

Monica Chua<sup>1</sup>, Hester Lau<sup>1</sup>, Ni Ni Soe<sup>1</sup>, Jill Lee<sup>1</sup>, Suzanna Sulaiman<sup>1</sup>

<sup>1</sup> *KK Women's and Children's Hospital, Singapore, Singapore*

#### **Background**

Healthcare workers (HCW) face intense pressure during a pandemic, and hence are at greater risk of experiencing burnout. This study aims to explore impact of COVID-19 outbreak on resilience and emotions of frontline HCW during the pandemic.

#### **Summary Of Work**

This is a cross-sectional retrospective descriptive study on HCW who worked in the COVID-19 screening facilities and wards of KK Women and Children's Hospital Singapore, Department of Obstetrics and Gynaecology between 7 February to 30 April 2020. The participants were given a survey designed to understand their emotions when caring for patients with suspected or confirmed COVID-19, and how their various aspects of health were affected. The Brief Resilience Scale (BRS) was used to evaluate their resilience.

#### **Summary Of Results**

Normal resilience scores were found in 76.3% of HCW, 11.3% had high resilience scores while 12.4% had low resilience scores. Doctors had higher resilience scores than nurses (3.8 vs 3.3, p-value 0.017). HCWs perceived their mental health was most affected, followed by social and physical health as a result of COVID-19 related work. The main stressors faced were related to their personal safety and that of their family. A positive attitude at work with good teamwork, time away from routine clinical work and appreciation received helped to relieve the emotional and psychological stress faced.

#### **Discussion And Conclusion**

The COVID-19 pandemic has, beyond physical health, caused emotional distress among the frontline HCW. The resilience score, feelings of HCW, their perceived stressors, and coping strategies were similar to those in other studies. However, analysis from qualitative data helped identify key areas that healthcare institutions can engage in to improve HCW well-being.



### Take Home Messages

It is essential to explore appropriate interventions for HCW with low resilience to better assist the coping mechanism during this pandemic. Stressors identified and feedback received through this study are useful for implementing supportive workforce resources during a pandemic.

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## Online Oral - Assessment in Practice 1

### Online Oral Session 2.1 (0227)

**Date of presentation:** Saturday 27th August

**Time of session:** 07:00 - 07:15

**Location of presentation:** Online Session

### Unpacking the impact of programmatic assessment as an educational and social change: A critical realist study

Priya Khanna<sup>1</sup>, Christopher Roberts<sup>1</sup>, Timothy Rutzou<sup>2</sup>, Stuart Lane<sup>1</sup>, Jane Bleasel<sup>1</sup>

<sup>1</sup> *The University of Sydney, Sydney, Australia* <sup>2</sup> *The University of Notre Dame, Sydney, Australia*

#### Background

Fundamental challenges exist in researching complex initiatives in assessment practice such as programmatic assessment especially in education programs where prior assessments have been largely traditional. We evaluated the perceived impact of a programmatic assessment system implemented in the first year of a new medical curriculum of one of the largest medical programs in Australia. We applied critical realist perspectives to unpack the underlying causes (mechanisms) that explained student experiences of programmatic assessment, in order to optimise assessment practice for future iterations

#### Summary Of Work

Using the data from 14 in-depth focus groups (N=112/261 students), we applied a critical realist lens drawn from Bhasker's three domains of reality (the actual, empirical, and real) and Archer's concept of structure and agency to understand the student experience of programmatic assessment. The analysis involved: induction (pattern identification), abduction (theoretical interpretation), and retrodution (causal explanation).

#### Summary Of Results

As a complex educational and social change, the assessment structures and culture systems within programmatic assessment provided conditions (constraints and enablers) and conditioning (acceptance or rejection of new 'non-traditional' assessment processes) for the agents (students) to exercise their learning choices. The emergent underlying mechanism that most influenced students' experience of programmatic assessment was balancing the complex relationships between learner agency, assessment structures, and the cultural system.



### **Discussion And Conclusion**

Achieving a balance between agency, structure, and culture can promote sustained changes in assessment practices. Promoting collective reflexivity and agency among faculty and students can be achieved via optimising assessment structures by explicit integration of theory with practice and changing learning culture to promote faculty and students' acceptance and trust related to the new norms, beliefs, and behaviors in assessing for, as and of learning.

### **Take Home Messages**

1. Balancing the complex interplay between learner and faculty agency, assessment structures, and the cultural system is a key in developing a change model for implementing, sustaining, and improving assessment practices.
  2. A critical realist approach, based on the relationship between structure, culture, provides a meaningful and adaptable methodology for researching complex assessment practices.
- 



## Online Oral Session 2.2 (0577)

**Date of presentation:** Saturday 27th August

**Time of session:** 07:15 - 07:30

**Location of presentation:** Online Session

### **Programmatic Assessment for Learning: parallel development of self regulated learning in the Learning Coaches**

Anna Vnuk<sup>1,2</sup>, Svetlana King<sup>2</sup>, Johanna Jordaan<sup>2</sup>, Maxine Moore<sup>2</sup>, Kate Starr-Marshall<sup>2</sup>

<sup>1</sup> James Cook University, Cairns, Australia <sup>2</sup> Flinders University, Adelaide, Australia

#### **Background**

One of the key components of Programmatic Assessment for Learning (PAL) is the development of self-regulated learning (SRL) and the capacity to derive meaning from assessment results and feedback to drive learning. SRL is a skill that needs to be cultivated. This development can be enhanced and supported by targeted coaching.

#### **Summary Of Work**

This study sought to understand coaches' perspectives on the development of understanding about PAL and SRL. Data were collected from focus groups (n=2) and semi-structured interviews (n=8) with Learning Coaches (LCs) across the four-year Flinders MD program. Data focussed on the enablers and barriers of PAL and SRL, perceptions of the students' development as self-regulated learners, and the coaches' own understanding of SRL. Data were transcribed, coded and analysed thematically and using Meyer and Land's (2005) Threshold Concepts framework.

#### **Summary Of Results**

This presentation reports on the findings of one component of the study: the coaches' understanding of SRL.

Some experienced LCs described how prior understanding of SRL had transformed their own professional practice and now informed their engagement with the students. Others explained how



the coaching process itself had changed the way they view their own practice and understanding of SRL. Some more experienced LCs suggested that less experienced LCs lacked a nuanced understanding of SRL which was also confirmed by some of the research data.

### **Discussion And Conclusion**

Data analysis revealed evidence of parallel development of SRL between LCs and students. In exploring SRL development, participants provided descriptions that clearly align with the elements of a Threshold Concept.

The study's findings highlight the importance of equipping coaches with the knowledge, skills, support and scaffolding to develop a sound understanding of SRL. This not only refers to supporting them in their role in coaching students, but also encouraging coaches to reflect on their own experiences of SRL.

### **Take Home Messages**

Ensuring that coaches have a sound understanding of SRL prior to commencing their role, and receive ongoing support are key to promoting success of the program, reminding us that "To introduce full-blown programmatic assessment in actual practice, all stakeholders need to be convinced. This is not an easy task". (van der Vleuten et al. 2015).

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## Online Oral Session 2.3 (0112)

**Date of presentation:** Saturday 27th August

**Time of session:** 07:30 - 07:45

**Location of presentation:** Online Session

### **Developing assessment methods for entrustable professional activities at Faculty of Medicine in Rabigh, King Abdulaziz University**

Muhammad Imran<sup>1</sup>, Waleed Alghamdi<sup>1</sup>

<sup>1</sup> King Abdulaziz University, Jeddah, Jeddah, Saudi Arabia

#### **Background**

It was suggested to introduce entrustable professional activities (EPAs) in the curriculum at the faculty of medicine in Rabigh, King Abdulaziz University, Jeddah. EPA-based undergraduate curriculum has unique challenges, and one of them is assessing those EPAs. This study was conducted to develop assessment strategies for the selected EPAs.

#### **Summary Of Work**

Different strategies were used to identify assessment methods for EPAs. Literature search, survey and focus group discussions (FGD) with students, Delphi technique and FGD with subject experts, meetings with the medical education and assessment units, and involvement of external reviewers were employed. The methods were discussed and finalized in a meeting with the vice dean for clinical sciences and the dean of faculty.

#### **Summary Of Results**

The first focus was faculty development for assessing EPAs. Seminars/ webinars, workshops, and small group sessions were planned for faculty development. A multilayered approach was finalized, for students, at different levels. Written assessment in the form of objective structured clinical examination (OSCE), mini clinical evaluation exercise (mini-CEX), Direct Observation of Procedural Skills (DOPS), 360° feedback, portfolio, case-based discussion (CBD), reflective practice, standardized rubric, and global entrustment scale were finalized at three levels: initial (I), proficient (P) and mastery (M), starting from 4<sup>th</sup> year to the end of the internship.

#### **Discussion And Conclusion**

EPA-based curriculum can be a futile effort if the assessment is weak. This needs to develop a valid and feasible plan with clear objectives. We suggest a multilayered approach in our program. The methods described here have been validated in different studies. However, execution is a major challenge. We conclude that, though developing assessment strategies for EPAs are challenging,



success can be promised if all stakeholders are involved, and EPAs are assessed in their real spirit.

### Take Home Messages

- Assessment of EPAs is an essential part of when EPA-based curriculum is introduced.
  - Developing assessment strategies for EPAs is challenging, and the process needs rigorous efforts.
  - Mostly, already valid assessment tools are used to assess EPAs, however, feasibility and assessors' training are crucial factors for success.
  - Each setup has its unique pros and cons that should be considered while developing assessment strategies.
- 



## Online Oral Session 2.4 (0351)

**Date of presentation:** Saturday 27th August

**Time of session:** 07:45 - 08:00

**Location of presentation:** Online Session

### **Clinician educators' conceptions of assessment: a continuum of understandings**

Danica Sims<sup>1</sup>, Francois Cilliers<sup>2</sup>

<sup>1</sup> *University of the Western Cape, Cape Town, South Africa* <sup>2</sup> *University of Cape Town, Cape Town, South Africa*

#### **Background**

Exit-level assessment in medical education has significant consequences for the student and public. It impacts on student learning and certification of a graduate as safe for public patient care.

Assessment should be practiced in such a way as to drive student learning and outcomes in desirable ways. Assessors are key to this process, yet little is known about their conceptions of assessment.

#### **Summary Of Work**

To this end, phenomenography was used to explore assessors' conceptions of assessment in medical education. Thirty-one clinical educators, from three different and diverse medical schools in South Africa and Mexico, were interviewed.

#### **Summary Of Results**

Conceptions of assessment were found to exist along a continuum. Four hierarchical categories of conceptions of assessment were found: Passive Operator; Awakening Enquirer; Active Owner and Scholarly practitioner. Dimensions of these categories included: purpose of assessment, temporal perspective, assessment literacy, identity, role and responsibility, reflexivity, accountability and emotional valence. Analytical triangulation of these findings with previously published literature across educational fields was performed to determine confirmability.

#### **Discussion And Conclusion**

The proposed conceptions of assessment encompass all of the components of conceptions proposed in previous work conducted at a range of levels of education. The exceptions are the explicit structure of the understanding of the purpose of assessment (concrete versus abstract, scope and scale) which was implied in previous conceptions; the dimension of professional identity; and the dimension of scholarliness. It is also evident that this work adds previously undescribed dimensions



to conceptions of assessment, including assessment literacy, professional identity, reflexivity and role and responsibility.

### **Take Home Messages**

Any intervention to change assessment practice aimed towards positive learning effects of assessment cannot take place without the assessor. We propose that understanding assessors' conceptions of assessment is an important part of the process needed to support changed assessment practice. The findings of this study extend our understanding of assessors' conceptions in medical education and align with previously described conceptions of assessment; suggesting possible transferability to other contexts.

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## Online Oral Session 2.5 (0537)

**Date of presentation:** Saturday 27th August

**Time of session:** 08:00 - 08:15

**Location of presentation:** Online Session

### **Systemic Assessment for Resilience (SAR): a novel model promoting resilience into assessment**

Majed Wadi<sup>1,2</sup>, Muhamad Saiful Bahri Yusoff<sup>1</sup>, Ahmad Fuad Abdul Rahim<sup>1</sup>, Nik Ahmad Zuky Nik Lah<sup>3</sup>

<sup>1</sup> *Medical Education Department, School of Medical Sciences, Universiti Sains Malaysia, Kubang Kerian, Malaysia* <sup>2</sup> *Medical Education Department, College of Medicine, Qassim University, Buraidah, Saudi Arabia* <sup>3</sup> *Obs & Gyn Department, School of Medical Sciences, Universiti Sains Malaysia, Kubang Kerian, Malaysia*

#### **Background**

Resilience has become a hot topic in a variety of fields, including medical education. The incorporation of resilience into assessment practice is rarely explored. The purpose of this study is to promote resilience during the assessment process.

#### **Summary Of Work**

Three concurrent approaches were used to investigate the area of integrating resilience into assessment systems. Then, the SAR model and its strategies were validated through a content validation and response process.

#### **Summary Of Results**

The SAR model is comprised of 19 assessment strategies, each of which is further classified into five assessment phases and is mapped to one of four resilience domains.

#### **Discussion And Conclusion**

The SAR model and its associated strategies offer a novel, evidence-based model for promoting resilience through assessment practice.

#### **Take Home Messages**

Resilience should be fostered in many aspects of the medical curriculum, including assessment.

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## Online Oral Session 2.6 (0734)

**Date of presentation:** Saturday 27th August

**Time of session:** 08:15 - 08:30

**Location of presentation:** Online Session

### **Feedback as a tool for assessment in a postgraduate program: teachers perspective**

Rubaba Azim<sup>1</sup>

<sup>1</sup> *Dow University of Health Sciences, Karachi, Pakistan*

#### **Background**

Feedback is a process which comprises communication of information followed by reactions to such communication. Feedback in medical education is an integral and important element of teaching as it encourages and enhances the learners' knowledge, skills and professional performance. It aids in improvement of the performance of the learners with the basic aim of helping them achieve their goals in addition to the educational objectives.

#### **Summary Of Work**

This is the cross-sectional study in which we adopted qualitative methodology for the collection of our data. Data will be collected through individual interviews with the faculty of Master Health Professionals Education (MHPE) who are involved in giving feedback to the students of MHPE. The data was analyzed by thematic analyses and the main themes were extracted.

Semistructured interviews are conducted and recorded for data analysis. All data was anonymized to maintain the privacy.

#### **Summary Of Results**

The main themes that were extracted are

lack of acceptability by students

lack of time

lack of training for giving feedback

biasness in giving feedback



feedback is not constructive

no structured feedback

Lack of practice and culture

### **Discussion And Conclusion**

Our study showed that despite the realization of the effectiveness of feedback, most of the faculty is reluctant to give detailed feedback to their students. There are many reasons for this first there is a lack of experience and most of the faculty needs training for giving constructive feedback. Many studies showed that feedback is indispensable for the constructive learning of students. Likewise, in our study, all participants agreed upon the fact that feedback is an important tool for teaching as well as assessment.

### **Take Home Messages**

Feedback is constructive in the process of learning if it is delivered immediately and constructively. However, despite the consensus that feedback is an important aspect of improved learning capabilities, teachers are reluctant to give feedback to their students. The main reasons for ineffective use of feedback are lack of training and lack of time. So it is necessary to arrange training sessions for teachers to give feedback and also promote the culture of 360 feedback in institute.

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## Online Workshop CW1 (0737)

**Date of presentation:** Saturday 27th August

**Time of session:** 07:15 - 08:45

**Location of presentation:** Online Session

### **Pandemic impacts on OSCE delivery – adaptations, substitutions and trade-offs. Implications for the place of the OSCE in future-focussed programs of assessment**

Bunmi Malau-Aduli<sup>1</sup>, Shannon Saad<sup>2</sup>, Cassandra Richmond<sup>3</sup>, Karina Jones<sup>4</sup>

<sup>1</sup> James Cook University, College of Medicine and Dentistry, Townsville, Qld, Australia <sup>2</sup> Notre Dame University, Sydney, Australia <sup>3</sup> University of Notre Dame, Australia, Sydney, Australia <sup>4</sup> James Cook University, Townsville, Australia

#### **Background**

The Australasian Collaboration for Clinical Assessment in Medicine (ACCLAiM) is a collaborative medical school initiative with two principal foci: to benchmark school-specific performance outcomes of the exit-year Objective Structured Clinical Exam (OSCE); and to facilitate inter-school quality assurance (QA) around OSCE practices.

In 2020-21, the COVID-19 pandemic resulted in major reconsideration of OSCE implementation processes worldwide. In the Australian context, medical schools in ACCLAiM reported major adaptations to OSCE processes, including the use of virtual OSCEs (vOSCEs). To capture the experiences of all stakeholders of this new format of OSCE delivery and understand the implications for the place of the OSCE in future-focussed programs of assessment, we conducted a qualitative phenomenological study in 2021 with a theoretical framework analysis of the interview data.



In this session, we would like to share our study findings with participants and identify commonalities and differences in our experiences. Using facilitated and inclusive reflective practice we will engage in theoretical and strategic thinking around the future of clinical assessments in light of pandemic impacts.

### **Who Should Participate**

Attendance is recommended for those interested in health professions assessment processes.

### **Structure Of Workshop**

- The ACCLAiM research findings will be presented to the group.
- Attendees will participate in discussions regarding their experiences with OSCE adaptations and virtual clinical assessments during the COVID-19 pandemic
- Attendees will share their thoughts on the future of the OSCE – what will it look like, and where will it fit in our future assessment strategies?

### **Intended Outcomes**

- To invite participants to reflect on their experiences with the OSCE during the COVID-19 pandemic, and consider the lessons learned. How have these experiences changed or clarified the role of the OSCE as a clinical assessment tool?
- To consider the place and format of the OSCE in future programs of assessment.



## Plenary 1A (0824)

**Date of presentation:** Saturday 27th August

**Time of session:** 08:00 - 09:15

**Location of presentation:** Auditorium Lumiere

### The Future of Performance Assessment: What has Covid taught us?

#### Plenary Speaker

Katharine Boursicot<sup>1</sup>

#### Moderators

Trudie Roberts <sup>2</sup>, Vishna Devi Nadarajah <sup>3</sup>

<sup>1</sup> HPAC, Singapore, Singapore <sup>2</sup> University of Leeds, Leeds, UK <sup>3</sup> International Medical University, Kuala Lumpur, Malaysia

The Covid-19 pandemic has had a major impact on medical education in many ways, including a myriad of modifications, adaptations and alternative approaches to performance assessment. Often these changes were implemented rapidly and were driven by concerns about what was feasible or even possible. However, questions about the validity and long-term viability of such changes remain somewhat unexplored.

During this presentation, I will delve into some of these changes and new adaptations to performance assessment from a validity perspective and consider the future of OSCEs and Work Based Assessment as 'fit for purpose' methods of assessment.

#### Biography

Katharine Boursicot, is the founder of HPAC, a consultancy company offering assessment courses and consultancy services. She graduated from the Medical College of St Bartholomew's Hospital and worked as an Obstetrician/Gynaecologist for 20 years.

She has been a full time medical educationalist since 2000, leading the reform of assessment at medical schools in the UK and Singapore. She has published in, and is a regular reviewer for, several leading medical education journals. Katharine has advised on numerous national and international assessment projects.

She is a member of the Assessment Panel for the ASPIRE Awards, and led the Consensus Group on Performance Assessment for the Ottawa Conferences in 2010 and 2020.



## Symposium 2A (0815)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:30 - 11:00

**Location of presentation:** Auditorium Lumiere

### Tensions and Controversies in Competency-Based Assessment

#### Presenters

Holly Caretta-Weyer<sup>2</sup>, Jonathan Amiel<sup>3</sup>, Karen E. Hauer<sup>4</sup>, Linda Snell<sup>5</sup>, Olle ten Cate<sup>6</sup>

#### Moderator

Jason Frank<sup>1,7</sup>

<sup>1</sup>Director, Centre for Innovation in Medical Education, University of Ottawa, Ottawa, Canada <sup>2</sup>

Stanford University, School of Medicine, San Francisco, USA <sup>3</sup> Columbia University, New York, USA <sup>4</sup>

University of California San Francisco, San Francisco, USA <sup>5</sup> McGill University, Montreal, Canada <sup>6</sup>

UMC Utrecht, Utrecht, The Netherlands Chair, <sup>7</sup>International CBME Collaborators, Ottawa, Canada

#### Background

This symposium focuses on the challenges of balancing the conflicting elements in the why, who, how of assessment in CBE, e.g. purpose of assessment (learning and growth vs ranking, sorting; formative vs summative); resident roles (learner vs worker); needs (individual preferences vs needs of the profession and society); faculty as coach versus assessor, faculty time vs burden of assessment, assessing competencies vs objectives. It will also address the question: Is there such a thing as 'too much assessment'?

#### Topic Importance

As CBE is implemented several challenges around assessment arise. This symposium will highlight the common tensions and challenges and provide approaches to address these that will be useful to those involved in planning, implementing, or conducting assessment within a competency-based framework.

#### Format and Plans

A panel of 4-5 will, with the audience, develop a list of common challenges, tensions; the audience (via poll) and panel vote on the 'biggest challenges'. Panelists each choose 1-2 to propose action, with input from audience



### Take Home Messages

- Recognise there are tensions and challenges in CBE assessment, often as the tension is not a primary issue but due to context
- When tensions arise in CBME assessment, there may be wisdom on more than one side of the issue: each side is incomplete without input from the other.
- Integration between assessment for and of learning is needed within a program of assessment



## Oral - Programmatic Assessment and Portfolio Assessment

### Oral Session 2B1 (0496)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:30 - 09:45

**Location of presentation:** Rhone 2

### How is programmatic assessment being operationalized in a Cardiology Competency Based Medical Education program; an appreciative inquiry

Peggy DeJong<sup>1</sup>, Linda Jones<sup>2</sup>

<sup>1</sup> Queen's University, Kingston, Canada <sup>2</sup> Centre for Medical Education, University of Dundee, Dundee, UK

#### Background

The cardiology program at Queen's University was the first Cardiology training program in Canada to transition to competency based medical education. There is a unique opportunity to examine what is working well about programmatic assessment in Cardiology and what can be done to enhance it further.

#### Summary Of Work

This study was carried out as a case study of a single program. Group and individual semi-structured interviews were undertaken with key stakeholders in order to determine how programmatic assessment was intended to be operationalized, what is working well and what can be further enhanced. Iterative coding for thematic analysis was undertaken to identify common themes.

#### Summary Of Results

Nine residents, four faculty and two program educational leaders were interviewed. The intention of the programmatic assessment system was to provide a clear and transparent structure to the assessments, with the ability to use those assessments to provide individualized development plans. These elements are highly valued by stakeholders. In order to constructively improve the system, support and time are needed for faculty, with further guidance for faculty and resident understanding of the formative process. Simplification of the forms and electronic assessment system would also be an asset. Change management and attention to the emotional response to significant change also emerged as important themes.



### **Discussion And Conclusion**

Programmatic assessment has been broadly implemented as it was intended. Elements such as transparency and coaching have been well accepted by stakeholders. Stakeholders also identified areas which can be further enhanced to bring programmatic assessment to its full potential, such as reducing administrative burden and enhancing resident and faculty understanding. Attention to change management strategies and the emotional response to change also appears important for programs to consider when making a fundamental change to an educational process.

### **Take Home Messages**

- 1) A clear and transparent programmatic assessment system exists and allows for coaching and individualization of learning plans.
  
  - 2) To constructively build upon what is working well, support and time is needed for faculty, with reduction in administrative burden.
  
  - 3) Institutions may wish to look at change management approaches in order to adjust to the understandable emotional responses to a significant change in educational training and assessment.
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## Oral Session 2B2 (0643)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:45 - 10:00

**Location of presentation:** Rhone 2

### Utility of mini-CEx for assessing clinical skills in programmatic assessment

Nidhi Garg<sup>1</sup>, Elie Matar<sup>1</sup>, Jane Bleasel<sup>1</sup>, Deborah O'Mara<sup>1</sup>

<sup>1</sup> *The University of Sydney, NSW, Australia*

#### Background

Medical programs have relied on high-stakes summative assessments such as the Objective Standardised Clinical Examination (OSCE) when assessing students' clinical skills. With increasing use of programmatic assessment, alternative clinical assessment methods are required. The mini-clinical evaluation exercise (mini-CEx) is widely used in medical programs with published literature largely focusing on mini-CEx as a formative assessment. Mini-CEx utility in programmatic assessment is beginning to be explored, but requires further evaluation.

#### Summary Of Work

This research addresses the utility of mini-CEx as part of a programmatic assessment portfolio for a new curriculum (graduate entry medical program). Students undertake a number of mini-CEx throughout the year. In addition, two standardised assessments are conducted, consisting of a total of 8 mini-CEx [Multi Modal Clinical Assessment (MMCA)]. We analysed data from 282 Year 2 students including two MMCA (2021) and Year 1 MMCA (2020) results. For each mini-CEx, data points include a global measure and domain-based measures for skills (10), communication (8) and professionalism (8). An evaluation survey was conducted to identify the views of examiners who marked the MMCA and the OSCE in previous years.

#### Summary Of Results

Using Factor analysis to identify the degree to which examiners had marked by station or domain, we found that 70% of the variance in scores was explained by 11 factors each explaining a similar amount of variance. These factors represented each of the 8 individual stations (including domain and global scores) in Year 2 (56%), skill domains (10%) and the Year 1 performance (4.3%). Evaluation of examiners supported the use of the MMCA as easier to mark and supporting the increased validity of the assessment.

#### Discussion And Conclusion



Our results show that the majority (70%) of variation of the scores within the MMCA are explained by performance in individual Mini-CEx (including global ratings) and skills domain performance independently. The remainder may be explained by individual student factors resulting in variability of performance between stations. Together with the evaluation findings from the examiners, the findings support the use of mini-CEx incorporating both domain-based marking and global scores in programmatic assessment.

### **Take Home Messages**

Mini-CEx have high utility as an assessment tool for clinical skills as part of programmatic assessment.

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## Oral Session 2B3 (0709)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:00 - 10:15

**Location of presentation:** Rhone 2

### **The CBME Disillusion in Critical Care Medicine: How well intended changes led to pervasive, detrimental assessment perceptions and behaviors**

Dominique Piquette<sup>1</sup>, Christie Lee<sup>2</sup>, Briseida Mema<sup>3</sup>, Ryan Brydges<sup>2</sup>, Walter Tavares<sup>2</sup>, Stella Ng<sup>2</sup>

<sup>1</sup> Sunnybrook Health Sciences Centre, Toronto, Canada <sup>2</sup> University of Toronto, Toronto, Canada <sup>3</sup>

Sickkids Hospital, Toronto, Canada

#### **Background**

Challenges complicate the implementation of programmatic assessment, including limited engagement of trainees/faculty and persistent lack of high-quality feedback. We aimed to explore how a program of low-stakes workplace-based assessments (WBA) was designed, implemented, and modified in two Canadian critical care postgraduate training programs to support learning.

#### **Summary Of Work**

We conducted a longitudinal, multiple case study of the implementation of a new WBA program in two critical care residency programs. We used purposive sampling to select hospital sites, faculty, and trainees within each program, and iteratively conducted two phases of semi-structured interviews and direct observations. We structured the dataset and analyses according to pre-specified theoretical assumptions that focused on engagement and feedback.

#### **Summary Of Results**

We conducted 27 individual interviews of critical care faculty and residents, and six direct observations in three ICUs. Interviews completed prior to the mandatory adoption of CBME, revealed that CBME brought hopes among participants for more meaningful assessments. Programs made well-intended educational implementation decisions: assessing all clinical activities relevant to daily ICU practice, assigning primary responsibility for completing WBAs to residents, and using WBA forms to document feedback conversations. These choices, together with contextual challenges, led to the unintended adoption of detrimental assessment habits, such as providing dishonest feedback or asking for assessments retrospectively. Participants perceived WBA forms as a burden that instilled fear of negative consequences. The later interviews revealed that, as assessments continued to lack meaning, CBME disillusion took hold among participants.

#### **Discussion And Conclusion**



Our results revealed that participants' assessment behaviors were often misaligned with CBME objectives. Many reasons may explain these behaviors, such as fear of negative consequences or failure, empathy, limited time or cognition. Potential solutions include: clear separation between the roles of feedback provider and clinical assessor, and replacing written by verbal feedback (documenting rather than content).

### **Take Home Messages**

- 1) Critical care participants recognized the limitations of traditional, time-based residency training and understood the rationale for CBME.
  
  - 2) Implementation choices made by training programs during CBME transition unintentionally enabled the adoption of detrimental assessment behaviors by faculty and residents.
  
  - 3) Questionable assessment behaviors perpetuated the perception of low value of assessment practices and limited benefits of CBME.
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## Oral Session 2B4 (0018)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:15 - 10:30

**Location of presentation:** Rhone 2

### **Using the REFLECT rubric for assessing the reflective use of e-portfolios; a pilot study at Alexandria Faculty of Medicine**

Marwa Schumann<sup>1</sup>, Azza Baraka<sup>1</sup>

<sup>1</sup> *Alexandria Faculty of Medicine, Alexandria, Egypt*

#### **Background**

Reflection is a metacognitive skill that is gaining increased importance in medical education. The reflective capacity is considered one of the main tools to foster clinical reasoning, critical thinking and professionalism among trainees. Teaching and assessing reflection have been challenging to teachers as well as students. Although portfolios have been commonly used as a tool to foster students' reflective practices, they do not guarantee the stimulation of reflection.

The Reflection Evaluation for Learners' Enhanced Competencies Tool (REFLECT) was developed to assess the reflective capacity of students according to four reflective capacity levels: habitual action, thoughtful action, reflection and critical reflection.

This study aimed at assessing undergraduate medical students' reflective e-portfolios using the REFLECT rubric.

#### **Summary Of Work**

In the academic year 2021/2022 we designed an e-portfolio with the aim of stimulating reflection in the final year of the undergraduate program at Alexandria Faculty of Medicine. After attending the 2 weeks elective course "steps towards accreditation of medical schools" 6th year medical students submitted their e-portfolios which included reflections about their role in quality management and accreditation, their strengths and weaknesses in communication, leadership and conflict management in addition to designing an action plan for self-improvement.

Reflective comments included in 32 e-portfolios were analyzed using ATLAS.ti qualitative software data analysis program. The four reflective capacity levels of the REFLECT rubric and the 5 criteria (writing spectrum, presence, description of conflict or dilemma, attending to emotions and analysis and meaning making) were used as a priori themes for content analysis.



### **Summary Of Results**

Students' reflections were rather descriptive and superficial rather than analytic and critical. In contrast to facts which received the main attention, emotions received little recognition and reflection texts lacked detailed elaboration. Most students' reflective comments were classified as habitual action non reflective writing.

### **Discussion And Conclusion**

The REFLECT rubric offers a valuable tool to assess students' reflective writing in e-portfolios. Medical teachers cannot assume that all students have innate abilities of reflection; it needs to be taught before it is assessed.

### **Take Home Messages**

Cultivating reflective skills should begin in the early years of undergraduate medical curricula and be accompanied by ongoing assessment of students' depth and quality of reflections.

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## Oral Session 2B5 (0745)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:30 - 10:45

**Location of presentation:** Rhone 2

### **Investigating health professions educators perceptions on the feasibility and utility of a newly implemented electronic portfolio (ePortfolio)**

Claire Canning<sup>1</sup>, Limin Wijaya<sup>2</sup>, Riitta Moller<sup>3</sup>

<sup>1</sup> Duke-NUS Medical School, Singapore, Singapore <sup>2</sup> SingHealth, Singapore, Singapore <sup>3</sup> Karolinska Institute, Stockholm, Sweden

#### **Background**

The ePortfolio was introduced in the final year of a graduate medical degree programme (MD Programme) in late 2019. Following the successful implementation of this online evaluation tool, it has been introduced to all phases of the 4 year MD Programme. The purpose of the ePortfolio is to gather evidence of clinical skills and clinical reasoning competence, attributes of professionalism and the provision of multi-source feedback. Students engage in multiple pre-determined workplace-based assessments (WBA) and receive specific feedback from a range of assessors in a timely manner. This platform is a source for learner reflection, longitudinal student performance tracking, and evaluation of competence.

#### **Summary Of Work**

A structured survey was conducted to evaluate the perception of various healthcare professions educators on the feasibility and utility of the ePortfolio. This survey was piloted, revised and administered to various faculty who serve as supervisors in the clinical setting. The survey comprised of 16 structured items, graded on a 5 point Likert scale. The domains included, but were not limited to. Perceive Ease of Use, Faculty Considerations, Assessment and Feedback. Four open ended items were also included. The survey was administered to supervisors, who are either medical faculty, or residents. This study aims to compare the perceptions of the different clinical supervisors, and interrogate the correlation between different domains of the survey.

#### **Summary Of Results**

The results demonstrate that the strongest correlations between senior clinical faculty and residents are in the Provision of Feedback domain, followed closely by the Assessment domain. There is a significant difference in the overall satisfaction of the tool, and the perceived value of the tool, with



residents scoring higher in both categories.

### **Discussion And Conclusion**

Our findings indicate that while faculty at a senior and resident level actively engage in the e-portfolio, continued support will be required to ensure students are receiving meaningful feedback and we are meeting the intended outcomes of this resource.

### **Take Home Messages**

Digitalization of WBAs is useful resource in healthcare professions education, both for students and faculty. We acknowledge the need to align expectations of senior clinician educators and residents. The provision of guided feedback training is essential to the utility of this learning resource.

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## Oral - Assessment of Clinical Skills

### Oral Session 2C1 (0358)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:30 - 09:45

**Location of presentation:** Rhone 3A

### **The validity of physical examination assessments in a high-stakes online clinical licensing examination.**

Amanda Barnard<sup>1</sup>, Lambert Schuwirth<sup>1</sup>, Elizabeth Farmer<sup>1</sup>, David Prideaux<sup>1</sup>, Carl Matheson<sup>1</sup>, Philip Pigou<sup>1</sup>

<sup>1</sup> *Australian Medical Council, Canberra, Australia*

#### **Background**

The Australian Medical Council (AMC) conducts a 16 station OSCE for international medical graduates. COVID restrictions forced the examination to be conducted online. Four Predominant Assessment Areas (PAAs) underpin the examination blueprint; history taking, physical examination, diagnostic formulation, and management/counselling/education.

#### **Summary Of Work**

The PAAs of history, diagnosis, and management can be adapted to the online format. Physical examination, which had previously been examined through face-to-face contact, cannot be assessed in the same way. Candidates are now asked to communicate how they would conduct a physical examination. There is concern about the limitations of this approach. It is judged to lack both face validity and authenticity. This raises the question of whether the construct validity of the examination was also negatively impacted. Using routine data collected in the examination process a comparison of the measurement characteristics of the physical examination stations in 30 face-to-face and 30 online deliveries was made.

#### **Summary Of Results**

All correlations between mean scores on all PAAs were low in all 60 examinations, most likely due to domain specificity. Logically, correlations between scores on physical examination stations and other PAAs were also low, both in the face-to-face mode and online mode.



### **Discussion And Conclusion**

Any construct validity issues in assessing physical examination are not necessarily dependent on whether the examination is conducted in an online or face-to-face format. However, construct validity alone is not sufficient to convince stakeholders, and the process of assessing physical examination in artificial settings removed from authentic clinical contexts can still cause concern. Nevertheless, the analyses suggest that there is a need to assess physical examination ability in a more authentic context than an OSCE.

### **Take Home Messages**

The AMC will move towards a hybrid form of clinical assessment for international medical graduates that will combine elements of face-to-face, online and work-based assessments. This will include the more continual assessment of physical examination in authentic settings.

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## Oral - The Teacher and Assessment

### Oral Session 2C2 (0245)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:15 - 10:30

**Location of presentation:** Rhone 3A

### Developing a assessment blueprint for clinical skill competencies in General Surgery for the Medical Undergraduates

Dr.Neetha Kundoor<sup>1</sup>, Sridhar lingala<sup>1</sup>, Faizhussain Mohammad<sup>1</sup>

<sup>1</sup> *Apollo Institute of Medical Sciences and Research, Hyderabad, India*

#### Background

Indian medical schools follow the traditional method of long and short cases to assess the clinical skills which is subjective, only few aspects of curriculum are assessed and may not align with learning objectives. These issues can be sorted out with assessment blue print which reduces the threats to validity of assessment.

#### Summary Of Work

The blueprint was planned for clinical skills assessment across phases- II, III(part 1&2) in General Surgery. With the consensus from the faculty, all the clinical competencies (systems) which are clearly defined by the National Medical Commission (NMC) for undergraduate standards have been included. This was validated by the subject experts from the department of General Surgery. The next stage was selecting the best assessment tool to assess the clinical competencies at different phases of the course. Finally, faculty feedback questionnaire with 5point-likert scale was validated by the statistical tool -Cronbach's alpha(0.585)

#### Summary Of Results

A spread sheet was created with all the Clinical competencies(systems) on the vertical axis while the weight age based on its impact on society, frequency of occurrence and the phase at which the competency to be tested is spread on the horizontal axis.



Second spread sheet has the same Clinical competencies on vertical axis and best tool to assess that particular clinical competency on horizontal axis,

Feedback was collected from the General Surgery, all the faculty (100%) felt that appropriate weight age was given to all the clinical competencies. 80% of the faculty were of the opinion that assessment plan is aligned with learning objectives, questions distributed according to must know and other categories, Blueprinting acts as a guidance to clinical exam construction, it increases the validity of exams, makes examination fair. While 70% of them thought that blue print helps in distributing the appropriate weight age to topics of public health importance.

### **Discussion And Conclusion**

Blue print helps to reduce the major threats to validity: construct under representation and construct irrelevance variance. It reflects on the competencies to be assessed. Blueprint links curriculum content with assessment and ensures uniformity of assessment system.

### **Take Home Messages**

Blueprint should be integral part of curriculum as it links curriculum content, Learning Objectives and assessment system.

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## Oral - The Teacher and Assessment

### Oral Session 2D1 (0819)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:30 - 09:45

**Location of presentation:** Rhone 3B

### “Keep curious. The scholarship of assessment”

Jennifer Cleland<sup>1</sup>

<sup>1</sup> *Lee Kong Chian School of Medicine, Singapore, Singapore*

#### Background

No assessment system is perfect. Very few of us have had the opportunity to develop assessment systems from scratch, using best evidence. Even in those few places where this has been possible, assessment thinking and trends move on. In this short talk I draw on my 20-year programme of research into assessment in medical schools to encourage reflection of how to implement evidence-informed change while considering local and wider context.

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## Oral Session 2D2 (0622)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:45 - 10:00

**Location of presentation:** Rhone 3B

### **Demystifying misconceptions around learner assessments of clinical teachers: Implementation and evaluation of a university-wide clinical teacher assessment tool**

David Rojas<sup>1,2</sup>, Samantha Inwood<sup>3</sup>, Mariela Ruetalo<sup>2</sup>, Caroline Abrahams<sup>2</sup>, Susan Glover Takahashi<sup>2</sup>

<sup>1</sup> Temerty Faculty of Medicine, University of Toronto, Toronto, Canada <sup>2</sup> University of Toronto,

Toronto, Canada <sup>3</sup> Women's College Hospital, Toronto, Canada

#### **Background**

In July 2020 the University of Toronto introduced the Learner Assessment of Clinical Teacher (LACT) form across the undergraduate and postgraduate clinical curriculum. The form was developed after an in-depth analysis of teacher assessment tools used in education, and medical education. The LACT is a brief form targeting different dimensions of effective teaching using open- and closed-ended items. We conducted a process evaluation after one year of implementation to understand how clerks and residents use the form, clarify potential misconceptions around teacher assessment, and identify areas of strength and improvement.

#### **Summary Of Work**

We conducted descriptive statistics to better understand the tool performance, capture potential misalignments between scores and comments, and identify possible examples of retaliatory use (a previously communicated faculty concern). We also conducted descriptive and thematic analyses of qualitative form data (collected July 2020 – June 2021) from five rotations, followed by focus groups (FGs) with clerks (n=6) and residents (n=10).

#### **Summary Of Results**

Overall form data showed that most instructors are good teachers, evidenced by relatively high scores across departments and a high proportion of positive comments. FG data showed there was uncertainty around how teachers are using the form data. Issues of misalignment or potential retaliatory use of the form were minimal in our results (<3%). Anonymity and power dynamics were identified as barriers to complete and accurate teacher assessment and feedback.

#### **Discussion And Conclusion**



Both form and FG data indicated similar results across learner groups. Further clarifying the form and increasing transparency in its administration could provide more complete and accurate learner feedback. Exploring how learners understand the tool can help increase the quality of teacher assessments, the external validity of the data, and assessment response rates.

We identified limitations of the tool and possible refinements to align it more accurately with learner experiences and expectations. Evaluating the performance and implementation of evaluation tools can help demystify previous misconceptions held by faculty and learners alike.

### **Take Home Messages**

- The standardization of teacher performance tools in the clinical environment support experimentation and demystification of myths around the use of the tool.
  
  - Form administration and program culture play important roles in learner assessments of teachers
- 



## Oral Session 2D3 (0748)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:00 - 10:15

**Location of presentation:** Rhone 3B

### Exploring student's satisfaction after faculty training in oline education: A Longitudnal study

Mahwish Arooj<sup>1</sup>, Khadijah Mukhtar<sup>1</sup>

<sup>1</sup> *University of Lahore, Lahore, Pakistan*

#### Background

Educational sector had faced many challenges during COVID-19 pandemic. Medical schools had to shift to online education completely in 2020 and 2021 in Pakistan. During first lockdown, many challenges were faced like implementation of LMS, lack of faculty and student's familiarity for online learning and assessment but these limitations bee reduced during second lockdown in 2021 with certain interventions i.e. buying premium package of LMS, faculty and students training regarding teaching, assessment and engagement. This study aims to compare the level of students' satisfaction after various trainings in light of previous evaluation reports.

#### Summary Of Work

This quantitative longitudinal study was conducted at University College of Medicine and Dentistry, from January 2020 to November 2021. Data was collected from 1<sup>st</sup> year to final year MBBS students through Pre-validated questionnaire. Data was collected in two phases, 2020 and 2021 module evaluation. Data was entered in SPSS and independent sample t test was used to explore the difference between students' satisfaction in year 2020 and year 2021.

#### Summary Of Results

The results of independent t test revealed insignificant difference between the two groups (2020 and 2021) using traditional face to face learning. While, in 1<sup>st</sup> year, there is a significant difference between two groups (2020 and 2021) exposed to online education, MSK I (t=-2.037, P=.04), and Respiratory module (t=-7.53, P=.00), in 2<sup>nd</sup> year, Endocrinology (t=-6.92, P=.00) and GIT I (t=-9.90, P=.00), in 3<sup>rd</sup> year module, Nervous system and psychiatry (t=-10.24, P=.00), Hematology (t=-5.03, P=.00) and Respiratory II (t=-4.49, P=.00) and in 4<sup>th</sup> year, Endocrinology II (t=-13.84, P=.00) and GIT II (t=-9.12, P=.00).

#### Discussion And Conclusion



The current study concluded that during first lockdown students were less satisfied with online education as compared to second lockdown. One of the main reason is unfamiliarity with online mode of education. On the basis of evaluation reports, certain interventions were done like faculty training regarding online lecturing, using LMS efficiently, online assessments and student engagement. It showed that with faculty trainings a significant improvement has been observed student satisfaction regarding online teaching and assessment.

### **Take Home Messages**

Timely feedback of student with intervention is pivotal to improve the quality of education.

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## Oral Session 2D4 (0570)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:15 - 10:30

**Location of presentation:** Rhone 3B

### Facilitators and barriers influencing implementation of peer observation of teaching: a qualitative study

Pei Se Wong<sup>1</sup>, Norul Hidayah<sup>1</sup>, Yu Sui Chen <sup>1</sup>, Hui Meng Er<sup>1</sup>, Vishna Devi Nadarajah<sup>1</sup>

<sup>1</sup> *International Medical University, Kuala Lumpur, Malaysia*

#### Background

Peer observations of teaching (PoT) can be a useful tool for continuous professional development for teachers in order to develop their teaching strategies. It could be supportive when Covid-19 affected teaching, and teachers are critically seeking strategies to improve their online teaching. The implementation and sustainability of PoT can be challenging for many institutions. This qualitative study explored the barriers and facilitators of the implementation through a pilot PoT programme.

#### Summary Of Work

Study involved twenty-one (21) multidisciplinary faculty participation in focus-group and semi-structured interviews. Interviews were recorded, transcribed, and analyzed thematically.

#### Summary Of Results

Participants viewed PoT to be beneficial as a platform for the exchange of experiences and ideas. Barriers and facilitators affecting faculty acceptability (e.g. perceived benefits, motivation, and confidence), dynamic of the observee-observer team (e.g. feedback giving process, confidentiality), implementing processes (e.g. selection of observers, selection of class, number of observers), and organizational support (e.g. institutional guide, connection to existing structure) found to influence the implementation and success of PoT.

#### Discussion And Conclusion

The study highlighted the areas of consideration when developing a framework of an institution's peer observation as well as the implementation of peer observation during COVID-19 to ensure that PoT remains relevant to teachers.

#### Take Home Messages

- Peer observation remains useful for continuous professional development for the new norm of teaching online



- The implementation of peer observation should consider the practicality of processes and organizational support.
  - Interventions to enhance faculty acceptability and the dynamic of the observee-observer team would enhance the success of PoT.
- 



## Oral Session 2D5 (0611)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:30 - 10:45

**Location of presentation:** Rhone 3B

### **Bundling of experience, expertise and engagement to master challenges in assessments together**

Saskia Egarter<sup>1</sup>, Anna Mutschler<sup>1</sup>, Winfried Kurtz<sup>1</sup>, Konstantin Brass<sup>1</sup>

<sup>1</sup> *Institute for Communication and Assessment Research, Heidelberg, Germany*

#### **Background**

In order to face challenges in the continuously changing medical assessment culture, institutions have to cooperate more intensively. On this target, the Umbrella Consortium for Assessment Networks (UCAN) was formed 16 years ago and is meanwhile carried by the non-profit Institute for Communication and Assessment Research. UCAN is an academic association which consists of a total of 84 faculties, professional societies, medical associations and other institutions from eight different countries, which support each other through optimizing of the following resources: (1) network, (2) development, (3) standardisation, (4) quality assurance, (5) exchange and (6) research.

#### **Summary Of Work**

Over the last 16 years, UCAN has successfully developed a comprehensive portfolio of 14 different assessment tools to cover the entire examination workflow. In collaboration with our partner institutions, UCAN has been developing standards, workflows and tools for the planning, preparation, implementation, evaluation, quality assurance and feedback of examinations.

#### **Summary Of Results**

So far, over 14,050 colleagues added more than 810,000 items to a common platform for authoring, sharing and reviewing items and exams. Best practice examples for reliable exams, assessment contents and workflows are collected and implemented at the partner institutions. New formats for item and exam formats are continuously developed. To date, over 15 million students were successfully assessed in 45,600 exams.

#### **Discussion And Conclusion**

Especially with the upcoming conceptual, logistic and developmental challenges associated with the shift from knowledge to competency-based assessment, tie-ups are highly recommendable. 16 years of cooperation in a collaborative network has proven to be an efficient way to face challenges in medical assessment.



### Take Home Messages

Assessment institutions should work together in order to tackle common challenges. 16 years of successful cooperation at UCAN proves this approach to be both innovative and feasible.

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## Workshop 2E (0602)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:30 - 11:00

**Location of presentation:** Rhone 4

### Using Logic Models to Align Program Planning, Delivery and Assessments

Nancy Moreno<sup>1</sup>, Alana Newell<sup>1</sup>

<sup>1</sup> *Baylor College of Medicine, Houston, USA*

#### Background

Logic models are valuable tools for program planning and evaluation. A logic model visually connects intended outcomes with the resources and activities that go into a program, depicting relationships among program inputs, planned work, measurable outputs or products, and outcomes or impacts for students or other learners. Thus, a well-constructed logic model can guide decision-making about data collection, assessment timepoints and overall program evaluation, supporting clear alignment between these measures and the desired outcomes. In this session, an experienced investigator and program evaluator team will guide participants through each of the elements of a logic model, and provide templates, strategies and practice in the development of well-aligned education program logic models.

#### Who Should Participate

The workshop is directly related to the conference Main Tracks on Approaches to Assessment, What Is Assessed? and Management of Assessment (planning). Logic models can guide planning for individual assessments and the timing of assessments—or provide insights into measures for a complete program evaluation. Thus, the workshop will be relevant for a range of conference participants. We identified the workshop level as beginner, but it will be valuable for any individual with limited experience with logic models.

#### Structure Of Workshop

- Session Warm-Up: Think Pair Share discussion of experiences with, or questions about, planning assessments to match learner outcomes or programmatic objectives.
- Overview of Logic Model Construction, with examples of different types of logic models.
- Guided Demonstration of How to Build a Logic Model, starting with development of measurable outcomes and showing the importance of alignment across each component.
- Small Group Activity, in which each group collaboratively develops a logic model.
- Presentation and Discussion of logic models developed by each group.



- Group Discussion and Questions: What were the most challenging aspects of developing a logic model? How might you use a logic model in your own situation? Which aspect of the model will be most useful for framing an evaluation plan or individual assessments?

### **Intended Outcomes**

As a result of participating in this session, participants will:

- be able to describe a range of approaches to developing logic models, and
- apply logic models to refine evaluation and assessment strategies in the context of their own programs.



## Oral - Equality and Inclusivity

### Oral Session 2F1 (0423)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:30 - 09:45

**Location of presentation:** Saint Clair 1

### **A Comprehensive Blueprint to Address Racism in Medical Education: A Suggested Approach from Cambridge**

Azmaeen Zarif<sup>1</sup>, Paul Wilkinson<sup>1</sup>

<sup>1</sup> *University of Cambridge School of Clinical Medicine, Cambridge, UK*

#### **Background**

In 2020, the University of Cambridge School of Clinical Medicine convened the Racism in Medical Education Student-Staff Liaison Group (RME SSLG) following calls from over 2000 past and present students to address racism in medical education. Through collaborative student and staff leadership, we have developed an internationally-applicable framework to tackle racism in undergraduate medical education.

#### **Summary Of Work**

To comprehensively target the major areas of medical education, we agreed on four main areas of focus: Curriculum; Assessment; Student Reporting and Support; and Staff Development.

#### **Summary Of Results**

Curricular revisions have focused on improving understanding of how structural racism creates and reinforces health inequalities. New practical skills teaching is focused on raising students' awareness about their susceptibility to, and thus how to reduce, implicit biases. All speciality teaching is being revised to address the influence of ethnicity on speciality-specific presentation, treatment, and outcomes. We are developing novel assessment material to better reflect patient diversity and test students' ability to consider patients' ethnicities sensitively in their management. We are working to finely characterise ethnicity-based awarding gaps in our exams and then put in place appropriate ameliorative measures. We identified three major functions necessary for any racism-related reporting system: ensuring codified procedures following an incident report; providing emotional and practical support to students; and facilitating high-quality data collection to drive long-term change. For Staff Development, in addition to delivering Unconscious Bias Training, we are developing Active Bystander Training to enable staff to support students when they witness racism in the workplace.



### **Discussion And Conclusion**

Our comprehensive approach includes visible, high-profile commitment from senior leadership; emphasises the importance of the voices of students and staff of colour; and includes both relatively quick, clear actions such as a critical review of curriculum content alongside longer-term ambitions to address biased attitudes and constructions of knowledge that perpetuate structural inequity.

### **Take Home Messages**

The doctors of tomorrow cannot be allowed to repeat the mistakes of the past. Our framework presents one such approach that other medical schools could implement, with the ultimate aim of improving the care and lives of ethnic minority patients and colleagues.

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## Oral Session 2F2 (0534)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:45 - 10:00

**Location of presentation:** Saint Clair 1

### Race and Sex Bias in Clerkship Grading of Medical Students

Jacqueline Gauer<sup>1</sup>, [Claudio Violato](#)<sup>1</sup>

<sup>1</sup> *University of Minnesota Medical School, Minneapolis, USA*

#### Background

Race/ethnicity and sex have been found to be associated with pre-clinical and clinical grades during medical school. Identifying the root causes of grading disparities during the clinical phase of medical school is important because of its long-term impacts on the career advancement of men and women as well as students of color. The main purpose of the present study was to analyze the potential bias or differential grading in core clinical clerkships for sex and race biases when grading is tiered (e.g., Honors, Excellent, Satisfactory, Fail).

#### Summary Of Work

Participants included 1,905 graduates (985 women, 51.7%; 920 men, 48.3%) of University of Minnesota Medical School who received the MD degree between 2015 and 2021. Most of the participants were White (n = 1,310, 68.8%) and about one-fifth were Non-White (n = 397, 20.8%). To explore the potential differential grading, a two-way multivariate analysis of covariance (2-way MANCOVA) was employed. The independent variables were Race (two levels: White and Non-White) and Sex (two levels: Male and Female) with 8 dependent variables – the required clerkships (Medicine, Pediatrics, Surgery, Psychiatry, Neurology, Family Medicine, Obstetrics / Gynecology, and Emergency Medicine). There were three covariates: MCAT, UGPA, and USMLE Step 1 scores. The core clerkships were graded on Honors = 3, Excellence = 2, Satisfactory = 1, No Pass = 0.

#### Summary Of Results

There are Sex differences on all 8 clerkships even with the covariates applied ( $p < .01$ ). There are Race differences on 4 of the clerkships (Medicine, Pediatrics, Surgery, Obstetrics / Gynecology) even with the covariates applied ( $p < .05$ ). There were no interaction effect between Sex by Race.



### **Discussion And Conclusion**

There is a bias favoring higher grades for women on all 8 clerkships and a bias favoring higher grades for White race on 4 of the 8 clerkships. As clerkship grading is partially based on verbal skills and verbal intelligence, implicit and explicit biases can have a large impact on grading based on verbal abilities and skills. The most at risk group for receiving lower grades are men of color.

### **Take Home Messages**

Tiered grading results in Sex and Race biases in clinical clerkships. Dichotomous grading (P/F) can ameliorate these biases.

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## Oral Session 2F3 (0549)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:00 - 10:15

**Location of presentation:** Saint Clair 1

### **Acute pain, communication skills, and implicit bias: Can we uncover an association in the sim lab?**

Felise Milan<sup>1</sup>, Tavinder Ark<sup>2</sup>, Marla Fisher<sup>1</sup>, Adina Kalet<sup>2</sup>, Paul Marantz<sup>1</sup>, Dianna Burgess<sup>1</sup>, joanna starrels<sup>1</sup>, Malika Samuel<sup>3</sup>, Lily Burd<sup>1</sup>, Cristina Gonzalez<sup>1</sup>

<sup>1</sup> *Albert Einstein College of Medicine, Bronx, USA* <sup>2</sup> *Medical College of Wisconsin, Milwaukee, Wisconsin, USA* <sup>3</sup> *Public Care Strategies, New York, USA*

#### **Background**

Evidence suggests communication is associated with racial implicit bias (RIB). No published simulations exist to assess physician implicit bias recognition and management (IBRM) in patient encounters. To address this gap, we developed a high-fidelity simulation and adapted existing checklists and global rating scales to include items associated with RIB. Acute pain was chosen as the clinical presentation due to published racial disparities in pain management.

#### **Summary Of Work**

We conducted a feasibility study to determine if the simulation can assess variability in communication skills and behaviors related to IBRM.

This case was conducted over Zoom with N=22 internal/family medicine physician volunteers (PVs). SPs were highly trained (16 hours) either Black or White, and otherwise closely matched for age, English fluency, attractiveness, and BMI. SPs remained blinded to the true purpose of the case which involved a 48-year-old woman who presented with right sided chest pain after a fall. We pursued an exploratory approach investigating variability of PVs' skills as rated by the SPs and exploring associations with the race Implicit Association Test (IAT). Checklist and global rating scale items were rated on 3- and 4-point scales, respectively. For each communication item, we compared mean scores of PVs caring for SPs that were Black vs White.

#### **Summary Of Results**

A total of 11 Black SPs, and 9 White SPs participated and provided ratings on PVs' skills. The case, checklist, and global rating scale resulted in variability of PVs' scores. PVs' mean IAT scores were in



the neutral range. A significant positive relationship was found between “Allowing patient to tell their story” item with race IAT score ( $r=0.64$ ,  $p=0.01$ ).

### **Discussion And Conclusion**

We developed a high-fidelity simulation, checklist, and global rating scale that elicit variability in communication skills scores among PVs. While some associations reached statistical significance, several trended toward a positive association, but we are still underpowered to demonstrate small effect size. Data analysis will continue as the number of participants increases. We expect to conduct psychometric analysis to assess construct validity of our checklist and global rating scale.

### **Take Home Messages**

This study supports the feasibility of designing high-fidelity simulations to assess the association of RIB and communication behaviors in practicing physicians.

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## Oral Session 2F4 (0233)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:15 - 10:30

**Location of presentation:** Saint Clair 1

### **Equality, diversity and inclusion in medical education: are we doing enough?**

Nadia Shad<sup>1</sup>, Kelly Ka Yee Chu<sup>2</sup>, Antony Fernando<sup>2</sup>, Martina Larsson<sup>1</sup>, Rebecca Hulbert<sup>1</sup>

<sup>1</sup> *Guys and St Thomas' Hospital Trust, London, UK* <sup>2</sup> *King's College London, London, UK*

#### **Background**

In 2020 the GMC released guidance on promoting excellence in medical education stating we should be giving our students the opportunity to gain knowledge and appreciate how to treat patients from a diverse background. It is our responsibility to ensure our resources are diverse and inclusive.

We aim to review the current attitudes of medical students towards the curriculum.

#### **Summary Of Work**

We surveyed 50 medical students studying paediatrics at our institution. Our survey asked questions regarding the importance of diversity in the curriculum, the current viewpoint on our curriculum and proposed improvements. We used a combination of likert scoring and white box answers.

#### **Summary Of Results**

95% of students reported diversity in the curriculum was very important to them. 45% of students felt the curriculum represented them. Only 17% of students felt our teaching showcases diversity. Comments included teaching serving “predominantly white patients”, “images are largely of caucasian children”, and sometimes the use of ethnic examples “reinforcing stereotypes”. Multiple students commented feeling underconfident with presentations of common signs of illness and dermatological conditions in various skin tones including the appearance of pallor and mottling.



Particular lack of LGBTQIA+ content was highlighted. There were some positive comments suggesting a change in the culture of discussing equality and diversity in our curriculum, and a majority of the teachers being well versed in presentations of disease in different populations.

### **Discussion And Conclusion**

Students suggested case based discussion and reflections on personal experiences of patients, doctors and peers may benefit them. Stock images and resources of patients must be reviewed and improved. Marginalised groups must be integrated into the conversation when developing these resources such as case studies and up to date evidence should be used. Where ethnicities and sexuality is being discussed it is imperative we do not reiterate stereotypes. Informed teaching and content on diverse populations should become the norm, not performative action.

### **Take Home Messages**

Medical students in our cohort do not feel we are doing enough to represent them and our patient populations.

We aim to educate our teachers, disseminate more diverse teaching resources and imagery, and integrate EDI teaching into all aspects of our curriculum.

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## Oral Session 2F5 (0220)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:30 - 10:45

**Location of presentation:** Saint Clair 1

### A Six Week Program to Improve Performance on USMLE Board Exams

Alana Nichols<sup>1</sup>

<sup>1</sup> *University of Alabama at Birmingham, Birmingham, USA*

#### Background

Underrepresented medical students are more likely to experience delayed graduation and failure even after accounting for science GPA and MCAT performance. Moreover, underrepresented medical students are more likely to earn lower scores on licensing examinations. There is an urgency in addressing this disparity as the current climate places underrepresented students at a disproportionate disadvantage regarding specialty choice and residency competitiveness. Due to the history of inequity in science education, minority students are at particular risk during the basic science portion of their preclinical curricula. Institutions should be proactive in mitigating those risks that many underrepresented students will face in their coursework. Although some medical schools have previously implemented interventions for at-risk and underrepresented students, none have developed a comprehensive, analytical approach.

#### Summary Of Work

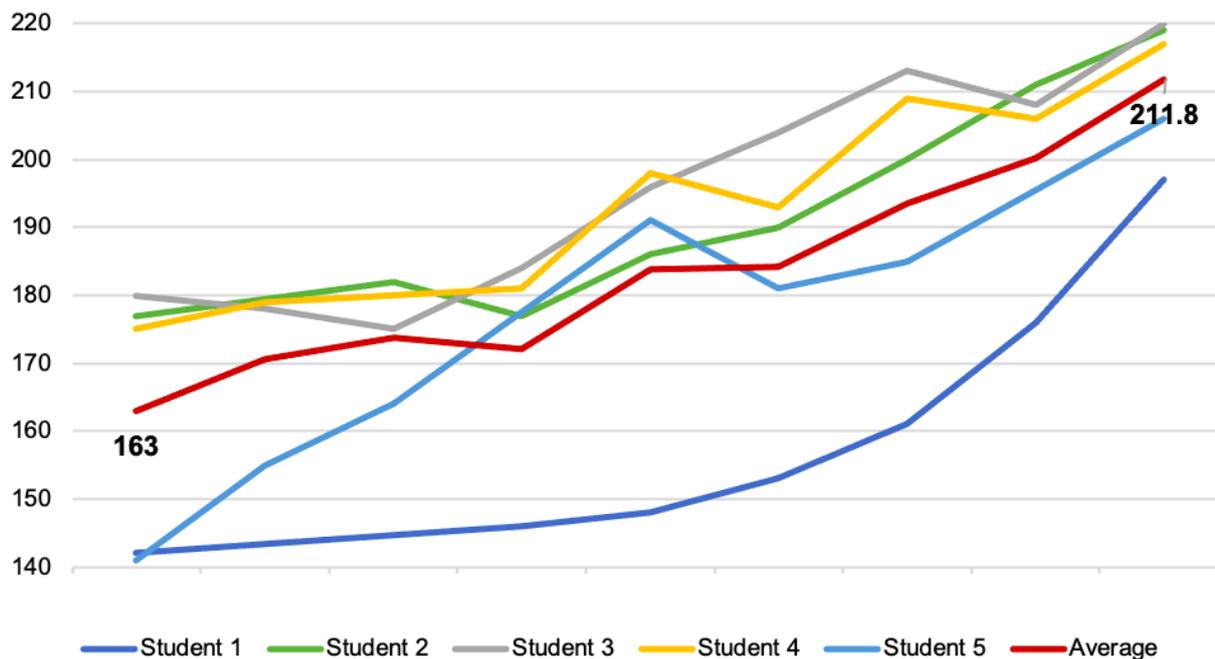
We propose an academic support program to close the achievement gap in medical education. We developed an evidence-based intensive, six-week test taking bootcamp that tailors sessions to the individual student's needs and focuses on analytical skills. Each student completed an NBME exam to establish a baseline score. They completed subsequent NBME examinations to track their progress during the boot camp with the final data point being their Step 1 or Step 2 score.

#### Summary Of Results

Implementation of the six-week bootcamp portion of this program in a small cohort of underrepresented medical students (n=6) has shown initial improvement on Step 1 and Step 2, as compared to initial baseline assessments, of more than 40 points each. All students had baseline scores that were below passing and all students ultimately passed their board exams.



### USMLE Step 1 Performance



#### Discussion And Conclusion

Underrepresented minorities continue to struggle with board exams, regardless of Pass/Fail scoring. As long as this achievement gap persists, we will continue to have a healthcare workforce that doesn't reflect our ever-diversifying patient population. Holistic admission must be married to holistic education because the very attributes that set underserved and disadvantaged students apart are the attributes that must be acknowledged, nurtured and incorporated into their medical education.

#### Take Home Messages

The students in our program saw remarkable improvement. Further studies are needed with a larger cohort to assess the efficacy and reproducibility of the program.



## ePoster - ePosters 1

### ePoster Session 2G1 (0031)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:30 - 09:38

**Location of presentation:** Saint Clair 2

### **The Effectiveness of a Multi-Station Viva Voce Examination over a Virtual Examining Platform During the COVID-19 Pandemic**

Jolie Hwee<sup>1</sup>, Brenda Wong<sup>2</sup>, Yan Lin Yap<sup>3</sup>, Michelle Ho<sup>2</sup>

<sup>1</sup> Khoo Teck Puat Hospital, Singapore, Singapore <sup>2</sup> Tan Tock Seng Hospital, Singapore, Singapore <sup>3</sup> National University Hospital, Singapore, Singapore

#### **Background**

The Coronavirus Disease 2019 (COVID-19) pandemic has resulted in cancellation or postponement of conventional specialty examinations internationally. This has significantly impacted the training and career progression of residents, including in Singapore.

#### **Summary Of Work**

Navigating the challenges of restricted inter-hospital movement and the need to maintain social distancing during the COVID-19 period, Singapore's nationwide Plastic Surgery residency viva examination was conducted virtually for the first time. Using a multi-station virtual examining platform over ZOOM, the examination involved residents and faculty examiners from 3 different institutions located across Singapore. This study delineates the process of setting up a standardized multi-station, virtual-examining platform and examines its effectiveness via a post-examination survey of residents and examiners.

#### **Summary Of Results**

The nationwide Plastic Surgery residency Viva Voce examination was conducted with 16 residents, 9 examiners and 2 proctors, over 2 back-to-back sessions. A ZOOM meeting was set up with a main waiting room and 9 breakout rooms. Each candidate was scheduled to rotate through a circuit comprising of 3 different stations - with 1 examiner taking each candidate through 1 case study per station. Questions and pictures were presented using Powerpoint slides and each candidate was examined for knowledge, presentation and time management.



### **Discussion And Conclusion**

Our experience has shown that the virtual-examining platform is a user-friendly and convenient method for conducting a viva exam. It provides quality simulation of the exam setting, while adhering to social distancing measures. A multi-station set-up with examiners from multiple institutions also ensures standardization. The ability to record each session also allowed for feedback to be given to residents and for standardization of marking. However, the drawbacks include a relative lack of exam pressure in a virtual exam setting. A conventional in-person viva examination was still preferred by both examiners and candidates. Nonetheless it is a viable alternative platform for conducting examinations in the midst of a pandemic, thereby allowing residency training assessment and progression to continue.

### **Take Home Messages**

Strategies to further enhance the process for adoption in future examinations include, the involvement of multiple examiners per station, including the involvement of overseas faculty; and providing a tablet to allow residents to illustrate when required.

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## ePoster Session 2G2 (0293)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:38 - 09:46

**Location of presentation:** Saint Clair 2

### **Results of a postgraduate survey of physiotherapists who participated in an international exchange project prior to the COVID-19 pandemic**

Kazumasa Nakagawa<sup>1</sup>

<sup>1</sup> *Takasaki University of Health and Welfare, Takasaki, Gunma, Japan*

#### **Background**

Fresenius University and Takasaki University have been engaged in short-term international exchanges of their physiotherapy students. This study aimed to evaluate the impact of this program over 7 years before the COVID-19 pandemic on students in Japan who have worked as physiotherapists after graduation. The Japanese Ministry of Education, Culture, Sports, Science and Technology and the Japan Physical Therapists Association encourage Japanese people to go abroad. We examined whether our project is contributing to the overseas orientation of postgraduates.

#### **Summary Of Work**

A questionnaire was administered to the 91 physiotherapists who participated in this program. The questionnaire consisted of 13 items that focused academic (n = 3), language (n = 3), intercultural exchanges (n = 3), abilities (n = 2), feedback on the project (n = 1), and interest in studying or working abroad (n = 1, henceforth referred to as "interest"). All items were answered on an 11-point numerous rating scale. "Interest" was the dependent variable and the other items as explanatory variables. Statistical analysis was performed using multiple regression analysis. IBM SPSS ver.24 was used for statistics, and the significance level was set at 5%.

#### **Summary Of Results**

The following questions were identified as significant explanatory variables: "Do you make effort to improve your language skills?" and "Do you still maintain the friendships you made during the project?". The items "I think it is very good to build relationships and contacts overseas" and "I think this project has broadened my perspective" showed high values but did not lead to a subsequent orientation toward working or studying overseas.

#### **Discussion And Conclusion**

This project appears to be effective as an opportunity for international exchange, but there seems to be a need for continuous language training and stimulation via ongoing exchange. The university



provides opportunities for postgraduate exchange, and this study highlights the importance of such opportunities.

### **Take Home Messages**

Physiotherapists in Japan need to develop an international perspective; thus, it would be meaningful for them to gain international experience during their undergraduate years. However, the country is still not oriented toward gaining international perspectives and experiences. Hence, education of international standards and communication skills is necessary for postgraduate students as well.

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## ePoster Session 2G3 (0359)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:46 - 09:54

**Location of presentation:** Saint Clair 2

### **Push Diffusion Knowledge via Social Media Mobile Application to Prepare Lifelong Learning in Medical Students**

Nattapol Sathavarodom<sup>1</sup>, Amnart Chaiprasert<sup>1</sup>

<sup>1</sup> *Phramongkutklao Hospital and College of Medicine, Bangkok, Thailand*

#### **Background**

Push diffusion “Read it for them and send it to them” is the current evidence-based medicine. Lifelong learning is essential in medicine especially for the graduates. This technique may be beneficial to enhance continuous self-directed learning (SDL) in medical students.

#### **Summary Of Work**

This study was conducted at Phramongkutklao Hospital and College of Medicine. Summarized essential current medical knowledge with short corresponding question will be pushed to the student individually twice a day at 8:00 and 20:00 for ten days. The knowledge will be push via LINE, the most popular social media mobile application in Thailand. Students will be asked to evaluate the following; usefulness and disturbance levels by five-level Likert scale questions and satisfaction score by 100-point visual analog scale.

#### **Summary Of Results**

There were 47 medical students participated in this study. Overall response rate to answer the question was 27.7% and correct answer rate was 71.1%. Mean $\pm$ SD of time to response was significantly longer in the morning than in the evening; 257.1 $\pm$ 166.5 vs 57.8 $\pm$ 31.5 min, respectively;  $p < 0.001$ ). Disturbance of daily life was in level 2-3 (not much or neutral) in 75% of students, usefulness was in level 4 (much) in 52.8%. Overall satisfaction score was 75.1 $\pm$ 12.4. In the multivariate analysis; factor associated with satisfaction score at least 80 was student with high response rate (OR 5.56, 95% CI 1.08-28.62;  $p$  value = 0.04). The most convenient time recommended by the students were 18:00-21:00 (46.8%) and 15:00-18:00 (17%), while 12:00-15:00 (6.4%) was the least recommended.

#### **Discussion And Conclusion**

Most of medical students satisfied with push diffusion knowledge by the specialists. The response rate was low because answering the questions were not compulsory. The convenient time for SDL



should be after daytime academic activities.

### **Take Home Messages**

Medical students satisfied with push diffusion knowledge via social media mobile application. This technique was useful to enhance SDL and prepare for lifelong learning.

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## ePoster Session 2G4 (0384)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:54 - 10:02

**Location of presentation:** Saint Clair 2

### Using Myers Briggs Type Indicator to Improve Code Blue Curriculum

Eric Hsieh<sup>1</sup>, Krystle Santos<sup>1</sup>

<sup>1</sup> Keck School of Medicine of USC, Los Angeles, USA

#### Background

In many hospitals across the US, Internal Medicine residents are responsible for responding to inpatient emergencies. Residents serve as team leaders during emergency events. Residents have expressed trepidation leading cardiac resuscitation situations. Methods to teach cardiovascular life support readiness have not yielded great results. The COVID-19 pandemic brought these concerns to the forefront as hospitals were inundated with critically ill patients and increased emergency events, highlighting the need to reevaluate resident emergency preparedness.

#### Summary Of Work

Using our simulation lab, we had 165 residents in the USC Internal Medicine Residency Program each run 4 advanced cardiovascular life support (ACLS) scenarios under faculty supervision. Nurses, respiratory therapists and students participated as members of the code team. We used a standard scoring system to grade the residents' ACLS competency and had team members grade the residents on communication skills as the leader of the emergency scenarios. Residents took the Myers Briggs Type Indicator Test and were stratified into different groups based on results. Residents met with faculty who coached them on how to improve their communication and performance during emergency scenarios. Coaching was based on themes that appeared in the different MBTI groups. Residents completed 4 different ACLS scenarios in our simulation lab and were evaluated in the same manner as the first cycle. Residents were also graded on communication during actual ACLS scenarios over the subsequent year.

#### Summary Of Results

Using the MBTI to focus coaching, communication skills of the residents dramatically improved. The different MBTI groups benefitted from different coaching techniques to improve communication and ACLS performance. Evaluation of the residents improved in both the simulation and actual ACLS scenario settings.

#### Discussion And Conclusion



MBTI stratification allowed us to focus on improving residents' performance during emergency situations. Focusing on different personality types to influence coaching has been our most successful method of teaching ACLS.

### **Take Home Messages**

The COVID-19 pandemic and heightened presence of unstable patients underlines the importance of emergency code training in medical education. There remains a need for further development of emergency response curriculum for trainees. Utilization of the MBTI to help frame this curriculum can help develop strategies to improve resident communication and performance during emergency response scenarios.

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## ePoster Session 2G5 (0403)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:02 - 10:10

**Location of presentation:** Saint Clair 2

### **National Board of Internal Medicine Examination Scores Predicted by Subspecialty Division Competency**

Naowanit Nata<sup>1</sup>, Amnart Chaiprasert<sup>1</sup>, Narittaya Varothai<sup>1</sup>, Chantrapa Sriswasdi<sup>1</sup>

<sup>1</sup> *Department of Internal Medicine, Phramongkutklao Hospital and College of Medicine, Bangkok, Thailand*

#### **Background**

Several factors can affect medical knowledge acquisition during residency training such as trainee factors, training program, department and subspecialty division competencies.

#### **Summary Of Work**

The study was conducted at Phramongkutklao Hospital and College of Medicine between 2018-2019. Subspecialty division factors and related data including individual subspecialty division summative broad multiple-choice questions (MCQ) scores by the Royal College of Physicians of Thailand (RCPT) were analyzed. We categorized 13 divisions (Allergy & Immunology, Cardiology, Dermatology, Endocrinology, Gastroenterology, Hematology, Infectious Disease, Nephrology, Neurology, Nutrition, Oncology, Pulmonary & Critical Care Medicine, and Rheumatology) into two groups. Group 1 consisted of 7 divisions which residents achieved summative broad scores above the average of RCPT and group 2 consisted of 6 divisions which scores were equal or under the average.

#### **Summary Of Results**

Number of fellows in each subspecialty division and number of division research done by residents in group 1 were significantly higher than group 2; mean±SD of 5.86±3.18 vs 2.00±0.63 and 12.14±10.39 vs 3.67±2.66, respectively. Number of attendings in each division and number of elective residents per year from other hospitals tended to be higher in group 1 than group 2; 6.43±4.17 vs 4.17±0.75 and 51.71±32.24 vs 20.33±16.00, respectively. In multivariate analysis; factors associated with summative board scores above the average of RCPT were number of fellows in the subspecialty division (OR 5.63, 95% CI 1.03-6.78, p = 0.02) and number of subspecialty division researches done by residents (OR 3.29, 95% CI 1.18-18.1, p = 0.02).



### **Discussion And Conclusion**

Number of fellows in subspecialty division and number of subspecialty division research done by residents can predict high national broad examination scores. This may reflect the impact of division academic activities. Other factors such as number of attending in each division, number of elective residents from other hospitals, training scores and consultation round scores evaluated by residents, number of out-patients and in-patient consultation, were not the predicting factors.

### **Take Home Messages**

Subspecialty division competencies affect knowledge acquisition during internal medicine residency training.

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## ePoster Session 2G6 (0471)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:10 - 10:18

**Location of presentation:** Saint Clair 2

### **Fourth Year Medical Students' Satisfaction with Clinical Education in Surgery Section in Covid-19 Era**

Titima Nasomtrug<sup>1</sup>

<sup>1</sup> *Clinical Medical Education Center, Udon Thani Hospital, Udon Thani, Thailand*

#### **Background**

Fourth year medical students must practise in surgery section which is the major basic subject. After finishing practice, they were asked for rating satisfaction scores. The teaching process was changed a lot due to Covid-19 situation. Therefore, the purpose of this study was to evaluate their satisfaction.

#### **Summary Of Work**

Questionnaire that collect data from fourth year medical students in 2020-2021 which divided into 7 major issues; subject, medical teachers, learning system, facilities and infrastructure, evaluation system, self assessment and teaching sections. Suggestions about satisfaction were asked from the students, as an open-ended question.

#### **Summary Of Results**

42/53 fourth year medical students replied the questionnaires. Everage satisfaction was 84.52%. Average satisfaction of subject, medical teachers, learning system, facilities and infrastructure, evaluation system, self assessment and teaching sections was 85.82%, 86.18%, 85.67%, 84.37%, 82.96%, 83.79% and 82.84% respectively. Medical students wanted intensive lecture in the first 2 weeks before practice and teachers should not often postpone their classes. They wanted more teaching ward round and bedside teaching procedure but less being on duty.

#### **Discussion And Conclusion**

Fourth year medical students wanted to learn a lot with medical teachers in teaching ward round and practice medical procedures. Medical teachers were too busy teaching them on duty period. They could not relate lecture content with practicality. Because of Covid-19 situation, they could not take history and physical examination with patients, so they were lack of diagnostic skills. They though evaluation system was not reliable. Furthermore, they required more improvement in medical library.



**Conclusion :** Mostly of fourth year medical students satisfied with clinical education in surgery section in Covid-19 era. However they wanted more bedside teaching and practice with patients.

#### **Take Home Messages**

Bedside teaching time is very important. Medical students want completed lecture which relate with practicality before practice. They require more reliable evaluation system and more facilities in medical library, result in highest satisfaction and success.

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## ePoster Session 2G7 (0489)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:18 - 10:26

**Location of presentation:** Saint Clair 2

### Impact of COVID-19 on Fear and stress: comparison of Hybrid and Onsite medical students

Subencha Pinsai<sup>1</sup>, Wannaporn Eaimworawuthikul<sup>1</sup>, chartchai klaisuban<sup>1</sup>, Ekarin Sathusen<sup>1</sup>

<sup>1</sup> MEDICAL EDUCATION CENTER OF CHAOPHYA ABHAIBHUBEJHR HOSPITAL, Prachinburi, Thailand

#### Background

The coronavirus disease 2019 (COVID-19) pandemic is a global health emergency that has impacted daily living due to the policies created to contain the outbreak and cause fear and stress. Recent studies revealed that medical students have high stress during the pandemic. This study aims to assess stress and fear among medical students between hybrid and onsite learning strategies.

#### Summary Of Work

A cross-sectional study was conducted in the Medical Education Center of Chaophya Abhaibhubejhr Hospital, Prachinburi, Thailand. Undergraduate medical students were requested to reply to an electronic questionnaire voluntarily. Demographic data, the Thai Stress Questionnaire (Thai-ST5), and the fear of COVID-19 scale (FCoV-19S) were collected.

#### Summary Of Results

There were 37 medical students who responded to the questionnaires. Seventeen (45.95%) were male with a mean age of 22.95-years (Standard deviation (SD)= 0.18). Twenty-two medical students (59.46%) received a hybrid study that combined online and onsite learning strategies. Mean Thai-ST5: Thai Stress Assessment Questionnaire was 5.81 ( $\pm$ 3.98), 11 (29.73%) had a high-stress level. There was no difference between hybrid and onsite groups in the Thai-OHQ score ( $p=0.29$ ). Mean of Fear of COVID-19 Scale scores were 18.24 (SD=0.69). We used the mean of Fear of COVID-19 Scale scores as the cutoff point of high fear, and our study showed significantly high Fear of COVID-19 Scale scores in hybrid learning strategies ( $p= 0.01$ ). With multivariable analysis, hybrid learning strategies significantly related to a high score of fear (OR=5.41,  $P=0.03$ ).

#### Discussion And Conclusion

Medical student stress and fear levels were higher during the pandemic. There were higher stress and fear levels in hybrid learning strategies during the outbreak of COVID-19 in Thailand. Stress-relieving activities, availability, and access to mental health resources among medical students are



needed.

### **Take Home Messages**

Stress-relieving activities and mental health support are urgently needed between COVID-19 pandemic

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## ePoster Session 2G8 (0532)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:26 - 10:34

**Location of presentation:** Saint Clair 2

### Development of an online quotation system (CELEC)

Marie-Pier Carrier<sup>1</sup>, Julie Bouchard<sup>1</sup>, Sarah-Caroline Poitras<sup>1</sup>, Christine Drouin<sup>1</sup>

<sup>1</sup> Laval University, Québec, Canada

#### Background

With the concern for sustainable development and the arrival of the pandemic, online learning assessment is a method that is becoming increasingly popular. At Laval University, the Information Technology Integration Direction (Diti) and the evaluation sector of the Apprentiss center of the Medical faculty have collaborated to develop a system for online quotation called CELEC.

#### Summary Of Work

This system consists of a complementary computer application to our OSCE examination management applications. It allows the creation of evaluation grids in electronic format allowing online scoring and remotely as needed. This innovation significantly improves current processes and practices, resulting in significant gains in efficiency and in a sustainable manner. The purpose of this presentation is to introduce the tool, how it was developed, and discuss its advantages and disadvantages. The system will be presented in a general way: the different components and their uses. It includes a component for the management of the student questionnaires and evaluation grids. The stages of CELEC development will be also discussed: from planning to delivery of the system.

#### Summary Of Results

This project has had several benefits which will be presented. It allows, among other things, great flexibility in the development of evaluation grids, a reduction in the number of incomplete grids, the possibility of having a case bank, as well as a reduction in the time required to process the results.

#### Discussion And Conclusion

Although, as such a project is not without its limitations, these will also be discussed, including the budget to acquire laptops, the time required to develop the system, and the human resources needed. Some recommendations will be presented for those wishing to carry out a similar project. In our experience, it is essential to involve all users of the system during its development, including the exam development team, as well as grid users and alumni. It is also recommended to identify a



spokesperson in each team to facilitate exchanges and collaboration between the IT and evaluation teams.

### **Take Home Messages**

This was a great project that now facilitates our work and we hope to share it with other teams who are working on a similar project.

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## ePoster Session 2G9 (0674)

**Date of presentation:** Saturday 27th August

**Time of session:** 10:34 - 10:42

**Location of presentation:** Saint Clair 2

### **Impact of Liminality and Rituals on Physician Training Development and Cultivation of Professionalism**

Huei-Ming Yeh<sup>1</sup>, Jian-Hua Hong<sup>1</sup>, Chun-Lin Chu<sup>1</sup>, Fu-Chang Tsai<sup>1</sup>

<sup>1</sup> *National Taiwan University Hospital, Taipei, Taiwan*

#### **Background**

Medical students transitioning from “being a student” to “being a physician” face various dilemmas. Appropriate liminality phase influences the quality of training during this key transition. This study assessed the impact of liminality and rituals on medical trainees and their subsequent identity formation and professionalism development.

#### **Summary Of Work**

The authors collected audio diaries on the management of feelings and emotions during clinical practice from medical students in 2 different training systems, a traditional training system and an accelerated training system. The accelerated training system aims to reform the postgraduate general medical training, introducing one additional post graduate year after certification as a physician to replace traditional internship year. The authors used an open-ended questionnaire along with a rigorous triangulation method to evaluate the responses and identify consistent characteristics, and they compared and assessed the effect of liminality and rituals on different aspects of professionalism.

#### **Summary Of Results**

By comparing the effects of deleting or shifting key elements of medical education and by comprehensively exploring fundamental aspects of “rites of passage” and their interaction with the training process, the authors revealed some key insights. Because the rites of passage and interactive and augmented effects of rituals are different for trainees in the accelerated system, these trainees must demonstrate higher proactive characteristics and self-motivation. The lack of traditional liminality increases conflict when trainees are faced with the transformation of professional identities and socialization, which affects the transformation of professionalism.

#### **Discussion And Conclusion**



This study highlights the sequential implementation of rites of passage and the experience of liminality between two educational systems, also confirms the impact of deleting internship year or shifting certification on cultivation of professionalism. How to combine these fundamental factors for optimal results in an adjusted training system warrants delicate design and further research.

### **Take Home Messages**

Appropriate content and period of liminality, rites of passage, and timing of rituals should be delicately incorporated into educational program development.

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## Workshop 2H (0621)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:30 - 11:00

**Location of presentation:** Saint Clair 3A

### **Increasing Faculty Comfort with Assessment and Remediation of Professionalism Concerns**

Keith Wilson<sup>1</sup>, Wendy Stewart<sup>1</sup>

<sup>1</sup> *Dalhousie University, Halifax, Canada*

#### **Background**

In self-regulating health professions, professionalism is considered a core competency. It is imperative that we continue to develop ways to identify lapses in professionalism early in training as lapses in professionalism in undergraduate training are associated with on-going issues once in practice. We need to foster the skills, attitudes and behaviours we want the students to demonstrate as they move through their training and on into practice. This requires faculty having a comfort with identifying and providing feedback for these issues.

Faculty struggle with identifying issues of professionalism and providing appropriate and timely feedback. Insufficient documentation to assist in decision making around professionalism concerns hinders appropriate remediation planning. Various reasons for this lack of documentation have been identified, including: faculty seeing a student only once; giving students the benefit of the doubt; lack of time; expecting someone else to deal with it; providing challenging feedback is difficult; concern it might affect the students career; and concern about being sued.

This workshop will provide participants with approaches for identifying and documenting professionalism concerns, opportunities to practice providing feedback and to create a remediation plan using fictional student cases.

#### **Who Should Participate**

Health professions faculty with an interest or role in the assessment and remediation of professionalism issues.



### **Structure Of Workshop**

The workshop will combine brief didactic presentations to frame information, interspersed with interactive activities. Specifically, participants will:

1. In small groups, list the types of professionalism issues seen at the undergraduate level and how they might be identified.
2. Pair-share to identify their own challenges in providing feedback to students in difficulty, then share with the larger group.
3. Practice providing feedback using role plays representing a variety of challenging student professionalism situations.
4. Create a professionalism remediation plan for a fictional student in difficulty using a provided template.

### **Intended Outcomes**

At the completion of this workshop, participants will be able to:

1. Identify issues of professionalism at the undergraduate level.
2. Provide constructive feedback to a student with identified professionalism issues.
3. Create a professionalism remediation plan for a student in difficulty with specified objectives and outcome measures.



## Round Table 2J (0702)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:30 - 11:00

**Location of presentation:** Saint Clair 4

### **The evaluation of a selection process in postgraduate medical education subspecialty training program in Canada**

Natalie Buu<sup>1</sup>, Carlos Gomez-Garibello<sup>2</sup>, Scott Nordstrom<sup>1</sup>, Rachel Fisher<sup>1</sup>, Catherine Paquet<sup>1</sup>

<sup>1</sup> McGill University, Montreal, Canada <sup>2</sup> Institute of Health Science Education, McGill University, Montreal, Canada

The selection process of medical students to Canadian postgraduate-level subspecialty programs is dissatisfying. In 2015, our program decided to overhaul the selection process. The timing for this change was deliberate. Postgraduate programs in Canada were soon launching a competency-based medical education (CBME) curriculum. Our postgraduate-level subspecialty residency program was integrating this CBME curriculum in July 2017. A multiple mini-interview (MMI) approach to selection was developed, focusing efforts to create scenarios that best highlight strengths and weaknesses in CanMEDs-like realms as communication, collaboration, professionalism, and responsivity to feedback, with the goal to prospectively track these attributes through the five-year training program thanks to increased assessments with milestones within similar CanMEDS categories.

This selection process is a herculean effort for our medium-sized program faced with an ever-increasing number of applicants for a handful of positions. The annual creation of scenarios and assessment rubrics for the selection process, including training of standardized patients, mandates effort and time beyond clinical responsibilities faced by staff and residents. It is imperative therefore that this selection process is reviewed annually, including candidate and staff satisfaction data and analysis of scenarios and rubrics for facility of use and discriminatory ability to allow improvement for subsequent years.

Due to small numbers, despite being a medium-sized program, it remains difficult to report more than trends and tendencies. Our data demonstrate satisfaction of candidates and staff of the process. Preliminary comparison of trainees in the program 6 years prior to and 6 years since starting our MMI selection process suggests an approximate two-fold decreased number of residents requiring remediation. We herewith also discuss perceived differences in the ability to discriminate candidates among selected CanMEDS categories of different scenarios and advantages and challenges perceived after 2 years experience delivering virtual instead of in-person MMIs. Furthermore, with the upcoming graduation of the first cohort of residents in the CBME curriculum, it also becomes possible to begin to assess how scenarios may help predict strengths and weaknesses



in trainees through their residency training.

Although resource and time intensive, there is evidence to support using MMI for selection for our postgraduate-level subspecialty program.



## Workshop 2K (0324)

**Date of presentation:** Saturday 27th August

**Time of session:** 09:30 - 11:00

**Location of presentation:** Roseraie 2

### Building an international community of practice for program evaluators

Deborah Engle<sup>1</sup>, Andrea Berry<sup>2</sup>, Elizabeth Bradley<sup>3</sup>, Loretta Jackson-Williams<sup>4</sup>, Weichao Chen<sup>5</sup>, Jessica Greenfield<sup>3</sup>, Michele Birch<sup>6</sup>

<sup>1</sup> *Duke University School of Medicine, Durham, NC, USA* <sup>2</sup> *University of Central Florida College of Medicine, Orlando, FL, USA* <sup>3</sup> *University of Virginia School of Medicine, Charlottesville, VA, USA* <sup>4</sup> *University of Mississippi School of Medicine, Jackson, MS, USA* <sup>5</sup> *Baylor College of Medicine, Houston, TX, USA* <sup>6</sup> *Wake Forest School of Medicine, Charlotte, NC, USA*

#### Background

Program evaluation (PE) is essential for ongoing, continuous quality improvement (CQI), compliance with medical education regulations and high-stakes decision making. Competency-based assessment data such as EPAs and outcomes are vital resources in this effort.

A community of practice (CoP) provides evaluators a useful model for both professional development and improvement of PE practices. CoPs situate learning through interacting with other members, which also leads to the promotion of innovation and development of social capital.

This session invites participants to conquer the challenge of PE by contributing to an established COP (Program Evaluation Special Interest Group). Following this existing model, participants will begin building a CoP with peers from across the globe. Members of this nascent CoP will engage in sharing and co-creating current and best practices in PE that can lead to scholarly collaborations such as peer-reviewed presentations, publications, and grant applications.

#### Who Should Participate

Novice through advanced program evaluators, course directors and assessors

#### Structure Of Workshop

- 2 minutes- Introduction
- 13 minutes- Overview of PE models (basic and advanced), resources, and how data is collected, analyzed, and used
- 10 minutes- How COP helps with PE challenges/barriers



- 30 minutes- Small groups of 4-6 participants will work through provided evaluation dataset and institutional program objectives to make recommendations on specific components of the program. The evaluation dataset will be from a de-identified institution to include markers of program/course effectiveness. Participants will share personal approaches to PE
- 25 minutes- Small groups report conclusions/recommendations from exercise. Large group discussion of similarities/differences in recommendations; participants will share useful resources
- 5 minutes- Wrap up and next steps: group discussion on how best to facilitate COPs at regional, national, and/or international level commitment exercise for those who want to participate in the CoP formed during session

#### **Intended Outcomes**

- Explore how student/programmatic assessment data is used within PE for CQI, accreditation or high-stakes decision making.
- Describe the tenets of the CoP model, including resources and strategies, in promoting professional development and best practices in PE
- Experience the value of a CoP through tackling practical PE challenges/tasks collectively to achieve institutional effectiveness
- Develop and/or contribute to a virtual, hybrid or in-person regional and international PE CoP



## Symposium 3A (0830)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:30 - 13:00

**Location of presentation:** Auditorium Lumiere

### **High Stakes Testing in the 21<sup>st</sup> Century, is it still necessary? Does it cause harm?**

#### **Presenters**

Humayun Chaudhry<sup>2</sup>, Theresa Chan<sup>3</sup>, Claire Touchie<sup>4</sup>, Graham McMahon<sup>5</sup>, Lambert Schuwirth<sup>6</sup>,  
Mădălina Elena Mandache<sup>7</sup>, Kevin Eva<sup>8</sup>

#### **Moderator**

Ian Bowmer<sup>1</sup>

<sup>1</sup> Royal College of Physicians & Surgeons of Canada, Ottawa, Canada <sup>2</sup> Federation of State Medical Boards, Washington DC, USA <sup>3</sup> McMaster University, Faculty of Health Sciences, Hamilton, Canada <sup>4</sup> University of Ottawa, Ottawa, Canada <sup>5</sup> ACCME, Chicago, USA <sup>6</sup> Flinders University, Adelaide, Australia <sup>7</sup> IFMSA, Copenhagen, Denmark <sup>8</sup> University of British Columbia, Vancouver, Canada

#### **Background**

The COVID 19 pandemic caused both assessment and regulatory agencies to re-evaluate traditional testing and licensing approaches. Many national examinations were postponed or cancelled. In addition, newer approaches to assessment of competence and the recognition that advances in artificial intelligence assisted medical care are changing how learners learn and practice.

The panel will present regulatory, educator, testing organizations, and student perspectives as to whether high stakes testing continues to be needed and whether this form of assessment negatively impacts approaches to learning in today's medical world. Following the presentations and short discussion, the audience will be asked to participate.



## Oral - EPAs and self-assessment

### Oral Session 3B1 (0255)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:30 - 11:45

**Location of presentation:** Rhone 2

### From prospective to summative entrustments: a cautionary tale

Jessica Dine<sup>1</sup>, Jennifer Kogan<sup>1</sup>, Lisa Conforti<sup>2</sup>, Eric Holmboe<sup>2</sup>

<sup>1</sup> Perelman School of Medicine at the University of Pennsylvania, Philadelphia, USA <sup>2</sup> ACGME, Chicago, USA

#### Background

Both faculty and learners regard prospective entrustment-supervision ratings as more instinctive compared to other rating scales. The main objective of this study was to determine whether the dependability of a prospective entrustment-supervision scale differed by the performance of learners when the true level of performance is known.

#### Summary Of Work

As part of a larger randomized controlled trial, ten videos were developed depicting a standardized resident obtaining a history from or counselling a standardized patient. Each video was rigorously scripted and filmed to represent a certain level of entrustment. Participating faculty were asked to rate the learner using a 4-point entrustment-supervision ordinal scale (1= Learner cannot practice, must be directly observed, 2= learner can practice skill with direct supervision, 3= indirect supervision, 4= unsupervised practice). Generalizability (G) and Decision (D) studies were performed first for all cases (rater x case) and then for lower performing cases (rater only).

#### Summary Of Results

Seventy-seven faculty rated 10 standardized resident video cases. Five, three and two of these cases were scripted to represent an entrustment rating of 2, 3 and 4, respectively. The mean score for all 10 videos was 2.87 (SD 0.86). G-studies estimated the variance proportions of the rater and case to be 5% and 54% (with variance (rater\*case, residual) of 41%). D studies estimated the need for 3 raters to watch the ten videos for an acceptable G coefficient of 0.78. The variance proportion of the rater was 4% (residual variance of 96%) when the analysis was restricted to level 2 entrustment performance (five videos) and would require 15 raters to watch the five videos for the G coefficient to equal 0.81.



### **Discussion And Conclusion**

The variance proportion of the rater and the results of the D studies varied significantly depending on the performance of the learner.

### **Take Home Messages**

Caution is needed when using entrustment scales as ratings varied substantially by performance level in medical interviewing and counseling.

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## Oral Session 3B2 (0726)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:45 - 12:00

**Location of presentation:** Rhone 4

### Understanding the Measurement Affects Self-Assessment on Pediatric Milestones

Elizabeth Chawla<sup>1,2</sup>

<sup>1</sup> Georgetown University School of Medicine, Washington, DC, USA <sup>2</sup> Medstar Georgetown University Hospital, Washington, DC, USA

#### Background

The US Accreditation Council for Graduate Medical Education's (ACGME's) Pediatric Milestones have been difficult for front line faculty members to interpret for the assessment of pediatric trainees. The literature shows poor inter-rater reliability of the milestones assessment scales between faculty, however this is thought to improve with training on use of the milestones. Several studies have noted inaccuracies in self-assessment of medical trainees, but self-assessment is important to the life-long learning of medical professionals. This study sought to examine self-assessment of pediatric trainees on the milestones, and if reliability with faculty assessments improved after real-time training.

#### Summary Of Work

Final year pediatric residents at a single US institution completed two simulated patient encounters designed specifically to evaluate the core competency of interpersonal communication skills (ICS). Two faculty members observed each case and evaluated the residents' performance on a well-designed communication assessment tool based on the literature, followed by assessment on the pediatric milestones ICS1 and ICS2. The resident completed a self-assessment using the tool and self-assessment on the pediatric milestones ICS1 and ICS2, followed by in-person feedback and discussion of performance by the faculty member using the tool. The resident then completed the second case, followed by the same self-assessment on the tool and on milestones ICS1 and ICS2. Kappas, weighted kappas, and percent agreement were calculated.

#### Summary Of Results

Ten residents were assessed in two cases each. There was poor inter-rater reliability between faculty members on both ICS1 [kappa -0.029/weighted -0.009/28.6% agreement] and ICS2 [kappa 0.152/weighted 0.263/43% agreement]. There was also poor reliability between faculty and resident self-assessment which did not improve from the first case [kappa -0.045/weighted -0.189/23% agreement] to the second case [kappa -0.058/weighted -0.225/17.7% agreement].



### **Discussion And Conclusion**

Pediatric milestones are confusing for both faculty members and residents, even when training on the scale is provided in the context of real-time performance. Trainees are more likely to develop personal insight leading to appropriate goals for growth when benchmarks are more clear.

### **Take Home Messages**

We should continue to reevaluate the role of milestones for assessment, as more concrete methods are needed to help trainees develop the personal insight into their own clinical performance required for life-long learning.

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## Oral Session 3B3 (0778)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:00 - 12:15

**Location of presentation:** Rhone 4

### Can Self-Regulated Learning Theory Guide Learning Task Design?

Michael Allen<sup>1</sup>, Todd Cassese<sup>2</sup>, Tavinder Ark<sup>3</sup>

<sup>1</sup> *The Icahn School of Medicine at Mount Sinai, New York, USA* <sup>2</sup> *The Albert Einstein College of Medicine, New York, USA* <sup>3</sup> *The Kern Institute at the Medical College of Wisconsin, Wisconsin, USA*

#### Background

The benefits students derive from utilizing the steps Self-Regulated Learning (SRL) Theory are extensive. The degree to which students innately employ these steps and whether learning formats influence the specific steps utilized is less clear. This retrospective study examined how students utilized and valued components of the SRL Theory when completing online modules.

#### Summary Of Work

An anonymous, electronic survey was sent to all 3<sup>rd</sup> and 4<sup>th</sup> year students at our institution to assess students' experience of online lectures. The survey assessed whether students utilized the steps of the SRL Theory, their perceived value of utilized steps, and whether the learning task was conducive to employing SRL steps. Fisher's Exact Test was used to examine the association between use of SRL Theory steps and their perceived value (4-point Likert scale). Phi Correlation ( $\Phi$ ) was computed to examine directionality of the correlation.

#### Summary Of Results

A total of 171 survey responses (171/360, 47.5%) were collected. Planning was most utilized (50%) followed by Attention Control (41%), Strategizing (38%), Goal Setting (26%), Reflection (21%), and Seeking Help (8%). Most students who did not utilize SRL steps thought they would have been useful (>50% for each). Significant correlations between utilization and perceived value were found for Strategizing ( $p < 0.028$ ,  $\Phi = 0.21$ ) and Reflection ( $P < 0.041$ ,  $\Phi = 0.19$ ). Conversely, students who did not Plan were more likely to perceive planning as valuable compared to those students who did Plan ( $p < 0.005$ ,  $\Phi = -0.27$ ).

#### Discussion And Conclusion

Most students that did not utilize steps of SRL Theory responded that it would have been useful to have done so after simply being introduced to that step in the survey. This mandatory video lecture assignment differentially stimulated performance-oriented steps of the SRL Theory (Planning,



Attention Control, Strategizing) while steps like Reflection were marginally used. Our results suggest that for mandatory online lectures, performance tasks are more readily a part of students' study repertoire. Adding a Reflection component or modifying the learning task to a modality with higher engagement could rectify this. Further validation of these results in a multi-centered study is needed to contribute to more learning task designs that increase student engagement.

### **Take Home Messages**

Understanding the limitations of online assignments can help instructors remodel them to optimize student's learning.

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## Oral Session 3B4 (0565)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:15 - 12:30

**Location of presentation:** Rhone 4

### **Adaptive Design of Competencies and Milestones: Lessons from a New Medical School**

Carla Lupi<sup>1</sup>, Candace Pau<sup>2</sup>, Lindsay Mazotti<sup>1</sup>, Abbas Hyderi<sup>1</sup>

<sup>1</sup> Kaiser Permanente Bernard J. Tyson School of Medicine, Pasadena, USA <sup>2</sup> Kaiser Permanente Bernard J. Tyson School of Medicine, Pasadena, USA

#### **Background**

A key step in the design of competency-based medical education is the establishment of both “competencies and their developmental markers.” Successful programmatic assessment necessitates learner access to data which at different levels of training reliably communicates learner progress along milestones and ultimately attainment of graduation outcomes. While milestones are now robustly operationalized in graduate medical education, only a handful of U.S. medical schools have defined and/or implemented milestones, and the literature contains no reports of their implementation in a new medical education program. .

#### **Summary Of Work**

As a new school, Kaiser Permanente Bernard J. Tyson School of Medicine (KPSOM) designed its curriculum around 29 initial educational program outcomes (EPOs), or competencies. These EPOs and their developmental milestones were defined and implemented based on feasibly achieved instructional and assessment plans, as well as our institutional mission, vision, and values. Course-level learning objectives for required courses derive from the milestones for applicable EPOs. The milestones also serve as the basis for ratings in simulation-based assessments, clinical competency forms, behavioral assessment tools, and rubrics for projects and open-response examinations.

#### **Summary Of Results**

In our first academic year, sufficient performance data from multiple assessment modalities were generated to populate milestone dashboards for eight EPOs. A year-end institution-wide, cross-disciplinary review process was implemented to systematically analyze data from all EPOs and determine whether revision was necessary. As a result of this process, we have reduced the total number of EPOs, with several EPOs additionally undergoing modification to enhance alignment of the milestones with the anticipated developmental trajectory.



### **Discussion And Conclusion**

Driving revision of the milestones through curricular governance has fostered faculty buy-in for maintenance and use of milestones. KPSOM milestones are sufficiently broad that institutions may adopt those relevant to their own curricula. Our governance and CQI processes for iteration are consistent with the requirements of our national accrediting body.

### **Take Home Messages**

The development of EPOs and milestones in an ambitious curriculum is a highly iterative process.

While the rapidity of early change through curricular governance may delay achievement of a reasonably steady state, these processes enhance alignment to feasible curriculum and solidify faculty buy-in.

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## Oral - Management and Assessment

### Oral Session 3C1 (0642)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:30 - 11:45

**Location of presentation:** Rhone 3A

### **An Artificial Intelligence Approach to Assessment of Student Success: From Concept to Implementation**

Maryann Wu<sup>1</sup>, Mrunmayee Shirodkar<sup>1</sup>, Ying Wang<sup>1</sup>, Ian Haworth<sup>1</sup>

<sup>1</sup> *University of Southern California, Los Angeles, USA*

#### **Background**

Artificial intelligence (AI) has great potential for assessment of the impact of educational programs on student outcomes. Here, we describe our approach to building such an AI model, which we refer to as AI-SiPS (Success in Pharmacy School).

#### **Summary Of Work**

Conceptually, we wanted to develop a model to predict student success upon graduation, using stepwise assessment of activities through the 4-year program. The current three-stage model includes data collected during semesters 1 (P1), 2-4 (P1-P2), and 5-6 (P3). Practically, these choices were based on data availability from surveys and other sources.

#### **Summary Of Results**

The AI model was built on KNIME ver.4.5.1, using the Decision Tree algorithm. As an example, we focus on the P3 stage. A model describing success in obtaining a residency was constructed using curricular information (order of clinical rotations), student motivation (goals identified in a P3 survey), and student confidence level (P3). Data were evaluated for 382 students who graduated in 2019-2021. Of students with a clear residency goal (n=81), 72% obtained a residency. For those still uncertain in P3 (n=336), 143 attempted to obtain a residency, and their success rate was higher if they had a certain order of clinical rotations (71% vs. 63%).

#### **Discussion And Conclusion**

Our preliminary results indicate a need to better identify students with a clear residency goal and to ensure that these students are given certain orders of clinical rotations. Similar considerations are needed for students with other career goals. The earlier stages of the model can be used to predict this information. This provides an example of “backward” design: use of earlier data to predict key



parameters for later stages, and identification of points of intervention that can be used to “disrupt” the model in future years. Our development of AI-SiPS also provided insights into our assessment processes and suggested changes to collect appropriate and timely data to feed the model.

### **Take Home Messages**

Development of an AI model requires discussion among experts in different areas of a school, in order to identify key elements of the model. Some elements are constrained by external considerations, but others are manageable through changes in the timing and type of assessment data collected.

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## Oral Session 3C2 (0703)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:45 - 12:00

**Location of presentation:** Rhone 3A

### Revitalizing Exams by Exploring the Uses of Assessments and the Interpretation of Scores

Carlos Gomez-Garibello<sup>1</sup>, Maryam Wagner<sup>1</sup>, Melina Vassiliou<sup>1</sup>, Allan Okrainec<sup>2</sup>, Dmitry Nepomnayshy<sup>3</sup>, Suvranu De<sup>4</sup>, Neal Seymour<sup>5</sup>

<sup>1</sup> McGill University, Montreal, Canada <sup>2</sup> University of Toronto, Toronto, Canada <sup>3</sup> Lahey Hospital and Medical Center, Burlington, USA <sup>4</sup> Rensselaer Polytechnic Institute, Troy, USA <sup>5</sup> University of Massachusetts Medical School-Baystate, Springfield, MA, USA

#### Background

Healthcare professions continuously incorporate technologies and adopt new standards to provide the best possible care to patients. As such, healthcare professions are perpetually evolving and transforming, thus affecting the curriculum to be delivered to trainees, as well as the assessments of their qualifications. Stakeholders need to engage in principled, systematic approaches to ensure that these assessments reflect current content and priority areas for measurement. This presentation illustrates this revitalization process for a certification exam, the Fundamentals of Laparoscopic Surgery (FLS) program.

#### Summary Of Work

FLS is a program focused on the tenets of laparoscopic procedures used in surgery comprising a set of manual skills tasks and a knowledge exam. The Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) has unfolded a process to review the uses of the FLS program and the interpretation of its scores. This process involved: 1) Developing validity claims related to FLS program's uses and interpretations to identify research goals; 2) based on the defined goals, multiple surgical educators identify the most salient competencies related to laparoscopic procedures; 3) the resulting list was used to create a survey that was distributed to surgeons and trainees around the world. Participants were asked to rate each competency in terms of its importance, frequency and priority for testing.

#### Summary Of Results

A total of 1143 surveys were completed by surgeons. Using the distribution of scores for priority for testing, a subset of the original competencies were selected. Confirmatory Factor Analysis was computed to test the appropriateness of the domains that hypothetically cluster these competencies. Finally, these competencies were used to map the existing manual skills measured in



the FLS program.

### **Discussion And Conclusion**

The validity claims regarding the content of the test and its relevance contributed to defining research goals and helped to define the process for identifying the most relevant competencies of laparoscopic surgery that need to be assessed.

### **Take Home Messages**

This project illustrates a systematic process that may be used to review any program of assessment entailing: 1) developing validity claims; 2) using the claims to define research goals; and 3) designing a research study to examine the claims.

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## Oral Session 3C3 (0418)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:00 - 12:15

**Location of presentation:** Rhone 3A

### **Involving faculty in the assessment strategy reform: Plotting assessment opinions with a qualitative survey**

Johanna Louhimo<sup>1</sup>, Eeva Pyörälä<sup>2</sup>

<sup>1</sup> *University of Helsinki, Faculty of Medicine, Helsinki, Finland* <sup>2</sup> *University of Helsinki, Center for University Teaching and Learning, Helsinki, Finland*

#### **Background**

In the University of Helsinki medical degree program, all disciplines have traditionally had a high degree of autonomy in all areas of teaching and assessment. With the Helsinki 2020 curriculum reform and the national outcomes of graduating Finnish doctors published in 2020, it has become pivotal to develop assessment to support the student learning and the achievement of outcomes for graduates. In addition, the Covid-19 pandemic caused a rapid transition to online assessment. To meet these demands, we need an assessment strategy to ensure transparent, fair, reliable and valid assessment for medical students. To advance in this process collaboratively, we asked teaching staff for their opinions on assessment. The aim of this study was to report on the key themes on assessment expressed by the teaching staff.

#### **Summary Of Work**

In November 2021, we sent an online questionnaire to 137 members of the faculty, including professors and clinical or university lecturers. The questionnaire included open-ended questions on teachers' perspectives on assessment methods, assessment processes, assessment strategy, and assessment in general. We received 32 responses that were pooled and examined using qualitative content analysis.

#### **Summary Of Results**

The following themes emerged from the responses: (1) More formative assessment and constructive feedback in both biomedical and clinical courses. (2) Systematic assessment of the development of clinical skills in patient encounters, using simulations and virtual patients, and conducting several OSCEs. (3) Complete digitalization of written exams, including both essays and SBA-MCQs. (4) Teachers' autonomy in assessment should remain. The degree program should set only general principles in assessment.



### **Discussion And Conclusion**

In designing and implementing an assessment strategy, we should hear the voice of the teaching staff to ensure their engagement in the process. This study revealed that teachers were interested in fostering assessment although they wanted to maintain their assessment autonomy. The promotion of formative type of assessment for learning, enhancing online exams were shared areas for development.

### **Take Home Messages**

The results of the qualitative survey provided us with valuable insights into teachers' views on assessment.

Assessment perspectives show that teachers are both ready for rapid reform and to defend their own autonomy.

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## Oral Session 3C4 (0125)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:15 - 12:30

**Location of presentation:** Rhone 3A

### **Conscientiousness predicts later medical school and post-graduation performance, can be used for selection, and is a major component of professionalism**

Marina Sawdon<sup>1</sup>, John McLachlan<sup>2</sup>

<sup>1</sup> *University of Sunderland, Sunderland, UK* <sup>2</sup> *University of Central Lancashire, Preston, UK*

#### **Background**

Undergraduate medical student test performance predicts future clinical performance, including fitness to practice (FtP). But FtP lapses are overwhelmingly failures of professionalism, not knowledge or skills. So why does exam performance predict this?

We have hypothesised that the trait of conscientiousness underpins both exam performance as a student and later clinical performance, including professional behaviour. We have collected data on early years conscientiousness and can now compare it with later performance, including clinical settings. It would be of great value if conscientiousness could be used as a selection tool. We therefore also review observed conscientiousness with predictions derived from written tests to see if these test are a reliable predictor, first of conscientiousness, and hence of later clinical professionalism.

#### **Summary Of Work**

Data on conscientiousness in routine tasks was collected over a 12 year period within one UK medical school to explore the relationship between medical student conscientiousness (the 'Conscientiousness Index' or CI), and later assessments, including performance after graduation. This predictor data (from 858 students) was compared using the UKMED with Situational Judgement Test, Prescribing Safety Assessments, aggregated exam scores in later years, and with the likelihood of successfully completing the two years of post-graduation Foundation programme, and performance on Royal College exams. Observed CI Scores had previously been compared with test scores using NEO-P-IR, an instrument designed to explore the Big Five personality characteristics.

#### **Summary Of Results**



The CI was positively and significantly correlated with the Situational Judgement Test, Prescribing Safety Assessment, and aggregated exam scores in later years, and with the likelihood of successfully completing the two years of the post-graduation Foundation programme. Positive but just below significance correlation values were observed with post-graduation Royal College exams for speciality training. NEO-P-IR had previously been shown to correlate well with CI scores.

### **Discussion And Conclusion**

This data demonstrates that measures of routine conscientiousness are predictive of later performance, including at postgraduate level, and that conscientiousness as estimated by written tests of psychological characteristics are predictive of actual conscientiousness in routine tasks at medical school.

### **Take Home Messages**

This indicates that written tests of psychological characteristics are potentially valuable selection tools, with different characteristics than tests of academic performance.

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## Oral Session 3C5 (0785)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:30 - 12:45

**Location of presentation:** Rhone 3A

### Benefits of Assessment collaborations and communities – the way of the future

Deborah O'Mara<sup>1</sup>, Helen Wozniak<sup>2</sup>, Stephen Tobin<sup>3</sup>, Mike Tweed<sup>4</sup>, Anna Ryan<sup>5</sup>

<sup>1</sup> *Office of Medical Education, University of Sydney, Sydney, Australia* <sup>2</sup> *Academy for Medical Education, University of Queensland, Brisbane, Australia* <sup>3</sup> *School of Medicine, Western Sydney University, Sydney, Australia* <sup>4</sup> *Department of Medicine, University of Otago, Dunedin, New Zealand* <sup>5</sup> *Department of Medical Education, University of Melbourne, Melbourne, Australia*

#### Background

Assessment in medical education has shifted to more frequent low and medium stakes assessment for learning, increasing resource needs. COVID-19 has added further complications reducing on-campus and clinical experiences, forcing an acceleration of planned changes to programs of assessment, the creation of new assessment modalities such as remote and proctored assessment, often within a shrinking fiscal environment. Other than Subha Ramani et al (2021) outlining the importance of collaborations in Twelve tips for developing a global community of scholars in health professions education, *Medical Teacher*, 43:8, 966-971, there has been little reported about the value of assessment collaborations.

#### Summary Of Work

Collaborations between Australasian medical programs have assisted in managing these complexities by illuminating the spectrum of practice, offering peer critique and support while retaining the autonomy of individual medical schools. Our collaboration use the wisdom of the crowd to refine educational innovations prior to implementation and have proven invaluable to the participants in implementing policy change at their individual schools. In addition, the collaborations have extended to research on assessment and publications, further developing a community of practice.

#### Summary Of Results

There have been three successful assessment collaborations in Australasia to-date. Collaboration 1 began in 2020 and is an informal monthly community of practice meeting for assessment leads in Australasia that has included participants from South Africa and Fiji. Collaboration 2 is the Australasian Medical Schools Assessment Collaboration (AMSAC) which started in 2009 and is used for benchmarking the preclinical academic performance of medical students. Collaboration 3 is the Assessment Collaboration for Clinical Assessments in Medicine (ACCLAiM) that began in 2010 and



Through the discussion of the three Australasian models we will demonstrate how to facilitate the growth of a collaborative assessment community, and discuss perceived advantages as well as barriers to participation and unanticipated consequences. The development of collaborative research projects and consequent publications have been other positive outcomes.

### **Take Home Messages**

We cannot afford not to be part of assessment collaborations and communities.

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## Oral Session 3C6 (0424)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:45 - 13:00

**Location of presentation:** Rhone 3A

### **Assessing the impact of a medical education academy: A study in social network analysis of members within Duke AHEAD**

Deborah Engle<sup>1</sup>, James Moody<sup>1</sup>, Maria Christina Ramos Flor<sup>1</sup>, Rebecca Blanchard<sup>2</sup>

<sup>1</sup> *Duke University School of Medicine, Durham, NC, USA* <sup>2</sup> *Baystate Health, Springfield, MA, USA*

#### **Background**

Duke AHEAD is an interprofessional academy and faculty development (FD) is central to its mission.

Both within our academy and the literature, evaluation of FD programs has primarily focused on gaining feedback about the individual academy member's acquisition of knowledge, skills and attitudes. However, this strategy has not provided information about FD programs in terms of organizational change affected by faculty participants, as has been long advocated by FD scholars.

One opportunity for exploring organizational-level influence is through the growth of social networks, which are critical for promoting personal resilience and fostering institutional change primarily through cultivation of social capital. Our study explores the social networks of academy members, before and after joining AHEAD.

#### **Summary Of Work**

A social network analysis (SNA) survey was created and disseminated to all AHEAD members. Survey respondents listed up to 10 people with whom they discussed important education matters before the start of AHEAD (2014) and after its launch. The analytical strategy included the construction of two respondent- and two nominee-projection networks.

#### **Summary Of Results**

78 respondents participated in the survey; 53% respondents completed the portions required for analysis. Results for respondent projection networks reveal the network structure became less fragmented after AHEAD, and there were more connections among nodes of different fields after AHEAD compared to before. This pattern was observed with individuals from the Physician Assistant Program and Nursing School.



Results for nominee projection networks reveal a stark increase in the number of connections after the start of AHEAD (n= 82) compared to before (n=60). Additionally, there is a more connected network of faculty who teach medical students, and more connections with faculty who teach in other health professions programs.

### **Discussion And Conclusion**

Results of SNA reveal a more connected faculty after launch of AHEAD, offering a novel framework for evaluation of education academies.

### **Take Home Messages**

To our knowledge, this is one of the first studies to measure connection between members of a health professions education academy. Academies can foster activities that deliberately leverage the social networks in their communities to promote organizational change and institutional impact. Examples might include encouraging interprofessional scholarship and recognizing and honoring interprofessional mentoring relationships.

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## Oral - Postgraduate Course Evaluation

### Oral Session 3D1 (0712)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:30 - 11:45

**Location of presentation:** Rhone 3B

### **Lessons learned from an interprofessional simulation session for health professions learners when breaking bad news.**

Stephen Miller<sup>1</sup>, Kelly Lackie<sup>2</sup>, Marion Brown<sup>3</sup>, Lori Beatty<sup>4</sup>, Shauna Houk<sup>2</sup>, Laurie Graham<sup>2</sup>, Leanne Picketts<sup>5</sup>, Christy Simpson<sup>6</sup>, Peter Stilwill<sup>7</sup>

<sup>1</sup> Dalhousie University, Faculty of Medicine, Halifax, Canada <sup>2</sup> Dalhousie University, Faculty of Health; School of Nursing, Halifax, Canada <sup>3</sup> Dalhousie University Faculty of Health, Halifax, Canada <sup>4</sup> Dalhousie University, Faculty of Medicine, Department of Emergency Medicine, Halifax, Canada <sup>5</sup> Dalhousie University, C3LR, Simulated Patient Educator, Halifax, Canada <sup>6</sup> Dalhousie University, Faculty of Medicine, Department of Bioethics, Halifax, Canada <sup>7</sup> Dalhousie University, Faculty of Health, Halifax, Canada

#### **Background**

Breaking bad news (BBN) can have an enduring impact on patients, families, and caregivers. Evidence suggests that health care providers feel inadequately prepared to deliver bad news (BN). Research has shown that practitioners with poorer performance when BBN experience burnout and fatigue. There is limited training related to BBN in health professions education, but through practice, optimal therapeutic delivery of BN can improve patients' and families' satisfaction. It may also improve health-related outcomes in those receiving the BN. An interprofessional education (IPE) approach provides an opportunity for health professions learners to collaboratively learn about each other's roles in BBN.

#### **Summary Of Work**

We will provide an overview of development and delivery of this workshop to BBN for emergency medicine residents, nurse practitioner and social work trainees. Two emotionally charged simulations requiring the collaborative delivery of BN in an acute care setting were delivered with a goal to learn about each other's roles in the process. The majority attended face to face with two IP teams participating virtually. Details regarding the simulations and a BBN framework will be presented, including integration of IP competencies.



### Summary Of Results

A survey was administered as a pre/post test to the learners. 70% completed the pretest and 60% the posttest. Statistically significant changes were seen in many of items around "learning" and the majority of items around "applying learning". 80% were motivated to apply their learning, 85% found it relevant, and 85% found the simulation good to excellent.

### Discussion And Conclusion

The pre/post simulation debriefing sessions conducted with the learners will be discussed. Rich evaluation feedback provided valuable narrative to understand learner perceptions of such a workshop. Data showed multiple statistically significant changes in the learners perception, preparedness and motivation to be able to effectively BBN. The presentation will conclude by describing future curriculum development and scholarly activity around BBN.

### Take Home Messages

BBN requires IP team training for learners to feel comfortable and prepared in their roles.

A well thought out IP simulation session can significantly improve multiple measures with respect to providing this care.

Further work in preparing learners for this type of workshop to create a safe space for learning is key.



## Oral Session 3D2 (0717)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:45 - 12:00

**Location of presentation:** Rhone 3B

### **Evaluation of A simulation program for Foundation doctors after successful introduction: ‘Learning together for patient care’: Experience of novice doctors in a District General Hospital in England.**

Mousumi Sadhukhan<sup>1</sup>

<sup>1</sup> *Stockport NHS Foundation Trust, Manchester, UK*

#### **Background**

Originating from aviation industry, simulation based education in medicine is rapidly developing. Technologies/innovative tools are emerging to enhance healthcare and improve patient safety. Novice doctors train and learn together in a safe environment. In Stepping Hill Hospital, simulation training for foundation year 1 (FY1) and 2 (FY2) doctors was a bit of ‘hit and miss’.

#### **Summary Of Work**

In 2017 after overcoming several hurdles, careful planning, identification of resources and faculty development, uni-professional Simulation Programme was introduced as part of mandatory foundation teaching. Topics were identified from United Kingdom Foundation Programme Curriculum. Each session was delivered to 5-7 trainees with debrief using Imperial College debrief SHARP tool. The Programme was evaluated after two years. A survey methodology with structured questionnaire designed from literature review was used. All trainees participated and voluntarily completed the questionnaire after each session. Data was collected from 5 point Likert scale and from free comments from sessions held every two months over two years. Simple statistical methods used for the quantitative data from the Likert scale. The information from free text grouped into themes.

#### **Summary Of Results**

Foundation doctors felt that simulation was relevant to their learning. 77% strongly agreed feeling better prepared in assessing an un-well adult and responding to changes in their condition. 74 % felt more empowered to make clinical decisions. 85% felt that ‘debrief’ provided opportunity to self-reflect on their performance.

#### **Discussion And Conclusion**



The program provided foundation doctors a novel learning experience from each other in a safe environment. Key take-home messages included improved technical skills such as defibrillation pad placement and revision of Advanced Life support algorithms. FY1 would like more sessions in FY2 and requested simulation for managing the acutely unwell. The main limitations were no feedback from faculty, one-point data collection, non-validated questionnaire used and no opportunity for patient feedback. Following the successful introduction, learning from the evaluation and acknowledging the limitations, an in-situ simulation program was introduced in 2018-19 where trainees could participate in inter-professional simulation as they rotated through specialities.

### **Take Home Messages**

Successful introduction and evaluation of a simulation programme for foundation trainees. Following evaluation of the programme, an in-situ simulation programme was developed and introduced.

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## Oral Session 3D3 (0615)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:00 - 12:15

**Location of presentation:** Rhone 3B

### **The effect of theoretical knowledge on resident's practical performance in musculoskeletalultrasound- a randomized study**

Stine Maya Dreier Carstensen<sup>1,2</sup>, Søren Just<sup>3</sup>, Lars Konge<sup>2,4</sup>, Thiusius Rajeeth Savarimuth<sup>5</sup>, Martin Slusarczyk Hubel<sup>5</sup>, Mikkel Østergaard<sup>1,2</sup>, Mogens Pfeiffer Jensen<sup>1</sup>, Lene Terslev<sup>1,2</sup>

<sup>1</sup> *Copenhagen Center for Arthritis Research, Center for Rheumatology and Spine Diseases, Centre for Head and Orthopaedics, University Hospital of Copenhagen, Rigshospitalet Glostrup, Glostrup, Denmark* <sup>2</sup> *Department of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark* <sup>3</sup> *Department of Medicine, Svendborg Hospital, Odense University Hospital, Svendborg, Denmark* <sup>4</sup> *Copenhagen Academy for Medical Education and Simulation, The Capital Region of Denmark, Copenhagen, Denmark* <sup>5</sup> *The Maersk Mc-Kinney Møller Institute, SDU Robotics, University of Southern Denmark, Odense, Denmark*

#### **Background**

Musculoskeletal ultrasound (MSUS) is a difficult procedure to master and requires both extensive theoretical knowledge and hands-on training. E-learning can supplement hands-on training by providing the resident with theoretical knowledge using online lectures and interactive assignments.

In this study we aim to examine how theoretical pre-course knowledge effects residents' practical MSUS performance pre- and post-course.

#### **Summary Of Work**

We designed a randomized controlled study following the CONSORT statement. The study is currently ongoing, and 14 out of 26 residents have already been included. After inclusion the participants were randomized to the e-learning group or the traditional group. The e-learning group received access to the platform one week before the hands-on course. All participants completed a pre- and post-course practical examination, assessed by two individual blinded raters using the validated Objective Structures Assessment of Ultrasound skills (OSAUS) assessment tool.

#### **Summary Of Results**

In our preliminary results we found no significant difference in OSAUS performance score between the e-learning group and the traditional group pre-course (43% versus 39%,  $p=0.5$ ) or post-course (67% versus 63%,  $p=0.4$ ). Nevertheless, the mean performance score was higher in the e-learning



group both at the pre-course and the post-course examination. The complete dataset will be presented at the conference.

### **Discussion And Conclusion**

Prior evidence suggests that it is possible to enhance learning of new skills if residents are theoretical prepared prior to practical training. In our preliminary results we found no significant improvement of practical MSUS skills when using the interactive e-learning platform, although a tendency toward improved performance was seen. The final conclusion will be presented at the Ottawa conference in August, when all data have been collected and analyzed.

### **Take Home Messages**

- Theoretical knowledge plays an important role in the acquirement of new practical skills.
  - Interactive e-learning has the potential to improve practical MSUS skills; however, in our preliminary analyzes it was not possible to show a significant improvement.
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## Oral Session 3D4 (0764)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:15 - 12:30

**Location of presentation:** Rhone 3B

### **Learners' tendencies in bronchoscopy simulation before transition to the clinical context: *factors that impact their practice.***

Briseida Mema<sup>1</sup>, Yoon Soo Park<sup>2</sup>

<sup>1</sup> Hospital for Sick Children, Toronto, Canada <sup>2</sup> Harvard Medical School, Boston, USA

#### **Background**

Fiberoptic bronchoscopy is a skill essential to many specialities and simulation has been established as an effective strategy for training. Virtual Reality (VR) simulators are available for training and offer advantages such as unrestricted availability and automatic scoring as feedback for learners to guide their own practice. The aims of this study were to investigate learners' tendencies in a self-regulated curriculum and explore factors that influence their simulation practice to a set standard.

#### **Summary Of Work**

This was a sequential explanatory mixed-methods design. Eighteen trainees participated in a simulation curriculum that was self-regulated. Descriptive statistics as well as discrete plots and fitted curves were used to portray trainees' learning curves. Interviews with trainees at the end of the simulation program were used to explore factors that impacted simulation practice. Interviews were analysed using a thematic analysis technique.

#### **Summary Of Results**

Following interviews the learners were grouped in "Goal Driven" (goal of simulation practice was an introduction to procedure) and "Data Driven" (data generated by the simulator impacted practice). The scores were compared between these two groups and between the two different procedures, fiberoptic intubation (high stakes, less time commitment for training) and airway navigation (lower stakes, more time commitment for training). Gener "Data Driven" group practiced more with higher scores and learners were more likely to practice to the set standard in fiberoptic intubation. Factors that affected learners' practice in simulation were views on simulation training as introductory, supervised clinical practice seen as more effective, discouragement from scores and learners' overall goal for level of competence in this skill.

#### **Discussion And Conclusion**



We found that learners are more likely to practice to the set goal if the procedure is high stakes, the time required to practice is short and when scores are improving. Self-regulated curricula need interventions to boost students' evaluation of learning and improvement, and their belief in the efficacy of their efforts.

### **Take Home Messages**

Self-regulated simulation curricula are possible in bronchoscopy simulation once certain supports are in place for learners. Understanding learners' tendencies and motivators may make these curricula more effective.

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## Oral Session 3D5 (0620)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:30 - 12:45

**Location of presentation:** Rhone 3B

### **Restructuring an internal medicine rotation to take on a fully virtual preclinical experience in a resource-limited setting**

Anton Elepaño<sup>1</sup>, Lia Palileo-Villanueva<sup>1</sup>, Andrew Rufino Villafuerte<sup>1</sup>, John Jefferson Besa<sup>1</sup>, Carl Lawrence Arenos<sup>1</sup>, Ron Michael Castillo<sup>1</sup>

<sup>1</sup> *University of the Philippines-Philippine General Hospital, Manila, The Philippines*

#### **Background**

During the COVID-19 pandemic, the University of the Philippines College of Medicine (UPCM) was forced to accelerate the adoption of virtual learning. Course developers were challenged in providing opportunities for clinical exposure and in delivering equitable learning for those with limited access to technology.

#### **Summary Of Work**

We reviewed changes in the course design and implementation of the 3-week internal medicine rotation for third year medical students of UPCM. Responses from course evaluation surveys for faculty and students were summarised. Using a mixed-methods approach, we analysed the quantitative and qualitative (free text) responses and triangulated the results of the faculty and student surveys.

#### **Summary Of Results**

Shifting to a virtual learning platform inevitably decreased the number of synchronous preceptorials from thirteen to three. These sessions were non-graded and formative, in consideration of students with limited internet access. Patient interaction was limited to observing a telemedicine consultation done by faculty. Case discussions involving face-to-face patient rounds were replaced with hypothetical paper cases. A total of 51% (93/181) of students and 34% (32/94) of faculty answered the course evaluation surveys. A recurrent theme from both faculty and students was the demand for more synchronous activities and patient interaction. Telemedicine observership was widely appreciated with 51% (47/93) of student respondents citing it as the activity which they liked the most. The faculty, but not the students, were critical about technical issues, such as microphone clarity and internet connectivity. Overall satisfaction with the course was high with a median (IQR) student rating of 4 (4-4) and faculty rating of 3 (3-4) on a scale of 1 to 4.

#### **Discussion And Conclusion**



A fully virtual course is feasible in teaching preclinical knowledge and skills to medical students, but not without compromises. Patient exposure was perceived to be important but lacking in the virtual course. In resource-limited settings, the technology needed to access the course may pose an issue on equitable learning.

#### **Take Home Messages**

- Balance between synchronous and asynchronous learning in a virtual internal medicine rotation is desired.
  - Telemedicine observership is a viable alternative for clinical exposure and is well-received by students.
  - Access to appropriate technology must be considered especially in low-resource settings.
- 



## Oral Session 3D6 (0635)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:45 - 13:00

**Location of presentation:** Rhone 3B

### **Embedding Prevention into Clinical Care: Empowering the Future Rural Medical Workforce to Address Childhood Obesity**

Linda Ferrington<sup>1</sup>, Emma Schwartzkoff<sup>2</sup>, Gordana Popovic<sup>3</sup>, Nicola Kerr<sup>2</sup>, Jessica Macer-Wright<sup>1</sup>, Andrew Bailey<sup>2</sup>, Danijela Gasevic<sup>4</sup>

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#### **Background**

Childhood obesity is a major public health concern that disproportionately impacts people living in rural and regional areas. Although medical doctors can play a key role in the prevention of childhood obesity they often lack the knowledge and confidence to address it in clinical practice and the Rural Doctors Association of Australia states that a priority action area for the prevention of childhood obesity includes education and training for health professionals involved in addressing overweight and obesity in rural and remote areas

#### **Summary Of Work**

This study used a pre-post cross sectional survey design to describe Rural Clinical School medical students' knowledge and confidence around childhood obesity prevention and management. Students completed the survey before and after completing an educational module delivered by a multidisciplinary team with experience working in childhood obesity.

#### **Summary Of Results**

The pre-intervention results showed that medical students' confidence to address childhood obesity in clinical practice increased as they progressed through medical school but knowledge about childhood obesity did not change. Post-intervention results demonstrated strong evidence an educational module improved students confidence and weak evidence that knowledge increased.

#### **Discussion And Conclusion**

Students felt that they would be more confident to discuss childhood obesity with families in practice after completing the educational module, rating their confidence as significantly higher across all seven domains assessed in the questionnaires. This, combined with the small but significant



increases in knowledge, is extremely important. Clinical practice guidelines recommend that physicians screen for obesity and offer advice to motivate healthy lifestyle choices. Physicians' reluctance to instigate these conversations prevents behaviour change. With the growing burden of obesity, it is imperative that our future rural clinical workforce has the confidence to tackle these difficult conversations which have been shown to be an acceptable and effective way to reduce population mean weight.

### **Take Home Messages**

This research demonstrated that the current medical curriculum does not increase students' knowledge of childhood obesity as they progress through their studies and has identified factors that may be important in the development and implementation of an effective and scalable educational module to increase students' knowledge and confidence and contribute to the prevention of obesity in rural and regional areas.

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## Workshop 3E (0084)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:30 - 13:00

**Location of presentation:** Rhone 4

### Quality Assurance of OSCEs: what have we learnt from the COVID-19 pandemic

Sandra Kemp<sup>1</sup>, Katharine Boursicot<sup>2</sup>, Trudie Roberts<sup>3</sup>, Richard Fuller<sup>4</sup>

<sup>1</sup> Curtin University, Perth, Australia <sup>2</sup> HPAC, Singapore, Singapore <sup>3</sup> Leeds University, Leeds, UK <sup>4</sup> University of Manchester, Manchester, UK

#### Background

Quality assurance of an OSCE involves a complex array of aspects that require advance planning, systematic analysis of evidence and reporting. Evaluation of the quality of an OSCE in terms of validity, reliability, fairness, transparency is essential using processes underpinned by the evidence base. With the COVID-19 pandemic, there are now additional challenges in OSCE design to ensure defensible outcomes. This workshop will provide practical guidance and tools to guide the stages of OSCE design, development and implementation to ensure OSCE quality in the contemporary assessment environment. The workshop facilitators will draw upon their recently published tools for quality assurance of OSCEs with hands-on practice in how to use the tools effectively. (See Boursicot, K., Kemp, S., & Fuller, R. (2021). Quality Assurance of Objective Structured Clinical Examinations (OSCEs). In B. Malau-Aduli, R. Hays, & C. Van der Vleuten (Eds.), *Understanding Assessment in Medical Education through Quality Assurance*: McGraw Hill.)

#### Who Should Participate

Academic faculty involved in OSCEs

Programme Leaders

Leads of assessment quality assurance/quality improvement

#### Structure Of Workshop

1. Short Presentation: principles of contemporary validity in OSCEs
2. Whole group discussion: enduring elements of OSCE design and new design adaptations for OSCEs in a pandemic
3. Hands-on group work: Using a Validity Framework: Workbook for an OSCE to evaluate OSCE quality



### Intended Outcomes

By the end of the workshop, participants will be able to:

- apply principles of contemporary validity to OSCEs
- appreciate impact on validity of OSCE adaptations during pandemic contexts
- use a validity framework tool to evaluate and quality assure an OSCE



## Oral - Curriculum Evaluation

### Oral Session 3F1 (0486)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:30 - 11:45

**Location of presentation:** Saint Clair 1

### **Introduction and Exploration of a Colour Coded Scale System: A Model Designed as a Tool to Facilitate Learning, Teaching, and Assessment**

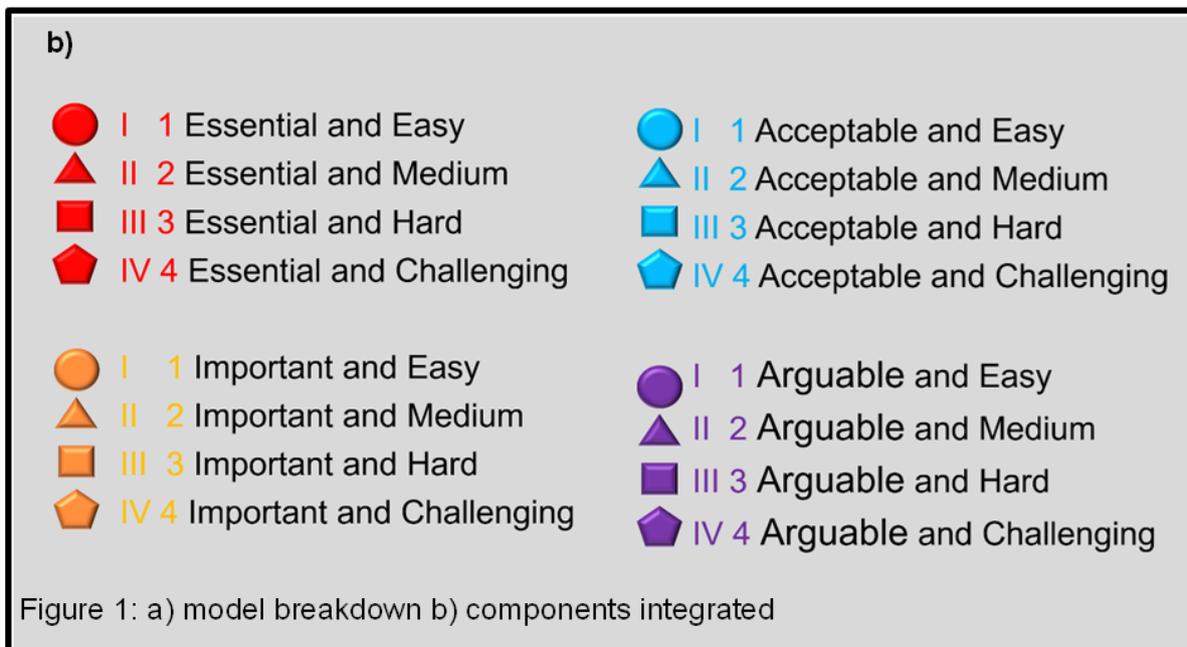
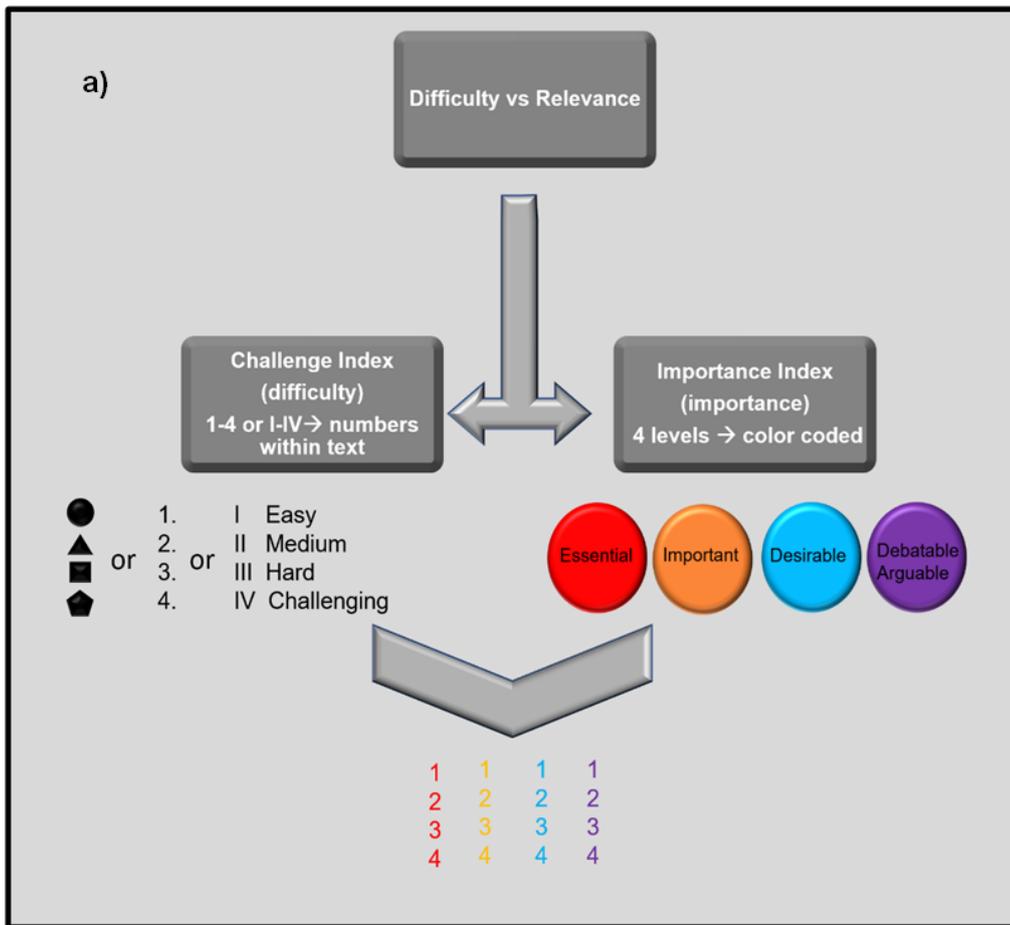
Bodour Alkhamees<sup>1</sup>, Judy McKimm<sup>2</sup>, Paul Jones<sup>2</sup>

<sup>1</sup> King Saud University, Riyadh, Saudi Arabia <sup>2</sup> Swansea University, Swansea, UK

#### **Background**

Implementing curricular changes and improvement is an ongoing process. Students are overwhelmed with the amount of knowledge and information presented and taught in the medical field. A student, however, needs specific competencies and knowledge to meet a specific level in a limited time. With the current shift towards student-centered, self-directed, and online learning, the process of teaching, learning, and assessment need to be interconnected to enable students planning and managing their learning activities as they are more responsible for doing so now. Mapping relevance and difficulty levels into the learning materials attempts to address the massive amount of knowledge and autonomy in learning.





### Summary Of Work

Developed model: The model employs *Challenge Index* (CI) and *Importance Index* (II) in educational materials as colour-coded scale system. The coloured numbers within the text would represent the relevance and difficulty of an item (Figure 1, a & b). Numbering can be in Roman numbers and Shapes can also be used where challenge corresponds with the number of angels as follows: Circle - Easy, Triangle - Medium, Square - Hard, Pentagon - Challenging.

### Summary Of Results

This model will be applied in action research and specific objectives will be studied and investigated. The instructor integrates the model into the instructional materials with interpretation of the colour-coded scale, explain it to students in the first lecture, and comment on it while delivering the lectures. Towards the end of the lectures, and at later different timepoints, students will answer short multiple-choice questions (MCQs) related to the presented content. Students will take a questioner (survey) associated with applying the colour-coded scale system. Lastly, semi-structured interviews with both students and instructors will also be conducted.

### Discussion And Conclusion

The research will demonstrate how the learners find overall integration of the colour-coded scale, and its components (*Challenge Index* and *Importance Index*), into the learning materials and whether the model have a positive impact on knowledge retention, in-class engagement, confidence, and managing self-learning activities. Also, the research will shed light on how instructors and facilitators find applying the model into educational materials.

### Take Home Messages

Integrating this model into the curriculum, course syllabus, and/or teaching materials may improve learning and teaching process.

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## Oral Session 3F2 (0568)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:45 - 12:00

**Location of presentation:** Saint Clair 1

### **Backward curriculum review of the MBBS program: Aiming at work-readiness of graduates.**

Jerzy Kuzma<sup>1</sup>, Iwona Kolodziejczyk<sup>1,2</sup>, Marsalina Heritrenggi<sup>1</sup>, Lucilla Pwaka<sup>1</sup>

<sup>1</sup> *Divine Word University, Faculty of Medicine and Health Sciences, Madang, Papua New Guinea* <sup>2</sup>

*Divine Word University, Madang, Papua New Guinea*

#### **Background**

The Department of Medicine (DM) at Divine Word University in Madang undertook a thorough review of the MBBS program curriculum between 2020 and 2022. Through the backward mapping and integration, the process aimed to increase our graduates' work readiness.

#### **Summary Of Work**

The review process involved backward mapping, surveys and focus group discussion among the department staff, students, graduates and stakeholders. We also conducted an extensive study on the current literature on curricula development, consulted with another medical school and undertook courses on curricula development. The main themes of the review were program integration, work relevance, primary community health relevance and implementation of based evidence medical education. We moved towards case-based studies and flipped classroom methods. Challenging was to engage the faculty in evaluating, revising, and accepting the change.

#### **Summary Of Results**

Through backward mapping, we have achieved a greater vertical and horizontal integration of teaching modules which aimed at improving the preparation of our graduates to manage 120 most common diseases in our setting. The feedback from the stakeholders and graduates initiated the change of the design to incorporate elements of spiral curriculum to promote durable and deeper learning.

Finally, the faculty training on evidence-based medical education reflected in program delivery changes including the move towards flipped classroom, increased application of simulation technique and improved utilization of case studies.



### **Discussion And Conclusion**

Although DM anticipates that better integrated curriculum and employing effective pedagogy improve graduates' work readiness, the department plans continuous evaluation and quality improvement of the program to respond to the advances in medicine and medical education.

### **Take Home Messages**

The development of the program curriculum cannot be effective without involving the faculty development.

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## Oral Session 3F3 (0147)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:00 - 12:15

**Location of presentation:** Saint Clair 1

### Examining factors influencing accreditation decisions

Touba Mohassesi<sup>1</sup>, Roghayeh Gandomkar<sup>1</sup>, Abolfazl Mohammadi<sup>2</sup>, Marzieh Nojomi<sup>3</sup>

<sup>1</sup> *Tehran University of Medical Sciences, Tehran, Islamic Republic Of Iran* <sup>2</sup> *ministry of health and medical science education, Tehran, Islamic Republic Of Iran* <sup>3</sup> *Iran University of Medical Sciences, Tehran, Islamic Republic Of Iran*

#### Background

The accreditation of medical education programs is a well-known way of ensuring the quality of medical education. Despite its potential impact on promoting an appropriate learning environment and the quality of medical care provided to patients, accreditation has often been criticized for the validity of decisions. This study aimed at determining the factors affecting accreditation decisions for undergraduate medical education (UME) programs.

#### Summary Of Work

Data related to accreditation visits of 63 UME programs in Iran were reviewed. Characteristics of the site visitors' team (and head of the team) and UME programs were considered as independent variables. Accreditation decisions at two levels as the ratings of the site visitors' team and accreditation committee were defined as outcome variables.

#### Summary Of Results

Bivariate analysis showed that the head of site visitors' team with clinical expertise and with the rank of full professor provided higher ratings to UME programs rather than basic science experts and associate professors, respectively. The average age of the site visitors' team demonstrated a positive significant correlation with the ratings of the site visitors' team. Other variables such as age and gender of head of the team, and their previous experience of site visit, time of the site visiting and age of the visited school were not associated with the ratings of the site visitors' team. We did not find statistically significant correlations between independent variables and the ratings of the site visitors' team in multiple linear regression analyses. The age of the visited school was significantly associated with accreditation committee decision which was not further confirmed in logistic regression analysis.



### **Discussion And Conclusion**

Although accreditation is commonly used in the evaluation of educational programs, little research has empirically examined what factors influence this summative evaluation. The findings of this study support the validity of accreditation decisions in terms of demonstrating no relations between potential confounding variables and accreditation decisions in regression analysis. However, several reported relations in the bivariate analysis are indicative of considering training of site visitors and considering consistency in selecting the head and members of the team.

### **Take Home Messages**

Understanding factors influencing accreditation decisions inform UME accreditation practice and provide added value to UME programs.

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## Oral Session 3F4 (0434)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:15 - 12:30

**Location of presentation:** Saint Clair 1

### **A novel conceptual framework to successfully establish new medical schools**

Sneha Kirubakaran<sup>1,2</sup>, Jennene Greenhill<sup>1,3</sup>, Paul Worley<sup>1</sup>, Koshila Kumar<sup>1</sup>, Joanne Pimlott<sup>1,4</sup>

<sup>1</sup> Flinders University, Adelaide, Australia <sup>2</sup> University of Queensland, Brisbane, Australia <sup>3</sup> Southern Cross University, Gold Coast, Australia <sup>4</sup> University of South Australia, Adelaide, Australia

#### **Background**

Medically under-served areas might seek to establish new medical schools in their region to improve their local medical workforce, health outcomes, and educational opportunities. Establishing a new medical school, however, is a significant venture involving many complex political, social, economic, educational, and organisational considerations. The process of establishment is empirically and theoretically under-developed with limited literature, no explicit reference to applicable theory, and minimal research on the critical success factors.

#### **Summary Of Work**

Through Critical Realist Multiple Case Study research spanning three continents, and adaptation of Institutional Entrepreneurship theory, a novel conceptual framework for successful establishment, was developed. The Eight C's Framework (8CF) examines the critical elements of Context, Catalysts, Conducting, Convincing, Collecting, Connecting, Challenges, and Consequences.

#### **Summary Of Results**

New medical schools are successfully established when Catalysts act within their Contexts to undertake various tasks of Conducting, Convincing, Collecting, and Connecting in order to produce desired Consequences and overcome Challenges.

#### **Discussion And Conclusion**

Catalysts are the human agents of change and innovation. They are creative, visionary leaders who use mechanisms of agency and power to collectively and individually effect change. They identify the field conditions of their environmental Context that are either beneficial or detrimental to their venture and utilise them to their advantage. They use entrepreneurial skills and processes when Conducting (making more favourable) the Context for their venture. They use socio-political devices such as power, persuasion, trust, symbiosis, sharing, and bricolage when Convincing all the stakeholders with various arguments and rationales, Connecting with various partners and



collaborators, and Collecting all the required resources. Catalysts harness the utility of field structure, human agency, power dynamics, political diplomacy, and social accountability to produce desired macro-level, meso-level, and micro-level Consequences or outcomes and to overcome foreseen and unforeseen Challenges or problems and obstacles. 8CF could guide stakeholders such as academics, clinicians, administrators, politicians, universities, health facilities, health systems, and communities, especially in medically under-served areas, to strategically consider these elements when establishing a new medical school.

### **Take Home Messages**

Medical school founders could benefit from the strategic use of a theory-based, empirically-supported framework such as 8CF as they approach their local contexts with a system-wide view to establishing a new medical school.

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## ePoster - ePosters 2

### ePoster Session 3G1 (0574)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:30 - 11:38

**Location of presentation:** Saint Clair 2

### **Learners' Perspective versus Teachers' Perspective on Entrustable Professional Activities**

Pongthorn Narongroeknawin<sup>1</sup>, Thammanoon Srisaarn<sup>1</sup>, Dusit Staworn<sup>1</sup>

<sup>1</sup> *Phramongkutklao College of Medicine, Bangkok, Thailand*

#### **Background**

Entrustable Professional Activities (EPAs) are used for the assessment of the learners' competence development, which takes place by means of an entrustment decision, aiming to stimulate learning and independent practice in learners. Recently, EPA-based assessment has been implemented with an online web application to the clerkship rotation at Phramongkutklao College of Medicine (PCM). We explore the perspective of teachers and learners on EPA-based assessment.

#### **Summary Of Work**

We used web-based questionnaires to evaluate teachers' and learners' perspectives with the use of five EPAs at PCM. Data were analyzed quantitatively and qualitatively.

#### **Summary Of Results**

A total of 41 students and 39 teachers completed the questionnaires. The majority of the students and teachers agreed that EPA-based assessment was a valid and reliable tool, provided opportunities for improving students' competency, and was essential in competency-based medical education. Four-fifth of the teachers recommended using EPAs as a formative assessment, while only half of the students concurred. However, only half of the teachers and students suggested using EPAs as a summative assessment. Approximately half of the teachers feel that EPAs increase their workload, while 78% of the students concurred. One-fifth of the teachers and one-fourth of the students advised revisiting the number and context of EPAs in order to reduce their workload.

#### **Discussion And Conclusion**

During the early stage of implementation in PCM, EPAs were well accepted as a feasible formative workplace-based assessment tool in our college. However, a number of EPAs and instances of assessment may need to brush up.



### Take Home Messages

EPAs can be effectively introduced to clinical rotation in undergraduate medical education.

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## ePoster Session 3G2 (0593)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:38 - 11:46

**Location of presentation:** Saint Clair 2

### Design and Implementation of a National Digital Progress Test

Kati Hakkarainen<sup>1</sup>, Reija Autio<sup>2</sup>, Juhani Jääskeläinen<sup>3</sup>, Katri Kaukinen<sup>4</sup>, Sari Kuitunen<sup>5</sup>, Jonne Laurila<sup>6</sup>, Antti Nissinen<sup>7</sup>, Eeva Pyörälä<sup>8</sup>, Marjo Renko<sup>9</sup>, Risto Tertti<sup>10</sup>

<sup>1</sup> Faculty of Medicine and Health Technology, Tampere University, Tampere, Finland <sup>2</sup> Faculty of Social Sciences, Tampere University, Tampere, Finland <sup>3</sup> Faculty of Medicine and Health Technology, Tampere, Finland <sup>4</sup> Department of Internal Medicine, Tampere University Hospital and Tampere University, Tampere, Finland <sup>5</sup> Education Development Unit, Faculty of Medicine, University of Turku, Turku, Finland <sup>6</sup> Institute of Biomedicine, Integrative Physiology and Pharmacology, University of Turku, Turku, Finland <sup>7</sup> Research Unit of Biomedicine, University of Oulu, Oulu, Finland <sup>8</sup> Center for University Teaching and Learning, University of Helsinki, Helsinki, Finland <sup>9</sup> Department of Pediatrics, University of Eastern Finland and Kuopio University Hospital, Kuopio, Finland <sup>10</sup> Department of Medicine, University of Turku, Department of Internal Medicine, Vaasa Central Hospital, Turku, Finland

#### Background

The Finnish Ministry of Education funded a MEDigi project in 2018- 2021 aiming to promote digitalization in medical and dental education. As a part of the project we established a national digital progress test (PT).

#### Summary Of Work

We designed a formative PT, constructed a test blueprint, decided the question format as the Single Best Answer (SBA) with four options, and produced item writing instructions. Item writing training was held online on Zoom. Moodle platform and running the PT remotely were successfully tested in February 2021 in the Tampere Medical Faculty, where the SBA PT has been in use since 2010.

The Faculties of Eastern Finland, Oulu, Tampere and Turku piloted the PT on October 27, 2021. In Tampere, participation was mandatory, highly recommended in other faculties. The PT was a formative assessment in all faculties. The PT included 178 SBA items on Moodle platform, where items and options were randomly selected. Students used their own devices remotely and unsupervised. The test was scored: correct answer + 1, wrong answer -0.5 points, unanswered 0 points. An online survey on students' experiences was conducted.



### Summary Of Results

A total of 2,000 students participated (58.6% of the total number of students) the PT. Attendance varied: 98.4% of the students in the unit with mandatory attendance and 21.2%–80.1% in other units. The mean score of the test results for all faculties increased from 6.5% of theoretical maximal score to 50.8%, STD from 9,81 to 26,61. Between faculties, variation was 5.7%-6.8% and 46.5%-54.4%, respectively. Chronbach's alpha of the test increased each study year from the first 0.78 to the sixth 0.933.

1025 students (51,3%) completed the survey. The students reported no major technical difficulties and expressed their overall satisfaction with the test.

### Discussion And Conclusion

Our results from the national unsupervised digital PT on Moodle platform indicated that this test mode provided reliable results. Further studies are needed to identify the implications of digital unsupervised formative testing for long-term student performance in PT.

### Take Home Messages

Digital unsupervised assessment provides a viable way to implement a PT.

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## ePoster Session 3G3 (0633)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:46 - 11:54

**Location of presentation:** Saint Clair 2

### **Validity and reliability of a Korean version of the Consultation and Relational Empathy (CARE) Measure**

Hoonki Park<sup>1</sup>, Kye-Yeung Park<sup>1</sup>, Yu mi Kim<sup>2</sup>, Jinho Shin<sup>3</sup>, Ran Heo<sup>3</sup>, Soorack Ryu<sup>4</sup>, Seon Young Hwang<sup>5</sup>, Jeong-Hun Shin<sup>6</sup>, Stewart W Mercer<sup>7</sup>

<sup>1</sup> Department of Family Medicine, Hanyang University College of Medicine, Seoul, The Republic Of Korea <sup>2</sup> Department of Preventive medicine, Seoul, The Republic Of Korea <sup>3</sup> Division of Cardiology, Department of Internal Medicine, Hanyang University College of Medicine, Seoul, The Republic Of Korea <sup>4</sup> Biostatistical Consulting and Research Lab, Medical Research Collaborating Center, Hanyang University College of Medicine, Seoul, The Republic Of Korea <sup>5</sup> School of Nursing, Hanyang University, Seoul, The Republic Of Korea <sup>6</sup> Division of Cardiology, Department of Internal Medicine, Hanyang University Guri Hospital, Seoul, The Republic Of Korea <sup>7</sup> Centre for Population Health Sciences, Usher Institute, College of Medicine and Veterinary Medicine, University of Edinburgh, Scotland, UK

#### **Background**

No validated tool is available to assess patients' perception of physician empathy in Korea. The objective of this study was to establish a Korean version of the consultation and relational empathy (CARE) measure, originally developed in English and widely used internationally, and to examine its reliability and validity.

#### **Summary Of Work**

The CARE measure was translated into Korean and tested on 240 patients from one secondary care hospital and one tertiary care hospital in Korea. Internal consistency by the Cronbach's alpha, exploratory analysis, and confirmatory factor analysis were conducted to verify the 10 items of the Korean CARE measure.

#### **Summary Of Results**

The Korean CARE measure seemed to demonstrate high acceptability and face validity. It exhibited excellent internal reliability (Cronbach's alpha 0.97) and moderate test-retest reliability (Pearson correlation coefficient 0.53; Spearman correlation coefficient 0.51). Distribution of scores showed negative skewedness. Corrected item-total correlations were ranged from 0.77 to 0.92, implying its homogeneity. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.949, and Bartlett's test of sphericity was good ( $\chi^2= 3157.11$ ,  $P < 0.001$ ). Factor analysis yielded a single dimensional structure of physician empathy with all factor loadings exceeding 0.80 and excellent goodness of fit.



### **Discussion And Conclusion**

The study supports the reliability and validity of the Korean CARE measure in secondary and tertiary care settings of Korea.

### **Take Home Messages**

The Korean version of of the consultation and relational empathy (CARE) measure was deveoped and it may be used for many area of communication study in Korea.

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## ePoster Session 3G4 (0665)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:54 - 12:02

**Location of presentation:** Saint Clair 2

### Effects of Health Education by using role play model on 4<sup>th</sup> year medical students

Sakulrat Srirojana<sup>1</sup>, Yupaporn Rattanaseth<sup>2</sup>, Bussarin Khianman<sup>3</sup>

<sup>1</sup> Kalasin Medical Education Center, Kalasin, Thailand <sup>2</sup> Thai Traditional and Alternative Medicine Department, Kalasin Hospital, Kalasin Hospital, Thailand <sup>3</sup> Department of Obstetric and Gynecology, Kalasin Hospital, Kalasin, Thailand

#### Background

Health promotion curriculum was established by Kalasin Medical Education Center since 2009. Health education (HEdu) is important topic in the curriculum which medical students should know and practice. We study outcome of health education learning by role play model (RPM) in 4<sup>th</sup> year medical students who were studying at KMEC in 2019.

#### Summary Of Work

We performed HEdu teaching by team teaching **tutors were medical teachers and nurses** which consist of the following

**Theory** : By introducing learning content (concept of HEdu, models and techniques of HEdu to the patients)

**Practice** : By interactive learning using RPM based – on common topics at the out patient department, patient participation by questions and co – play

**Assessment** : By medical students evaluation about their knowledge in topics which using RPM, contentment & application for their learning

**Knowledge** : sharing by discussion in the classroom after role play, the tutors have given feedback and supervision to medical students

#### Summary Of Results



: Assessment by self evaluation in 25 4<sup>th</sup> year medical students, they had knowledge improvement and contentment approximately 95% and 92.5% respectively. They could apply this learning experience for their future learning in other topics from knowledge – sharing. They had good attitude and concept in HEdu using RPM and they could work together , problem – solving and had good confident to communicate with the patients.

### **Discussion And Conclusion**

The medical students had good attitude to HEdu learning by RPM . Interaction , two – way communication , participation from the patients , feedback and supervision from the tutors were the effective technique for HEdu learning. They have Improved in knowledge and practice that may be sustained and useful for their future learning. The only one disadvantage of this method was long time using for learning process .

**Conclusion** : HEdu learning by RPM is the effective way for integration of new knowledge and practice in medical students and should be applied in other learning.

### **Take Home Messages**

HEdu by role play model is the effective way for learning.

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## ePoster Session 3G5 (0731)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:02 - 12:10

**Location of presentation:** Saint Clair 2

### **Role play for disclosure medical error practice in medical clerkship**

Kanokrot Kovjiriyapan<sup>1</sup>, Nichapat Kiattikunnathom<sup>1</sup>

<sup>1</sup> MEC Phayao hospital Thailand, Phayao, Thailand

#### **Background**

Disclosure of medical errors is required for maintaining trust in patient-centered medical care. Many countries have established error disclosure as a standard of practice. But some obstacles such as attitude of health care provider, anxiety about lawsuits or inconfidence were interrupted this process. We recognized that physicians play a big part to create a transparency culture in medical error disclosure. Medical students should learn and practice this skill but it was not implemented in our medical training program. Role plays for disclosure medical error were applied for medical student understanding and practice skill.

#### **Summary Of Work**

9 sixth-year medical students at Medical Education Center Phayao Hospital were participated. Disclosure medical error was applied using simulated patient and student role play, feedback and short didactic sessions. Participant perceptions of medical error disclosure were evaluated by using 5-point Likert scale (self assessment questionnaires) before and after the session. We also assess confidence and satisfaction of students after education session.

#### **Summary Of Results**

Following the role play, understanding about disclosure medical error principle and skill increase from pre-session ( $p=0.017$ ,  $p=0.001$ ). 8/9 of participants revealed more confident in coping with medical errors and 1/9 revealed most confident. 7/9 of participants revealed very satisfied and 2/9 revealed most satisfied. They also indicated that disclose medical errors and deliver an apology for medical errors and its consequences are their responsibility.



### **Discussion And Conclusion**

A role play for disclosure medical errors was helpful in improving skill and confidence in medical error disclosure. Extending this session to more diverse scenarios and a more diverse group of medical students is needed.

### **Take Home Messages**

disclosure medical error is necessary and important. This skill is essential for medical students to improved competence and confidence in medical practice. This topic should implemented in our medical training program.

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## ePoster Session 3G6 (0736)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:10 - 12:18

**Location of presentation:** Saint Clair 2

### Characteristics associated with difficult items in 4th year OB-GYN multiple choice questions

[pornnapa suriyachai](#)<sup>1</sup>, Kanokrot Kovjiriyapan<sup>1</sup>

<sup>1</sup> *Medical Education Center Phayao Hospital, Phayao, Thailand*

#### Background

Difficulty index ( $p$ ) is an item analysis in order to assess the individual difficulty of item after examination. It is valuable in improving items which may be used again in later examination. It also discriminates between students who know the tested material and those who do not. If the item is so difficult that almost students get it wrong it will have low discrimination. Finding characteristics associated with difficult items may be useful for determining and modifying difficult items before being used in examination. It can help to improve the quality of examination. The purpose of this study is to determine characteristics associated with difficult items in 4th years OB-GYN multiple choice questions (MCQ).

#### Summary Of Work

All 600 MCQ are calculated and divided into 2 groups depending on difficulty index: moderate items ( $p$  0.2-0.8) and difficult items ( $p < 0.2$ ). All items are subjective determined 6 characteristics: length of question more than 3 lines, descriptive words such as usually often, hints of highly similar pairs, outline such as mechanism of disease diagnosis management, medical clues and level of Bloom's taxonomy by 4 OB-GYN staffs. The data is analyzed by Fisher's exact test at .05 level of significance.

#### Summary Of Results

358 (87.96%) items are in moderate items group and 49 (12.04%) are in difficult items group. Difficult items group has 20.41 % length of question more than 3 lines, 48.98% descriptive words, 6.12 % hints of similar pairs, 49.98% understanding level and no medical clue. There are 32.65 % in the mechanism of disease outline, the same as management outline. From 6 characteristics, there are no significant characteristics associated with difficult items.

#### Discussion And Conclusion

The differences are not statistically significant, maybe because of small sample size. But we observe that difficult items have more descriptive words and no medical clues compared with moderate



items. Difficulty indexes of the same examinations are various depending on students' ability. The result of this study on different students may be different.

### **Take Home Messages**

Difficult items have more descriptive words and no medical clues.

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## ePoster Session 3G7 (0750)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:18 - 12:26

**Location of presentation:** Saint Clair 2

### Teaching sonography and assessing knowledge transfer in large groups

Sibylle Kneissl<sup>1</sup>, Carina Strohmayer<sup>1</sup>, Maria Prüllage<sup>1</sup>, Stefan Kammerer<sup>1</sup>

<sup>1</sup> *University of Veterinary Medicine, Vienna, Austria*

#### Background

COVID-19-associated restrictions lead to increased use of online large group teaching. Here we describe a tutorial setting that allows observing and gaining confidence with veterinary sonography as well as assessing knowledge transfer in large groups.

#### Summary Of Work

Teaching and assessing sonography are set as a clinical demonstration within a multi-disciplinary course for veterinary students at three levels (year 2, 3 and 4). The format is blended learning with 5 persons in the classroom and about 80 learners watching the event online (Collaborate, Blackboard). The tutorial was divided into a PowerPoint presentation followed by interactive polling (Poll Everywhere, used to recall prior learning and elicit performance) and finally a sonographic examination of a live patient (Butterfly iQ+, Butterfly Network, Inc.). Butterfly iQ+ is a mobile probe containing the technology of an ultrasound machine that displays sonographic images via an App on a mobile telephone.

#### Summary Of Results

A view, showing the position of the ultrasound transducer, and the sonographic images were simultaneously transferred to the online room (WebEx, Citrix Systems). A technician shared his screen using Collaborate and switched from PowerPoint, to Poll Everywhere or WebEx during the event. The technician also monitored the chat, where students were invited to ask questions at any time during presentations or examination. In agreement with the learners, the session was taped and stored in the corresponding e-learning course. The technically challenging tutorial events were evaluated and received positive feedback; learners were enthusiastic about the live simulation with well-balanced instructions and questions in a non-threatening learning environment. They appreciated the fancy technology allowing displaying sonographic images into the online room as well as prompt feedback used in formative assessment.



### **Discussion And Conclusion**

Butterfly iQ+ is a promising technique to explain sonography to a larger group (anticipation metaphor) (Sfard, 1998), an interactive polling system (PollEverywhere, 2020) guides formative assessment. The supervised application of the technology (participation metaphor) will only be possible in later courses.

### **Take Home Messages**

A live examination of a patient demonstrates the practical relevance of the theoretical instruction and made the material appropriately stimulating despite online teaching.

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## ePoster Session 3G8 (0756)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:26 - 12:34

**Location of presentation:** Saint Clair 2

### **Medical Information seeking behaviors of undergraduate, postgraduate medical students and health science students.**

Kanokrot Kovjiriyapan<sup>1</sup>, Nattapon Jongkitsomboon<sup>1</sup>

<sup>1</sup> *Medical Education Center Phayao Hospital, Phayao, Thailand*

#### **Background**

Nowadays, assess to read the new medical issue is easier than in the past. Students can update and search for interesting issues every time through the internet. The information seeking from various sources to meet the demand is absolutely necessary. As a result, this study uses medical information seeking behaviors framework to scrutinize the undergraduate, postgraduate medical students and health science students behavior in order to adopt as guidelines for information services.

#### **Summary Of Work**

We invited Undergraduate , postgraduate medical students and health science students(pharmacy student,physical therapy student )from University of Phayao to complete an online survey. completely answered an online questionnaire on their medical Information seeking behaviors. The questionnaire asked students to explore behavior to use media in each group. in topic the choice of medical resource, confidence in medical resource and decision for pick up the resource for work.

#### **Summary Of Results**

In total 122 responders consist of 13 postgraduate medical students , 65 undergraduate medical students and 44 health science students. In the undergraduate group, making written notes and reading textbooks were the most frequently utilized resources for learning new material, followed by lecture and facebook experts. . In postgraduate medical students, they used facebook experts for updating new issues most frequently. Whereas other health science students group the journal is the most resource that they use. All group confidence in the textbook, lecture and journal in orderly. If they worked or learned they would like to use these 3 resources for reference.



### **Discussion And Conclusion**

This study found that traditional educational formats, including textbooks and attendance at lectures remain the most popular resource for learning new knowledge. Now mobile technology in medical education is mainstream. So online resources that can be accessed on multiple platforms are also convenient and provide instant access to information in any setting. To support blended learning, incorporating both e-learning and traditional learning tools, medical schools should allocate the resources that students are likely to use.

### **Take Home Messages**

Medical knowledge has increased exponentially in the last few decades. So the data is very cloudy. Learners must have a process for seeking information efficiently and systematically in order to obtain information that they need.

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## ePoster Session 3G9 (0757)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:34 - 12:42

**Location of presentation:** Saint Clair 2

### **The 10-70-20 Learning and Development Model for the Improvement of Internship Competencies of Sepsis Patients Care**

Phakphoom Dusitagorn<sup>1</sup>, Pornnapa Suriyachai<sup>1</sup>, Kanokrot Kovjiriyapan<sup>1</sup>

<sup>1</sup> *Medical Education Center Phayao Hospital, Phayao, Thailand*

#### **Background**

The 70-20-10 learning and development model considered being a guide for business organization to maximize the effectiveness of their executives, but it is less familiar in medical education. The mortality rate of sepsis patients in Phayao hospital was as high as 37.8% in the first half of 2019. Delayed diagnosis, inadequate resuscitation and lack of monitoring were three key problems. Intern is the first encounter as a leader of healthcare worker team. To apply this model for the improvement of internship competencies of sepsis patients' care is a challenge.

#### **Summary Of Work**

The 70-20-10 model suggested a proportional breakdown of how interns learn effectively. In our practice, we rearranged the step of learning to 10-70-20; 10% from formal learning, 70% from experiential learning and 20% from social learning respectively. The first 10% of learning, all interns attended case-based learning class and learnt to use hospital sepsis protocol. The next 70%, they gained their experience by patient care using protocol guide. The last 20%, peer feedback from staffs encouraged their strength and improved their weakness.

#### **Summary Of Results**

The 10-70-20 model implemented in the fourth quarter of 2019. From the self-assessment questionnaire before and after 20 interns had accomplished this program, their knowledge increased from 6.7 to 8.2/10, their confidence gained from 5.3 to 8.1/10 and their satisfactory rose from 5.5 to 8.0/10. Finally, the mortality rate of sepsis patients dramatically declined from 37.8% to 28.1%.

#### **Discussion And Conclusion**

A well-controlled study required approving the benefit of this model; nevertheless the results supported this model promoted internship competencies led to improve patients' outcomes from sepsis. The balance among formal, on-the-job and social learning embed in the internship performance could be an enhancement of sepsis patient care.



### Take Home Messages

Using the 10-70-20 model as a guiding metaphor for learning and development initiatives could be potential challenges for healthcare organizations.

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## Workshop 3H (0069)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:30 - 13:00

**Location of presentation:** Saint Clair 3A

### Assessment Practices that Support Learning and Well-being

Michelle Daniel<sup>1</sup>, Seetha Monrad<sup>2</sup>, Karen E. Hauer<sup>3</sup>, Deborah Ziring<sup>4</sup>, Abbas Hyderi<sup>5</sup>

<sup>1</sup> *University of California, San Diego School of Medicine, La Jolla, California, USA* <sup>2</sup> *University of Michigan, Ann Arbor, Michigan, USA* <sup>3</sup> *University of California, San Francisco, San Francisco, USA* <sup>4</sup> *Sidney Kimmel Medical College Thomas Jefferson University, Philadelphia, Pennsylvania, USA* <sup>5</sup> *Kaiser Permanente School of Medicine, Pasadena, California, USA*

#### Background

Medical student well-being is in crisis. A meta-analysis published in 2016 reported that approximately 27% of medical students are depressed, with 11% reporting suicidal ideation. One key driver of poor well-being in undergraduate medical education is the “tyranny of assessment”. High stakes, summative assessments (e.g. final exams, licensure exams, or other assessments that contribute to grades) negatively impact learners most, but even formative or low stakes assessments (i.e., assessments that contribute in no or only a small way to grades) can add to stress. In this session, we will explore several organizational changes to pre-clinical and clinical assessment programs designed to promote learning and well-being. These organizational strategies address several drivers of well-being, including control and flexibility, work-life integration, reduced competition and community at work, as well as organizational culture and values.

Assessment practices:

#### 1) Flex-time quizzing/exams

- Students may test anytime between X and X day / time, when it best suits their schedule and learning needs.

#### 2) Second-chance quizzing

- Students have the opportunity to take another quiz, blueprinted to the first quiz, at “no stakes”. The higher score counts towards their grade.

#### 3) Frequent low stakes quizzing, with quiz drop options



- Students take weekly formative quizzes where there are no or very low passing thresholds, with the option to drop a set number of quizzes per term.

#### 4) Remote assessments

- Students can take quizzes and exams anywhere, in remote proctored or un-proctored settings (even after contingency planning for the pandemic is no longer needed).

#### 5) Longitudinal low-stakes workplace-based assessments

- Students receive continued feedback (coaching) based on direct observations to promote mastery.

#### 6) Pass-Fail grading in the clerkships

- Students are not graded to reduce competition, promote cooperation, and enhance equity.

### **Who Should Participate**

Undergraduate medical educators and administrators, students

### **Structure Of Workshop**

Overview of the topic and assessment practices to support learning and well-being (30 minutes).

Table-top discussions on the strengths and weaknesses of 2-3 practices (45 minutes).

Report out (15 minutes).

### **Intended Outcomes**

- Describe novel assessment practices that can support learning and well-being
- Discuss the strengths and weaknesses of each assessment practice for learning and well-being
- Outline potential challenges to implementation and strategies to overcome these challenges



## Workshop 3I (0625)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:30 - 13:00

**Location of presentation:** Saint Clair 3B

### Upgrading your HPE statistical approaches: is it worth the effort?

Martin Pusic<sup>1</sup>, Christy Boscardin<sup>2</sup>, Martin Tolsgaard<sup>3</sup>, Stefanie S Sebok-Syer<sup>4</sup>

<sup>1</sup> Harvard Medical School, Boston, MA, USA <sup>2</sup> UCSF, San Francisco, CA, USA <sup>3</sup> Copenhagen Academy *for* Medical Education and Simulation, Copenhagen, Denmark <sup>4</sup> Stanford University Department of Emergency Medicine, Palo Alto, USA

#### Background

The statistical toolkit of a Health Professions Education (HPE) analyst remained static for many years. However, recently new techniques have emerged ranging from variations on classical techniques through to calls for reconsidering the entire framework.

We propose a workshop in which we consider not the mechanics of new techniques but rather the question of when the new technique might be preferable to the existing one in HPE. The presenters have used these techniques in their HPE work and propose to tell those stories in a discussion of when the new analyses are advantageous.

#### Who Should Participate

The workshop is geared to a) education researchers who have experience with quantitative analyses and would like to contrast their current approach with new ones and b) education leaders who are critical consumers of HPE data analyses.

In this participatory workshop, the workshop leaders will dynamically adjust to the level and intentions of the participants.

#### Structure Of Workshop

10 min – Introductions and overview – theory burst showing representative HPE studies using advanced statistical methods



Cases – each case will be presented in 5 min (3 slides) with the rest of the time dedicated to a managed large group discussion of the pros and cons of the new approaches.

25 min – Case 1: Medical school exam scores with covariates (ANOVA vs. MLM)

> Multi-level modeling can help with hierarchical data in ways that go beyond ANOVAs -- but when are HPE data appropriate to this data analysis?

25 min – Case 2: Modelling learning from deliberate practice (Linear regression vs. Growth Curve Modelling)

> Learning is often non-linear - how can we take this into account?

25 min – Case 3: A Bayesian Approach to Progress Testing (Bayesian vs. Frequentist).

> Bayesian approaches have become increasingly popular in general statistical practice, but not so much in HPE. Why?

5 min – Summary

### **Intended Outcomes**

Participants will be able to, using HPE examples:

- Compare and contrast traditional ANOVA with multi-level models
- Compare and contrast traditional regression with growth (learning) curves
- Compare and contrast Bayesian approaches with frequentist ones



## Round Table 3J (0178)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:30 - 13:00

**Location of presentation:** Saint Clair 4

### **Assessing Professionalism in Medical Education in non-physician lead Community based settings**

Peter D Jones <sup>1</sup>, Janie Smith<sup>1</sup>

<sup>1</sup> *Bond University, Gold Coast, Australia*

It has long been recognised that medical students require more exposure than what is found in in-patient acute hospital care in large metropolitan teaching hospitals. Over the last two decades much of the innovation in delivering medical education has focussed on general practice and rural settings and how these settings provide at least the equivalent if not a superior learning environment for senior medical students to gain the clinical skills expected of a new medical graduate in 2022.

Complex patient care is mostly delivered in the community by a range of health care professionals working in teams. Doctors often make contributions to these teams but only deliver a small amount of the services and care received by almost all of our patients who require hospital services or care from family doctors in the community. Students and practicing doctors often refer to these services but have no first hand experience of how these services deliver care to patients.

In 2022 we are establishing new community based placements in a range of novel locations. These placements are full time workplace immersions of six weeks duration. These include an Aged Care Home, a Woman's prison, a Public Health Unit, a Rehabilitation service, A Community Urban Indigenous Health Service, A Special School for children with Moderate Intellectual Disability ,a Drug and Alcohol Rehabilitation Centre and a Cancer Day treatment centre. In each of these centres are many clients/patients who have complex medical histories that offer a prospective student a deep learning opportunity.

A key step in establishing these placements has been accepting that it will most often not be a medical doctor supervising students and that each student does not have to receive the same exposure. We have modified our standard in-training assessment and Mini-Cex forms to allow them to be completed by any workplace supervisor irrespective of their own professional discipline. At this roundtable discussion we will share the outcomes for the first 4 placements delivered between January and August 2022 and seek input from participants about what will be the next steps of this innovation in clinical education and assessment.



## Meet the Expert Session 3L (0827)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:30 - 13:00

**Location of presentation:** Roseraie 3

### Feedback: a lot more to it than meets the eye

Susan van Schalkwyk<sup>1</sup>

<sup>1</sup> Stellenbosch University, Cape Town, South Africa

The principle that feedback plays a central role in student learning is relatively uncontested. However, in the plethora of literature that has feedback as central theme, there is far less agreement about what comprises feedback, when it should occur, and what form it should take. Early thoughts on feedback have either been supplanted or expanded over time with more recent work describing feedback in relational terms, fostering 'experience-informed dialogues', with calls for us to reconstruct feedback in line with an 'educational alliance' framework. Join this 'meet the expert' session and let us explore some of these ideas and perspectives about feedback together.



## Online Oral - Programme Evaluation: Examples 1

### Online Oral Session 3.1 (0105)

**Date of presentation:** Saturday 27th August

**Time of session:** 11:45 - 12:00

**Location of presentation:** Online Session

### The use of Simulated Observations in Medical Simulation and it's effect on perceived realism

James Ainsworth<sup>1</sup>

<sup>1</sup> *Morrison Hospital, NHS, Swansea, UK*

#### Background

Simulation is an effective teaching method with increasing growth and recognition, and refers to the artificial representation of a real life scenario. The aim of this study was to compare simulation with and without the use of a simulated observations monitor, to investigate differences in students impression of realism, engagement, learning, and enjoyment.

#### Summary Of Work

Simulation teaching to 15 second and third year Swansea University Medical Students, carrying out scenarios with and without the simulated observations monitor. Data collection via surveys and joint interview.

#### Summary Of Results

All students had an increased sense of realism with the simulated observations monitor, improving learning, making them more prepared for clinical practice. The monitor was more dynamic, helping them maintain focus and engagement. A key theme was the reduction of interruptions from the scenario to communicate with the examiner. The visual and audible affects provided additional stimuli, adding to the realistic nature of the simulation.

#### Discussion And Conclusion

Simulation has been shown to be a useful education tool, but there is less evidence to support the use of higher fidelity simulation, particularly given the additional cost and demands. The terms are often used inconsistently, and many factors affect students perceived sense of realism. This study shows the addition of a simple device such as the simulated observations monitor can produce a higher level of fidelity, particularly in terms of the stimuli provided and student perceptions of realism, which may be effective in improving engagement, learning, and aid recall when presented



with similar real life scenarios.

### Take Home Messages

Take home messages

- Simulation is shown to be beneficial, but less evidence for higher fidelity simulation.
  - There are different interpretations of what defines fidelity.
  - Multiple factors may influence students perceived sense of realism.
  - Simple additions such as a simulated observations monitor can increase perception of realism.
  - This can improve engagement and learning.
- 



## Online Oral Session 3.2 (0449)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:00 - 12:15

**Location of presentation:** Online Session

### The Digital Health Undergraduate Medical Curriculum: UK Medical Student National Survey Results

Elizabeth Le<sup>1</sup>, Yuri Aung<sup>2</sup>, Alexander Deighton<sup>3</sup>, Mrudula Utukuri<sup>4</sup>, Johnathan Hirniak<sup>5</sup>, Connor Dibblin<sup>6</sup>, Benedict Osei-Boadu<sup>7</sup>, Maarja-Liis Ferry<sup>8</sup>, Nishita Gadi<sup>7</sup>, Ariana Axiaq<sup>9</sup>, Bridget Agboola<sup>10</sup>, Chandini Chand<sup>11</sup>, Felecia D'Souza<sup>12</sup>, Chandni Patel<sup>13</sup>, Mohsin Abedi<sup>5</sup>, Matthew Byrne<sup>14</sup>, Rajiv Sethi<sup>15</sup>

<sup>1</sup> University of Cambridge School of Clinical Medicine, Cambridge, UK <sup>2</sup> Barking Havering and Redbridge NHS Trust, London, UK <sup>3</sup> Queen Mary University of London, London, UK <sup>4</sup> Nottingham University Hospitals NHS Trust, Nottingham, UK <sup>5</sup> Mid and South Essex NHS Foundation Trust, Basildon, UK <sup>6</sup> King's College London, London, UK <sup>7</sup> Anglia Ruskin University, Chelmsford, UK <sup>8</sup> NHS Greater Glasgow and Clyde, Glasgow, UK <sup>9</sup> Queen's University Belfast, Belfast, UK <sup>10</sup> University of Edinburgh Medical School, Edinburgh, UK <sup>11</sup> Hull York Medical School, York, UK <sup>12</sup> Barts and The London School of Medicine and Dentistry, London, UK <sup>13</sup> Barts Health NHS Trust, London, UK <sup>14</sup> Oxford University Hospital NHS Foundation Trust, Oxford, UK <sup>15</sup> Manchester University NHS Foundation Trust, Manchester, UK

#### Background

Digital health (DH) is increasingly becoming an integral part of patient care. Undergraduate medical education plays a vital role in shaping our future clinical workforce. This study sought to better understand medical student perspectives regarding digital health education and how to prepare them to become digitally competent healthcare professionals.

#### Summary Of Work

A national online survey was conducted from March to September 2021, collecting data relating to medical student demographics, their perspectives on the importance of digital health and its relation to the medical curriculum, as well as their preferences for the contents and methods of teaching delivery and assessment.

#### Summary Of Results

514 completed responses were received from medical students across all years of study and across 39 UK medical schools. 60.9% of respondents were in their clinical years, with 57.2% of respondents being female.



93.6% of students considered DH to be 'important/extremely important' to future clinical practice, with particular emphasis on electronic patient records (87.4%), telehealth (81.9%) and smartphone applications (66.9%). Students felt unprepared with regards to medical robotics (77.2%), artificial intelligence (68.9%), genomics (68.5%) and virtual reality (67.3%). The majority of students (70.2%) had received some form of DH education such as lectures/seminars (30.5%) or e-learning modules (28.6%), but only 25.7% felt satisfied with their current DH education provision. The majority of students (83.3%) indicated that DH education should be included in their undergraduate medical curriculum. 56.1% of students preferred a form of mandatory teaching, including practical hands-on workshops (75.8%) and lectures and seminars (60.4%). The preferred DH teaching frequency was either on a termly (35.7%) or monthly basis (32.2%). 65.4% of students indicated that DH should be assessed in medical school, with formative assessment being the preferred option.

### **Discussion And Conclusion**

This is the first national survey of UK medical students regarding digital health education. Medical students support incorporating digital health into the medical curriculum. A balance is necessary between the core medical curriculum and helping students adapt with the changing digital landscape.

### **Take Home Messages**

1. Digital health education is a neglected part of the undergraduate medical curriculum
  2. Medical students want more digital health teaching
  3. Medical students support formative assessment of digital health competencies
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## Online Oral Session 3.3 (0711)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:15 - 12:30

**Location of presentation:** Online Session

### Student evaluation of simulation-based education (SBE) at the Lisbon School of Medicine: A pilot study

António Velha<sup>1</sup>, Madalena Patrício<sup>1</sup>, Luís Soares de Almeida<sup>1</sup>

<sup>1</sup> *Lisbon School of Medicine, Lisbon, Portugal*

#### Background

Interest for simulation technology applied to medical education has been exploding worldwide, particularly due to the COVID-19 pandemic. At the LSM, a new simulation centre was recently created.

#### Summary Of Work

The aim was to promote student SBE evaluation. A survey (1-5 Likert-scale) was sent asking students to evaluate and comment the most/least positive educational aspects. Answers are from 19 and 14 undergraduates (groups A and B) and 9 postgraduates (group\_C). Group\_A had sessions with 12\_participants and group\_B with 2-3\_participants.

#### Summary Of Results

- Group\_A: Most valued evaluated\_aspects were equipment\_adequacy( $\mu=4,32$ ), opportunity\_for\_discussion( $\mu=4,21$ ), while least valued were group\_dynamic( $\mu=3,37$ ), tutor\_performance( $\mu=3,53$ ), feedback\_quality( $\mu=3,58$ ). Initial expectations were exceeded for 3/19, met for 10/19 and unmet for 6/19. Of the top positive commented\_aspects, seven mentioned simulation\_realism and five environment\_control. Nine complained of passive\_observance, and three of lacking\_additional\_sessions and tutor\_underfamiliarity\_with\_simulation\_equipment.
- Group\_B: Most valued evaluated\_aspects were equipment\_adequacy( $\mu=4,93$ ) and opportunity\_for\_questions( $\mu=4,64$ ), while least valued was feedback\_quality( $\mu=4,29$ ). Initial expectations were exceeded (7/14) or met (7/14). Realism and opportunity\_for\_active\_participation were reported by three respondents as the most positive commented\_aspects. Four complained of reduced\_session\_time.
- Group\_C: All educational aspects (except two) had maximum score from all respondents. Initial\_expectations were exceeded (8/9) or met (1/9). Top positive commented\_aspects mentioned by three respondents were realism and integration\_with\_debriefing\_moments.

All groups reported that neither protocols nor predefined objectives were available before sessions.



### Discussion And Conclusion

Students valued realism and environment\_control, equipment\_adequacy and tutor\_openness to questions/discussion. Both groups were disappointed with feedback and group\_dynamic. Group\_A complained of passive observance and expectations were unmet for a significant minority (6/19). Group\_B had sessions with smaller groups, appreciating opportunities for active participation, with expectations being met/exceeded. Group C had full active participation in team-based settings for several hours, having extremely positive experiences. A strength of SBE lies in active practice, exploring various dynamics in group interaction. Opportunities to practice with SBE should be expanded, taking advantage of the technologies used.

### Take Home Messages

- Students recognize the value and weaknesses of SBE.
  - More active participation is required in SBE settings, as students considered it integral to their experience and expectations.
  - Group size, feedback and teaching strategies need to be tailored to SBE.
  - Skill protocols and pre-defined objectives must be available before the session.
- 



## Online Oral Session 3.4 (0035)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:30 - 12:45

**Location of presentation:** Online Session

### **Educational change in a crisis; what has changed and what is here to stay in undergraduate teaching and learning in General Practice**

Karen Kyne<sup>1,2,3</sup>, Aileen Barrett<sup>1</sup>

<sup>1</sup> ICGP, Dublin, Ireland <sup>2</sup> NUIG, Galway, Ireland <sup>3</sup> RCSI, Dublin, Ireland

#### **Background**

On the 12th March 2020, universities in the Republic of Ireland were closed in an attempt to curtail the spread of Covid-19. Overnight, universities were required to substitute their predominantly face-to-face teaching for a virtual format.

The aim of the study was to explore the decisions and decision-making strategies employed by academic GPs tasked with adapting the delivery of undergraduate general practice education curricula to virtual platforms during the pandemic and to investigate how their experiences of this adaptation might influence the development of future curricula.

#### **Summary Of Work**

Approaching the study from a constructivist grounded theory (CGT) perspective, we recognised that experiences shape perception, and an individual's 'truths' are socially constructed. Nine academic

GPs from three university GP departments participated in semi-structured interviews conducted via Zoom®. Anonymised transcripts were iteratively analysed, generating codes, categories, and concepts using a constant comparative approach. The study was approved by the RCSI Research Ethics Committee.

#### **Summary Of Results**

Participants described the transition to online delivery of the curriculum as a 'response approach'. The elimination of in-person delivery necessitated the changes rather than any strategic development process. With varying levels of experience in eLearning, participants described the need for and engagement with collaboration both internally within institutions and externally between institutions. Virtual patients were developed attempting to replicate learning in a clinical



environment. How these adaptations were evaluated by learners differed across the institutions. The value and limitations of student feedback as a driver for change differed between participants. Two institutions plan to incorporate aspects of blended learning going forward. Participants recognised the impact of limited social engagement between peers on social determinants of learning.

### **Discussion And Conclusion**

Prior experience in eLearning appeared to colour participants perceptions of its value, those experienced in online delivery were inclined to recommend some level of continuation post-pandemic.

### **Take Home Messages**

We now need to consider which elements of undergraduate education can be delivered effectively online into the future. Maintaining the socio-cultural learning environment is of critical importance but must be balanced by efficient, informed and strategic educational design.

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## Online Oral Session 3.5 (0576)

**Date of presentation:** Saturday 27th August

**Time of session:** 12:45 - 13:00

**Location of presentation:** Online Session

### Comparison of students' performance in face to face, online and hybrid anatomy courses

Halima Albalushi<sup>1</sup>, Mohamed Al Mushaiqri<sup>1</sup>, Srinivasa Sirasanagandla<sup>1</sup>, Srijit Das<sup>1</sup>

<sup>1</sup> *Sultan Qaboos University, muscat, Oman*

#### Background

The SARS COVID-19 pandemic resulted in the disruption of regular face-to-face classes. Institutions were forced to conduct online teaching and assessment. The online assessment was a challenge due to available infrastructure and time limits.

#### Summary Of Work

This study was planned to study the performance in theory and practical online examinations. We analysed the students' assessment results for two basic anatomy courses given in phase 1 of Doctor of Medicine (MD) and Biomedical Sciences (BMS) curricula. We compared the performance of the students in anatomy in written exams of multiple-choice questions and practical exams of objective structured practical exams (OSPE) of face-to-face teaching and exams, partial online teaching and online exams and online teaching, and proctored online and face-to-face exams. Data were analysed using SPSS v.23. Descriptive statistics were used and data are presented in the form of mean and standard deviation. The students' performance scores in theory and practical components of each course in the three semesters were analysed by ANOVA test. The level of significance was set at  $p < 0.05$ .

#### Summary Of Results

Our results showed that the performance of the students was better in 2019 compared to 2020 when we had less time to adopt online learning but in 2021, the results were better than in 2019 and comparable to 2019.

#### Discussion And Conclusion

Teachers should not always confine to one traditional method of teaching and assessment and should always be open to any innovative changes. Well-designed assessment programs with innovative methods can be beneficial. Assessment methods in anatomy need a change from the conventional methods followed, to date. Medical education has a greater role to play. Active



participation by the administrators, faculty members and students is needed. Based on our results in practical spotters, we opine that online assessment may be a better option. The online form of assessment may reduce the burden of the physical presence of invigilators and address the problem of space consumed for conducting such examinations. The results and feedback could be made easier and these would help the students.

### **Take Home Messages**

Online teaching and assessment of anatomy courses can be considered even after the pandemic.

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## Online Oral Session 3.6 (0254)

**Date of presentation:** Saturday 27th August

**Time of session:** 13:00 - 13:15

**Location of presentation:** Online Session

### **Redesigning, Implementation, And Evaluation of Imam Khomeini Hospital Complex's Virtual Internal Medicine Clerkship Program In 2021 Academic Year, Using CIPP Evaluation Model**

Farshad Shahkarami<sup>1</sup>, Nasim Khajavi Rad<sup>1</sup>, Roghayeh Gandomkar <sup>1</sup>, Azim Mirzazadeh<sup>1</sup>

<sup>1</sup> *Tehran University of Medical Sciences, Tehran, Islamic Republic Of Iran*

#### **Background**

Due to the Covid-19 pandemic, undergraduate internal medicine education has been affected in the past two years. To compensate and use the full potential of e-learning, this study was conducted based on CIPP evaluation model to redesign, implement, and evaluate an internal medicine program for clerkship students, which was held along their clinical rotations at IKHC.

#### **Summary Of Work**

A three-month online program was designed using context and input evaluation. It consisted of 60 sessions, including morning reports, case-based classes, interactive classes on approaching common diseases and clinical manifestations, communication skills, and sessions to facilitate students' encounter with the new clinical setting. Besides, the students were provided with multimedia educational materials and mentorship. They were assessed using GRFs, OSCE, and clinical reasoning and MCQ exams. For a comprehensive process and product evaluation, we used satisfaction surveys, questionnaires, focus group discussions, and semi-structured interviews.

#### **Summary Of Results**

Although some of our initiatives didn't go as expected, our evaluation showed that most of the students were satisfied with the program. They were happy with the teachers' performance, online platforms, educational design and materials. The faculty members were also satisfied with the program. Although the workload was a little overwhelming for both groups. The students' assessment also showed that they were knowledgeable and competent.

#### **Discussion And Conclusion**

This program succeeded at reaching its goals. We tried to improve its quality by trying new ideas; some failed, and some showed potential for providing a better education. Overall, most of the stakeholders were satisfied with the experience and CIPP model proved to be useful for redesigning



and evaluating our program . This study had limitations like lacking a control group and not evaluating the long-term results. Therefore, future studies can explore the potentials and long-term effects of this new way of education.

### **Take Home Messages**

It's been more than two years since we were forced into online education. Now that everyone is used to it, there are more opportunities for innovation and trying new ideas. Although worldwide vaccination against COVID-19 has brought up the possibility of going back to traditional in-person education, we believe that e-learning is not going anywhere and still has a huge untapped potential.

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## Online ePoster Session

### Online ePoster 1 (0005)

**Date of presentation:** Saturday 27th August

**Time of session:** 13:30 - 13:38

**Location of presentation:** Online Session

### **Comparison of Younger and Elder Medical Students Accomplishment in Objective Structured Clinical Examination, Repeat-year Experience, Clinical Clerkship Achievement and Related Summative Exams**

Nobuyasu KOMASAWA<sup>1</sup>, Fumio TERASAKI<sup>2</sup>, Kimitaka TAKITANI<sup>2</sup>, Ryo Kawata<sup>1</sup>, Takashi Nakano<sup>1</sup>

<sup>1</sup> Medical Education Center, Faculty of Medicine, Osaka Medical and Pharmaceutical University, Osaka, Japan <sup>2</sup> Medical Education Center, Osaka Medical and Pharmaceutical University, Osaka, Japan

#### **Background**

While the number of elder medical students is increasing, the age difference in their achievement has not been clarified yet, especially in clinical contexts. In this study, we compared the age difference in repeat-year experience, Objective structured clinical examination (OSCE), Clinical Clerkship (CC) performance and related exams achievement in Japanese medical contexts.

#### **Summary Of Work**

We performed retrospective analysis on repeat-year student number and year needed for graduation in younger (who needed 4 or less years for entrance: Younger group) and elder (who did 5 or more years for entrance: Elder group) medical schools. We also compared OSCE, Computer-based testing (CBT) before CC, CC performance evaluated by clinical teachers, CC integrative test, and graduation exams in 2018-2020 graduates from our medical school. We also analyzed the correlation between medical student age and accomplishment.

#### **Summary Of Results**

From 2018 to 2020, 328 medical students graduated from our school. 283 medical students entered our school after less than 4 years or less (Younger group). In contrast, 45 of them did after 5 years or more (Elder group). The number of repeat-year did not significantly differ between the two groups. The average year need for graduation was slightly longer in more than elder groups than less than younger groups. While younger group showed significantly higher CC integrative test, no significant difference was seen in other tests. There were significant correlations between age and accomplishment in CC integrative test (5<sup>th</sup> grade) and graduate examination (6<sup>th</sup> grade), while no significant correlation was seen to other accomplishments.



### **Discussion And Conclusion**

We conducted an age difference analysis in medical school on the clinical context.

### **Take Home Messages**

While age and some summative test accomplishment showed significant correlations, our results suggest that elder medical students do not show serious inferior performance in most of the clinical related context.

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## Online ePoster 2 (0129)

**Date of presentation:** Saturday 27th August

**Time of session:** 13:38 - 13:46

**Location of presentation:** Online Session

### **Faculty and students' perceptions of High Fidelity Simulation: A study at an Emergency Medical Services school in King Saud University, Saudi Arabia.**

Majed Alqahtani<sup>1</sup>

<sup>1</sup> *Cardiff University, Cardiff, UK*

#### **Background**

High Fidelity Simulation (HFS) can help the learner shift from knowledge to higher cognitive levels such as application and analysis (Zigmont et al., 2011). The goal of simulation is to provide experiential learning opportunities that allow the learner to apply theory to practice. Whilst a great deal of research has been conducted in medical and nursing education on the topic of High Fidelity Simulation, very little research exists that considers the experiences and needs of learners and teachers in Emergency Medical Services education (paramedics). In addition, a problem exists that teachers often feel ill-prepared to implement HFS as a teaching strategy and it has been acknowledged that faculty development to implement simulation is critical to an effective and sustainable simulation programme (Jeffries, 2014). Assessing the needs of both teachers and students regarding HFS implementation will aid in the development of interventions to address this issue.

#### **Summary Of Work**

The purpose of the study was to examine the views of faculty and students with respect to their experiences and challenges associated with the implementation of HFS at King Saud EMS school. It was set to examine:

1. The extent to which faculty feel prepared to teach students in HFS settings?
2. How faculty prepare to teach in HFS settings?
3. What factors impact the implementation of HFS?
4. What are paramedic students' and teachers perceptions of their experience of HFS?



## Summary Of Results

### Results:

The faculty and students agreed about having perceived the simulation design features and the educational practices elements to be present. 'Statistical analysis of survey data suggest that students and faculty are equally satisfied with their experiences of HFS, as examined by the SDS and EPSS . It was the thematic analysis of the qualitative data that enabled the uncovering of challenges and barriers to HFS implementations. These challenges were categorised to themes associated with: institutional issues, support needs and assessment and feedback.

## Discussion And Conclusion

### Conclusion

The findings will help inform the development of guidance and further support of educators in maximising this HFS as a teaching strategy to improve the students' learning experience and preparation for their clinical role.



## Online ePoster 3 (0202)

**Date of presentation:** Saturday 27th August

**Time of session:** 13:46 - 13:54

**Location of presentation:** Online Session

### **The development of a tool to assess medical students' non-technical skills - the Norwegian Medical Students' Non-Technical Skills (NorMS-NTS)**

Katrine Prydz<sup>1,2</sup>, Peter Dieckmann<sup>3,4</sup>, David Musson<sup>5</sup>, Torben Wisborg<sup>6,7</sup>

<sup>1</sup> Finnmark Hospital trust, Hammerfest, Norway <sup>2</sup> Faculty of Health Sciences, University of Tromsø – the Arctic University of Norway, Hammerfest, Norway <sup>3</sup> Senior Scientist at CAMES, Copenhagen, Denmark <sup>4</sup> Professor of Healthcare Education and Patient Safety, University of Stavanger., Stavanger, Norway <sup>5</sup> Associate Professor, Faculty of Health Sciences, McMaster University, Ontario, Canada <sup>6</sup> Finnmark Hospital trust, Hammerfest, Norway <sup>7</sup> Professor, Faculty of Health Sciences, University of Tromsø – the Arctic University of Norway, Hammerfest, Norway

#### **Background**

New physicians need to master non-technical skills (NTS), defined as the combination of cognitive and social skills. High levels of NTS increase patient safety. It is possible to enhance NTS through training. To evaluate the effect of training, customize training and give constructive feedback a tool to assess these skills during medical school is needed. The aim of this study was to establish the necessary NTS for Norwegian medical students and, create an assessment tool to rate these.

#### **Summary Of Work**

We conducted focus group interviews with people working with, or treated by, newly graduated physicians. The interviews were analyzed through card sort analysis, and the necessary NTS found formed a framework. Based on the framework we created a prototype of the assessment tool. The prototype was returned to the focus groups for feedback. Finally, we conducted a search for existing tools and literature. Based on the combined inputs from the focus groups, the existing tools and literature search the final tool was designed.

#### **Summary Of Results**

We created Norwegian medical students' non-technical skills (NorMS-NTS) assessment tool containing 4 main categories; 'Communication', 'Situation awareness', 'Teamwork skills' and 'Decision making', consisting of 13 elements. An overall global score is based on a seven-point Likert scale, while categories and elements are rated with a five-point Likert scale.



### **Discussion And Conclusion**

NorMS-NTS represents a purpose-made unique tool for assessment of newly graduated physicians' necessary non-technical skills. While it has similarities to existing assessment tools it was based on user perspective through focus group interviews, and refined by feedback from the groups, a comprehensive literature search and existing assessment tools.

### **Take Home Messages**

NorMS-NTS is a tool for assessment of medical students NTS

High levels of NTS increase patient safety.

It is possible to enhance NTS through training.

We found the necessary non-technical skills for newly graduated physicians.

We made an assesment tool for assessing the necessary NTS during medical school.

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## Online ePoster 4 (0516)

**Date of presentation:** Saturday 27th August

**Time of session:** 13:54 - 14:02

**Location of presentation:** Online Session

### **Current perception of medical schools' social accountability in Japan: A qualitative content analysis from the documents based on WFME accreditation system**

Hiroko Mori<sup>1</sup>, Masashi Izumiya<sup>1</sup>, Mikio Hayashi<sup>1, 2</sup>, Masato Eto<sup>1</sup>

<sup>1</sup> *Department of Medical Education Studies, International Research Centre for Medical Education, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan* <sup>2</sup> *Centre for Medical Education, Kansai Medical University, Hirakata, Osaka, Japan*

#### **Background**

The accreditation system of medical education is not an assimilation of the content but a contextual guarantee of quality. The concept of medical schools' social accountability is globally accepted and studied, but there is a lack of data regarding Japanese medical schools. This study aimed to elucidate the perception of medical schools' social accountability in Japan and compare this to global frameworks.

#### **Summary Of Work**

A document on Japanese medical accreditation standards (Basic Medical Education: Japanese Specifications WFME Global Standards for Quality Improvement) was used for this study with permission for the research obtained from the Japanese Accreditation Council for Medical Education. We included documents from 45 medical schools' that were available in August 2020 in a qualitative content analysis using an inductive category formation.

#### **Summary Of Results**

Three main categories and 15 categories were identified. The three main categories in reference to Bronfenbrenner's ecological system model were: Issues in society, quality assurance of medical school, and individual quality improvements. Most categories were common to those in global frameworks, but some were characteristic of the Japanese context: Addressing natural disasters, historical events, and the actual situation.

#### **Discussion And Conclusion**

As the WFME accreditation system aims to improve social accountability, the structure of the Japan Accreditation for Medical Education standards may reflect social accountability without medical



schools' explicit awareness. Categorisation based on the ecological system model suggested connections between the social accountability of medical schools and the viewpoints of individual medical students and doctors. The social accountability of Japanese medical schools is similar to global frameworks but has key differences. Our findings will improve the understanding of medical schools' social accountability and develop it beyond contextual borders.

#### **Take Home Messages**

1. Most themes of the social accountability of medical schools in Japan are similar to global frameworks, but others are characteristic of the Japanese context.
  2. A universal understanding of social accountability across medical schools is necessary to reveal and recognise differences that depend on the local context.
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## Online ePoster 5 (0644)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:02 - 14:10

**Location of presentation:** Online Session

### Virtual reality of Newborn immediate care for undergraduate nursing students

HsiaoYing Hung<sup>1</sup>, Ying-Ju Chang<sup>1</sup>, Yu-Yun Hsu<sup>1</sup>

<sup>1</sup> *Department of Nursing, College of Medicine, National Cheng Kung University, Tainan, Taiwan*

#### Background

Nursing education aims to cultivate students who can adapt to the diverse demands in clinical settings. Caring-skills training in schools will enhance the confidence of students and ensure the patient safety. The proper implementation of neonatal immediate care has an impact on newborn survival and development. Virtual reality (VR) is an innovative teaching strategy that can overcome several teaching barriers in NIC teaching while providing students with a highly realistic and safe learning environment.

#### Summary Of Work

Therefore, three-phases study was adopted to develop an NIC VR to cultivate the competency of undergraduate nursing students in newborn care.

#### Summary Of Results

In the first phase, NIC VR's preliminary design was developed by research team based the needs of the students and the NIC procedure identified in the empirical literature, textbooks, and hospital nursing standard; in the second phase, the research team collaborated with experts in information engineering to develop the NIC VR. This VR contains a 3D delivery room scenario, multiple immersive skill training models, and recording of the learning process; in the third phase, there were 6 maternal educations and clinical experts and 28 nursing students included to evaluate the suitability, accessibility, and usefulness of the VR module through questionnaires. Overall, participants gave the VR positive feedbacks. The experts thought the VR can facilitate students' learning and the students also thought the VR is easy to use and helpful for their learning.

#### Discussion And Conclusion

The effectiveness of NIC VR required further assessed to determine its impact on students' nursing skills performance and confidence in the future. This VR module was expected to be serve as a reference for the nursing skills training in other nursing schools.



### Take Home Messages

The proper implementation of neonatal immediate care has an impact on newborn survival and development. This skill consists of numerous complex steps and requires a significant amount of time, manpower, and resources for teaching and learning. Virtual reality (VR) is an innovative teaching strategy that can overcome several teaching barriers in schools while also providing students with a highly realistic and safe learning environment. As a result, it is suitable for teaching complex skills with various key steps.

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## Online ePoster 6 (0669)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:10 - 14:18

**Location of presentation:** Online Session

### Are you ready for new training patterns of pathology residents after the pandemic?

Man SHU<sup>1</sup>

<sup>1</sup> *the First Affiliated Hospital of Sun-Yat-Sen University, Guangzhou, China*

#### Background

An unexpected pandemic hit the whole world in 2020, which influenced the common way of pathology resident training significantly, as we have to rely more on online techniques for assistance. Within the last two years, we have produced digital learning resources such as lecture videos, digital sections, and online communication groups.

#### Summary Of Work

Retrospective research on trainees and tutors in the pathology department of the First Affiliated Hospital of Sun-Yat-Sen University was performed, which included an analysis of exam results and surveys on trainees and tutors containing multi-choice questionnaires.

#### Summary Of Results

54 trainees and 10 tutors responded to the questionnaires. All respondents reported digital resources helped significantly in their training. Three mostly mentioned reasons of trainees are "Flexible study schedule", "Flexible learning scenarios" and "positive effect on diagnosis thinking and section reading skills". While the tutors took the digital resources a good assistant for them to save more time for discussion on difficult cases. The analysis of the residents' exam showed that the trainees who completed after the pandemic got a higher pass rate(15/16) than those who completed before the pandemic(33/38).

#### Discussion And Conclusion

Compare with the traditional way of resident training, which in our cases, the tutors provided face-to-face lectures in a fixed time, and the trainees studied by representative pictures of typical lesions, the digital resources provided flexible study schedules and learning scenarios. The trainees can watch lecture videos whenever they are available and they watch the videos repeatedly until they can fully understand them. Digital sections can well mimic the diagnosis scenarios of a pathologist's daily work, which helped to enhance the trainees' section reading skills effectively. Online communication



groups, which developed rapidly after the pandemic, made a good platform for tutors and trainees to discuss difficult cases conveniently.

### **Take Home Messages**

Digital resources and platforms that developed after the pandemic deeply impact our way of resident training pattern, which showed good influence both on the trainees and tutors.

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## Online ePoster 7 (0751)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:18 - 14:26

**Location of presentation:** Online Session

### Conducting OSCE During Pandemic Covid 19 Conducting OSCE During Pandemic Covid 19

Diani Puspa Wijaya<sup>1</sup>

<sup>1</sup> *Faculty of Medicine Universitas Islam Indonesia, Yogyakarta, Indonesia*

#### Background

Covid-19 has brought many changes in medical education, not only in the learning process but also in assessment. Assessment have been widely developed online, hybrid or offline by strict health protocols. OSCE is an assessment to assess the achievement of clinical competence in an objective and structured manner in the form of stations rotation within a certain time. At each station, there is a task that must be done. Examiners will observe and assess examinees. In the Covid-19 condition, the faculty of medicine must continue the valid and reliable assessment process to provide information on student competency achievement but still provide a safe situation. FM UII conducts OSCE on advanced students online and offline to assess students' clinical competence. The purpose of this article is to provide an overview of how OSCE is developed for advanced medical students.

#### Summary Of Work

OSCE for advanced students is carried out both online and offline. OSCE offline for clinical skills material that has not been tested in the previous learning stage or requires special equipment. Meanwhile, the online OSCE is to assess communication competence, diagnosis and management of the disease. Some questions also ask for procedural skill and physical examinations, but only to explain the procedure.

#### Summary Of Results

Both students and evaluators were satisfied with the implementation of the OSCE both offline and online. The online OSCE can assess clinical competence, although it is constrained to assessing knowledge of procedural skills. Students also get feedback on the achievement of their clinical competence. And students hope to have the opportunity to practice procedural clinical skills and physical examinations.



### **Discussion And Conclusion**

OSCE conducted online can assess the achievement of student clinical competence. At the same time, we can do offline OSCE during pandemic Covid 19 by selecting clinical skills in procedural skills and physical examinations by implementing strict health protocols.

### **Take Home Messages**

OSCE in this pandemic Covid 19 period is still important to conduct by carefully sorting out the competencies to be assessed and selecting the right technical, whether online or offline.

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## Online ePoster 8 (0657)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:26 - 14:34

**Location of presentation:** Online Session

### **Competencies for Dental Public Health Specialists; a thematic analysis**

Mahsa Malekmohammadi<sup>1</sup>, Hadi Ghasemi<sup>2</sup>, Mohammad Hossein Khoshnevisan<sup>3</sup>, Fakhrolsadat Hosseini<sup>4</sup>

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#### **Background**

Competency frameworks as essential tools for competency-based education provide a transparent guide for workforce training which results in competent professionals for service provision. This study aimed to provide a comprehensive competency framework for Dental Public Health (DPH) specialists based on current related documents worldwide.

#### **Summary Of Work**

A review of current DPH postgraduate competency sets was performed by searching on PubMed, Scopus, Google Scholar, and Google from May to June 2021. All English materials in the form of official papers or published articles were reviewed with no time restriction. To extract diverse competencies, the contained papers were submitted to qualitative thematic analysis. These extracted competencies were, then, discussed in a panel of experts to develop the final competency framework.

#### **Summary Of Results**

Five documents that indicated competencies for the DPH specialists from Canada, the United Kingdom, the United States, Australia and New Zealand, and Ireland were reviewed. The thematic analysis led to the extraction of nine specific competency domains including Education, Research, Management of Oral health programs, Oral health policies and legislations, Communication, Collaboration, and Partnering, Leadership, Professionalism, Oral Health status and its determinants, and Development and evaluation of oral healthcare services.



### **Discussion And Conclusion**

All reviewed frameworks in this study highlighted the need for a range of competencies that empower DPH specialists for working in a multidisciplinary environment. Each framework, however, stressed some specific competencies while underestimating the others. The product of the present study which collected and compiled all competency areas under one venue may facilitate its utilization in accordance to local, national, and international contexts for training and evaluation of the DPH workforce.

### **Take Home Messages**

Identification and discussion of a profession's competencies are not only to shape educational and training models but also is the cornerstone of that profession's construction and strengthen its conceptual and operational framework. Therefore, DPH professionals should be prepared in advance and not let external determinants shape their profession; changes in the DPH profession should be based on internal factors and their true nature.



## Symposium 4A (0062)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Auditorium Lumiere

### **COVID-19 and High-Stakes Clinical Assessments: emergency replacements for OSCEs. A discussion of future options based on experience of the MRCGP's Recorded Consultation Assessment (RCA)**

#### **Presenters**

Richard Wakeford<sup>2</sup>, David Swanson<sup>3, 4</sup>

#### **Moderator**

Adrian Freeman<sup>1</sup>

<sup>1</sup> *University of Exeter, Exeter, UK* <sup>2</sup> *Hughes Hall, University of Cambridge, Cambridge, UK* <sup>3</sup> *University of Queensland, Queensland, Australia* <sup>4</sup> *University of Melbourne, Melbourne, Australia*

#### **Background**

COVID-19 interrupted the delivery of important assessments internationally.

The RCGP's assessment of UK GP trainees, using live, examiner-observed simulated patient scenarios was affected. RCGP designed, piloted and introduced an emergency replacement assessment of recordings of trainees' consultations (RCA), with candidates providing 13 recordings, following curricular specifications. A technical system enabled submission of audio or video recordings of their consultations which were double-marked. Acceptable test statistics were achieved.

This enabled accreditation of 4,276 UK GPs in 2020-21. We review replacement options, referring to the RCA and information about other assessment bodies' activities internationally. Such interruptions may recur, prompting advance review now.

#### **Topic Importance**

The continuing COVID-19 pandemic may make reliance on emergency replacement clinical examinations necessary again. It is important that the RCA experiment is fully reported, lessons learned, key decisions reviewed, and alternative models considered.

#### **Format and Plans**

Six-stage presentation plus discussion

1. We first summarise the RCA experience, including its validity, reliability and precision and differential performance by candidate sub-groups
2. In what ways could an OSCE be replaced?



3. What test quality measures should evaluate consultation assessments? We used 'g', pooled SEM and test-retest COSE
4. What criteria should be applied to these? Could single-marking (more economical) be introduced?
5. What flexibilities should be permitted for candidates? E.g. curricular requirements, recording media
6. Summary of symposium: recommendations for the RCA and more broadly for the future

Dr Swanson, with wide experience internationally of many postgraduate assessments – and their varied responses to the COVID-19 crisis – will comment throughout.

### **Take Home Messages**

An assessment of trainees' consultations reportedly provides a defensible emergency replacement for an OSCE. But could the RCA be improved – or bettered?



## Oral - Assessment: Written 1

### Oral Session 4B1 (0229)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:30 - 14:45

**Location of presentation:** Rhone 2

### A comparative analysis of multiple choice (MCQ) and extended matching (EMQ) questions in a final MBBS medicine and therapeutics examination

Alok Kumar<sup>1</sup>, Colette George<sup>1</sup>, Michael Campbell<sup>1</sup>, Kandamaran Krishnamurthy<sup>1</sup>, Md Anwarul Majumder<sup>1</sup>, Virendra Singh<sup>2</sup>, Shastri Motilal<sup>2</sup>, Sateesh Sakhamuri<sup>2</sup>, Tamara Thompson<sup>2</sup>, Corrine Sinquee-Brown<sup>3</sup>, Paula Lashley<sup>1</sup>, Curt Bodkin<sup>2</sup>, Charles Twort<sup>4</sup>, Bidyadhar Sa<sup>2</sup>

<sup>1</sup> *The Faculty of Medical Sciences, The University of the West Indies, Bridgetown, Barbados* <sup>2</sup> *The Faculty of Medical Sciences, The University of the West Indies, St Augustine, Trinidad and Tobago* <sup>3</sup> *The Faculty of Medical Sciences, The University of the West Indies, Nassau, The Bahamas* <sup>4</sup> *Kings College London School of Medicine, London, UK*

#### Background

The suitability and advantages of traditional multiple-choice and extended matching questions continue to be debated in medical education. The objective of this study was a comprehensive comparative analysis of the performance of EMQ and traditional MCQ formats in the written medicine and therapeutics component of final MBBS examination.

#### Summary Of Work

We conducted an item analysis of 80 EMQs and 200 MCQs administered to 532 examinees across four campuses/site in different Caribbean countries during final MBBS medicine and therapeutics examination of 2019. Exam performance measures included central tendency, item discrimination, reliability, item difficulty, and distractor efficacy.

#### Summary Of Results

For the 532 students who sat the exam, the highest, lowest, and mean (+SD) scores for EMQs were 93, 41, and 69.0 (+9.8); for MCQs, the respective values were 82, 41 and 62.7 (+7.4). The predictive value of EMQ and MCQ scores for overall failure was 0.67 (95% CI=0.39, 0.87) and 0.89 (95% CI=0.65, 0.98) respectively. There were no statistically significant differences in discrimination index (DI) scores by question type for any of the four cohorts. KR-20 coefficients for EMQs and MCQs ranged from 0.52 to 0.70 and 0.71 to 0.79, respectively. The proportion of questions with two or more functional distractors was consistently higher for MCQs than for EMQs in all four cohorts of students.



### **Discussion And Conclusion**

The wider spread of EMQ compared to MCQ scores suggests that the former are suitable for formative assessment. However, MCQ scores were more predictive of overall exam failure, which suggests that MCQs are more suitable for high-stakes assessments such as the final MBBS examination. Although there was no significant difference between the DI of EMQ and MCQ items, MCQs demonstrated stronger internal consistency. Both EMQs and MCQs demonstrated similar levels of difficulty. However, EMQs displayed poorer distractor efficiency than MCQs, which reflects the inherent difficulty in EMQ item construction.

### **Take Home Messages**

MCQs were more predictive of overall failure and had higher inter-item reliability, making the MCQ format more suitable for our high-stakes examinations. Examinations required for medical qualification and licensing to practice must be designed with careful attention to blueprinting and psychometric performance, as well as clarity about their formative or summative function.

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## Oral Session 4B2 (0693)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:45 - 15:00

**Location of presentation:** Rhone 2

### **Evaluating high-stakes summative VSAs vs SBAs in a new UK medical school – were they more helpful to discriminate between students?**

Scarpa Schoeman<sup>1</sup>, Kimberley Dancer<sup>1</sup>

<sup>1</sup> *Kent and Medway Medical School, Canterbury, UK*

#### **Background**

Kent and Medway Medical School (KMMS) accepted its first cohort of 107 students in September 2020. We opted to use a combination of very short answer (VSA) and best-of-5 single best answer (SBA) multiple choice test items for our formative and high-stakes summative applied knowledge tests (AKTs). All KMMS AKTs are written, standard set (modified Angoff), administered and anonymously marked online using the Exam-Write® software. No specified ratio between VSAs and SBAs are prescribed to the lecturers, they decide which format they want to employ. Faculty development and ongoing support regarding the writing and use of VSAs and SBAs are provided.

VSAs are a relatively new and novel AKT item format with a perceived enhanced authentic and uncued cognitive ask of students and there is an emerging body of evidence to their utility, suggesting they might have stronger discrimination ability and students find them more challenging to answer compared to SBAs. However, most of the literature data on VSAs are from smaller item sets from senior medical students and in formative, research contexts. Our data is from a real-world, high-stakes summative context with junior medical students.

#### **Summary Of Work**

We evaluated the emerging data from our early years summative AKTs about how lecturers are using VSAs and if VSAs are exhibiting statistically significantly different item analysis characteristics, compared to SBAs.

#### **Summary Of Results**

A total of 825 AKT items were used between September 2020 and February 2022 of which 23% (n=186) were VSAs and 77% (n=639) SBAs. The average discrimination (corrected item-total correlation) was 0.27 for VSAs vs 0.22 for SBAs ( $p<0.001$ ). The average facility was 66.4% for VSAs vs 71.5% for SBAs ( $p<0.01$ ). The average modified Angoff standard for VSAs were 52.2% vs 54.2% for SBAs ( $p<0.01$ ).



### **Discussion And Conclusion**

Our early data suggests that VSAs were commonly used. Compared to SBAs, on average, VSAs had stronger discrimination ability, were more challenging to students and had lower Angoff standards. All results showed statistically significant differences between item formats.

### **Take Home Messages**

Our early data seems to support the current literature that VSAs offer a stronger discriminating ability than more traditional SBAs and are more challenging for students to answer correctly.

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## Oral Session 4B3 (0546)

**Date of presentation:** Saturday 27th August

**Time of session:** 15:00 - 15:15

**Location of presentation:** Rhone 2

### **An updated integrated validity framework for health professions education**

Blanca Carrillo-Avalos<sup>1</sup>, Iwin Leenen<sup>2</sup>, Andrés Trejo-Mejía<sup>3</sup>, Melchor Sánchez-Mendiola<sup>3</sup>

<sup>1</sup> *Autonomous University of San Luis Potosi Faculty of Medicine, San Luis Potosi, Mexico* <sup>2</sup> *Faculty of Psychology, National Autonomous University of Mexico, Mexico City, Mexico* <sup>3</sup> *Faculty of Medicine, National Autonomous University of Mexico (UNAM), Mexico City, Mexico*

#### **Background**

Validation analysis is a complex challenge for high stakes assessments. The validity of score uses and interpretation requires appropriate conceptual frameworks. The frameworks of Messick and Kane are the most widely used and, although both provide guidance for the validity argumentation process, there is still controversy about their use in practice. The goal of this study is to propose an updated model that merges both frameworks and can be applied in health professions education.

#### **Summary Of Work**

A review of the literature about validity in assessment was performed. A comparative analysis of the available frameworks identified their relationships and generated an updated integrated proposal. Using recent reviews and analysis of the validity controversies, a validation model was developed, merging Messick's and Kane's frameworks and including Russell's recent proposal.

#### **Summary Of Results**

The evidence used to support inferences can be documented as follows: firstly, validation of the instrument needs to be performed before the test-takers respond the instrument, it implies gathering evidence for scores, generalizability, and extrapolation inferences, all supported by content evidence. Secondly, verification of interpretation and decisions, is performed after the applicants have taken the test, and evidence for the scores' inferences is acquired through the response processes and internal structure sources of evidence; for the generalizability inference, sources are internal structure and relationship with other variables; finally, extrapolation, is supported by relationship with other variables. The third stage, utility of actions, means the implications inference needs support from sources of evidence related to consequences.

#### **Discussion And Conclusion**



The different elements of each source of evidence can be aligned with Kane's inferences in a practical way, as validity evidence is generated while the instrument is developed and applied. It is not indispensable to study all elements of every evidence source, but most of them will be required to assure the quality of instruments used in high stakes assessments, including an analysis of voluntary and involuntary consequences.

### **Take Home Messages**

An updated integrated model that facilitates the process of gathering and analyzing validity evidence is proposed, that has practical applications in health professions assessment.

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## Oral - Assessment and CPD

### Oral Session 4C1 (0051)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:30 - 14:45

**Location of presentation:** Rhone 3A

### OSCE as an assessment tool for CPD activities

Khalid Al Busaidi<sup>1</sup>, Alshaatha Al Hasani<sup>1</sup>, Iman Al Nadabi<sup>1</sup>, Maimoona Al Balushi<sup>1</sup>, Ashwaq Al Mushaikhi<sup>1</sup>, Hasina Al Harthi<sup>1</sup>

<sup>1</sup> *Royal Hospital, Muscat, Oman*

#### Background

Majority of CPD activities adopt MCQs as post test as it's easy to prepare, easy to correct and economic in sense of human resource. However, MCQs may not be the suitable tool as it can only assess the students knowledge, the lowest level of the miller's pyramid of competence. Therefore, OSCE was adopted for to ensure nurses competency prior to practicing on real patient and to align the assessment with the learning outcome.

#### Summary Of Work

OSCE consist of 7 stations measuring different skills. Post test questionnaire for all participants were used to assess their perspectives. Study instrument was designed based on questionnaires used in previous studies using Likert scale to assess attributes, quality, validity and reliability, organization, and comparison of the OSCE with other assessment method.

#### Summary Of Results

Participants believed OSCE was fair, covered wide area of knowledge, well administered, well sequenced, minimized the chance of failing, less stressful and allowed them to compensate.

In term of quality, participants were aware of nature of exam, tasks reflected what has been taught, stations adequately timed, authentic, clear instructions, logic and appropriately sequenced.

Participants think scores provided a true measure, standardized, exam was practical and useful. They also believe personality, ethnicity and gender did not affect scores.

Compared to other assessment instruments, OSCE is easiest, fairest and should be used more often.



### **Discussion And Conclusion**

Overall OSCE had good construct validity, fairness and transparency which matches with previous studies. Several studies showed that students felt that OSCE examination was stressful and intimidating, in contrary, respondents of this study think OSCE was less stressful and not intimidating. Assessing nurses acceptance is very important. It is recommended to increase the study participation number and include OSCE examiner as well in order to improve the process and emphasis on skill testing rather than isolated knowledge test.

### **Take Home Messages**

CPD activities are mainly improving the skills of HCPs. While the assessment should always align with learning outcomes and the content, assessment of CPD activities are mostly conducted in form of MCQs/paper based. MCQ can be easy and economic, however, it may easily fail to asses whether participants met the createria to pass the programme.

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## Oral Session 4C2 (0368)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:45 - 15:00

**Location of presentation:** Rhone 3A

### Spaced Repetition in a Cohort of Practicing Physicians – Methods and Preliminary Results

David Price<sup>1,2</sup>, Ting Wang<sup>1</sup>, Thomas O'Neill<sup>1</sup>, Warren Newton<sup>1,3</sup>

<sup>1</sup> American Board of Family Medicine, Lexington, KY, USA <sup>2</sup> Department of Family Medicine, University of Colorado Anschutz School of Medicine, Aurora, CO, USA <sup>3</sup> University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

#### Background

Longitudinal, spaced testing results in better learning than repeated study of the same material. Physicians who participate in the American Board of Family Medicine formative Continuous Knowledge Self-Assessment (CKSA) receive 25 questions per quarter. After answering each question, physicians indicate confidence in their answer before receiving a critique and list of references. This study-in-progress of practicing physicians is comparing the effect of 5 different spaced repetition strategies on knowledge retention and transfer of knowledge from one clinical scenario to another.

#### Summary Of Work

Physicians who completed the CKSA in the 4<sup>th</sup> quarter of 2020 were randomized to a control group or one of 5 spaced repetition conditions over the subsequent 5 calendar quarters. All spaced repetition questions came from the block of 25 CKSA questions in the baseline period. Incorrectly answered questions answered confidently received highest priority for repetition. Control group participants received no repeated questions during the first 5 quarters of the study. Participants in the other 5 groups received up to 6 questions repeated either once or twice.

All remaining participants will receive their 6 repeated questions in study quarter 6. The primary analysis will compare differences in learning between physicians receiving any spaced repetition questions compared with the control group. Subgroup analyses will examine differences in learning between physicians receiving one repetition compared with those receiving two, differences in learning between the two single spaced repetition strategies, and differences in learning between the three double spaced repetition strategies.

Cloned questions emphasize the same key learning points as the original (base) question but frame them in different situations. In quarter 8 of the study, physicians in all groups will receive questions cloned from their 6 selected baseline questions. We will examine the effects of different repetition



strategies on transfer of knowledge from one clinical scenario to another.

### **Summary Of Results**

We will present interim study data on retention rates and preliminary analyses of learning.

### **Discussion And Conclusion**

The results of this study will help determine the potential added value of spaced repetition in assessment and CPD of practicing physicians.

### **Take Home Messages**

To date, spaced repetition has not been systematically deployed or evaluated in large cohorts of practicing physicians.

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## Oral Session 4C3 (0509)

**Date of presentation:** Saturday 27th August

**Time of session:** 15:00 - 15:15

**Location of presentation:** Rhone 3A

### Pre or Post? An RCT on Optimizing Test-Enhanced Learning in Continuing Education

Kulamakan(Mahan) Kulasegaram<sup>1</sup>, Oshan Fernando<sup>1</sup>, Tasnia Khan<sup>1</sup>, Vishan Shan<sup>1</sup>, Tina Martimianakis<sup>1</sup>, Mark Feldman<sup>1</sup>

<sup>1</sup> *University of Toronto, Toronto, Canada*

#### Background

Test-enhanced learning (TEL) is a proven education strategy to increase retention and transfer of learning in undergraduate and postgraduate medical education. Recent studies demonstrate TEL is feasible and effective in continuing education (CE), leading to gains in the application of knowledge for practicing physicians. TEL can be timed either before (pre) or after (post) learning. Choosing only one strategy maybe more efficient for participants and planners though evidence for the superiority of one strategy is inconclusive.

#### Summary Of Work

A randomized controlled experiment studied whether pre or post-testing was superior for CE in the context of the virtual Pediatric Update 2021 Conference in Toronto, Canada. Participants were randomized to pre or post-testing across 15 workshops. Participants in the pre-group received 5 MCQs 2 weeks before live workshops. Participants in the post-group received 5 MCQs for each workshop 2 weeks after the conference. The primary outcomes were clinical reasoning knowledge transfer tests for each workshop delivered one month after the conference. Participants also completed 3 surveys that queried learning behaviours and activities related to CE and the impact of pre or post-testing on their learning and clinical practices. Analysis was through multi-level model controlling for other covariates.

#### Summary Of Results

159 individuals provided complete data (90 pre/69 post). There was no statistical difference between the pre and post-groups on the primary outcome measure ( $b=0.05$ ,  $t=6.49$ ,  $p<0.52$ ) though we noted greater adherence to completing pre-tests compared to post-tests ( $t=18.6$ ,  $p<0.001$ ). Both groups reported positive appraisal of TEL in CE but only weak to moderate change in learning behaviours compared to previously self-reported learning in CE.



### Discussion And Conclusion

Both strategies were well received by participants. We did not detect an advantage for either testing strategy by any measure except one: significantly greater adherence to pre-testing suggests anticipation of learning events better engages participation in TEL.

### Take Home Messages

Either pre or post-testing can provide *efficacious* TEL in CE, however, pre-testing fosters better engagement and thus may be more *effective*). While TEL can promote learning behaviours further study is required to optimize learning activities and practice change using this strategy.

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## Oral Session 4C4 (0587)

**Date of presentation:** Saturday 27th August

**Time of session:** 15:15 - 15:30

**Location of presentation:** Rhone 3A

### Continuing Professional Development Training Needs of Nurses in Ethiopia: National Survey

Teshager Worku<sup>1</sup>

<sup>1</sup> *Ethiopian Nurses Association , Addis Ababa, Ethiopia*

#### Background

**Background:** The evolving healthcare needs demand that Nursing services be dynamic and up to date. This requires a well-organized and effective development of capacity of nurses through continuing professional development (CPD). There were no previously identified CPD training needs for Nurses. Hence, the goal of this study was to determine the training needs of nurses in Ethiopia.

#### Summary Of Work

**Methods:** Facility-based cross-sectional study design, from January 29 to May 4/2021, was employed. A total of 1287 nurses from six regions and one city administration participated in the study. A simple random sampling method was used to select health facilities and then all nurses were allowed to participate in the study. Data were collected using a structured questionnaire having a five-point Likert scale, collected by online and face-to-face approaches.

#### Summary Of Results

**Results:** Totally, 1025 nurses completed the survey with 84% response rate. Of these, most (72.2 %) of them work at hospitals. Over half (57.95%) of the nurses are first-degree holders, and the highest number of respondents (35.9%) were found in the Oromia region. The top five training needs were: Emergency preparedness (49.66%); Emerging diseases and nursing management (46.15%); Nursing process (40.68); Leadership, management, and governance skills (40.29); and non-communicable diseases (39.02%)

#### Discussion And Conclusion

**Conclusion:** The acute nursing care training needs are the priority capacity-building needs of nurses. In relation to government endorsement of CPD as a mandatory requirement for re-licensure, a huge demand is coming. More courses, with a variety of modalities and accessibility, should be an immediate attention.



### Take Home Messages

- Continuous Professional Development (CPD) is a new practice and in its infancy in Ethiopia
  - Availability and accessibility of CPD activities are in huge demand
  - Continuous Professional Development is one means of regulation, by linking with re-licensure
  - The nurses give emphasis the acute nursing care training
- 



## Oral Session 4C5 (0211)

**Date of presentation:** Saturday 27th August

**Time of session:** 15:30 - 15:45

**Location of presentation:** Rhone 3A

### Assessing Outcomes of a Practice Enhancement Program

Andries Muller<sup>1</sup>, James Macaskill<sup>1</sup>

<sup>1</sup> *University of Saskatchewan, Saskatoon, Canada*

#### Background

This paper synthesizes outcomes of Saskatchewan's Practice Enhancement Program (PEP) over the last 24 years. PEP is designed to provide physicians with patient and peer feedback on their clinical practice. In doing so, the program serves as an important means of promoting reflection and continued medical education. While PEP has been delivering this service since 1994, a comprehensive program evaluation has never been done.

#### Summary Of Work

The research team analyze the outcomes of 825 practice assessment reports and over 4241 individual recommendations found therein, from 1997 to 2020. Data from these assessments are collected, organized, and analyzed to determine: (i) What are the areas in need of improvement? (ii) Is there any other information that results from the data?

#### Summary Of Results

Several themes were identified as common reasons for recommendations. The top recommendation was around documentation. Other recommendations that made the top ten list were: Chronic Disease Management, Cumulative Patient Profiles, Medications, Emergency preparedness, Lab investigations, Objective measure of lung function, patient privacy, patient safety and Mental health. It was also possible to create a profile of a physician that would be more likely to receive more recommendations: Older, male physician in solo practice who are not involved in teaching and who not hold a certification in Family Medicine in Canada (CCFP).

#### Discussion And Conclusion

Although some recommendations were expected (documentation, selectivity in further investigations, etc.), others were surprising (privacy, proving better mental health, etc.) It was also interesting to see how certain demographics could predict "poorer performance" in a physician.



### Take Home Messages

CME can be designed around certain topics and with a certain target audience in mind, when using the results from this study.

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## Oral Session 4C6 (0618)

**Date of presentation:** Saturday 27th August

**Time of session:** 15:45 - 16:00

**Location of presentation:** Rhone 3A

### Using Item Response Models to Represent Irreducible Uncertainty in Clinical Diagnostic Decisions

Martin Pusic<sup>1</sup>, Yoon Soo Park<sup>1</sup>

<sup>1</sup> *Harvard Medical School, Boston, MA, USA*

#### Background

Clinicians often find themselves making diagnoses under conditions of uncertainty. When learning a diagnostic skill, it can be difficult to disentangle what is uncertainty due to incomplete mastery and what is structural uncertainty where even a fully trained expert would have difficulty distinguishing between two alternative diagnoses. In this work, we explore assessment-for-learning statistical approaches using an item-response model to identify irreducible diagnostic uncertainty and improve visual diagnosis.

#### Summary Of Work

We carried out a prototype analysis of 40 dermatologists rating 100 images of skin lesions that might be diagnosed as malignant melanoma, using a dichotomous categorization of either “no further treatment” (NFT) or “biopsy/further treatment” (Bx). We modeled the resulting fully-crossed data (42 raters x100 pictures of skin lesions) using a Rasch Model. We report the decision-thresholds and graphic tracelines and compare them to the individual case locations on the underlying decision scale (cf IRT where the scale is "difficulty").

#### Summary Of Results

The 100 cases demonstrated a full range of diagnostic uncertainty, from -4.18 logits (all dermatologists predicted to rate “Bx”) to +4.20 logits (all dermatologists predicted to rate “NFT”). 14 of the cases fell within 0.5 logits of the 0 mid-point, where the dermatologists would be predicted to be equally likely to endorse either category, suggesting there are a considerable proportion of cases with uncertainty for all practitioners. Additionally, a number of the benign cases showed ratings consistent with malignancy. Modelling practitioners, we found that they demonstrated considerable practice variation in where they set their cut points.(See Figure)

#### Discussion And Conclusion

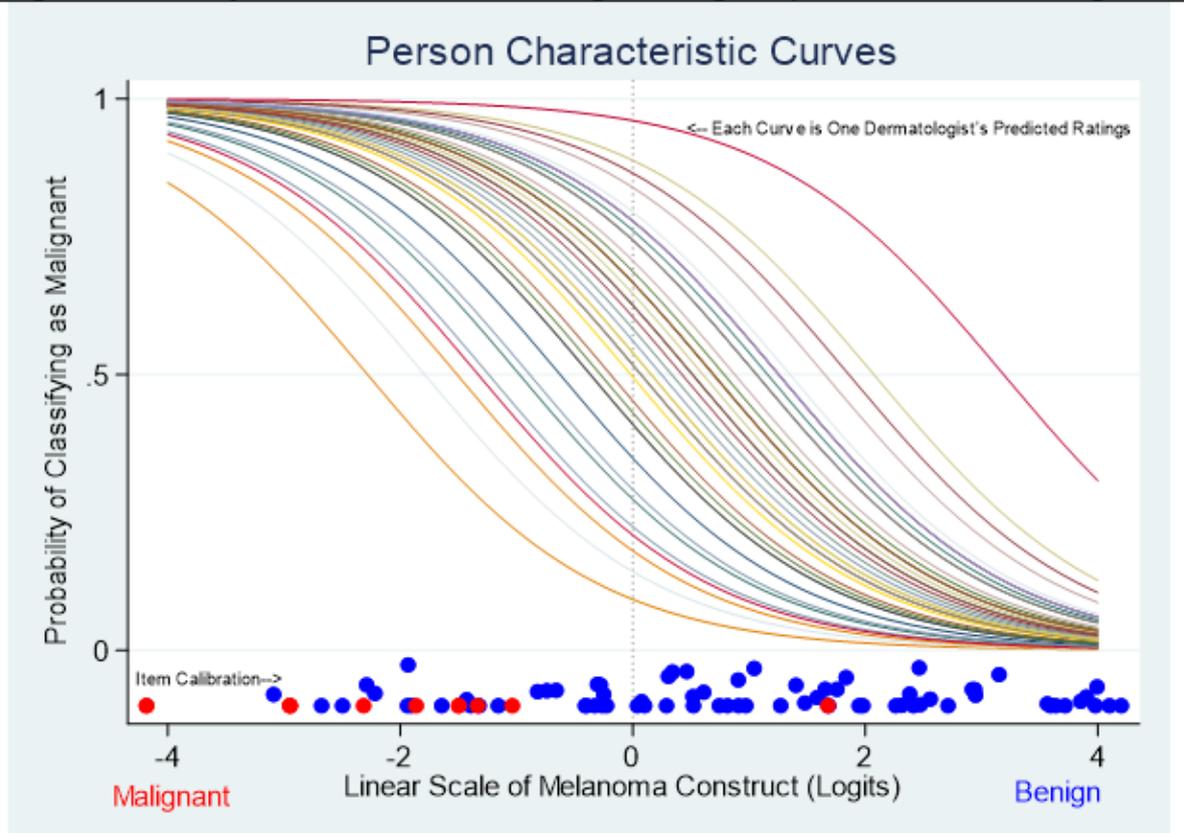


In an assessment for learning paradigm, assessment metrics can provide actionable feedback for individual improvement. The current work allows simultaneous estimates of both case and clinician uncertainty. The results provide quantitative estimates of practice variation in the face of clinical uncertainty with implications for both training and quality improvement.

**Take Home Messages**

Item response modeling, when aligned with an important clinical distinction such as whether to biopsy or not in a case of potential melanoma, can be used to provide meaningful feedback as to a clinician’s overall tendencies when faced with uncertain cases.

Figure: Probability tracelines for 40 Dermatologists rating 100 potential melanoma images.



Each traceline is one dermatologist as modeled using a Rasch Model. The item locations are represented by the coloured circles at the x-axis (red=malignant by gold standard; blue=not malignant by gold standard). A case at the zero point would be predicted to be equally likely to be assigned either category by a clinician of average bias. Clinicians to whose traceline mid-point is to the left of zero show a bias towards fewer biopsies; those to the right show a bias towards performing biopsies.



## Oral – Feedback

### Oral Session 4D1 (0513)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:30 - 14:45

**Location of presentation:** Rhone 3B

### Feasibility of introducing audio feedback in OSCEs

Saskia Egarter<sup>1</sup>, Katharina Langton<sup>2</sup>, Jörn Heid<sup>1</sup>, René Hemmerling<sup>3</sup>, Anna Mutschler<sup>1</sup>, Lara Hanske<sup>2</sup>, Kristin Seele<sup>3</sup>, Grit Hübsch<sup>3</sup>, Konstantin Brass<sup>1</sup>, Marie-Christin Willemer<sup>3</sup>

<sup>1</sup> *Institute for Communication and Assessment Research, Heidelberg, Germany* <sup>2</sup> *Technische*

*Universität Dresden, Faculty of Medicine Carl Gustav Carus, Center for Midwifery Sciences, Dresden,*

*Germany* <sup>3</sup> *Technische Universität Dresden, Faculty of Medicine Carl Gustav Carus, Medical*

*Interprofessional Training Centre, Dresden, Germany*

#### Background

Feedback to learners on their level of knowledge is one of the most important learning and performance factors. Thus, feedback should always be delivered in a way that can positively and effectively influence the learning process. Due to the increasing digitalisation in education and examinations, a growing number of technologies are available that also create opportunities to improve the delivery of feedback from Objective structured clinical examinations (OSCE). For example, tablets can be used to record oral feedback from examiners and make it available to examinees. In this study, the feasibility of introducing audio feedback in OSCEs will be presented.

#### Summary Of Work

As part of a pilot project, the Institute for Communication and Assessment Research adapted in closed cooperation with the Medical Interprofessional Training Centre (MITZ) and the Center for Midwifery Sciences at the Faculty of Medicine Carl Gustav Carus Dresden, the tOSCE app, which is used for the rating of student's performances in OSCEs. In close coordination, the possibility of recording audio feedback was further developed and expanded, a concept for the technical provision of the recorded audio files was developed and tests were carried out regarding functionality, stability and audio quality. The audio feedback was used in an OSCE with 6 stations in the Bachelor's degree programme "Midwifery". A total of 24 students and 6 examiners took part in the exam.

#### Summary Of Results

On the interface of the tOSCE app, a button for recording oral feedback on student performance was integrated for each station and a detailed structure for providing feedback was implemented. The quality of the audio recordings using the tablet can be classified as very good. However, some



challenges arose in the course of the testing and subsequent implementation.

### **Discussion And Conclusion**

In general, it can be said that the provision of feedback in OSCEs via recorded audio comments is a good method to introduce and implement. However, any change or adaptation of the feedback method needs to be checked in advance if its use is compatible with exam regulations or legal requirements.

### **Take Home Messages**

The use of audio feedback opens up new possibilities and ways to provide examinees with feedback on their performance.

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## Oral Session 4D2 (0493)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:45 - 15:00

**Location of presentation:** Rhone 3B

### Scoping Review of Educational Research on Formative Assessment Among Medical Undergraduates

Sheeba Kunjukrishnan Retnabai<sup>1,2</sup>, Amol Dongre<sup>3</sup>

<sup>1</sup> *Gulf Medical College, Ajman, The United Arab Emirates* <sup>2</sup> *Gulf Medical University, Ajman, The United Arab Emirates* <sup>3</sup> *PSMC, Karamsad Gujarat, India*

#### Background

Formative assessment is assessment for improving learning through timely feedback. There is a shift in focus to ongoing assessment during the course. The challenge is to main stream formative assessment in the current assessment system.

#### Summary Of Work

The study design was -scoping review. It is useful to formulate research questions for furthur research. Scoping review protocol by Sternberg et al (2018) was followed.

We obtained full text of 230 articles from PubMed in English and 12 full texts from the Google scholar and after the duplicates were removed there were total 240 atricles. After applying the exclusion criteria 179 articles 61 articles were included in the review. Articles were reviewed and code book was developed. two coders did the process in consensus.

#### Summary Of Results

There was a steady rise in the number of publications on formative assessment among medical students fro 26.2% to 39.5% during the year 2015-2016 to 2019-2020 showing steady rise in the interest on formative assessment.

Of the 61 articles 18% was based on the assessment of knowledge, 16% on clinical assessment, 16% on faculty perceptions, 8.2% on innovations in formative assessment, and 4.9% was based on selfrating.



Out of 61 articles 67.2% was cross sectional in nature, 3.4% was cohort, 11.4% was experimental, 8.2% were qualitative and mixed method of studies.

### **Discussion And Conclusion**

Out of 61 papers only 8 papers relate to issue of feedback, which is key to success of formative assessment.

We need to follow an assessment framework, blueprint, and ensure faculty training in how to give feedback.

Formative assessment should have high quality, timely feedback for learning to take place.

### **Take Home Messages**

Formative assessment is assessment for learning and it should happen during learning.

Formative assessment should be followed by timely and effective feedback in a psychologically safe environment.

We must try to incorporate 5-7 formative assessment with effective feedback in the undergraduate curriculum.

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## Oral Session 4D3 (0325)

**Date of presentation:** Saturday 27th August

**Time of session:** 15:00 - 15:15

**Location of presentation:** Rhone 3B

### Exploring Clerkship Students' Perceptions of Feedback: A Behavioral Sampling Study

Anna Cianciolo<sup>1</sup>, Heeyoung Han<sup>1</sup>, Lydia Howes<sup>2</sup>, Debra Klamen<sup>1</sup>, Cathy Schwind<sup>1</sup>, Aysha Rafaquat<sup>1</sup>, Sophia Matos<sup>1</sup>

<sup>1</sup> Southern Illinois University School of Medicine, Springfield, USA <sup>2</sup> University of Utah, Salt Lake City, USA

#### Background

At our medical school, clinical preceptors are required to complete weekly “on the fly” feedback forms documenting their impressions of clerkship student performance. These forms are intended to provide written performance assessment to clerkship administrators and facilitate student learning. However, preceptors typically provide sparse, untimely documentation, and students discount its learning value. On this basis--reinforced by the literature--one might assume that our students receive inadequate feedback. Yet, our students report commonly receiving useful feedback on rotation. We investigated the interactions on rotation that our clerkship students view as feedback. We sought to better understand this informal feedback to improve the effectiveness of preceptors' written commentary.

#### Summary Of Work

From July 2021 to February 2022, 11 clerkship students (64% female, 27% Underrepresented in Medicine, 73% in the middle quartiles of academic performance) received a weekly online survey administered on a random weekday and time between 8am and 5pm. The survey asked participants to specify their rotation and describe the Who, What, When, Where, and Why of their most recent feedback experience. A 6-member interprofessional team coded the survey responses using content analysis.

#### Summary Of Results

The survey has been administered 28 of 30 times. The first 167 survey responses-- ~67% of the data anticipated --have been analyzed. Average participation rate is 88%. Feedback source (Who), topic (What), and delivery (When, Where) reflected the particular nature of preceptor-student interaction on a given rotation. For instance, feedback on surgical rotation primarily came from residents in the operating room and addressed students' suturing technique. By contrast, feedback on internal medicine rotations primarily came from faculty and addressed students' oral case reports. Students



extrapolated learning value (Why) beyond feedback topic, including calibrated self-assessment and deepened understanding of their profession.

### **Discussion And Conclusion**

Learning from feedback occurs within specialty-specific learning ecologies, where clinical work shapes what students do, with whom, and how feedback is delivered. “On the fly” written commentary introduces a non-naturalistic practice into these ecologies.

### **Take Home Messages**

Written commentary may best be reserved for rotation’s end; prompting preceptors’ reflection on students’ performance within the learning ecology may improve its value.

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## Oral Session 4D4 (0729)

**Date of presentation:** Saturday 27th August

**Time of session:** 15:15 - 15:30

**Location of presentation:** Rhone 3B

### Rethinking how feedback from workplace-based assessments can stimulate extension and growth for learners

Helen Wozniak<sup>1</sup>, Christy Noble<sup>1</sup>, Rachel Claydon<sup>1</sup>, Megan Steele<sup>1</sup>, Samuel Monk<sup>1</sup>

<sup>1</sup> *Academy for Medical Education, The University of Queensland, Brisbane, Australia*

#### Background

Effective feedback is essential for student learning across the medical training continuum as it maximises the development of evaluative judgement and achievement of clinical capabilities. Feedback captured during opportunistic observed workplace-based assessments (WBAs) such as mini-CEX and DOPS provides useful insights for students about their current stage of development. What is less well understood is how students, informed by their evaluative judgement, plan to act on this feedback in subsequent WBAs.

#### Summary Of Work

Using an electronic WBA platform Year 3 and 4 medical students at The University of Queensland record feedback received from their supervisors and, in response to this feedback, their action plan. Drawing from frameworks previously described by Boud and Molloy (2013) and Derham (2021) we developed a coding taxonomy to characterise: 1) supervisors' feedback and 2) students' action plans, according to their level of detail (specific or vague), quality of information (instructional and actionable) and extent of planned change, to inform the following research questions:

- Does actionable feedback provide a stimulus for learners to extend their capabilities?
- Do students who receive actionable feedback have higher engagement with WBAs?
- Does assessor position influence the quality of the feedback?

#### Summary Of Results

During semester 1 in 2021, 15166 records were collected from a total of 893 students, including the position of the supervisor (e.g. intern, consultant, allied health practitioner). Using the taxonomic analysis and other WBA data (number and timing of completion) we will explore the relationships between the feedback and learner action planning and their overall engagement in completing WBAs. We will draw out insights about the relationship between the nature of feedback received and the planned actions suggested by learners in subsequent clinical tasks.



### **Discussion And Conclusion**

The discussion of results will unfold to consider how we can design WBAs to promote feedback dialogue that goes beyond an evaluation of the immediate observed experience to proactively build and extend students' clinical capabilities for their next WBA.

### **Take Home Messages**

The audience will be encouraged to reimagine the WBA feedback action planning cycle between students and supervisors in the clinical setting.

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## Oral Session 4D5 (0566)

**Date of presentation:** Saturday 27th August

**Time of session:** 15:30 - 15:45

**Location of presentation:** Rhone 3B

### **Knowing me, knowing you – How do supervisors experience the delivery of multisource feedback data?**

Eva K. Hennel<sup>1</sup>, Rafael Stoffel<sup>1</sup>, Andrea C. Lörwald<sup>1</sup>, Sören Huwendiek<sup>1</sup>

<sup>1</sup> *University of Bern, Institute for Medical Education, Department for Assessment and Evaluation, Bern, Switzerland*

#### **Background**

Multisource feedback (MSF) in residency training consists of written feedback from co-workers, which often is summed up in a feedback conversation by a supervisor. While the residents' situation is similar to other feedback conversations, the supervisors are challenged in a different way; they do not deliver their own feedback but the sum of feedback by others. Same time, they are supposed to create the space for a dialogue. There still is a gap in the literature on how to fulfil this task when delivering MSF data. We investigated the research question: How do supervisors experience their task in the MSF process and what do they need to deliver the feedback in a meaningful way?

#### **Summary Of Work**

We conducted a constructivist qualitative study following a hermeneutic (interpretive) phenomenological approach. We interviewed MSF supervisors from two settings, which contrasted regarding the supervisor's role. They were either clinical supervisors or MSF guides not related to the training. We then conducted a reflexive thematic analysis of the data and discussed the themes against models on psychological safety, feedback conversations, and faculty development.

#### **Summary Of Results**

The supervisor's role and the task of delivering the feedback is described quite differently: clinical supervisors interpreted the data, while MSF guides delivered the data in a neutral way without commenting on its content. At both settings, they aimed at creating a safe space to support the acceptance and use of the feedback. They made similar experiences: They would e.g. advise to prepare the conversation thoroughly, explain how to support the active participation of the resident, motivate the resident, and recommend to share their communication strategies with peers. They need advanced communicative skills and profit e.g. from a clear presentation of the MSF data.



### **Discussion And Conclusion**

This study addressed a relevant gap in the literature on multisource feedback. The study bases on two settings representing two different approaches to MSF conversations. The resulting recommendations on the supervisor's role and task will be transferable to various settings.

### **Take Home Messages**

Our results might orient future supervisors in MSF on their role and task and also inform organisers of MSF how to best equip supervisors.

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## Workshop 4E (0070)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Rhone 4

### **Programmatic Assessment of Clinical Reasoning: Moving the Needle from Current State Towards the Ideal**

Michelle Daniel <sup>1</sup>, Temple Ratcliffe<sup>2</sup>, Dario Torre<sup>3</sup>, Eric Holmboe<sup>4</sup>, Stuart Lubarsky<sup>5</sup>, Larry Gruppen<sup>6</sup>, Erik Driessen<sup>7</sup>, Steven Durning <sup>8</sup>

<sup>1</sup> University of California, San Diego, La Jolla, California , USA <sup>2</sup> University of Texas Health San Antonio Long School of Medicine, San Antonio, Texas, USA <sup>3</sup> University of Central Florida College of Medicine , Orlando, Florida, USA <sup>4</sup> Accreditation Council for Graduate Medical Education, Chicago, Illinois, USA <sup>5</sup> McGill University, Quebec, Canada <sup>6</sup> University of Michigan Medical School , Ann Arbor, Michigan , USA <sup>7</sup> Maastricht University , Maastricht , The Netherlands <sup>8</sup> Uniformed Services University of the Health Sciences , Bethesda, Maryland, USA

#### **Background**

Programmatic assessment (PA) is reshaping the way we think about assessment in a post psychometric, competency-based assessment era. Unlike traditional “module-test” assessment models, where the focus is largely on assessment of learning, programmatic assessment offers a holistic, longitudinal approach to assessment that combines assessment of learning with assessment for learning. PA allows information about learners’ competence to be collected and analyzed continuously. There is a constant reflective dialogue with the learner with the purpose of providing rich feedback. When needed, data may be purposefully combined with additional assessments to maximally inform development, allowing educators to arrive at credible final judgements. The number of assessment data points is typically dependent on the stakes of the decision.

Applying principles of PA can help optimize assessment of any competency and may be particularly important for the complex construct of clinical reasoning. Clinical reasoning is central to physician performance. Clinical reasoning entails conscious and unconscious cognitive operations in which clinicians observe, collect and interpret data to diagnose and treat patients, accounting for their specific circumstances and preferences. A scoping review identified more than 20 different methods to assess clinical reasoning in non-workplace, simulation, and workplace-based settings. The authors concluded that each assessment method had relative strengths and weaknesses, and that thoughtfully designed programs of assessment were needed to ensure clinical reasoning competence.



This workshop will provide participants with a conceptual framework for PA based on three core principles (longitudinality, triangulation and proportionality). Participants will apply these principles to a sample program of clinical reasoning assessment with an aim of “moving the needle” from current state towards an ideal assessment program *of* and *for* learning.

### **Who Should Participate**

Undergraduate medical educators and administrators

### **Structure Of Workshop**

- Introductory didactic (30 minutes).
- An example PA of clinical reasoning (e.g., combination of MCQs, OSCEs, global assessments, mini-CEX, etc.) will be introduced and the audience will engage in a table-top activity aimed at improving the example (45 minutes).
- Report out (15 minutes)

### **Intended Outcomes**

- Outline the core principles of PA
- Apply the principles of PA to improve an example of a clinical reasoning assessment program
- Recognize and discuss strategies to mitigate challenges of PA of clinical reasoning



## Oral - Undergraduate Course Evaluation

### Oral Session 4F1 (0780)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:30 - 14:45

**Location of presentation:** Saint Clair 1

### Characteristics Reported of Internal Medicine Education Study of Pimping

Michael J Matthews<sup>1</sup>, Sam Mcgee<sup>1</sup>, Nicholas W Salupo<sup>1</sup>, Benjamin T. Rose<sup>1</sup>

<sup>1</sup> *Grandview Medical Center, Dayton, OH, USA*

#### Background

'Pimping' is defined as back and forth question and answer interactions between a teacher and a learner(s) in a clinical environment. It is ubiquitous within medical education, However, the literature lacks any observational data characterizing 'pimping' interactions. Previous authors have suggested that benign and malignant 'pimping' are separate entities and should be delineated. The goal of this study is to identify objective measurements of 'pimping' that are associated with psychological distress within the learner.

#### Summary Of Work

47 participants including medical students, residents, and faculty consented to the study. Senior residents observed 'pimping' interactions and answered an 11-question survey for each interaction. The contents of the survey were blinded from all participants except the primary investigator and observers.

#### Summary Of Results

171 'pimping' interactions were observed. Based on Bloom's taxonomy, level 1 questions were asked most often (42.1%). A majority of interactions occurred in the classroom setting (52.6%). Junior residents (PGY-1) were questioned most often (28.9%), followed by students (20.8%). Out of 10 characteristics assessed, bedside environment was the most commonly identified characteristic (50% of all responses) as causing the most psychological distress across all learners. PGY-1 learners were more likely to find a question asked by an attending physician to be the most distressful characteristic compared to PGY-3 learners (37.5% and 16.6%, respectively).

#### Discussion And Conclusion

This pilot study examines several objective characteristics associated with 'pimping' interactions. Low complexity questions aimed at learners with lesser training in the classroom setting are the most



common 'pimping' interactions occurring in an Internal Medicine residency program. 'Pimping' may serve as an assessment of knowledge deficits and therefore, most readily directed towards learners who have less training. Additionally, questions are most often asked in the classroom which is familiar to all learners and therefore, may provide additional psychological safety.

### **Take Home Messages**

This data indicates that 'pimping' interactions that occur at bedside most commonly cause a negative emotional response which may influence a learner's ability to learn and grow. Furthermore, 'pimping' interactions change as a learner advances through the hierarchy of medical education.

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## Oral Session 4F2 (0162)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:45 - 15:00

**Location of presentation:** Saint Clair 1

### **Medical students' factors for prescription in patient with ST-elevation myocardial infarction: a mixed methods study**

Teeranan Angkananard<sup>1</sup>, Panida Issarasenarak<sup>2</sup>, Pawita Teerawattananon<sup>2</sup>, Maneekarn Kosulawath<sup>2</sup>, Varunrut Samrejphol<sup>2</sup>, Kamolnetr Okanurak<sup>3</sup>

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#### **Background**

There is little evidence to assess confidence and knowledge of medical students for prescribing antiplatelets and fibrinolytic agents in ST-segment elevation myocardial infarction (STEMI). We aimed to explore factors associated with prescribing confidence and competency of final-year medical students in patient with STEMI.

#### **Summary Of Work**

The study was conducted in 175 final-year medical students between November 2020 and April 2021 with a triangular convergent mixed methods approach. An on-line survey using voluntary sampling method and in-depth interview were performed simultaneously, and then integrated data in the final. Data were analyzed using descriptive statistics and paired t-test while survey factors were compared using  $\chi^2$  test or Fisher's exact test. A thematic analysis utilizing an inductive approach was conducted in which the interview data were coded, and analyzed thematically.

#### **Summary Of Results**

Totally 92 validly replied to the questionnaire and 20 responded to interviews. The majority of the students could correctly diagnose STEMI (92.4%), prescribe type of antiplatelets (91.3%), and fibrinolytic agents (80.4%). The mean self-reported confidence score of prescribing antiplatelets was higher than that of prescribing fibrinolytic agents (3.3+1.1 vs. 2.8+1.0,  $p<0.01$ ). The survey factors of their knowledge and experience, confidence in diagnosis STEMI correctly and supervision during prescription. Experience for prescribing fibrinolytic agents was often reported in low-confident group while their knowledge and teaching were recorded in high-confident group, significantly ( $p<0.05$ ).



Four themes were discovered from interviews data: experience, knowledge, provided guideline, mentoring and coaching as influencers of their confidence for prescribing those medications.

### **Discussion And Conclusion**

Our study demonstrated that final-year medical students tended to underestimate their ability of prescribing essential medication in patients with STEMI, particularly for fibrinolytic agents. A case-based approach, provided guideline, mentoring and coaching program would be helpful in prescribing confidence of undergraduate medical students, especially in emergency settings.

### **Take Home Messages**

- The Dunning–Kruger Effect of final-year medical students for prescription, especially in the emergency situations may be unrecognized and affect their performance.
  - Their experience and knowledge, provided guideline, mentoring and coaching were determined as the important factors of self-reported confidence for prescription.
  - A case-based learning, mentoring and coaching should be considered in undergraduate medical education for building their confidence and competence in professional performance.
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## Oral Session 4F3 (0226)

**Date of presentation:** Saturday 27th August

**Time of session:** 15:00 - 15:15

**Location of presentation:** Saint Clair 1

### **The Medical Teachers' Practices and Attitudes Towards Online Teaching During the COVID19 Pandemic**

Tanya Apichatvullop<sup>1</sup>, Chayanis Trakulthong<sup>1</sup>

<sup>1</sup> *Medical Education Center, Kalasin Hospital, Kalasin, Thailand*

#### **Background**

During the COVID19 pandemic, online teaching was recommended for medical classes to keep social distancing among students and teachers. On the other hand, most medical teachers were not familiar with this teaching method. This study aimed to investigate the practices and attitudes of medical teachers towards online teaching during the COVID19 pandemic

#### **Summary Of Work**

An online self-report questionnaire survey was administered to 77 medical teachers of the medical center of Kalasin hospital in the 2020 academic year. Data including age, sex, assigned class, affiliated department, and percentage of online teaching in their subjects were collected. Attitudes towards online teaching were evaluated through 12 questions in rating scale

#### **Summary Of Results**

There were 70 medical teachers who responded to the questionnaires (90.9% response rate). 60% were females, and 60% were older than 35 years old. All teachers used online teaching method. Most teachers (95.7%) taught online for 25-50% of total teaching time. Among 7 teaching methods, lecture was used via online method for more than 75% of the total time. The other 6 teaching methods were used via online method for less than 25%. As for the attitudes towards online teaching, 37.1% were extremely negative, 48.6% were indifferent, only 14.3% of the teachers were positive to online teaching. Significant differences in overall negative attitude scores were found among the teachers who taught online for 25-50% and those with 50-75 % (43.39 vs 37.67, p-value= 0.049).

#### **Discussion And Conclusion**

##### **Discussion**



Most medical teachers practiced online teaching, but they still feel easier with the traditional classroom. This might be from the fact that online teaching had reduced chances for the students to see patients in person and reduction of the students' clinical performances and skills. These may result in the students' inability to meet the requirement of the National Medical Council

### **Conclusion**

Although online teaching is currently practiced by all medical teachers, the method is still undervalued, and thus, fails to provide its maximum benefit.

### **Take Home Messages**

It is necessary to build up a better environment for online teaching in the medical center. For example, providing forums for sharing knowledge and experiences among medical teachers, and support for modern technology and teaching media.

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## Oral Session 4F4 (0357)

**Date of presentation:** Saturday 27th August

**Time of session:** 15:15 - 15:30

**Location of presentation:** Saint Clair 1

### Evaluating the learning environment

Anna Byszewski<sup>1</sup>, Heather Lochnan<sup>1</sup>, Sharon Whiting<sup>1</sup>, Donna Johnston<sup>1</sup>, Timothy J. Wood<sup>1</sup>

<sup>1</sup> *University of Ottawa, Ottawa, Canada*

#### Background

Learning environment (LE) assessment is an accreditation standard for academic institutions in North America.

Professional identity formation (PIF) is a life long process and largely depends on role modeling with clinical interactions.

#### Summary Of Work

The Learning Environment for Professionalism (LEP) survey consists of 11 balanced questions (5 positive, 6 less desirable), rated with 4 point Likert scale.

Trainees can evaluate fellow trainees and teaching faculty in an anonymous manner, not focused on individual.

LEP results have been validated at University of Arkansas.

Aim of this project was to expand to postgraduate programs for more broadly defined data base and to examine longitudinal evolution of LE.

#### Summary Of Results

The sample consisted of 3783 survey responses over 7 years from clinical programs affiliated with University of Ottawa, Canada.



Learning environments were assessed longitudinally using univariate linear regression.

To control for increase in error that occurs with multiple comparisons a p-value  $\leq 0.004$  (i.e.  $p \leq 0.05/11$ ) was considered statistically significant (Norman and Streiner, 2000).

The data were analyzed using R version 4.0.3.

There were several statistically significant but small changes in ranking over time across items.

Frequency of negative professional behaviour observed for residents and attendings significantly decreased (-0.02 to -0.05 per year)  $p < 0.001$  overall on 4/6 negative items.

For 3/7 programs one negative item relating to treating patients unfairly because of their financial status, ethnic background, sexual or religious preferences worsened although did not reach statistical significance (range  $p = 0.005-0.18$ ).

While overall ratings on all 5 positive items were highly satisfactory, no significant improvement was observed for residents and attendings.

### **Discussion And Conclusion**

Results showed that applying LEP longitudinally across a diverse set of training programs is feasible and could provide useful information to program directors and curriculum planners to identify patterns of professionalism that may need attention.

At our institution efforts across the faculty are in place currently to address awareness around EDI (Equity, Diversity and Inclusion).

### **Take Home Messages**

The LEP being an anonymous and balanced tool can be used by programs to celebrate successes and address area where there can be further efforts to provide a safe and rich environment for PIF and to optimize learning.

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## Workshop 4H (0106)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Saint Clair 3A

### **Understanding Academic Audit – An exercise for quality management of educational outcomes in medical schools**

Zayapragassarazan Zayabalaradjane<sup>1</sup>, Kadambari Dharanipragada<sup>1</sup>

<sup>1</sup> *Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Puducherry, India*

#### **Background**

The purpose of an academic audit is to encourage departments or programs to evaluate their “education quality processes” with reference to their curricular objectives. Academic auditing helps medical education stakeholders understand how learning experiences are organized, faculty and administrators approach towards educational decision making, utilization of learning resources by faculty and learners, the dynamics of learning environment and support systems, etc. Though there is enough literature on academic auditing and its educational implications, there is not much practice in teaching hospitals. The main challenge is how to make an educational audit a success. This workshop will introduce the participants to the concept of ‘academic audit’ and its application on a small scale in their respective workplaces.

#### **Who Should Participate**

Health professions education teachers interested in understanding the role of academic auditing in assessing the educational outcomes of any health profession education program.

#### **Structure Of Workshop**

The workshop will be conducted in three sections:

Section-1 will introduce the concept of ‘academic audit’ and its role in assessing the learner outcomes with reference to curricular objectives.

Section-II will be a group activity to identify the elements of an academic audit and how they serve as an index of measurement of educational outcomes. This will be a group activity wherein the participants will work in their respective group to identify the essential elements that are considered indicators for performance assessment.



Section–III is a short interactive presentation on the steps for conducting an academic audit and strategies for interpreting the indicators of performance assessment with concluding remarks.

### **Intended Outcomes**

At the end of the workshop, the participants will be able to :

1. Describe what is an academic audit
2. Identify the key elements for academic audit
3. List the steps for conducting an academic audit
4. Interpret the outcomes of an academic audit
5. Prepare an action plan for conducting an academic audit in their workplace



## Workshop 4I (0649)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Saint Clair 3B

### **Narrowing the Gap of Differential Attainment – Bringing research into practice**

Mumtaz Patel<sup>1</sup>, Jane Mamelok<sup>1</sup>

<sup>1</sup> *Health Education England, Manchester, UK*

#### **Background**

Differential attainment (DA) occurs across many professions and exists in both undergraduate and postgraduate programmes. It is 'spotlighted' in medical education, with literature often focusing upon differential outcomes in areas such as assessment and time to completion of training. Research suggests, DA may be due to a variety of social, economic and cultural factors. There is a need to ensure that any barriers to progression including examinations and assessments are valid, fair, and justifiable to protect patients.

Our research at Health Education England, North-West (HEE-NW) has focused on earlier identification and interventions to better support trainees. Our cross-collaborative research is with key stakeholders including, the General Medical Council (GMC), Royal Colleges, Universities to enable the research to be applied in practice and integrated into policy. We have developed a programmatic cross-specialty approach to address DA with a stepwise targeted set of interventions with novel approaches to support doctors and improve educational outcomes as well as improve recruitment and retention.

We have linked trainee interventions with educator development programmes to improve personalised support for trainees. A Learning Needs Analysis tool is being developed which will provide an effective individualised approach, identifying bespoke trainee needs, which informs personalised interventions to improve outcomes. This work is potentially transferable to other healthcare and training programmes.

#### **Who Should Participate**

All educators, trainees, stakeholders interested to learn about DA



### **Structure Of Workshop**

- Present our cross-collaborative DA research (HEE/GMC/colleges)
  
- Discuss barriers/enablers and approaches to narrow the DA gap
  
- Share areas of good practice which enable earlier identification of trainees requiring support and interventions which improve outcomes
  
- Presentation of case studies and small group work to discuss interventions in different contexts
  
- Present strategic multi-level framework with targeted trainee and trainer interventions providing personalised support for trainees.
  
- Plenary discussion

### **Intended Outcomes**

1. Inform participants of the current DA research and how this can be applied in practice.
  
2. Describe a strategic stepwise approach to address DA at a programmatic, cross-specialty level focused on early identification and interventions providing personalized support for trainees.
  
3. Present formal evaluation of targeted interventions in core training programmes and its impact on educational outcomes and trainee experience.



## Workshop 4K (0521)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Roseraie 2

### **Simulation-based progress testing: Expanding the competency-based assessment toolbox**

Candace Pau<sup>1</sup>, Carla Lupi<sup>1</sup>, Abbas Hyderi<sup>1</sup>

<sup>1</sup> *Kaiser Permanente Bernard J. Tyson School of Medicine, Pasadena, USA*

#### **Background**

In a competency-based approach to medical education, learners benefit from a purposefully designed longitudinal assessment system that provides data regarding their progress toward achieving competency. Progress testing is one way to obtain this information, involving the administration of the same graduation-level examination multiple times throughout a student's training. While this concept is more commonly applied to written examinations, the use of simulation-based progress testing remains relatively novel, particularly in undergraduate medical education. By carefully designing and administering a series of similar, but not identical, objective structured clinical examinations over the course of the developmental trajectory, we are able to generate and compare performance data for a wide range of clinical competencies across administrations. This data can then be used on an individual and cohort level to effect iterative, targeted improvement toward desired learning outcomes.

#### **Who Should Participate**

Educators and administrators with any level of experience in assessment design and implementation, who are currently employing, considering, or interested in competency-based assessment. This workshop is focused on undergraduate medical education but can be applied to more advanced levels.

#### **Structure Of Workshop**

The presenters will walk through the process of developing and implementing a simulation-based progress test at their institution. In small groups, participants will be provided a workbook to practice applying this design process and considering the feasibility of simulation-based progress testing at their own institutions.



10 min – Overview of simulation-based progress testing – theory and benefits

10 min – Small groups: Defining goals and competencies

10 min – Design of simulation-based progress test at Kaiser Permanente School of Medicine

15 min – Small groups: Blueprinting the exam

15 min – Implementation, data analysis and reporting, and evaluation

15 min – Small groups: Logistical challenges and solutions

15 min – Large group discussion and Q&A

### **Intended Outcomes**

1. Describe the benefits of simulation-based progress testing in a competency-based medical education curriculum
2. Outline a process for blueprinting a simulation-based progress test according to desired learner competencies and programmatic assessment needs
3. Identify potential barriers to development or implementation of simulation-based progress testing, as well as strategies for overcoming these challenges



## Meet the Expert Session 4L (0828)

**Date of presentation:** Saturday 27th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Roseraie 3

### Quality of performance assessments

Sandra Kemp<sup>1</sup>, Katharine Boursicot<sup>2</sup>

<sup>1</sup> Curtin Medical School, Bentley, Australia <sup>2</sup> HPAC, Singapore, Singapore

Join Professor Sandra Kemp and Professor Kathy Boursicot in a Meet the Expert session. This is an opportunity for you to ask any questions you have about how to evaluate the quality of your performance assessments such as OSCEs and WBAs. Drawing of their recent work published in "Performance assessment: consensus statement and recommendations from the 2020 Ottawa conference" in Medical Teacher and extensive global experience in quality assurance of assessment, Professor Kemp and Professor Boursicot will be able to talk about your assessment context and how to evaluate the quality of your assessments.



## Online Workshop 2 (0142)

**Date of presentation:** Saturday 27th August

**Time of session:** 15:00 - 16:30

**Location of presentation:** Online Session

### Assessment Strategies in the Medical and Health Humanities

Alan Weber<sup>1</sup>

<sup>1</sup> *Weill Cornell Medicine - Qatar, Doha, Qatar*

#### Background

Universities and academies in Europe have preceded organized medical training by almost a millennium. Drawing on this rich tradition of the liberal arts, the workshop leader has developed medical humanities curricula, research, and programs for 15 years at the medical and premedical levels. The pros and cons of the common grading schemes in the humanities are reviewed for application to humanistic medical training, such as medical sociology, narrative medicine, history and philosophy of medicine, graphic medicine, medical ethics, etc. The workshop provides an overview of humanities grading systems, and their applicability to the medical education context, as well as a resource list for further study and research.

#### Who Should Participate

Health educators

#### Structure Of Workshop

Lecture / discussion with short interactive exercises.

#### Intended Outcomes

Health and Medical educators will learn standard formative, summative, and diagnostic assessment practices in humanities-based learning experiences, including portfolios, criteria-referenced, contract grading, narrative grading, reflective, peer, and norm-referenced grading schemata.



## Symposium 5A (0122)

**Date of presentation:** Saturday 27th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Auditorium Lumiere

### Is the OSCE at a critical crossroads? Time for Extinction, Evolution or Revolution?

Richard Fuller<sup>1</sup>, Peter Yeates<sup>2</sup>, Matthew Homer<sup>3</sup>, Gerry Gormley<sup>4</sup>, Katharine Boursicot<sup>5</sup>

<sup>1</sup> Christie Education, Manchester, UK <sup>2</sup> Keele University, Keele, UK <sup>3</sup> University of Leeds, Leeds, UK <sup>4</sup> Queens University Belfast, Belfast, UK <sup>5</sup> Health Professional Assessment Consultancy, Singapore, Singapore

#### Background

The past two years have seen considerable disruption to education globally, with assessment significantly impacted by the pandemic. In turn, Health Professions Educators have shown considerable creativity in employing new approaches to the assessment of competence. Does this help us reimagine an alternative to high stakes performance assessments of the future?

#### Topic Importance

Health Professions Educators involved in the design, delivery and analysis of OSCEs across the continuum of education have faced major challenges as OSCEs have faced major redesign (impacting on authenticity), seen the rise of the 'virtual' OSCE or grappled with changes to assessment programmes that have seen a move away from highly standardised large-scale OSCEs. What are the challenges in the design, delivery and analysis of newer OSCE formats? Does the move away from large scale testing signal the 'end' of the OSCE?

#### Format and Plans

Five international speakers with considerable OSCE experience will critically comment on the current OSCE landscape, drawing on evidence-based practice and lessons from assessment design, performance art, scoring, metrics and the use of technology to support authentic assessment. Discussion and debate will centre on the future of the OSCE and whether newer perspectives on performance assessment help us change approaches to assessment of healthcare practice, and provide insights into future research questions surrounding the OSCE.



This symposium will encourage contributions not just within the Ottawa conference, but after through the use of Padlet, allowing on going conversation, generation and exchange of ideas and opportunities to share local OSCE innovations with educators globally.

### **Take Home Messages**

Can recent developments within the OSCE and newer perspectives on performance assessment help the next steps in the evolution of large scale, high stakes testing ('OSCE-lution') achieving a better balance of supporting learning whilst testing competence, aligned with authentic clinical practice?



## Symposium 5B (0816)

**Date of presentation:** Saturday 27th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Rhone 2

### **Programmatic Assessment across Cultural Contexts—Theory, Lessons, and Application**

Erik Driessen<sup>1</sup>, Satid Thammasitboon<sup>2</sup>, Atipong Pathanasethpong<sup>3</sup>, Kanyika Chamniprasas<sup>4</sup>, Adam Cohen<sup>2</sup>, Suzanne Schut<sup>1</sup>, Brian John Rissmiller<sup>2</sup>, Moushumi Sur<sup>2</sup>, Supaporn Dissaneevate<sup>4</sup>

<sup>1</sup> *Maastricht University, Maastricht, The Netherlands* <sup>2</sup> *Baylor College of Medicine, Houston, USA* <sup>3</sup> *Khon Kaen University, Khon Kaen, Thailand* <sup>4</sup> *Prince of Songkla University, Songkla, Thailand*

#### **Background**

Programmatic assessment offers a new approach to assessment. It was first introduced in health professions education in 2005. Now 17 years later, many health care education programs have implemented programmatic assessment in their curricula. But implementing programmatic assessment is easier said than done. In this symposium, we will share the lessons learned of implementing programmatic assessment in three regions: Southeast Asia (Thailand), Europe (The Netherlands), and North America (USA). We will discuss with the audience the following questions: What are the lessons learned from the implementation? What lessons can we learn from research? How did the different programs deal with the tension between theory and practice?



## Oral - Assessment in Postgraduate Training

### Oral Session 5C1 (0026)

**Date of presentation:** Saturday 27th August

**Time of session:** 16:30 - 16:45

**Location of presentation:** Rhone 3A

### Differential Attainment at the MRCS: A high-stakes Postgraduate Surgical Examination

Ricky Ellis<sup>1</sup>, Peter A Brennan<sup>2</sup>, Amanda J Lee<sup>3</sup>, Duncan SG Scrimgeour<sup>4</sup>, Jennifer Cleland<sup>5</sup>

<sup>1</sup> *Institute of Applied Health Sciences, University of Aberdeen, Aberdeen, UK* <sup>2</sup> *Department of Maxillo-Facial Surgery, Queen Alexandra Hospital, Portsmouth, UK* <sup>3</sup> *Medical Statistics Team, Institute of Applied Health Sciences University of Aberdeen, Aberdeen, UK* <sup>4</sup> *Department of Colorectal Surgery, Aberdeen Royal Infirmary, Aberdeen, UK* <sup>5</sup> *Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore, Singapore*

#### Background

An independent review on diversity and inclusivity within surgery highlighted concerns that barriers to career progression exist for some groups of individuals and not others. The Membership of the Royal Colleges of Surgery examination (MRCS) is highly valued as a gatekeeper to the surgical profession. Until now differential attainment (DA) at the examination had not been fully investigated. We aimed to characterise the relationship between socio-demographic differences and performance at MRCS.

#### Summary Of Work

All UK MRCS candidates attempting Part A ( $n=5,780$ ) and Part B ( $n=2,600$ ) between 2013-2019 with linked socio-demographic data in the UK Medical Education Database were included in this retrospective cohort study. Chi-squared tests established univariate associations with MRCS performance and multiple logistic regression identified independent predictors of success, adjusted for medical school performance.

#### Summary Of Results

We found statistically significant differences in MRCS pass rates according to gender, ethnicity, age, graduate status, educational background and childhood socioeconomic status (all  $P<0.05$ ). After taking into account prior academic performance, being male (odds ratio [OR] 2.34, 95% Confidence Interval [CI] 1.87 to 2.92) or a non-graduate (OR 1.98, 95% CI 1.44 to 2.74) were predictive of MRCS Part A success and being a non-graduate (OR 1.77, 95% CI 1.15 to 2.71) and having attended a fee-paying school (OR 1.51, 95% CI 1.08 to 2.10) were independent predictors of Part B success. Black



candidates were significantly less likely to pass MRCS Part B at their first attempt (OR 0.41, 95% CI 0.18 to 0.92) as were Asian candidates (OR 0.49, 95% CI 0.35 to 0.69) in comparison to White candidates.

### **Discussion And Conclusion**

These data highlight significant group-level DA at MRCS. Urgent investigation into the fairness of the examination is required, although bias and discrimination have been ruled out as a cause of DA seen in other high-stakes postgraduate examinations used in the UK.<sup>2-</sup> If the examination is found to be fair, then DA at MRCS is likely to represent the accumulation of privilege and disadvantage experienced by individuals throughout their education and training. Those leading surgical education now have a responsibility to identify and address the causes of these attainment differences.

### **Take Home Messages**

We found significant group-level D at MRCS.

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## Oral Session 5C2 (0025)

**Date of presentation:** Saturday 27th August

**Time of session:** 16:45 - 17:00

**Location of presentation:** Rhone 3A

### **Insufficient competencies in CanMeds among residents dismissed from various specialties**

Judith Godschalx-Dekker<sup>1,2</sup>, Frank Gerritse<sup>3</sup>, Jurjen Luykx<sup>4,5,6</sup>

<sup>1</sup> Spaarne Gasthuis, Haarlem, The Netherlands <sup>2</sup> Flevoziekenhuis, Almere, The Netherlands <sup>3</sup> Tergooi Ziekenhuis, Blaricum, The Netherlands <sup>4</sup> GGNet, Warnsveld, The Netherlands <sup>5</sup> UMC Utrecht, Utrecht, The Netherlands <sup>6</sup> Maastricht UMC, Maastricht, The Netherlands

#### **Background**

A small percentage of the trainees are forced to discontinue residency training because of insufficient performance. There is no recent research on the reasons why the training directors terminate training nor on the relevant performance insufficiencies. It is also unknown how the residents underperform and whether their underperformance differs between specialties. We aimed to identify insufficient CanMeds competencies among residents dismissed from training in the Netherlands.

#### **Summary Of Work**

Structured analysis of case law of Dutch residents dismissed from training between 2011 and 2020.

#### **Summary Of Results**

We found 116 cases of trainees who were forced to discontinue training. Most trainees performed insufficiently on more than one CanMed (90%; mean number of insufficient competencies 3,42). The competencies that were considered insufficient in most cases were medical expert, communicator and professional. Less frequently, insufficiencies were reported in the competencies of manager 56%, collaborator, scholar, or health advocate. In specialties whose task is primarily diagnostic, the most frequently reported insufficiency was in the competence of scholar. The medical expert competence was insufficient in 100% of the surgery cases, while manager and collaborator competencies were more frequently insufficient in psychiatry, internal medicine, and family medicine.

#### **Discussion And Conclusion**

When Dutch program directors terminated residency, this was frequently due to insufficient competencies in multiple CanMeds roles. The relevance of each CanMeds role to resident dismissal



differed per role. In terms of training suitability, there are specialty-specific differences between how important some CanMeds roles are.

### **Take Home Messages**

- The most common reasons for dismissing residents are insufficient performance on the competencies of medical expert, communicator, or professional.
  - Most dismissed residents performed insufficiently on several competencies.
  - In surgery and specialties with a primarily diagnostic task, dismissal of residents is more often due to deficiencies in hard skills (e.g. medical expertise and knowledge), while in psychiatry, family medicine and internal medicine, dismissal is more often due to deficiencies in soft skills (communication and collaboration).
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## Oral Session 5C3 (0256)

**Date of presentation:** Saturday 27th August

**Time of session:** 17:00 - 17:15

**Location of presentation:** Rhone 3A

### Enhancing Predictive Analytics of ACGME Milestones through Machine Learning

Kenji Yamazaki<sup>1</sup>, Stanley Hamstra<sup>2</sup>, Sean Hogan<sup>1</sup>, Eric Holmboe<sup>1</sup>

<sup>1</sup> Accreditation Council for Graduate Medical Education, Chicago, USA <sup>2</sup> University of Toronto, Toronto, Canada

#### Background

Since 2013, residency programs have reported Milestone ratings to the Accreditation Council for Graduate Medical Education (ACGME) as part of a feedback and improvement system. This accumulation of data has enabled the ACGME to provide predictive analytics since 2019 back to program directors to help identify and support struggling residents. Predictive probability values (PPVs) are estimates of the probability that residents would fail to achieve recommended graduation targets. Until now, the applicability of these national-level analytics to individual programs and residents has not been tested explicitly. In this study, we used program-specific information and a novel machine learning (ML) algorithm to predict whether residents would reach graduation targets at the program level for each individual resident.

#### Summary Of Work

We used data for the seven medical knowledge (MK) subcompetencies of obstetrics and gynecology from 2016-19 (n=5138 residents; n=267 programs). The residents of interest were those who were rated below a recommended milestone target at time of graduation for any subcompetency (range 32.6-38.9% across all cohorts). Predictors included the average of seven MK ratings measured 1.5 years before graduation and dummy-coded program identifiers. The 2016-18 cohorts were used for training 300 different ML models and the 2019 cohort was used for testing the optimal model's ability to predict graduation outcomes. All models were evaluated for sensitivity in detecting residents at risk, and PPV for predicting outcomes.

#### Summary Of Results

The support vector ML algorithm for group classification including dummy-program identifiers was derived as the optimal model, yielding 0.73 and 0.50 for sensitivity and PPV, respectively, whereas the same model excluding program-dummy variables resulted in 0.61 and 0.38.



### **Discussion And Conclusion**

The results suggest that an ML model can predict resident's future outcomes with sensitivity greater than 70% and positive prediction rate of 50%, and supportive of using the ML algorithm for formative purposes. Including program identifiers allows for prediction estimates that better reflect program-specific attributes.

### **Take Home Messages**

This novel ML approach can integrate program-specific variables into forecasting resident's outcomes for formative purposes to support resident's professional development, which may be more useful than national-level predictive analytics for individual program directors.

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## Oral Session 5C4 (0417)

**Date of presentation:** Saturday 27th August

**Time of session:** 17:15 - 17:30

**Location of presentation:** Rhone 3A

### **The Development of a National, Standardised Remediation Programme for Intern Doctors in Ireland.**

Oisín Friel<sup>1</sup>, Gerard Curley<sup>1</sup>, Gozie Offiah<sup>1</sup>

<sup>1</sup> *Royal College of Surgeons in Ireland, St Stephens Green, Ireland*

#### **Background**

Internship is a formative period for junior doctors commencing their careers as working professionals, but one which can pose numerous challenges. While many individuals cope well with such challenges, a small minority require periods of enhanced supervision and training as part of a formal remediation programme. Such programmes are resource-intensive for trainers and can have negative impacts on the confidence and mental wellbeing of interns. It is therefore imperative that a well-structured and supported remediation programme, founded on research and evidence-based practice, exists in Ireland to ensure optimal outcomes for those engaging with it.

#### **Summary Of Work**

This project was completed over a twelve-month period, during which time the authors completed a literature review of current practice regarding remediation of junior doctors, while also interviewing colleagues and educators in Ireland, the United Kingdom and Australia to best understand current practice around remediation in the clinical setting. A remediation policy was then developed following input from the Irish Medical Council, Medical Intern Unit and Intern Network Executive, thus ensuring the creation of a holistic and comprehensive remediation protocol founded on evidence-based best practice.

#### **Summary Of Results**

This project resulted in the development of a national, standardised policy for the remediation of intern doctors in Ireland, as well as the establishment of a national Intern Remediation Panel, aimed at advising on and supporting such processes. The policy includes the remediation protocol, along with an accompanying educational logbook, training plans, support services and feedback mechanisms for supervisors.



### **Discussion And Conclusion**

This project incorporated the collective experience of clinicians and educators from Ireland and abroad to devise a national, evidence-based policy for the remediation of post-graduate intern doctors. Such individuals are vulnerable and require a resource-intensive, holistic management strategy, with input from supervisors, lecturers and occupational medicine, to name but a few. The development of a standardised programme also supports supervisors, who can be placed in challenging situations should an intern fail to meet the criteria for sign-off at the end of the remediation period.

### **Take Home Messages**

The adoption of a collaborative approach is paramount in devising effective programmes that offer support to both trainers and trainees.

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## Oral Session 5C5 (0503)

**Date of presentation:** Saturday 27th August

**Time of session:** 17:30 - 17:45

**Location of presentation:** Rhone 3A

### **The use of Skills Passports/Mini-Credentials for Assessment and Workforce Planning.**

Chris Peat<sup>1</sup>, Thomas Kearns<sup>2</sup>

<sup>1</sup> *Chair of Axia Digital Ltd, Leeds, UK* <sup>2</sup> *Faculty of Nursing and Midwifery, RCSI, Dublin, Ireland*

#### **Background**

The use of Skills Passports/Mini Credentials by individuals to demonstrate the additional skills and knowledge they have, and for organisations to allocate staff to appropriate duties is increasing. The utility of Skills Passports was powerfully demonstrated during the pandemic. This presentation will describe how a digital Critical Care Skills Passports was used to respond to the challenges faced by ICUs in London. .

#### **Summary Of Work**

During the first wave of the Covid-19 pandemic patient safety was challenged by surge staffing models requiring critical care nurses to care for additional patients and absorb redeployed staff into their workforce. At an organisational level there was a lack of visibility or assurance of competencies which made it difficult to assign redeployed staff to appropriate duties. The London Transformation and Learning Collaborative (LTLC) through extensive consultation with Critical Care colleagues developed a passport that identified the core domains and competencies required to work in a Critical Care setting. It was quickly identified that a digital version of the passport was required, because it had to be accessible in an infection control limited situation, be portable and readily accessible in a variety of environments. E-assessment company Axia Digital delivered a digital version within a fortnight and because it was easy to use, this digital passport was rapidly adopted.

The passport enabled staff to capture the skills and experience they had on arrival at an ICU, easily access relevant learning materials, provided by elearning for Health (e-LfH) to increase their knowledge and then develop new skills and have these signed off. It increased the speed by which staff developed the competencies required to deliver essential elements of care to critically unwell patients.



### **Summary Of Results**

The Critical Care passport received numerous endorsements from key Critical Care professional bodies and has been rolled out across the UK. Other passports are being developed in Paediatric Critical Care and Wound Care,

### **Discussion And Conclusion**

The creation and use of Skills Passports and Mini Credentials is a key topic for all health jurisdictions. This powerful case study will act a powerful catalyst for discussion.

### **Take Home Messages**

Skills Passports are a significant development for the re-imagining of practice based assessment.

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## Oral - Students as Partners in Assessment

### Oral Session 5D1 (0465)

**Date of presentation:** Saturday 27th August

**Time of session:** 16:30 - 16:45

**Location of presentation:** Rhone 3B

### Peer review in Team-based learning: influencing feedback literacy

Annette Burgess<sup>1</sup>, Christopher Roberts<sup>2</sup>, Stuart Lane<sup>3</sup>, Inam Haq<sup>4</sup>, Tyler Clark<sup>2</sup>, Eszter Kalman<sup>4</sup>, Nicole Pappalardo<sup>4</sup>, Jane Bleasel<sup>2</sup>

<sup>1</sup> University of Sydney, Faculty of Medicine and Health, Sydney Medical School, Sydney, Australia <sup>2</sup> The

University of Sydney, Faculty of Medicine and Health, Sydney Medical School, Sydney, Australia <sup>3</sup>

University of Sydney, Faculty of Medicine and Health, Sydney Medical School, Sydney, Australia <sup>4</sup>

University of Sydney, Faculty of Medicine and Health, Sydney, Australia

#### Background

It is widely acknowledged that a peer review process in Team-based learning (TBL) that engages students is needed to promote reflection on individual behaviours; provide opportunities to develop professional skills; and prevent 'free riders' who fail to contribute effectively to team discussions. In 2019, TBL sessions in the Year 2 Sydney Medical Program occurred weekly (duration 2.5 hrs). Classes consisted of 60 students, with 5 or 6 students per team. Students (n=255) were required to complete peer review twice during the year. This study sought to: 1) Assess students' ability to provide written feedback to their peers and 2) Explore students' perception of the peer review process, using the conceptual framework of Biggs '3P model'.

**Summary Of Work** The peer review process assessed their own professional learning behaviours, and rate all fellow team members

using a Likert scale of 1-5 on a list of criteria, including preparedness, punctuality, team contributions, respectful behaviour, collaboration, communication.

2. Provide constructive written feedback to two team members

The quality of written feedback in the first (n=695 comments) and second (n=827 comments) task, was rated across four domains: 1) *Behaviours* (what was done well), 2) *Gap* (what was not), 3) *Action* (what can be improved), 4) *Responsiveness* (professional and specific). An instrument to gauge quality of feedback was developed using a rating scale of 1 to 3 for each of the four domains. Instances of unprofessional feedback were also recorded. Three focus groups were held with



students (n=21). Framework analysis, adapting Biggs' (2003) 3P model was used as a conceptual framework.

### **Summary Of Results**

Students scored reasonably high in both the 'Behaviour' and 'Responsiveness' domains, but very low in both 'Gap' and 'Action'. Their ability did not improve over time. The quality of feedback was influenced by the perceived task difficulty; social discomfort; and sense of responsibility in providing written feedback.

### **Discussion And Conclusion**

To increase student engagement, we require a transparent process that incorporates verbal feedback and team discussion, with monitoring of outcomes by faculty and adequate student training.

### **Take Home Messages**

Although peer review within TBL remains a difficult task, a well-developed process is needed.

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## Oral Session 5D2 (0660)

**Date of presentation:** Saturday 27th August

**Time of session:** 16:45 - 17:00

**Location of presentation:** Rhone 3B

### **Synthesising cohort feedback on reflective essays from qualitative peer-feedback using artificial intelligence**

Russell Hearn<sup>1</sup>, Dominic Main<sup>1</sup>, Johannes Driessen<sup>1</sup>

<sup>1</sup> *King's College London, London, UK*

#### **Background**

As part of a medical education Doctor as Teacher module, third year medical students write a 2,500-word reflective essay on their experience of teaching. They subsequently mark four of their peers' essays and produce both a quantitative mark and up to 150 words of qualitative feedback. It is often useful for learners to get cohort feedback on assessment activities to improve subsequent work. Cohort feedback is also useful for subsequent cohorts in understanding common strengths and pitfalls in undertaking the same assessment.

We explored questions: Can open-source artificial intelligence platforms use machine learning to produce relevant and useful cohort feedback based upon a large data set?

#### **Summary Of Work**

Anonymous free text feedback on essays (n=1600) collected from ~400 student essays totalling up to 240,000 words was analysed. Students consented for their responses to be used for educational research. Data was collated and labelled for each source essay, allowing subset analysis by individual essay. Data was screened for personally identifiable information and removed where necessary. Parameters will be established and programmed on the Google.ai platform. The resultant cohort feedback generated as AI output was analysed compared to cohort feedback synthesised by faculty experts.

#### **Summary Of Results**

Artificial intelligence is adept at summarising themes from large data sets. Triangulating feedback on multiple essays of the same source improved the feedback, in essence treating one set of feedback on one essay as a single data. Example cohort feedback will be presented along with a process map for producing this in a simple way.



### **Discussion And Conclusion**

Faculty examiners felt the artificial intelligence produced summary aligned well with their perceptions. Using artificial intelligence systems to automate cohort feedback can be done in a time effective way providing greater insight for students on how they performed alongside their peers. Consideration must be given to the management of data and potentially identifiable information which could be processed.

### **Take Home Messages**

- The protocol from this study will be shared to allow ongoing use or evolution by other educationalists.
  - Once formatted, processing of data is relatively simple and can be tweaked to produce accurate cohort feedback.
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## Oral Session 5D3 (0768)

**Date of presentation:** Saturday 27th August

**Time of session:** 17:00 - 17:15

**Location of presentation:** Rhone 3B

### Students and Educators as Partners in Education for Sustainable Healthcare

SanYuMay Tun<sup>1</sup>, Julia Simons<sup>2</sup>, Francesca Siracusa<sup>3</sup>

<sup>1</sup> *University of Oxford Medical School, Oxford, UK* <sup>2</sup> *University of Cambridge, Cambridge, UK* <sup>3</sup> *Imperial College London, London, UK*

#### Background

Sustainable healthcare must be understood within the context of planetary health - the health of human civilisation and the state of the natural systems on which it depends. Currently we are surpassing “planetary boundaries” and climate change is now recognized as the “biggest global health threat of the 21st century”. Yet, the co-benefits of climate action also present the greatest opportunities: improved health outcomes, economic gains, and planetary health for generations to come.

We propose that students can develop an understanding of health beyond the biomedical model through bidirectional learning. Modalities of assessment should therefore go beyond addressing only the attained level of knowledge. We present suggestions from students themselves for more visionary ways of assessing education for sustainable healthcare.

#### Summary Of Work

##### Our objectives

1. To explore, from the perspective of medical students, how education in sustainable healthcare and planetary health can lead to improved health outcomes
2. To propose the bidirectional learning model as a suitable method for embedding, at pace, the teaching of sustainable healthcare
3. To suggest assessment modalities that may encourage change in clinical practice and healthcare delivery on an individual and systemic level

#### Summary Of Results

##### Modalities of Assessment for Sustainable Healthcare Teaching



We advocate for a discursive approach to assessing students' understanding of planetary health and the need for the implementation of sustainable healthcare systems:

**Oral assessments:**

- Discussion between medical educators and students
- Summative structured oral exam in final year exams

**Written assessments:**

- Pre-clinical years: integration into foundations of clinical practice
- Clinical years: specialty choice placement and assessment

**Formative assessments:**

- Assessment of participation/discussion in relevant tutorials
- Sustainable quality improvement project

**Discussion And Conclusion**

A paradigmatic shift towards planetary health that prioritises the provision of sustainable healthcare can be facilitated by the implementation of a bidirectional learning model and of modalities of assessment that embrace change in both perspective and clinical practice. This can foster long term benefits of both planetary and human health: shifting the focus from individual treatment to systems for healthier lives.

**Take Home Messages**

We support a bidirectional learning model and discursive approach to assessment that engages both students and educators in order to address the need for sustainable healthcare education in the medical curriculum.

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## Oral Session 5D4 (0244)

**Date of presentation:** Saturday 27th August

**Time of session:** 17:15 - 17:30

**Location of presentation:** Rhone 3B

### Evaluation of curriculum by students: How do students' perspectives help in curriculum planning?

Sakarn Charoensakulchai<sup>1</sup>, Anupong Kantiwong<sup>1</sup>

<sup>1</sup> *Phramongkutklao College of Medicine, Bangkok, Thailand*

#### Background

A curriculum is defined as a planned education experience. Curriculum planning is an important part of medical education. It should change in accord to the updating knowledge and needs of stakeholders including instructors, learners, patients and medical practitioners. Thus, to achieve successful planning, student engagements are important. This study aimed to evaluate curriculum in students' perspectives for continually improving educational experiences.

#### Summary Of Work

A mixed-method cross-sectional study was designed. Ninety-five sixth year medical students at Phramongkutklao College of Medicine enrolled. The questionnaire included 2 parts; three 5-Likert rating scales on perspectives of pre-medical(PM), pre-clinical(PC) and clinical(C) courses and commentaries for courses improvement. One-Way ANOVA was used to compare perspectives between three courses with significant value at  $p \leq 0.05$ .

#### Summary Of Results

Mean scores of PM, PC and C were 3.70, 3.83 and 4.10 respectively. There were significant differences of perspectives between three courses ( $p = 0.04$ ), clinical and pre-medical courses (Mean difference = 0.41,  $p = 0.001$ ) and clinical and pre-clinical courses (Mean difference = 0.27,  $p = 0.001$ ). In pre-medical course, median of question 1 (Knowledge application from pre-medical sciences to pre-clinical sciences) was 3 which was lower than other questions. Students commented that subjects taught in pre-medical course (general chemistry, physics and calculus) were unrelated to basic medical sciences. There were also lack of practicing in humanity, social sciences and soft skills. The median was homogeneously 4 for pre-clinical course. For clinical course, the median was 4 except for question 5 (Attending operation theater) which was 3. Students commented that attending operations were time-wasting, as the surgical operation skills are not required for general practitioners (GP) and attending surgeon staffs are too busy with operation to communicate with students.



### **Discussion And Conclusion**

Students preferred curriculum of clinical course than pre-medical and pre-clinical courses. Subjects of pre-medical courses should be changed to apply for basic medical sciences and social sciences. Teachings in operation theater could be reduced and focus more on GP requirements for medical students.

### **Take Home Messages**

Students' engagements are important for curriculum planning to achieve best teaching methods for learners.

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## Oral Session 5D5 (0425)

**Date of presentation:** Saturday 27th August

**Time of session:** 17:30 - 17:45

**Location of presentation:** Rhone 3B

### Building better periodic reviews using Design Thinking

Keith Wilson<sup>1</sup>

<sup>1</sup> *Dalhousie University, Halifax, Canada*

#### Background

Postgraduate training requirements have become increasingly complex necessitating change in assessment methods. In an era of competency-based medical education, it is imperative that learners have a path to follow as part of their incremental skill development. As a result, periodic review is used to help guide postgraduate trainees in their learning trajectory. Traditional methods of review often prescribe a learning plan - from the learning program to the learner. Co-generated learning plans have far greater potential to effect change, utilizing numerous data sources to shape these plans. However, integrating learners more explicitly in the process involves numerous shifts in learning systems and attitudes towards traditional and newer approaches to assessment.

#### Summary Of Work

The Dalhousie University Family Medicine programme undertook major revisions to its periodic review process. Utilizing a framework of Design Thinking, stakeholders came together to create the revised assessment tools. A workshop using Design Thinking principles was conducted and guided participants through five stages: empathize, define, ideate, prototype and test. It aimed to challenge participants to discover alternate approaches to a particular assessment problem.

#### Summary Of Results

In exploring the assumptions and needs of our end-users by using Design Thinking, we were able to build better periodic review tools. It fostered greater collaboration by focusing on human values and deferring judgment. The output of the workshop was the foundation for the new review tools which were subsequently iteratively refined. The developed tools moved from traditional 'tick boxes' to improved guided self-reflection.

#### Discussion And Conclusion

Where Design Thinking is grounded in the users' experience and needs, greater buy-in to the final product is achieved. It is a catalyst to ensure that all voices are heard and that numerous alternative approaches to an assessment problem are creatively explored. Our revised periodic review tool is



now used at all of our distributed sites and has resulted in more actionable co-created learning plans.

### **Take Home Messages**

The Design Thinking framework can be used to create new or refine existing assessment tools used in health professions education. Broad stakeholder involvement in all steps is key to successful integration of ideas and improving buy-in of the final product.

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## Workshop 5E (0333)

**Date of presentation:** Saturday 27th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Rhone 4

### Planning for Workplace-based Assessment Mobile Technologies (WBA-MT)

Machelle Linsenmeyer<sup>1</sup>, Jordan Bohnen<sup>2</sup>, Jan Breckwoldt<sup>3</sup>, Olle ten Cate<sup>4</sup>, Adi Marty<sup>5</sup>, John Young<sup>6</sup>

<sup>1</sup> West Virginia School of Osteopathic Medicine, Lewisburg, USA <sup>2</sup> Beth Israel Deaconess Medical Center, Boston, USA <sup>3</sup> University of Zurich, Institute of Anesthesiology, Zurich, Switzerland <sup>4</sup> University Medical Center Utrecht, Utrecht, The Netherlands <sup>5</sup> Institute of Anesthesiology, University Hospital Zurich, Zurich, Switzerland <sup>6</sup> Donald and Barbara School of Medicine at Hofstra/Northwell, Hempstead, USA

#### Background

A program of assessment calls for efficient data collection in the workplace. WBA-MTs offer promise in advancing competency-based assessment by facilitating the efficient capture, aggregation, and visualization of performance data. Several scoping reviews have identified common barriers, key design features, and possible implementation strategies of WBATs. (Weller et al, 2021; Anderson et al, 2021; Young et al, 2020) Building on these, this workshop will provide a practical framework to guide educators through the process of selecting and implementing WBA-MTs. The presenters of this workshop have expertise in implementing complex systems of assessment using mobile technology both nationally and internationally. The speakers will share their experiences and help attendees explore important considerations in the planning process. Attendees will receive several frameworks, guides, and worksheets to help them work through the planning process at their home institutions.

#### Who Should Participate

Educators and educational administrative leaders interested in EPAs, competency-based medical education and workplace-based assessment.

#### Structure Of Workshop

- Introductions- 5 min
- Facilitated discussion about participants' experiences in planning WBA-MTs- 10 min
- Introduction to the system of assessment and guiding questions for planning- 5 min
- Small group activity outlining a plan using guiding questions- Each group will focus on a different set of questions- 15 min
- Summaries will be reported to the larger group- 20 minutes



- Four examples will be given illustrating various planning processes, contexts, challenges, and designs, again, tying to the guiding questions- 32 minutes
- Wrap-up- Each participant will be invited to identify 1 action they will take to perfect a plan at their home institution- 3 min

#### **Intended Outcomes**

1. Use guiding questions in planning and implementing workplace-based assessment/EPA assessments using mobile technologies
2. Evaluate systems of assessment and varying decision-making processes.
3. Use scenarios to work through guiding questions in the development of an institutional plan identifying barriers
4. Discuss four examples of planning processes and design from national and international initiatives



## Workshop 5H (0482)

**Date of presentation:** Saturday 27th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Saint Clair 3A

### Consensus methods: an interactive workshop

Julie Browne<sup>1</sup>, Alison Bullock<sup>2</sup>, John Jenkins<sup>3</sup>, Derek Gallen<sup>4</sup>

<sup>1</sup> Cardiff University School of Medicine, CARDIFF, UK <sup>2</sup> CUREMeDE, Cardiff University, CARDIFF, UK <sup>3</sup> RCSI University of Medicine and Health Sciences, Dublin, Ireland <sup>4</sup> Medics Academy, London, UK

#### Background

Consensus methods are increasingly used to address complex problems in health and social care education because they offer rigorous and quantifiable information about how far and in what ways a sample group of 'experts' (e.g. educators, learners, patients/public or other stakeholders) agrees on a given topic where there are multiple possible responses. Used effectively, consensus methods, such as the nominal group technique or the Delphi method, provide equitable and inclusive platforms for a wide range of opinion to be expressed and considered. This is an interactive workshop for those wishing to explore the potential of consensus methods.

#### Who Should Participate

The workshop is for anyone interested in using consensus methods as an aid to complex decision-making: examples of such problems might include quality improvement, guideline development, identification of learning needs, resource allocation and curriculum design.

#### Structure Of Workshop

In the first part of the session, we will describe the use of consensus methods and detail how nominal group technique is used. For the main part of the session participants will be actively involved in a nominal group. The group will discuss and generate ideas about the specific skills of interprofessional educators, actively observing how the technique gradually builds in stages towards a group consensus. Group members will engage in structured discussion and voting and there will be opportunity for general discussion. The session will conclude with a presentation on the benefits and challenges of using consensus methods.



### **Intended Outcomes**

After this workshop attendees will be able to

1. Describe, assess and compare consensus methods in education research, identifying the benefits and challenges they offer researchers
2. Outline the key practical steps in undertaking consensus processes and analysing resultant data
3. Discuss how a rigorous, inclusive and complete consensus around key interprofessional educator attributes may be developed using consensus methods.



## Workshop 5I (0041)

**Date of presentation:** Saturday 27th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Saint Clair 3B

### Assessing “the Competence” in Competency Based Health Professions Education

Claudio Violato<sup>1</sup>, Efrem Violato<sup>2</sup>

<sup>1</sup> University of Minnesota Medical School, Minneapolis, USA <sup>2</sup> University of Alberta, Edmonton, AB, Canada

#### Background

Competency-based health professions education has become widespread in recent years emphasizing that health professions graduates attain a pre-determined level of competence<sup>1</sup>. Competence is a complex, multidimensional construct commonly based on three primary components: knowledge, skills and attitudes. Entrustable professional activities are clinical actions that requires the use and integration of several competencies and milestones critical to safe and effective clinical performance. To assess the competence of clinicians requires complex and comprehensive assessments. Entrustment supervision scales assess the level of supervision a trainee needs to complete a task<sup>2</sup>. These scales with construct validity, involve direct observation of procedural skills (DOPS), and are easier for raters to use and understand with reduced training required<sup>2</sup>. They can also reduce bias in assessment as psychometric analyses can be conducted to enhance validity<sup>3</sup>. In this interactive workshop, with real world examples of competency assessments including direct observation to develop a program of assessment for their own health professions program.

#### References:

1. Violato C. *Assessing competence in medicine and other health professions*. Taylor & Francis, CRC Press: New York, 2019.
2. ten Cate O, Schwartz A, Chen HC. Assessing trainees and making entrustment decisions: On the nature and use of entrustment-supervision scales. *Academic Medicine*. 2020;95(11):1662-1669. doi:10.1097/ACM.0000000000003427
3. Violato C, Cullen M, Englander R, et al. Validity evidence for assessing entrustable professional activities during undergraduate medical education. *Academic Medicine*. 2021;96:S70–S75. doi:10.1097/ACM.0000000000004090



### Who Should Participate

Health professions educators responsible for assessment of learners in the clinical workplace

### Structure Of Workshop

1. Pre workshop assessment: Quiz (5 min)
2. Full group didactics: Fundamentals of Assessment (20 min)
3. Activity: Video activity DOPS scale rating of clinical encounters (20 min)
4. Full group didactics: Review existing scales and procedures (15 min)
5. Activity: small group assessment reviews (15 min)
6. Full group didactics: Review, summary and conclusions (10 min)
7. Post workshop assessment: Quiz (5 min)

### Intended Outcomes

Participants will be able to:

- Define and operationalize competence in medicine
- Employ psychometric principles of reliability, validity and feasibility to medical competence assessment
- Apply various methods (e.g., DOPs, checklists, Mini-CEX, EPAs, OSCEs, narrative description, etc.) to medical competence assessment
- Use strategies to mitigate bias in assessment of trainees based on sex, race/ethnicity, SES etc.



## Round Table 5J (0529)

**Date of presentation:** Saturday 27th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Saint Clair 4

### Programmatic Assessment - progress decision making for large cohorts

Anna Ryan<sup>1</sup>, Deborah O'Mara<sup>2</sup>, Mike Tweed<sup>3</sup>

<sup>1</sup> *University of Melbourne, Melbourne, Australia* <sup>2</sup> *The University of Sydney, Sydney, Australia* <sup>3</sup>

*University of Otago, Wellington, New Zealand*

In traditional assessment systems, progress decisions are made using aggregated scores on summative assessments from end of year examinations and/or a program of assessment, sometimes including additional subcomponent “hurdles” (for example, passing the combined cut score for written and clinical assessment components). Disparate assessment data is reduced to simple numerical values meaning that decisions regarding readiness to progress are compromised by the loss and re-categorisation of information. Though widespread in university environments, such decisions are potentially incorrectly, inconsistently, and arbitrarily made.

In systems of programmatic assessment progress decisions are made through triangulation of data from multiple longitudinal assessments involving various assessment formats. In this model, decision making panels are tasked with interpreting, and sometimes even integrating, these data to make defensible judgements on readiness to progress. The panel is required to consider both qualitative and quantitative data and to factor in considerations such as differences in timing of assessment delivery, variation in complexity of cases in the workplace and response of the learner to feedback over time. The work involved in doing this well is significant even with relatively small cohort groups, but the complexity of the task is magnified with larger cohort sizes, involving multiple and diverse health service learning sites, and a multitude of assessors.

This round table discussion invites participants to share their current practice, future plans and lessons learned when attempting to make robust progress decisions for large student cohorts. The session is suitable for those using systems of programmatic assessment (or intending to implement such systems in the near future) with student cohorts of >200 students per year level.

Key issues to be discussed include how much assessment is enough? Is there a point of too much detail for assessors to synthesise? How can the process be sustainable with a large cohort in times of post-pandemic fiscal restraint? What are the key learning points from implementations to-date?



## Workshop 5K (0821)

**Date of presentation:** Saturday 27th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Roseraie 2

### **Ottawa Consensus Statement: Big Data Research in Assessment and Medical Education: Ethics, Equity, and Emerging Practices**

Kulamakan(Mahan) Kulasegaram<sup>1</sup>, Lawrence Grierson<sup>2</sup>, Saad Chahine<sup>3</sup>, Jennifer Cleland<sup>4</sup>, Daniel Schumacher<sup>5</sup>, Eric Holmboe<sup>6</sup>

<sup>1</sup> *University of Toronto, Toronto, Canada* <sup>2</sup> *McMaster University, Hamilton, Canada* <sup>3</sup> *Queen's University, Kingston, Canada* <sup>4</sup> *LKCMedicine/University of Aberdeen, Singapore, Singapore* <sup>5</sup> *Cincinnati Children's Hospital Medical Center, Cincinnati, USA* <sup>6</sup> *Accreditation Council for Graduate Medical Education, Chicago, USA*

#### **Background**

Big Data research that connects assessment and other data across the continuum of physician training promises to provide novel insights and answer significant questions in medical education. However, this research is dependent on linking and sharing data that is often held and governed by different institutions and organizations. Engaging in big data requires navigating new ethical, equity, governance, and logistical challenges. Our group is working on a consensus statement to identify recommendations for big data research that accounts for these issues, and we will be presenting our work in a Symposium during Ottawa 2022. Prior to the symposium we are holding a workshop and welcome participants' views and contributions, which will inform the topic.



## Meet the Expert Session 5L (0811)

**Date of presentation:** Saturday 27th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Roseraie 3

### MCQs, G-theory, and more

David Swanson<sup>1</sup>, Susan Case<sup>2</sup>

<sup>1</sup> *University of Melbourne and Queensland University, Melbourne and Brisbane, Australia* <sup>2</sup> -,

*Guadalajara, Mexico*

Susan Case and Dave Swanson, the presenters for this Meet the Experts session, are the co-authors of a popular MCQ item-writing guide made available by the National Board of Medical Examiners in the early 2000s. It is still used by many medical schools and postgraduate organizations internationally. In addition, both have been actively involved in assessment research in medical education for 40+ years. In addition, Sue directed the Multistate Bar Examination for 10 years; it is used in conjunction with licensure of attorneys in most US jurisdictions. She and Dave have also consulted with numerous licensure and certification organizations in the US and internationally. Both are now (semi-) retired in Ajijic, Mexico (near Guadalajara).

Depending on audience preferences, topics that might be addressed in the session include:

- Writing multiple choice questions to assess application of knowledge rather than simple recall
- Assessment of medical decision making with multiple-choice tests and clinical simulations
- Measurement of clinical skills with real and standardized patients
- Design of in-training assessments for undergraduate and postgraduate medical education
- Design of assessments for licensure, certification, and recertification in the health professions
- Use of generalizability theory in design and analysis of performance-based tests like objective structured clinical exams, workplace-based assessments and oral exams
- Computer applications in testing in the health professions, including the design of longitudinal assessments used in continuing certification programs
- Advantages of retiring to Mexico



## Online Oral - Assessment in Practice 2 / Selection & Widening Access

### Online Oral Session 4.1 (0786)

**Date of presentation:** Saturday 27th August

**Time of session:** 18:30 - 18:45

**Location of presentation:** Online Session

### Predicting success in medical school using the BioMedical Admissions Test (BMAT)

Safiatu Lopes<sup>1</sup>, Sarah McElwee<sup>1</sup>, Mark Shannon<sup>2</sup>

<sup>1</sup> *Cambridge Admissions Testing, Triangle, Shaftesbury Road, Cambridge, UK* <sup>2</sup> *Assessment Group Manager, Cambridge Assessment Admissions Testing, Shaftesbury Road, Cambridge, UK*

#### Background

BMAT is an admissions test that is used, in the UK and internationally, for entry to medicine and related biomedical courses. To ensure that individuals selected for medical study will cope with the demands of training, selection assessments must be valid, fair and defensible. In particular, establishing predictive validity of selection methods is vital. This analysis examines the degree to which BMAT predicts on-course performance for one university cohort during medical training, compared to national school qualifications in the United Kingdom.

#### Summary Of Work

Exam results for the first and second year of medical training were gathered from six cohorts at a UK university (from 2013 to 2019) and were linked with BMAT and school qualifications (i.e. contextualised GCSEs and A-Levels). Descriptive statistics, correlations and regressions were conducted, to explore the relationships between BMAT scores, school achievement and end of year marks.

#### Summary Of Results

BMAT scores predicted end of year marks and likelihood of getting Class I grades, beyond the extent to which high-school achievement (GCSEs and top three A-Level grades) predicted performance. Section 2 (which assesses scientific knowledge and application) was the strongest predictor. Overall, national school qualifications and BMAT scores accounted for a small proportion of variance in medical study performance (15.5% in Year 1 and 8.0% in Year 2). Due to high range-restriction in this particular sample and subsequent attenuating effects, the reported effect sizes have mostly likely been under-estimated.



### **Discussion And Conclusion**

In this study, some BMAT section scores predicted additional incremental variance in early medical school performance above high-school achievement. Admissions tutors working in contexts similar to this study (e.g. where the applicant pool is already highly selected) may wish to rely on scores from admissions tests more heavily than they did previously. Additionally, with the current challenges brought on by COVID-19 (which has disrupted learning and recently prevented students from sitting their national school examinations), BMAT scores can be introduced into the selection process as a reliable and standardised measure of scientific aptitude and critical thinking skills that are shown to be necessary for successful progression in medical school.

### **Take Home Messages**

BMAT demonstrates incremental predictive validity over high-school qualifications, when using on-course examination performance as the criterion. Therefore, it can be a valuable tool to assist medical schools with differentiating between applicants.

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## Online Oral Session 4.2 (0558)

**Date of presentation:** Saturday 27th August

**Time of session:** 18:45 - 19:00

**Location of presentation:** Online Session

### Having a bad day is not an option: Learner perspectives on learner handover

Tammy Shaw<sup>1</sup>, Kori LaDonna<sup>1</sup>, Karen E. Hauer<sup>2</sup>, Roy Khalife<sup>1</sup>, Leslie Chung-Lei Sheu<sup>3</sup>, Timothy J. Wood<sup>1</sup>, Anne Montgomery<sup>2</sup>, Scott Rauscher<sup>1</sup>, Simran Aggarwal<sup>1</sup>, Susan Humphrey-Murto<sup>1</sup>

<sup>1</sup> University of Ottawa, Ottawa, Canada <sup>2</sup> University of California, San Francisco, San Francisco, USA <sup>3</sup> Private Medical, San Francisco, USA

#### Background

Learner handover is the sharing of information about learners between supervisors involved in their education. The practice allows learners to build upon previous assessments and has the potential to support the growth-oriented focus of competency-based medical education. However, learner handover also carries the risk of introducing bias in future assessments and breaching learner confidentiality. Moreover, little is known about learner handover's educational impact, and what is known is largely informed by faculty and institutional perspectives. The purpose of this study was to understand learner handover from the learner's perspective.

#### Summary Of Work

We used constructivist grounded theory to explore learners' perspectives and beliefs around learner handover. We conducted 29 semi-structured interviews with medical students and residents from the University of Ottawa and the University of California, San Francisco. Investigators identified themes using constant comparative analysis.

#### Summary Of Results

Learners were generally unaware about current learner handover practices at their institution, although most recognized circumstances where both formal and informal forms of learner handover may occur. Learners appreciated the potential for learner handover to tailor education, guide entrustment and supervision decisions, and ensure patient safety. However, learners also worried about learner handover's potential to bias future assessments, breach confidentiality, and bear more resemblance to gossip rather than education information sharing. Learners specifically feared unfair scrutiny, loss of the "clean slate," and irreversible long-term career consequences from one shared mediocre performance, leading to an overwhelming pressure to perform.



### **Discussion And Conclusion**

While learners recognize the rationale for learner handover, they voiced reservations about its use due to possible inadvertent short- and long-term impact on their training and future careers. When implementing learner handover, policy makers need to consider these perspectives to mitigate unintended consequences. Ensuring transparency, prioritizing learner-driven goals, and standardizing processes are some strategies to ease learner anxiety about its prospective use in medical education.

### **Take Home Messages**

Learner handover has the potential to improve medical training from the educational, supervisory, and patient safety standpoints. However, learners are concerned about unintended consequences. Steps to mitigate these concerns should be considered if learner handover is formally implemented in medical education

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## Online Oral Session 4.3 (0604)

**Date of presentation:** Saturday 27th August

**Time of session:** 19:00 - 19:15

**Location of presentation:** Online Session

### **Introducing the Medical Licensing Assessment in the UK in 2024: the design and intended aim and benefits**

Suzanne Chamberlain<sup>1</sup>, Judith Chrystie<sup>1</sup>

<sup>1</sup> *General Medical Council, London, UK*

#### **Background**

The Medical Licensing Assessment (MLA) is being launched in the UK in 2024 for all students in UK medical schools, and any international medical graduate seeking a licence to practise medicine in the UK via the examination route. The design features of the MLA have evolved over time to ensure it is feasible, and can deliver on the intended aim and benefits, as specified by the General Medical Council (GMC) as the independent regulator for UK medical practice. The intended benefits of the MLA refer to the themes of: 1) patient safety, 2) assurance and confidence, 3) consistency and fairness, and 4) upholding excellence.

#### **Summary Of Work**

The GMC has undertaken extensive stakeholder engagement on the MLA. This includes consulting medical school management teams and the Medical Schools Council (MSC) (the representative body for UK medical schools), medical students, and post-graduate assessment providers. In addition, there has been regular engagement with experts across the spectrum of assessment development in medical education (knowledge tests, clinical skills assessment, blueprinting, standard setting etc.) and with individuals outside of medical education with expertise in developing national, or other professional, assessments.

#### **Summary Of Results**

This engagement has resulted in refinements to the plans for the MLA as shaped by the intended aim and benefits for the MLA which have been outlined by the GMC.

#### **Discussion And Conclusion**

This paper tracks the development of the MLA over recent years and shows how it has evolved to achieve its intended aim and benefits. This includes how responsibilities for the MLA in UK medical schools have shifted between the medical schools, the GMC and MSC. The delivery model and responsibilities across the two components of the MLA and undergraduate sector will be outlined.



This will include the ways by which the GMC will continue to seek the input and engagement of assessment experts, and our plans for monitoring the delivery and outcomes of the MLA across medical schools and international medical graduates.

### **Take Home Messages**

The model for the MLA has evolved as a result of extensive stakeholder consultation and input and to ensure it meets the intended aim and benefits of the MLA as specified by the GMC.

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## Online Oral Session 4.4 (0705)

**Date of presentation:** Saturday 27th August

**Time of session:** 19:15 - 19:30

**Location of presentation:** Online Session

### **The use of creative enquiry and portfolio development to assess an innovative Year 5 Near Peer student placement based in primary care.**

Vidya Mistry<sup>1</sup>, Rofique Ali<sup>1</sup>, Louise Younie<sup>1</sup>

<sup>1</sup> *Queen Mary, University of London, QMUL, London, UK*

#### **Background**

Research into arts-based inquiry in medical education suggests that this approach can be transformative for students and help them engage in different types of knowledge production including intuitive as well as factual knowledge.

Portfolios can be used to assess outcomes difficult to assess via other methods like professionalism and attitudes. There is little to be found in the literature regarding the development of a portfolio to support an application for an award as an integral part of the assessment of a student placement.

There exists a significant body of literature on Peer Assisted Learning (PAL). Literature suggests that PAL enables students to become better teachers, doctors and learners.

There is little research relating to undergraduate Near Peer education in primary care but postgraduate literature suggests that potential benefits include promotion of General Practice as a career and increasing teaching capacity.

An innovative undergraduate SSC (Student Selected Component) in primary care was created where Year 5 students taught junior students and worked with central academics to develop teaching materials. The assessment of this SSC included a creative enquiry piece of work reflecting on their journey as educators and the development of a portfolio to support their application for a university award as well as a reflective written piece

#### **Summary Of Work**

Qualitative research including semi-structured interviews and focus groups were carried out.

#### **Summary Of Results**

Preliminary data suggests improved student teacher confidence with evidence of collaboration and creativity. The students engaged with the creative enquiry component producing work which



displayed deeper and more meaningful reflection. Students were motivated by the award aspect of the assessment.

### **Discussion And Conclusion**

A Near Peer teaching model in primary care enabled innovation in assessment facilitating the use of creative enquiry and the development of a portfolio to support the application of an award.

This research suggests that assessment through creative enquiry leads to more meaningful learning. The development of a portfolio to support the application of an award may motivate students.

### **Take Home Messages**

Near peer teaching in undergraduate primary care has advantages for both students and GP tutors. Assessment via creative enquiry and portfolio development for application for an award enhanced the learning experience for students.

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## Online Oral Session 4.5 (0308)

**Date of presentation:** Saturday 27th August

**Time of session:** 19:30 - 19:45

**Location of presentation:** Online Session

### **Do MCAT Subscores Predict Medical Students' Performance in Foundational Preclinical Science Courses? A K-Fold and Leave-One-Out Cross-Validation Approach**

Mohammed Abulela<sup>1</sup>, Esther Dale<sup>2</sup>, Claudio Violato<sup>2</sup>

<sup>1</sup> *Department of Educational Psychology, University of Minnesota, Minneapolis, USA* <sup>2</sup> *University of Minnesota-Medical School, Minneapolis, USA*

#### **Background**

The Medical College Admission Test (MCAT) scores are used, among other application materials, to admit medical school in the US and Canada. As a result, a great deal of research has been conducted to investigate the utility of MCAT scores to predict admitted students' subsequent performance in the medical school (e.g., GPAs, USMLE). However, using MCAT subscores to predict medical students' performance in preclinical science courses has received little attention, despite the potential implications for instruction and predictive validity evidence. Thus, there is a need to examine if the four MCAT subscores predict medical students' performance in two foundational preclinical courses.

#### **Summary Of Work**

A total of 342 undergraduate medical students (159 males, 183 females) participated. We fitted all 15 possible models and selected three with the lowest corrected Akaike Information Criterion (AICc) as recommended in previous simulation research for two preclinical foundational courses, anatomy and histology. To evaluate the three selected models, we utilized the 10-fold and leave-one-out cross validation approaches to select the model with the least cross-validated mean square error (CV-MSE), which indicates the generalizability of the selected model in future samples (i.e., inferential prediction accuracy).

#### **Summary Of Results**

Based on both cross-validation approaches, results revealed that the two-predictor model with Biological and Biochemical Foundations of Living Systems (BBFLS) and Chemical and Physical Foundations of Biological Systems (CPFBS) was the most parsimonious and had the lowest CV-MSE (23.6 for anatomy and 5.33 for histology). The other two subtests did not meet the inclusion criteria. The models explained 29% and 25% of the variation in medical students' anatomy and histology scores, respectively. BBFLS and CPFBS regression coefficients were respectively 0.89 and 0.87 for anatomy, and 0.44 and 0.37 for histology.



**Discussion And Conclusion**

Our results provide design and instruction insights particularly for anatomy. Specifically, if BBFLS and CPFBS subscores contribute significantly to anatomy more than histology, this suggests designing instructional practices in anatomy in the form of BBFLS and CPFBS practices.

**Take Home Messages**

High MCAT subscores in BBFLS and CPFBS indicate better future performance in anatomy and histology as two foundational preclinical science courses.

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## Online Oral - Programme Evaluation: Methods

### Online Oral Session 5.1 (0437)

**Date of presentation:** Saturday 27th August

**Time of session:** 18:30 - 18:45

**Location of presentation:** Online Session

### How do we best summatively assess Lifestyle Medicine and Population Health in the Undergraduate Medical Curriculum? The Student Perspective.

Hannah Wright<sup>1</sup>, Florence Mutlow<sup>1</sup>, Christopher Harvey<sup>1</sup>, Lucy Ryan<sup>1</sup>, Vinitha Soundararajan<sup>1</sup>, Edward Maile<sup>1</sup>, Amy Bannerman<sup>1</sup>, Richard Pinder<sup>1</sup>

<sup>1</sup> *Imperial College London, London, UK*

#### Background

Lifestyle Medicine and Prevention (LMAP) is an innovative pair of modules, delivered for first- and second-year medical students at Imperial College School of Medicine and introduced in 2019. The LMAP modules aim to develop students' insights into their own health, build understanding of the practice of lifestyle medicine and apply a population health mindset to their future practice.

The modules are assessed summatively in both years. In first-year, students work in groups to produce a podcast about one aspect of Lifestyle Medicine incorporating behaviour change. In second-year students sit a 100-item question paper.

#### Summary Of Work

We ran a series of student focus groups at the end of first and second year to evaluate their learning experience of LMAP overall. These focus groups were analysed using inductive thematic analysis by two independent coders to identify themes.

#### Summary Of Results

Assessment was a prominent theme. Students generally enjoyed the challenge of producing group podcasts. Most students appreciated the opportunity to develop in-depth understanding of an area of interest and felt it was aligned with 'the spirit of LMAP.' However, some students felt demotivated to engage with other areas of the course as these elements were not as explicitly assessed. Students reported high satisfaction with the teamwork element, though there was inter-group variability in this.



Students reported that reverting to the more traditional examination format in second year motivated them to engage more consistently with the content. However, most students felt that the format of the assessment was misaligned with the discursive nature of the content and did not do the module “justice”.

### **Discussion And Conclusion**

In spite of faculty-side trepidation about group podcasts, these findings suggest that diversifying assessment can add value to learning. Students identified benefits and drawbacks to the contrasting methods of assessment used in the course. Combining these approaches allows for development of a diverse range of skills among students.

### **Take Home Messages**

Perception and articulation of how assessment format aligns to learning content is important to maximise student engagement with the learning.

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## Online Oral Session 5.2 (0510)

**Date of presentation:** Saturday 27th August

**Time of session:** 18:45 - 19:00

**Location of presentation:** Online Session

### ***Outsiders-on-the-Inside? Unpacking the Paradoxes and Tensions of Program Evaluation Practice in HPE***

Betty Onyura<sup>1,2</sup>, Abigail Fisher<sup>1,3</sup>, Qian Wu<sup>1</sup>, Shrutikaa Rajkumar<sup>2</sup>, Sarick Chapagain<sup>4</sup>, Judith Nassuna<sup>2</sup>, Latika Nirula<sup>1,2</sup>

<sup>1</sup> Centre for Faculty Development, Toronto, Canada <sup>2</sup> University of Toronto, Toronto, Canada <sup>3</sup> McMaster University, Hamilton, Canada <sup>4</sup> Ryerson University, Toronto, Canada

#### **Background**

Program evaluation has become routine practice in health professions education (HPE). However, there is scant research on the experience, utility, or impact of evaluation work in the field. To address this gap, our research focuses on the experiences of those who are tasked with the responsibility of leading or implementing evaluation mandates including accreditation. Drawing on organizational paradox theory, we examine the systemically entrenched tensions that HPE evaluators must navigate in doing evaluation work.

#### **Summary Of Work**

We recruited 29 evaluation-scientists/leads/specialists across 26 academic health science institutions and 4 countries to participate in semi-structured interviews on their evaluation practices. Thematic and matrix analysis were used for data analysis.

#### **Summary Of Results**

Results identified that evaluators encountered general *confusion about the role of evaluation in addition to paradoxes, and dilemmas*. We surfaced 5 paradoxical tensions including *performing, learning, organizing, belonging, and publicizing along with multiple sub-themes*. For example, sub-themes of the **publishing paradox** revealed tensions around data ownership and access. Sub-themes of the **performing paradox's** sub-themes discloses the tension between balancing the demands and interests of multiple stakeholders against professional standards. In a further example, sub-themes of the **learning paradox** highlight tensions around gaining new knowledge via evaluative scrutiny vs having scrutiny disrupt established views about program functioning.



### **Discussion And Conclusion**

Our study unveils the underlying paradoxes that evaluators encounter. Participants acknowledge that these paradoxes can negatively affect their practice. Additionally, evaluators' creative navigation of challenges can be hampered or facilitated by positional authority and organizations' evaluation culture. Thus, it is critical for academic health science institutions to recognize how the structural supports for evaluation influence how evaluators can navigate paradoxes in ways that optimize social accountability.

### **Take Home Messages**

For evaluation to be socially accountable, institutions need to better understand the systemically entrenched tensions in evaluation practice and invest in the structural support and capacity building required to navigate them.

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## Online Oral Session 5.3 (0544)

**Date of presentation:** Saturday 27th August

**Time of session:** 19:00 - 19:15

**Location of presentation:** Online Session

### Health equity curriculum evaluation: a single center study on medical student perceptions of required curriculum

Alexandra Fincher<sup>1</sup>, Allison Teng<sup>1</sup>, Ruth Sanchez<sup>2</sup>, Gareth Gingell<sup>1</sup>, LuAnn Wilkerson<sup>1</sup>

<sup>1</sup> Dell Medical School at the University of Texas at Austin, Austin, USA <sup>2</sup> University of Texas

Southwestern Medical Center, Dallas, USA

#### Background

Given the emerging focus on health equity in medical education, little is known about medical students' perceptions of this topic. A clearer understanding of how medical students experience conversations around health equity-related content in classroom and clinical settings has implications for the design and implementation of future curriculum.

#### Summary Of Work

Our research team created a survey to assess medical student perceptions of health equity content at Dell Medical School (DMS). This voluntary internet-based cross-sectional survey was administered to all students in 2020. The survey collected demographic information, measured perceptions of training received on common health equity topics, and assessed the cultural climate and level of student satisfaction regarding these topics. Largely based on survey results, DMS administration developed and implemented health equity as a graduation competency domain.

#### Summary Of Results

Response rate was 48.5% (n = 94). 30.1% of students were "very or completely satisfied" with the 2020 DMS health equity curriculum. 60% of students had "sometimes, often or always" faced dismissive attitudes about health equity from peers, residents, and faculty alike. Notably, students' satisfaction varied by year with responses ranging from <10% among MS1s to 43% among MS3s that were "very or completely satisfied" with the curriculum.

#### Discussion And Conclusion

The survey results showed that students overwhelmingly believed that health equity curriculum was important to their development as competent physicians, but was not effectively covered by the DMS required curriculum. Results from this survey informed the adoption of a health equity domain as a graduation requirement. This domain includes four competency areas - Historical and Current



Context, Personal and Interpersonal, Community Awareness and Society, and Intentional Disruptive Action - and sixteen enabling objectives. A thorough curriculum mapping was conducted to highlight and add relevant health equity tie-ins to existing content. Future evaluation of these administrative changes are forthcoming to further define the created competencies and improve the DMS educational experience.

### **Take Home Messages**

Medical student perceptions on health equity content and school-wide cultural climate must be taken into account when adopting a new health equity focus.

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## Online Oral Session 5.4 (0631)

**Date of presentation:** Saturday 27th August

**Time of session:** 19:15 - 19:30

**Location of presentation:** Online Session

### Insights into how and why U.S. medical students select and integrate informal resources with formal medical school curriculum

April Taniguchi<sup>1</sup>, Lindsey Webb<sup>1</sup>, Amy Morrison<sup>1</sup>, Peter Dominguez<sup>1</sup>, Atsusi Hirumi<sup>1</sup>, Ziana Bagot<sup>1</sup>, David M. Harris<sup>1</sup>, Reanne Mathai<sup>1</sup>

<sup>1</sup> *University of Central Florida, Orlando, USA*

#### Background

Colloquially likened to drinking from a firehose, American undergraduate medical education (UME) is known for its fast paced curriculum that often floods students with educational resources. Yet, the vast majority of students also spend substantive time utilizing commercial resources to prepare for national licensing exams. To continually improve UME, we sought to understand how and why medical students approach their educational needs.

#### Summary Of Work

This study investigated students' study habits through daily learning logs, ethnographic interviews, and closed and open-ended survey questions. Thirty-nine learning logs provided snapshots of typical study patterns. Ten interviews and forty-four surveys provided further insights into students' use and perceptions of resources through thematic analysis. This study analyzed the reasoning behind each student's study habits and how their motivations modified their approach.

#### Summary Of Results

The learning logs found most students in clinical rotations studying between 0-2 hours daily using commercial UWorld question banks. The interviews revealed that students thought lectures were extraneous and felt frustrated with resources and activities that were perceived as poor time investments. Many preferred commercial resources that were succinct, well-organized, and provided licensing preparation and self-assessments; they wished these materials were incorporated into the school's curriculum. Survey responses conveyed that efficiency was the motivating factor for how students selected resources and a strategic approach was necessary with the time constraints of UME.



### **Discussion And Conclusion**

Students typically used informal resources for test preparation and referenced class materials. Each student approached their education uniquely for different reasons. Common thematic patterns revealed students prioritized efficiency and strategic planning for standardized tests over performance in classes. Students appreciated the passion and experience of faculty, and some relied heavily on formal resources. During their ongoing UME, these students' perspectives provided ideas for possible improvements like intertwining informal resources with a school's prescribed curriculum to provide increased engagement and learner success.

### **Take Home Messages**

This study provides qualitative and quantitative analysis of students' use and perceptions of formal and informal curriculum resources. We encourage UME to acknowledge the benefits of and integrating both resources to prepare students for residency.

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## Online Oral Session 5.5 (0772)

**Date of presentation:** Saturday 27th August

**Time of session:** 19:30 - 19:45

**Location of presentation:** Online Session

### **Co-Creating a Logic Model for Program Evaluation of General Psychiatry Residency Program with Resident, Faculty, Program, and Hospital Site Representatives**

Certina Ho<sup>1</sup>, Deanna Chaukos<sup>1</sup>, Inbal Gafni<sup>1</sup>, Petal Abdool<sup>1</sup>, Sanjeev Sockalingam<sup>1</sup>, Adrienne Tan<sup>1</sup>

<sup>1</sup> *University of Toronto, Toronto, Canada*

#### **Background**

Program evaluation is an essential component to provide evidence to prove and improve a program's quality and effectiveness. The recent implementation of Competency-Based Medical Education to Canadian residency programs has presented new opportunities and challenges to residents, faculty, residency programs, and hospital sites. The Department of Psychiatry planned a half-day online retreat for the General Psychiatry Residency Program (GPRP), with a focus on program evaluation.

#### **Summary Of Work**

Our objective is to co-create a feasible and sustainable framework (i.e., Logic Model) for program evaluation of the GPRP with resident, faculty, program, and hospital site representatives. Four virtual breakout groups were arranged during the online retreat, representing the core types of stakeholders/parties of the GPRP, including: residents; faculty; program; and hospital sites. Each breakout group was led by a facilitator who was involved in GPRP administration. Insights and suggestions from retreat participants regarding the input, activities, outputs, and outcomes components of the Logic Model, in addition to external factors and unintended outcomes of the GPRP were discussed and collected, followed by a large group debrief session.

#### **Summary Of Results**

A logic model was developed with key stakeholders to set priorities and guide program evaluation of the GPRP. We refer to this framework to (1) monitor actions and activities for achieving desired residency program outcomes; (2) collect and analyze data to prove and improve our program on an ongoing basis; and (3) document and reflect on short-term (e.g., program-related) and long-term (e.g., system-wide) accomplishments or changes as a result of the residency program. We also take into considerations of external factors and unintended outcomes of the GPRP while ensuring feasibility and sustainability of the evaluation efforts.



### **Discussion And Conclusion**

By engaging and gathering insights from retreat participants, the Department of Psychiatry can improve the delivery and achieve ongoing program evaluation and quality improvement of the GPRP.

### **Take Home Messages**

By relating lessons learned from key stakeholders of the General Psychiatry Residency Program, including residents and faculty, we were able to recognize the input, activities, outputs, and outcomes components of a logic model that can serve as a framework to guide program evaluation and continuous quality improvement of the residency program.

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## Online Oral Session 5.6 (0362)

**Date of presentation:** Saturday 27th August

**Time of session:** 19:45 - 20:00

**Location of presentation:** Online Session

### ***What's Realist? A Scoping Review on Trends and Methodological (mis)Alignment in Theory-Based Evaluation in Medical Education***

Betty Onyura<sup>1</sup>, Latika Nirula<sup>1</sup>, Qian Wu<sup>1</sup>, Hollie Mullins<sup>1</sup>, Kurt Grunsky<sup>2</sup>, Deena Hamza<sup>3</sup>

<sup>1</sup> Centre for Faculty Development, Toronto, Canada <sup>2</sup> Toronto District School Board, Toronto, Canada <sup>3</sup> University of Alberta, Edmonton, Canada

#### **Background**

Program evaluation is part of routine practice across medical education. However, reflective examination on the practice of program evaluation itself is largely absent, resulting in scant evidence about the quality, utility or impact of evaluation. The paper addresses the gap by examining the uptake of theory-based evaluation (TBE) methods in medical education. It explores (1) the chronological and methodological trends; (2) the patterns in the foci of evaluation questions; and (3) the ways in which TBE studies aligned or mis(aligned) with the espoused theoretical approaches.

#### **Summary Of Work**

A scoping review is an ideal knowledge synthesis approach for topics on which there has been limited empirical attention, and where the literature considered may not lend itself to outcome-focused questions addressed by systematic reviews. The review was conducted in accordance with methodological guidelines provided by Arksey and O'Malley (2005) using dual, independent screening, of articles for inclusion, as well as of abstracted data. Abstracted data were synthesized using descriptive statistics and thematic analysis.

#### **Summary Of Results**

The scoping review identified 30 studies that reported employing TBE methods. Chronological trends suggest an increased uptake of this family of approaches with the most commonly used methodology being realist evaluation. As for foci of evaluation questions, summative (outcomes) was the most studied, followed by change mechanisms and pathways, Process (Implementation), and Program context. Our review also found significant issues in methodological alignment of the studies and the approaches they adopted. For example, 60% of realist evaluation studies did not articulate or delineate context-mechanism-outcome configurations, which is at the core of realist evaluation.



### **Discussion And Conclusion**

Our study indicates that there are ongoing challenges with poor methodological diversity in evaluation studies in the field. To improve quality of evaluation requires increased capacity building among those leading or reviewing evaluative studies. We need more research on how patterns of evaluation practice influence its use and impact.

### **Take Home Messages**

There has been a slow but increasing uptake of contemporary evaluation methods. Existing studies are of variable quality and consistency in application of core methodological principles. The lack of shared understanding about core concepts, such as what is a mechanism, may limit transferability of findings.

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## Online Workshop 3 (0339)

**Date of presentation:** Saturday 27th August

**Time of session:** 18:45 - 20:15

**Location of presentation:** Online Session

### Increasing the Validity of Curriculum Mapping Data

Patti Dyjur<sup>1</sup>, Olufemi Ogundipe<sup>2</sup>

<sup>1</sup> University of Calgary, Calgary, Canada <sup>2</sup> Obafemi Awolowo University, Ile-Ife, Nigeria

#### Background

Curriculum mapping (CM) is a form of data collection often used in curriculum review and quality assurance processes. It can be described as the process of associating course outcomes with program learning outcomes and aligning elements of courses within a program, to ensure that it is structured in a deliberate, thoughtful way that enhances student learning.

Such examinations can reveal curricular patterns, trends, gaps and redundancies, allowing instructors to strengthen courses, and the program as a whole, if the data are accurate. However, curriculum mapping can be a messy process: common pitfalls that have the potential to erode validity include instructors who are unfamiliar with the curriculum mapping process, differing understandings of the CM scale, and missing data. At times, instructors might wonder how accurate the curriculum maps are and if they retain enough validity to be useful.

In this session we will examine some of the common issues with validity in curriculum mapping data and discuss how they might be mitigated. In addition to participants' ideas for increasing validity, we will offer our strategies, such as the following:

| Pitfall                        | Potential Strategies  |
|--------------------------------|---|
| Instructors unfamiliar with CM | <ul style="list-style-type: none"> <li>Ongoing communication</li> <li>Orientation session</li> <li>Contact person for emerging questions</li> </ul>                           |
| Missing data                   | <ul style="list-style-type: none"> <li>Course coordinator maps the course</li> <li>Work from the course outline</li> <li>Ask instructor to validate the course map</li> </ul> |



|  |  |
|--|--|
| Different understandings of the CM scale | Discuss the scale as a group<br>Map a sample course and compare<br>Clarify terminology |
|--|--|

### Who Should Participate

Instructors, department heads, curriculum developers, and others involved in curriculum mapping processes

### Structure Of Workshop

Structure of the Workshop:

1. Presentation to introduce central concepts, including initial ideas to increase validity of CM data
2. Small group discussion about increasing validity of CM data
3. Debrief
4. Do a demo showing 2 different approaches to CM

### Intended Outcomes

By the end of the session, participants will have the opportunity to:

- Discuss the concept of validity in curriculum mapping data
- Identify common pitfalls in the curriculum mapping process that erode the validity of CM data
- Select strategies that mitigate issues with validity in curriculum mapping



## Online Oral - Assessment of Professionalism

### Online Oral Session 6.1 (0032)

**Date of presentation:** Saturday 27th August

**Time of session:** 20:30 - 20:45

**Location of presentation:** Online Session

### Evaluation of medical professionalism in Brazilian pediatric residents: a cross-sectional study

Mariana Holdefer<sup>1</sup>, [Alessandra Naghettini](#)<sup>1</sup>, Edna Pereira<sup>1</sup>, Cláudia Sena<sup>1</sup>

<sup>1</sup> *Universidade Federal de Goiás, Goiânia, Brazil*

#### Background

Assessing medical professionalism can improve patient safety and confidence in their care, reduce the exposure of medical professionals to ethical processes related to accountability, and has an important formative role.

#### Summary Of Work

Tutors evaluated 30 residents on more than one occasion in pediatrics in neonatal intermediate care unit using the Brazilian version of the Professionalism Mini-Evaluation Exercise (P-MEX) and to verify the association with factors related to professional training. A total of 143 assessments were performed

#### Summary Of Results

There was significant difference in score in the time management domain, and the total score, lower scores were observed among residents who were in the third year of the course when compared to those in the first and second year ( $p=0.001$ ). Third-year residents had significantly lower total scores than residents who took the course previously ( $p=0.04$ ).

Lower mean scores in time management were observed among R3 residents when compared to R1 and R2 ( $p=0.001$ ). A similar result was observed in the total score ( $p=0.04$ ) and when comparing the scores between the categories of time since graduation ( $p=0.03$ ).



### Discussion And Conclusion

Residents with more time since graduation and those in the third year of residency had lower scores in time management than those with less time since graduation and in the previous years of residency. This result can be explained by the fact that these residents have a greater burden of responsibilities and professional concerns that negatively impact their ability to manage time. The care of critically ill patients attributed to these residents also seems to explain the result. Senior year residents were expected to have higher professionalism scores. Although the higher activity-load seems to be a plausible justification for the difficulty these residents have in managing their time.

### Take Home Messages

- Time management was a difficulty for residents in more advanced stages of the course
  - Studies with assessing professionalism using the Brazilian version of P-MEX allow the comparison of these findings with others with similar populations
  - Longitudinal studies will contribute to the diagnosis of failures and corrections in the attitudes and behavior of residents
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## Online Oral Session 6.2 (0518)

**Date of presentation:** Saturday 27th August

**Time of session:** 20:45 - 21:00

**Location of presentation:** Online Session

### The Medical Practice Reasoning Assessment: Reliable Assessment for Clinical Reasoning and Professionalism

Marshall Angle<sup>1</sup>, David Baxter<sup>2</sup>, Susan Cline<sup>2</sup>, Natalie Hogan<sup>3, 4</sup>, Robert Sarlay<sup>2</sup>

<sup>1</sup> Mercer University School of Medicine, Savannah, GA, USA <sup>2</sup> Mercer University School of Medicine, Macon, GA, USA <sup>3</sup> Mercer University School of Medicine, Savannah, GA, USA <sup>4</sup> Memorial Health University Medical Center-HCA Healthcare, Savannah, GA, USA

#### Background

In developing a new pre-clinical curriculum, Mercer University School of Medicine recognized that students needed better preparation for thinking critically and communicating professionally during clinical rotations.

#### Summary Of Work

The Medical Practice Reasoning Assessment (MPRA) was created to promote and assess students' clinical reasoning and professionalism in MUSM's pre-clinical curriculum. The MPRA is a two-day developmentally appropriate authentic assessment comprised of a standardized patient encounter, a data-evaluation exercise, a case write-up, and an oral assessment. Faculty examiners score students' critical thinking, professionalism, and communication as evidenced by case write-ups and oral presentations. Over the course of four MPRA's administered during the pre-clinical curriculum, passing standards shift emphases from basic clinical skills at the beginning of Year 1 to more advanced critical thinking by the end of Year 2. During AY2020-21, MUSM adapted the MPRA protocol to include *MPRA-Clinical Years*, administered at the end of Year 3 clerkship rotations.

#### Summary Of Results

Reliability statistics for the MPRA's oral component include Percent Agreement, Percent Adjacent Agreement, and Kappa. Since its inception, 11 of 16 administrations of MPRA have resulted in "Moderate" or "Strong" reliability estimates. Although not directly correlated with individual students' MPRA scores, results of our annual Residency Director Survey indicate that our graduates are prepared for residency: since 2017, over 96% of all indicators for readiness are "'Meets' or 'Exceeds' Expectations for a New Resident."



The MPRA engages pre-clinical students with practicing physicians in meaningful authentic assessment that emulates the clinical reasoning and professional communications that occur on the wards. Review of reliability statistics has yielded helpful faculty development and improvements for test administration. Significantly, the longitudinal nature of the MPRA positions this protocol to be more than a stand-alone OSCE or discrete triple jump exercise. In the absence of national clinical skills testing, valid protocols such as MUSM's MPRA are imperative for demonstrating graduates' readiness for professional practice.

### **Take Home Messages**

Since its inception, the MPRA has continued to mature with regard to psychometric reliability and validity as well as the logistics of test administration. Significantly, our expansion of the MPRA protocol provides for reliable and valid longitudinal assessment that demonstrates students' readiness for residency training.

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## Online Oral Session 6.3 (0539)

**Date of presentation:** Saturday 27th August

**Time of session:** 21:00 - 21:15

**Location of presentation:** Online Session

### Effectiveness of the Student Performance Monitoring System

Shujiao Wang<sup>1</sup>, Beth-Ann Cummings<sup>1</sup>, Jingyang Xiao<sup>1</sup>, Melanie Mondou<sup>1</sup>

<sup>1</sup> McGill University, Montreal, Canada

#### Background

Student performance monitoring system (SPMS), a dynamic tool to track the learning progress and identify any student whose performance is likely to lead to academic challenge and/or professionalism probation, can provide information to enhance learning development, motivate course/curriculum evaluation, and trigger effective intervention. This study aims to examine the effectiveness of the SPMS by exploring the relationships between the flags identified SPMS and major internal and external exams (e.g., Progress Tests, national licensing exam).

#### Summary Of Work

Our current SPMS has been implemented since 2018. Based on students' performance, it categories them into 4 academic status levels (by flag severity): Good standing, Academic Risk, Academic Difficulty, and Probation; and 2 professionalism levels: good standing, and probation. The results are reviewed by the student promotion committee and educational leaders periodically and make decisions on the intervention plans. The data of 906 students' grades (cohorts of 2016-2021), progress tests, MCCQE Practice Test, and MCCQE Part I scores were collected and analyzed by Pearson correlation analysis, ANOVA, and Kruskal-Wallis test.

#### Summary Of Results

The findings revealed that the academic status levels are statistically significant related to the major exams, and the system in our institution generally functions well in terms of tracking and identifying students whose academic performance is likely to lead to academic failure. However, in order to provide effective support to students, the SPMS could be further investigated and the use of it could be enhanced. In particular, it could be improved by breaking down the academic difficulty category.

#### Discussion And Conclusion

Benefiting from the SPMS, the program's overall performance in the national licensing exam has been improved. From the learners' perspective, it would be beneficial by using it to self-monitor their goal setting and academic progression; from the educators' perspective, identifying the student's



specific needs (e.g., academic, professionalism, others) through this system would be helpful for data management and to provide efficient and meaningful support accordingly.

### **Take Home Messages**

An effective SPMS needs to be easy to implement, clear to interpret, accurate to predict the student performance academically and professionally, and to identify the potential needs of intervention.

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## Online Oral Session 6.4 (0672)

**Date of presentation:** Saturday 27th August

**Time of session:** 21:15 - 21:30

**Location of presentation:** Online Session

### Using Natural Language Processing to Understand the Multidimensionality of Professionalism through a Constructed-Response Situational Judgement Test

Alexander MacIntosh<sup>1</sup>, Cole Walsh<sup>1</sup>, Okan Bulut<sup>2</sup>

<sup>1</sup> Altus Assessments, Toronto, Canada <sup>2</sup> University of Alberta, Edmonton, Canada

#### Background

Beyond academic aptitude, medical school applicants are evaluated on professionalism and interpersonal skills including collaboration, motivation, and ethics (Mahon et al., 2013). While professionalism is multidimensional, the competitive nature of selection motivates admissions committees to discretize the applicant, using increasingly specific measures towards creating an overall evaluation (Harsch et al., 2012).

In Casper, a constructed-response situational judgement test (SJT), applicants respond to 12 real-life scenarios intended to assess ten professionalism aspects (Dore et al., 2017). Human raters evaluate responses to each scenario and provide a single holistic score, regardless of whether applicants address any particular aspect. Until now, it has been infeasible to characterise how applicants address the multidimensionality of professionalism.

#### Summary Of Work

This study uses of semi-supervised natural language processing (NLP) to identify:

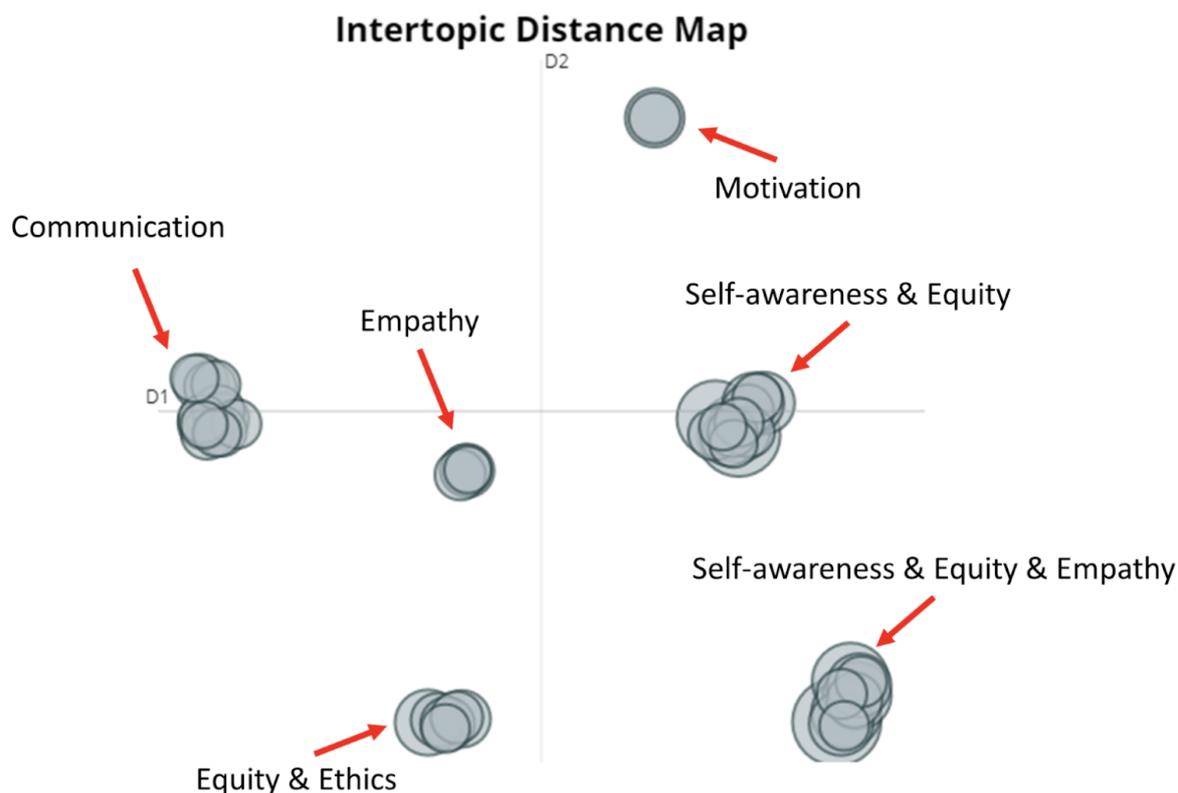
1. How many professionalism aspects are regularly addressed by medical school applicants when responding to a situational dilemma.
2. Which professionalism aspects are most frequently and infrequently discussed together.

Over 635,106 anonymized written responses to 311 scenarios were analysed using the BERTopic (Grootendorst 2021) model with sentence transformers to identify which professionalism aspects medical school applicants discussed based on theoretically derived keywords and labels (Frank et al., 2003).



## Summary Of Results

A typical 204-word response addressed 3 professionalism aspects, on average. Resilience, self-awareness, and motivation were most frequently discussed together. Conversely, self-awareness and professionalism were rarely addressed in the same response. Figure 1 shows the relationships among the topics on a two-dimensional space (Sievert et al., 2014). Overlapping circles identifies topics similar professionalism similar aspects. The figure indicates that communication and empathy are closely related, whereas motivation is discussed differently from communication and empathy.



## Discussion And Conclusion

Understanding how professionalism aspects map onto Casper responses of medical school applicants allows admissions committees to more thoroughly consider the multidimensionality of professionalism. Through this work they can characterise how their program's values of professionalism aligns with the aspects demonstrated by applicants in their written statements.

## Take Home Messages

The constructed-response format enables applicants to demonstrate their capacity to address multiple aspects of professionalism together. This is essential considering certain aspects are frequently addressed in combination, such as resilience, self-awareness, and motivation.



## Online Oral Session 6.5 (0426)

**Date of presentation:** Saturday 27th August

**Time of session:** 21:30 - 21:45

**Location of presentation:** Online Session

### Annual Assessment Outcomes of Academic Faculty

Mia Lang<sup>1</sup>

<sup>1</sup> Faculty of Medicine & Dentistry, University of Alberta, Edmonton, Canada

#### Background

Academic Faculty members (Assistant, Associate and Full Professors) in the Faculty of Medicine & Dentistry, University of Alberta are assessed annually for merit performance in the domains of teaching, research and administration using faculty specific standards of performance. Merit ranges from 0D (unacceptable) to 3.0 (highest) with performance expectations increasing with progressive academic rank and assigned time for the academic domain. Over time, merit increments help faculty members become eligible for promotion to full professor and contributes to annual salary. As such, merit increments can contribute to gender disparities in academia.

#### Summary Of Work

Anonymized, aggregate data from over 750 faculty members from 23 different departments (5 basic science, 18 clinical) were reviewed each year between 2017 and 2021. Descriptive statistics and t-tests were used to summarize and compare the data.

#### Summary Of Results

Over the five-year period, men continued to have a slightly higher average merit than women ( $p = 0.04$ ): 2017 average ( $\pm$  stddev) merit for men =  $1.20 \pm 0.31$  ( $n=416$ ) vs  $1.15 \pm 0.25$  for women ( $n=252$ ); 2021 average merit for men =  $1.24 \pm 0.28$  ( $n=417$ ) vs  $1.19 \pm 0.23$  for women ( $n=262$ ). Unacceptable performance (0D) was uncommon, a total of 14 over the 5 years, and mostly in men ( $n=13$ ). Only 17 faculty members over the five years received a merit of 2.25 or higher, of which only three were women. Faculty members receiving these very high merits were a mixture of basic scientists and clinician-scientists.

#### Discussion And Conclusion

The average merit of 1.2 was comparable to the merit in other Faculties at our university and recognized the performance in all academic areas: teaching, research, and administration. Faculty members with more research time tended to achieve the very high merits. While men had a slightly



higher average merit, the gender differences were more pronounced at the extreme ranges of available merit, both under and over-performance.

### **Take Home Messages**

Gender differences exist in annual faculty evaluation outcomes. Supporting men and women to succeed academically may require not just faculty development but application of equity, diversity, and inclusion principles.

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## Online Workshop 4 (0446)

**Date of presentation:** Saturday 27th August

**Time of session:** 20:45 - 22:15

**Location of presentation:** Online Session

### Evaluating Faculty Development Initiatives

Shanu Gupta<sup>1</sup>, Weichao Chen<sup>2</sup>, Jean Bailey<sup>3</sup>, Irene Alexandraki<sup>4</sup>, Karim Hanna<sup>1</sup>, Amy Smith<sup>5</sup>

<sup>1</sup> University of South Florida, Tampa, USA <sup>2</sup> Baylor College of Medicine, Houston, Texas, USA <sup>3</sup> Virginia Commonwealth University School of Medicine, Richmond, USA <sup>4</sup> Texas Tech University Health Sciences Center Paul L. Foster School of Medicine, El Paso, USA <sup>5</sup> University of South Florida Morsani College of Medicine-Lehigh Valley Campus, Allentown, USA

#### Background

Development of faculty in the areas of teaching, leadership, and educational scholarship is an essential aspect of medical education and a requirement for educational governing bodies, such as the Liaison Committee on Medical Education (LCME) standard 4.5 and Accreditation Council for Graduate Medical Education (ACGME) Common Program Requirement II.B.2.g. However, due to the existence of compounding factors, it is challenging to assess and accurately report the effectiveness of faculty development (FD) initiatives. Meanwhile, there are limited publications and evidence-based guidelines on how to evaluate faculty development programs. In this workshop, participants will dedicate time to discussing the value of a well-planned program evaluation and start improving evaluation of their FD initiatives.

#### Who Should Participate

Medical Education Faculty Developers

#### Structure Of Workshop

Introduction and ice-breaking activity (10min)

Didactic: The importance of faculty development (FD) (5min)

- a. Review of various FD programming
- b. Whole group facilitated discussion: Why is program evaluation important for FD?

Didactic: Frameworks for program evaluation - benefits and limitations (20min)



- Logic model
- CIPP evaluation model
- Kirkpatrick's Model

Didactic: Methods, metrics, example instruments, and data for program evaluation (15min)

Session participants break into small groups (25min)

Multiple breakout rooms for each choice, depending on the number of participant

- Choice 1: How would you like to evaluate your FD program? What metrics will you use and why? How will you use your data?
- Choice 2: How would you evaluate this workshop that you are attending today? Come up with a plan for workshop facilitators to implement.

For both choices

- Consider FD program type
- Select a framework from: Logic, CIPP, Kirkpatrick's or Patton's
- Identify appropriate methods and metrics
- Identify supporting resources, barriers and solutions
- Identify ways to use data and outcomes of your FD evaluation

Large group: Report back and debrief (10min)

Final conclusions (5min)

### **Intended Outcomes**

1. Describe the importance and utility of program evaluation for faculty development initiatives
2. Apply a framework to guide evaluation of faculty development initiatives
3. Adopt appropriate methods, and metrics, to evaluate faculty development programs, utilizing resources that will be provided as a guide
4. Strategize to leverage institutional resources and mitigate barriers in implementing faculty development evaluation.



## Online Oral - Programme Evaluation: Examples 2

### Online Oral Session 7.1 (0094)

**Date of presentation:** Sunday 28th August

**Time of session:** 04:00 - 04:15

**Location of presentation:** Online Session

### Investigation on the Implementation Effect and Students' Satisfaction of Medical Online Course Between International and Domestic Classes

Ruoxi Chen<sup>1</sup>, Shi-Kun Dong<sup>1</sup>, Deng-Yuan Wang<sup>1</sup>, Xiao-Lu Li<sup>1</sup>, Xin-Yan Cui<sup>1</sup>, Lei Cheng<sup>1</sup>

<sup>1</sup> *Department of Otorhinolaryngology and Clinical Allergy Center, The First Affiliated Hospital, Nanjing Medical University, Nanjing, China*

#### Background

The aim is to understand the satisfaction of domestic and international students with the online course of Otorhinolaryngology during the COVID-19 period, and to provide reference for promoting the revolution of online teaching.

#### Summary Of Work

We introduce the online and offline teaching mode of Otolaryngology. A questionnaire survey was conducted among the students of international and domestic classes to analyze their satisfaction with the online course.

#### Summary Of Results

Most students' satisfaction with online courses was at the level of "general" and "satisfaction". In the seven dimensions of free-time arrangement, online classroom form, difficulty, value, period planning, online operation and overall satisfaction, the satisfaction of domestic students with online courses is significantly higher than that of international students. The satisfaction of international students in active learning and achievement is significantly higher than that of domestic students. In terms of learning enthusiasm, the two classes are basically the same. However, 34.1% of the students thought that they didn't learn much from the online courses. In terms of value, period planning, online operation and overall satisfaction, the distribution of satisfaction between domestic and international students is different; In terms of free-time arrangement, online classroom form and difficulty, there is no difference in the distribution of student satisfaction between domestic and international classes.



### **Discussion And Conclusion**

We should adopt different teaching methods for students with different cultural backgrounds, pay attention to cultivating students' autonomous learning ability and improve their satisfaction, in order to improve the teaching quality.

### **Take Home Messages**

Medical teaching mode combined with online course needs to be improved for students with different cultural backgrounds. We should pay more attention to cultivating students' autonomous learning ability.

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## Online Oral Session 7.2 (0175)

**Date of presentation:** Sunday 28th August

**Time of session:** 04:15 - 04:30

**Location of presentation:** Online Session

### Understanding The Research Landscape of Interprofessional Education And Collaboration Via Data Mining

Catherine Joy Escudra<sup>1</sup>, Jocel Regino<sup>2</sup>

<sup>1</sup> Ewha Womans University, Seoul, The Republic Of Korea <sup>2</sup> University of Santo Tomas, Manila, The Philippines

#### Background

Interprofessional Education and Collaboration (IPE/C) are terms commonly used in research, clinical practice, and education. An increased number of IPE/C publications were found from the past years. The objectives of this study are to identify dominant topics of IPE/C research, to summarize the temporal trend of topics, and to interpret the evolution of topics within the past years.

#### Summary Of Work

This study systematically mined number of IPE/C studies from two databases to characterize the relevant literature by an efficient and effective approach. Text mining, frequency analysis, topic modelling, analysis and exploration were done to detect semantic patterns and explore the yearly development of research themes.

#### Summary Of Results

The researchers found 15 topics upon review of 3651 research publications from 1992 to 2021. The top three topics with the highest frequency of publication and with significant trends were (1) contextual factors for readiness (p-value <0.05), (2) pre-licensure training (p-value <0.05), and (3) theoretical underpinnings (p-value <0.05). While the topics with the lowest frequencies (from least) but still with significant trends were (1) effectiveness of training programs (p-value <0.05), (2) health service delivery (p-value <0.05), and (3) assessment and evaluations (p-value <0.05). Throughout the years, increased IPE and IPC research publications were seen with more studies related to IPE than IPC. The study also revealed limited studies related to 4th industrial revolution (AI, big data, technology)

#### Discussion And Conclusion

The use of data mining to understand the research publications about IPE and IPC revealed that there is a large amount of research already about the topic since the 1990s. It was not surprising to see



that IPE research studies are more dominant than IPC as the integration of interprofessional collaboration is still foreign for most professionals worldwide. Most of the advocates for interprofessional collaboration have focused first on the identification of theories and assessment of their target stakeholder's readiness for future program implementation.

**Take Home Messages**

- IPE and IPC has been studied greatly for the past years
  - There is a need to also integrate theories from IPE to practice in IPC
  - Most studies have focused on readiness assessment, theories, and pre-licensure training.
- 



## Online Oral Session 7.3 (0214)

**Date of presentation:** Sunday 28th August

**Time of session:** 04:30 - 04:45

**Location of presentation:** Online Session

### **Perceptions of students regarding innovative approaches introduced in nutrition and metabolism module at Shifa college of medicine**

Sumreena Mansoor<sup>1</sup>, Saima Saeed<sup>1</sup>, Iqra Anwar<sup>1</sup>, Sajid Rashid<sup>2</sup>

<sup>1</sup> Shifa college of medicine , Islamabad , Pakistan <sup>2</sup> Rawalpindi medical college , Rawalpindi , Pakistan

#### **Background**

Objective: To assess the perceptions of students of 2nd year MBBS, Shifa College of Medicine (SCM) regarding the innovative approaches introduced in the course of Nutrition and Metabolism module at the end of the respective module in the year 2020. Recent strategies introduced in this module included introduction to community nutrition, school visits, Islamic perspective of nutrition, journal club and e-posters in order to build the students horizons in clinical practice.

#### **Summary Of Results**

Method: This descriptive study was conducted on all students of 2nd year MBBS in Shifa College of Medicine after informed consent upon the completion of the Nutrition and Metabolism module (2nd December to 28th December 2020). A questionnaire comprising of 5 categories with 25 questions in total formulated according to Likert scale based on a modified DREEM (Dundee Ready Education Environment Measure) criteria designed in reference to innovative approaches incorporated in this module in order to enhance the students' understanding in correlation with their future clinical training. Quantitative data was collected after ethical approval and will be analyzed using SPSS version 22.

#### **Discussion And Conclusion**

Conclusion: Designing course content for the students is an ongoing process demanding innovations and updates with reference to the international guidelines. Total DREEM score at Shifa College of Medicine was 74.68%( 74.68/100) which depicted that students perceptions about the innovations were positive showing an encouraging response towards learning approach, outcome and attitude in regards to the educational environment.



### Take Home Messages

It depicts that the students perceived the innovations positively showing an encouraging response towards learning approach, outcome and attitude in regards to the educational environment. It helped in identifying certain strategies introduced in the module which needed improvement and provided positive feedback on certain changes. Identification of relatively less receptive strategies provides a room for improvement.

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## Online Oral Session 7.4 (0364)

**Date of presentation:** Sunday 28th August

**Time of session:** 04:45 - 05:00

**Location of presentation:** Online Session

### **Incorporating GRADE Concepts into an Introductory Course on Evidence-Based Medicine for Undergraduate Medical Students Transitioning from Preclinical to Clinical Medical Education**

Jeng-Wen Chen<sup>1,2</sup>

<sup>1</sup> Cardinal Tien Hospital and Fu Jen Catholic University, New Taipei City, Taiwan <sup>2</sup> National Taiwan University Hospital, Taipei, Taiwan

#### **Background**

Conveying uncertainty regarding treatment effects in clinical medicine is essential when teaching evidence-based medicine (EBM) to undergraduate preclinical medical students. Based on the grading of recommendations assessment, development, and evaluation (GRADE) system, systematic reviews are defined as providing high, moderate, low, and very low quality evidence—which correspond to estimated likelihoods of >90%, 60%–70%, 30%–40%, and <20%, respectively—that the treatment effects will not change substantially as new studies emerge.

#### **Summary Of Work**

A 1-week introductory course on EBM was developed for year-4 medical students. To improve the engagement of the medical students studying EBM, we conducted a pretest survey with five common sense-based items, including “Is clinical medicine a science or an art?” “Eating eggs causes elevated serum cholesterol,” “Milk drinking habits prevent fractures,” “Tamiflu treats influenza,” and “Which databases are you used to search the medical literature?” Students were asked to estimate the likelihood (>90%, 60%–70%, 30%–40%, and <20%) that the statements in items #2–#4 will remain unchanged as new studies emerge. The students were asked to respond to the same items 1 week later in the posttest and provide feedback in the satisfaction surveys.

#### **Summary Of Results**

From 2018 to 2021, 141 year-4 medical students participated in the course. More participants considered clinical medicine a science rather than an art in the posttest than in the pretest. The posttest results for items #2–#4 revealed that the students’ confidence that the findings would remain unchanged decreased significantly. All items (#1–#5) had significantly different pretest versus posttest distributions (chi-square test  $P < .001$ ). The student satisfaction surveys had an average score of 4.5, as scored on a Likert scale of 1–5.



### **Discussion And Conclusion**

The real life–based surveys used in the pretest and posttest may increase undergraduate preclinical medical students’ motivation to learn about EBM. The students demonstrated significantly decreased confidence in the common sense–based statements after they applied their learned EBM skills.

### **Take Home Messages**

1. Using common sense–based surveys in a pretest and posttest increase engagement in preclinical medical students learning EBM.
  2. An introductory course on EBM incorporating concepts of clinical uncertainty facilitate preclinical medical students’ transition into a clinical education environment.
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## Online Oral Session 7.5 (0559)

**Date of presentation:** Sunday 28th August

**Time of session:** 05:00 - 05:15

**Location of presentation:** Online Session

### Evaluation of Teaching Effect of First Aid Comprehensive Simulation-based Education in Clinical Medical Students

Mian Peng<sup>1</sup>

<sup>1</sup> *The Third Affiliated Hospital of Shenzhen , Shenzhen, China*

#### Background

Although students mastered the composition skills, they lack of the ability to effectively integrate these composition skills in real clinical situations. To address the problem, we set up different levels of situational simulation training for grade 2 ~ 4 medical students, and evaluate the teaching effect of first aid situation comprehensive simulation-based education on clinical medical students.

#### Summary Of Work

The medical students in Grade 2, 3 and 4 received different situational SBE respectively. The 2nd-year medical students received single skill module which included cardiopulmonary resuscitation, endotracheal intubation, and electric defibrillation training. The 3rd-year medical students received single subject module which included cardiovascular and respiratory system training. The 4th-year medical students received the integrated multidisciplinary module which combined first-aid skills, clinical thinking and teamwork training. The primary outcome was expert evaluation and peer evaluation. The secondary outcome was students' satisfaction questionnaire response. In our training, we arranged an adequate teaching staff for intensive training and timely feedback (the student-teacher ratio of 1:5), adequate time for repetitive practice (Each SBE was carried out within 4 hours), curriculum design and integration from real cases by clinicians, realistic computer-driven mannequins to ensure simulation fidelity, providing different difficult level of SBE to different grades of students, and pre- and after tests for ourcome measurement.

#### Summary Of Results

In all of the single skill module, single subject module or comprehensive disciplines module, the scores in the expert evaluation and peer assessment after the training were significantly higher than before the training, and the differences were statistically significant ( $P < 0.05$ ). The integrated subject training, although having the lowest pre - and after-test marks, has the largest increase in scores.



### **Discussion And Conclusion**

The first aid comprehensive simulation-based education in grade 2-4 clinical medical students, basing on timely feedback, repetitive practice, curriculum integration, simulation fidelity, and outcome measurement are effective in improving the students' proficiency in managing the real emergencies.

### **Take Home Messages**

The first aid comprehensive simulation-based education are effective in improving the students' proficiency in managing the real emergencies.

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## Online Oral - Clinical Assessment

### Online Oral Session 8.1 (0372)

**Date of presentation:** Sunday 28th August

**Time of session:** 06:30 - 06:45

**Location of presentation:** Online Session

### **Applying the Many facets Rasch Model (MFRM) and Kane's framework in an argument based validity study of performance assessment ratings.**

Imogene Rothnie<sup>1</sup>, Christopher Roberts<sup>1</sup>

<sup>1</sup> *The University of Sydney, Sydney, Australia*

#### **Background**

Examiner ratings and candidate scores in performance-based assessments infer competence levels and often have consequences for student progression. Good governance of these assessments requires evidence that interpretations of performance ratings and related decisions are valid; they are based on accurate and fair interpretations of students' ability. The health professions research community is beginning to embrace contemporary argument-based validity theories such as Kane's interpretation/use argument to direct validation studies. However, the arguments developed for validity evidence; the evaluative component of Kane's approach, frequently lack a consistent theoretical framework and thus criteria to test the interpretation/use argument. In this study we demonstrate that the Many facet Rasch Model (MFRM), from Rasch measurement theory, provides a robust theoretical framework for comprehensive measurement-based validation studies of performance assessments.

#### **Summary Of Work**

The study focus was a 12 station clinical skills OSCE at an Australian medical school. Examiners produced assessment ratings on three domains of performance on each station. The passing standard was set per domain. A minimum score of 9/12 ratings of performance 'at expected standard' on each domain was necessary to pass and progress to the next year of training.

We created the interpretation/use argument for the OSCE from theory and process documentation. A relevant MFRM provided the evaluative lens, criteria and identified the sources of evidence for the validity argument.



### **Summary Of Results**

The analysis showed that examiners applied the rating scales in different ways, which threatened the validity of interpreting ratings as accurate measures of students' clinical competence. We confirmed unidimensionality of the data which implies that isolating performance domains as a standard-setting approach may be unnecessary and threaten generalisability of results. WE found the accuracy of decisions about competence could be improved by applying techniques that quantify and control for the measurement error introduced by examiner behaviours.

### **Discussion And Conclusion**

Applying the MFRM provided a comprehensive theory-based frame of reference to evaluate the evidence in this validation study, and we argue this approach could be applied in other settings.

### **Take Home Messages**

This research demonstrates the importance of identifying and making explicit assumptions that underpin the interpretation of performance assessment ratings and relating these to a framework used to assess validity evidence.

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## Online Oral Session 8.2 (0394)

**Date of presentation:** Sunday 28th August

**Time of session:** 06:45 - 07:00

**Location of presentation:** Online Session

### **Analysing Medical Student Assessment Performance across Clinical Placement Sites**

Denise Demmer<sup>1</sup>, Jodie Ween<sup>1</sup>, Elina Ng<sup>1</sup>

<sup>1</sup> Curtin University, Perth, Australia

#### **Background**

The clinical learning environment is highly complex and multifaceted in nature which can influence student learning experience. For medical schools, it is important that learning and assessment outcomes are consistent across clinical teaching sites. One mechanism for achieving this is to analyse, comparisons of assessment performance of year cohorts of medical students undertaking clinical placement at various clinical teaching sites which can include metropolitan, outer metropolitan and rural locations.

#### **Summary Of Work**

This cross-sectional study examined summative assessment results for two major assessments, a written examination and an OSCE for one cohort of medical students in two academic years. Analysis of the cohort performance was undertaken in 2020 and 2021 to compare performance between clinical placement sites of a medical program at an Australian University.

#### **Summary Of Results**

When comparing end of year summative assessment results between medical students (N=55) completing placements in metropolitan/outer metropolitan settings (n=39) versus placements in a rural setting (n=16), no significant differences in written and OSCE scores were observed (written:  $t(53) = .698, p = .488$ ; OSCE:  $t(53) = 1.412, p = .164$ ). For examinations in the following year of the same cohort (n=51), no significant differences in written assessment and OSCE scores between clinical sites (metropolitan/outer metropolitan) were observed between these students (written:  $F(3,47) = 0.659, p = .582$ ; OSCE:  $F(3,47) = 0.156, p = .926$ ).

#### **Discussion And Conclusion**

The results demonstrated that assessment performance of students across two years of the medical course were not significantly impacted by clinical placement site. This is of particular importance for students who engage in clinical placements in a rural setting, as they are neither advantaged nor



disadvantaged in assessment performance in comparison to their counterparts in metropolitan/outer metropolitan placements. Systematic investigation into student assessment performance across clinical placement sites is imperative for quality assurance purposes. This allows for the identification of any issues with the learning experienced by students at clinical sites which can inform quality improvement, particularly when clinical sites are new or undergo significant changes which may affect quality of teaching.

### **Take Home Messages**

Timely systematic monitoring of student assessment performance across clinical placement sites is crucial for identifying learning issues at clinical site/s which may affect learning outcomes.

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## Online Oral Session 8.3 (0399)

**Date of presentation:** Sunday 28th August

**Time of session:** 07:00 - 07:15

**Location of presentation:** Online Session

### Using mobile-enhanced technology to re-design WBA

Carmel Tepper<sup>1</sup>, Kirsty Forrest<sup>1</sup>, Jo Bishop<sup>1</sup>

<sup>1</sup> *Bond University, Gold Coast, Australia*

#### Background

The evaluation of student-patient interactions in the clinical setting is a form of authentic assessment embraced by the medical education community. It is essential that medical schools are able to evidence that their graduates have attained sufficient standards in core clinical and procedural skills as indicated by their accrediting institutions' graduating doctor competency frameworks. Bond University partnered with an external provider in the development of a mobile-enhanced clinical ePortfolio that captures evidence of workplace-based assessments (WBA).

#### Summary Of Work

In 2021 the Bond Medical Program transitioned to a competency Pass/Fail model of assessment in the clinical years. Our WBA program was re-designed to require additional evidence and more precise task completion specific to each placement. The flexibility of tools in the ePortfolio enabled our program to introduce numerous innovations in WBA, some in response to Covid and some in response to changes in delivery methods of medicine in our community. New WBA's have been created to evaluate student interactions in alternate community environments while existing WBA such as the Mini-CEX have been re-designed to enhance personalised feedback for students. QR codes have been developed to assist communication of WBA requirements to clinical supervisors, also using mobile devices.

#### Summary Of Results

Clinical staff survey feedback indicates that the clinical ePortfolio is simple and intuitive to use. Data will be shared to show how students are successfully achieving required WBA obtaining rich, personalised feedback on their skills performance and giving faculty detailed evidence of multiple competencies achieved.

#### Discussion And Conclusion

Mobile-enhanced technologies are a convenient and efficient way for clinician supervisors to give real-time assessment and feedback on performance of skills to medical students. The flexible nature



of the tool has enabled us to adapt our program of WBA to evidence alignment of tasks to clinical or community setting. The narrative feedback has given us insight to our student experience on placement and enhanced the integrity of our decision-making.

### **Take Home Messages**

The flexibility offered by mobile-enhanced technologies enables programs to adapt their WBA to align with future requirements of medical practice and to give students substantial more in-time personalised feedback on skills development.

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## Online Oral Session 8.4 (0626)

**Date of presentation:** Sunday 28th August

**Time of session:** 07:15 - 07:30

**Location of presentation:** Online Session

### **You want us to do *what*? Validated online assessment and a happy admin team is possible**

Alison Seccull<sup>1,2</sup>, Silas Taylor<sup>3</sup>, Renee Lim<sup>4</sup>, Melanie Fentoullis<sup>3</sup>

<sup>1</sup> School of Clinical Medicine, UNSW Medicine & Health, Rural Clinical Campus Coffs Harbour, Australia <sup>2</sup> UNSW, Sydney, Australia <sup>3</sup> Office of Medical Education, UNSW Medicine and Health, Sydney, Australia <sup>4</sup> FMHS, University of Sydney, Sydney, Australia

#### **Background**

Online medical assessment has become commonplace over the last 2 years of the COVID pandemic. Our institution also opted to replicate its clinical exams in an online format in 2020 and 2021. OSCEs are administratively time consuming and expensive at the best of times. Our team spent countless hours refining the timetabling, invigilation and examiner support process for wholly Microsoft Teams<sup>®</sup> based online exams in 2020. We were keen to explore a more efficient process in 2021.

#### **Summary Of Work**

In 2021 we trialled a new version of teleOSCE for part of our exam process. The Changineers OSCIA (Online Structured Clinical Interaction and Assessment) platform combines videoconferencing, automated recording, timestamped feedback and scheduling capability. A standout feature from an administrative perspective is that it allows students and examiners to book a mutually acceptable time independent of our administrative team. This removes a significant time burden. Additional capacity is built in for overruns. Examiners can also pre-book time slots for those stations that have been affected by technical glitches. Examiners were trained in the use of the technology through videoconferencing support of up to 30 minutes.

#### **Summary Of Results**

OSCIA has been validated against in person and Teams<sup>®</sup> based OSCEs for clinical history based OSCEs. OSCIA reduced the number of administrative hours required to monitor timing and marshal students in and out of online waiting rooms by 30 mins per student. (3 stations x 10 minutes per station). OSCIA was used to reschedule several stations that were halted for technological or time overrun reasons. These were completed on the day of the exam.



### **Discussion And Conclusion**

The administrative burden of traditional OSCE examinations is well described. The OSCIA platform reduced administrative burden on our professional services team and allowed uncompleted stations to be anticipated and rescheduled on the same day. OSCIA has the potential to reduce the stress related to a technological failure or overrun that is experienced by student, examiner and the administrative team.

### **Take Home Messages**

Administrative costs and team stress can be reduced by incorporating an appointment booking system into online educational software.

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## Online Oral Session 8.5 (0721)

**Date of presentation:** Sunday 28th August

**Time of session:** 07:30 - 07:45

**Location of presentation:** Online Session

### **patient safety OSCE to assess competencies at graduation: case development using a modified Delphi method**

Ikuo Shimizu<sup>1</sup>, Kazumi Tanaka<sup>2</sup>

<sup>1</sup> *Shinshu University, Matsumoto, Japan* <sup>2</sup> *Gunma University, Maebashi, Japan*

#### **Background**

Medical students are expected to have competencies in patient safety by the time of graduation. However, methods to properly assess these competencies have not yet been properly introduced. Although the objective clinical skills examination at the end of clinical clerkship (Post-CC OSCE) was officially introduced in Japan in 2020, the major stations focus on medical interviews, physical examinations, and presentations, and tasks for the summative assessment of patient safety have not yet been established.

#### **Summary Of Work**

Consensus process rounds using an online questionnaire based on the modified Delphi method were conducted among medical education specialists, clinical educators at training hospitals, and patient safety managers at university hospitals (n=30). After the researchers developed the draft cases, the panels evaluated the cases for consistency with existing core-competencies (Model Core Curriculum and the WHO Patient Safety Curriculum Guide), and for feasibility as an OSCE using the Likert scale.

Based on the results obtained, the tasks were revised or added, and the responses were requested repetively. This process was repeated until all the evaluation items were aggregated to a mean value  $\geq 3.5$  and standard deviation  $\leq 1$ .

#### **Summary Of Results**

Twenty-two participants (73.3%) responded to the survey, and we decided to complete the survey in the second round because the above criteria were met. Finally, four stations (preoperative marking, matching of blood collection tubes, double-checking of medications, and patient encounter after an incident) were established. Many tasks asked about non-technical skills, which were not included in the existing tasks.



### **Discussion And Conclusion**

The modified Delphi method was considered to be able to generate products with high content validity and was useful in the formulation of the Post-CC OSCE stations.

### **Take Home Messages**

It is suggested that non-technical skills are included as patient safety competencies, and the medical skills in a broader sense to be acquired need to be clarified. In addition, there is a need to consider how to provide opportunities to participate in tasks that contribute to patient safety in clinical practice to acquire these skills.

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## Online Oral Session 8.6 (0648)

**Date of presentation:** Sunday 28th August

**Time of session:** 07:45 - 08:00

**Location of presentation:** Online Session

### **Social Cognitive Predictors of Medical Students' Academic Satisfaction: Implications for Career Development**

Min An<sup>1</sup>, Xuanxuan Ma<sup>2</sup>, Hongbin Wu<sup>3</sup>

<sup>1</sup> School of Education, Qufu Normal University, Shandong, China <sup>2</sup> School of Public Health of Peking University, Beijing, China <sup>3</sup> Institute of Medical Education of Peking University, Beijing, China

#### **Background**

Academic satisfaction (AS)—the extent to which people enjoy their role or experiences as medical students—is important for medical students, with implications for well-being and medical career development. This study explores the relationships between medical students' social cognitive factors and AS in a Chinese medical education context.

#### **Summary Of Work**

The study sampled 123 medical institutions across China. 130,909 medical students provided valid data for the study after data cleaning (effective response rate of 94.40%). The social cognitive model of academic satisfaction (SCMAS) was adopted as the theoretical framework in this study. Descriptive statistics of and zero-order correlations among the social cognitive variables were computed, and hierarchical multiple regression analyses were performed.

#### **Summary Of Results**

Medical students were more likely to have lower levels of AS if they were male ( $\beta = -0.02$ ,  $P < 0.001$ ), getting older, having financial pressure ( $\beta = -0.02$ ,  $P < 0.001$ ), or having higher college entrance examination scores ( $\beta = -0.00$ ,  $P < 0.001$ ). Medical students were more likely to have higher levels of AS if they lived in an urban area ( $\beta = 0.02$ ,  $P < 0.001$ ) or had parents working in medicine ( $\beta = 0.01$ ,  $P < 0.05$ [AM1]). Their AS was predicted by outcome expectations ( $\beta = 0.39$ ,  $P < 0.001$ ), environmental support ( $\beta = 0.24$ ,  $P < 0.001$ ), self-efficacy ( $\beta = 0.19$ ,  $P < 0.001$ ), and goal progress ( $\beta = 0.11$ ,  $P < 0.001$ ). These social cognitive factors explained an additional 39% of the variance in AS, among which outcome expectations were the strongest predictor.

#### **Discussion And Conclusion**



In conclusion, the findings of this study shed light on medical students' AS in at least three ways. First, social cognitive factors played an important role in predicting AS, among which outcome expectations were the strongest predictor. Second, medical students' AS showed demographic differences. Finally, strategies to increase medical students' AS would be more appropriate when social cognitive factors are effectively promoted.

### **Take Home Messages**

Intervention programs or courses aiming to improve medical students' AS are advised to consider social cognitive factors. Intervention strategies are also discussed.



## Symposium 6A (0081)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:00 - 09:30

**Location of presentation:** Auditorium Lumiere

### Research in Assessment – Why, How, and So What?

#### Presenters

Lars Konge<sup>3</sup>, Leizl Joy Nayahangan<sup>3</sup>, Ebbe Thinggaard<sup>3,4</sup>, Martin Tolsgaard<sup>3,5</sup>

#### Moderator

Kulamakan (Mahan) Kulasegaram<sup>1,2</sup>

<sup>1</sup> The Wilson Centre, University Health Network, Toronto, Canada <sup>2</sup> Department of Family & Community Medicine, University of Toronto, Toronto, Canada <sup>3</sup> Copenhagen Academy for Medical Education and Simulation (CAMES) / University of Copenhagen and Capital Region of Denmark, Copenhagen, Denmark <sup>4</sup> Department of Gynaecology and Obstetrics, Hvidovre Hospital, Hvidovre, Denmark <sup>5</sup> Department of Obstetrics, Rigshospitalet, Copenhagen, Denmark

#### Background

Good assessment methods are a prerequisite for the transition from time-based to competency-based medical education. Solid evidence of validity is needed both for assessments. Research in assessment has grown tremendously over the past years, however the quality of most studies is low, e.g. a recent review in simulation-based assessment of surgical skills found that less than 10% of the approximately 500 papers used a contemporary framework of validity. Finally, assessment is often considered and used mainly for traditional testing purposes. The impact – both positive and negative – for instruction and learning still receives limited attention in the clinical and educational practice.

#### Topic Importance

Assessment theory and practice are often not aligned in educational and clinical contexts. If tests are being used without validity evidence, the consequences of testing and the resources used to implement it may not be justified. Likewise, if research in assessment is conducted without any theory, its merits as science cannot be justified

#### Format and Plans

The symposium consists of presentations, panel discussions and a PRO/CON debate. Throughout the presentations, the audience will be invited to share their experiences, insights, and feedback. The audience will also serve as judges during the debate and will be given the possibility to vote pro or con. The presentations are as follows, based on our intended outcomes:



1. Understand the theoretical underpinnings of assessment from both a psychometric , cognitive learning, and social perspective
2. Realize the immense gap in use and understanding of assessment between clinicians and medical education researchers
3. Be familiar with two recommended, contemporary frameworks of validity (PRO/CON Debate: Kane's and Messick's frameworks)
4. Reflecting on the importance of high-quality research in assessment

**Take Home Messages**

- Use contemporary validity frameworks to ensure validity and defensibility of your assessment instruments
- High-quality research on assessment is needed as we transition from time-based to competency-based medical education



## Oral - Assessment: Written 2

### Oral Session 6B1 (0760)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:00 - 08:15

**Location of presentation:** Rhone 2

### Brazilian assessment with ABEM 2021 National Progress Test

Sandro Schreiber de Oliveira<sup>1</sup>, Eduardo Arquimino Postal<sup>2</sup>, Denise Herdy Afonso<sup>2</sup>, Carlos Edurado Meres<sup>2</sup>, Eliana Goldfarb Cyrino<sup>2</sup>, André Abreu Júnior<sup>2</sup>, Nildo Alves Batista<sup>2</sup>

<sup>1</sup> ABEM, Brasilia, Brazil <sup>2</sup> ABEM, Brasília, Brazil

#### Background

The Brazilian Association of Medical Education – Abem, has been carrying out the Progress Test in Brazil for more than a decade, organized from centers that group together a set of about ten schools each. Each center organizes and annually administers its own test. Between 2019 and 2020, Abem developed a strategy to expand the participation of medical schools and the number of centers, in order to carry out an Abem National Progress Test from 2021 onwards.

#### Summary Of Work

Based on the limitations imposed by the covid-19 pandemic, Abem proposed an online application of the test in 2021 at the national level. Currently, Abem has 18 centers that bring together 182 medical schools, which represent 52% of all Brazilian schools. For the 2021 test, 17 of these centers joined.

#### Summary Of Results

The participation of 130 medical schools (37.3% of the total of Brazilian schools) was counted, and the enrollment of 67,871 academics, of which 48,946 took the test. The average increase in the performance of first-year students compared to sixth-year students was 29.6 percentage points (32.4% to 62.0%). The Basic and Public Health areas showed the lowest variation in the correctness rate between the initial and final periods of the course, approximately 20 and 25 percentage points, respectively. The total average of correct answers, in the last year of the course, was 62%.

#### Discussion And Conclusion

The averages of students in the final year of the course do not seem to vary significantly from those obtained in different parts of the world or when compared to a Brazilian initiative from 2015. The percentages of correct answers in 2021 for the first and final years are almost identical to those of 2015. However, there was an increase in the range of performance variability among final year



students when comparing the averages of the different participating centers.

### **Take Home Messages**

The results, based on a large number of schools and students, point towards the need to consolidate the progress test as an evaluation strategy for Brazilian medical education, based on Abem, an association responsible for the care of students, schools and medical education.

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## Oral Session 6B2 (0571)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:15 - 08:30

**Location of presentation:** Rhone 2

### A Study on the Reliability of Remote Online Open Book Examinations

Hui Meng Er<sup>1</sup>, Vishna Devi Nadarajah<sup>1</sup>, Pei Se Wong<sup>1</sup>, Nur Hafizah Adnan<sup>1</sup>

<sup>1</sup> *International Medical University, Kuala Lumpur, Malaysia*

#### Background

The COVID-19 pandemic has affected the delivery of education and assessments in an unprecedented way. Remote online open book examinations (ROOBE) were widely adopted during the pandemic but there were concerns about its reliability due to several reasons such as faculty's competencies in setting higher order thinking questions and students' academic integrity with respect to assessment behaviour. The objective of this study was to determine the reliability of ROOBE.

#### Summary Of Work

The student performances in the End-of-Semester 4 examinations in an undergraduate pharmacy programme were compared between two cohorts (A and B). The examination formats were multiple choice questions (MCQ) and modified essay questions (MEQ). For Cohort A, the examinations were closed-book and held in campus with proctoring. Due to the COVID-19 pandemic, Cohort B students undertook the examinations online remotely without proctoring. Faculty were trained to set higher order thinking questions for ROOBE. Independent t-test was used to determine the difference between the scores of the two cohorts. For Cohort B, the grade point average (GPA) of the students in Semester 3 (closed-book) and Semester 4 (ROOBE) were analysed using paired t-test and Pearson correlation.

#### Summary Of Results

In the MCQ examinations, Cohort B's average scores were higher than those of Cohort A for all modules. However, the difference was significant for only one of the modules ( $p \leq 0.05$ ). For the MEQ examinations, Cohort B showed significantly higher average score than Cohort A in one module ( $p \leq 0.05$ ). The GPA for Cohort B was significantly higher in Semester 4 compared to that in Semester 3 ( $p \leq 0.05$ ). A high Pearson correlation (0.790) was found between the GPA of the two semesters.



### **Discussion And Conclusion**

Despite the concerns for ROOBE, the study has provided some evidence for its reliability. As there were multiple assessments using various tools throughout the semester for all modules, the reliability was not significantly compromised by the change in the assessment mode during the COVID-19 pandemic.

### **Take Home Messages**

Remote online open book examination is feasible and reliable with the use of technology. Faculty training on setting higher order thinking questions is critical.

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## Oral Session 6B3 (0692)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:30 - 08:45

**Location of presentation:** Rhone 2

### **‘ClickStreams’: Mapping candidate behaviour in online invigilated and uninvigilated undergraduate assessments**

Alison Sturrock<sup>1</sup>, Chris McManus<sup>1</sup>, [Gil Myers](#)<sup>1</sup>

<sup>1</sup> *UCL medical school, London, UK*

#### **Background**

The introduction of computer-based tests has provided detailed data on how candidates answer single best answer questions in a time-limited assessment. Typical data consist of a ‘ClickStream’ – the keyboard and cursor actions for navigating questions, studying images, choosing answers, changing answers, and returning to questions. Events are timed to fractions of a second, generating large amounts of data. Interpreting so much data is not simple. We will describe ‘ClickMaps’, which allow a rapid visual assessment of detailed maps of candidate behaviour.

#### **Summary Of Work**

Using data obtained from two summative undergraduate assessment at UCL medical school, we have collated patterns of behaviour or ‘ClickMaps’ generated by candidates taking randomly ordered computer-based tests in a high-stakes assessment. We will look for differences in these patterns between the invigilated and uninvigilated assessments.

From these behaviour patterns, we will present our inference of several distinct approaches students take in completing their assessments. Based on these we can start to consider how different student groups manage their assessments and the impact of their strategies on results.

As collusion is a concern in any high-stakes assessment and the introduction of CBTs has increased this concern. We will review the ‘ClickMaps’ from this perspective and in relation to Acinonyx analysis.

#### **Summary Of Results**

We will present the most common patterns of behaviour or ‘ClickMaps’ generated from an invigilated and uninvigilated undergraduate summative assessment.



As a result of a university-level decision, one of our assessments was not invigilated. In this assessment, we found four anomalous pairs using Acinonyx software to check for collusion. We will present detailed comparison of these pairs of ClickMaps to provides insights into the process by which collusion may have occurred.

### **Discussion And Conclusion**

Candidate taking computer-based tests use a variety of strategies that differ in effectiveness. Some candidates might perform better if they used a different strategy. ClickMaps can provide useful feedback to candidates and help them adopt better exam-taking strategies. It may also be useful in detecting collusion in computer-based tests.

### **Take Home Messages**

Students have different approaches to managing their assessments strategies in a time-limited assessment. ClickStream data provides powerful ways of assessing candidate behaviour in summative assessments.

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## Oral Session 6B4 (0487)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:45 - 09:00

**Location of presentation:** Rhone 2

### **The use of an online formative question bank to support progress testing in remediation tutorials during the COVID-19 pandemic.**

Steve Capey<sup>1</sup>

<sup>1</sup> *Swansea University, Swansea, UK*

#### **Background**

The initial stages of the COVID-19 pandemic saw a cessation of face to face teaching from March 2020. The Swansea University MBBCh uses summative progress testing in years 2 to 4 to make promotion decisions. We had completed the first round of progress testing in November 2019, before the cessation of face-to-face teaching. This left a number of students that required support to remediate an unsatisfactory score later in the year.

#### **Summary Of Work**

We utilised a resource of 1000 formative SBA questions that had been provided by the U.K. Medical Schools Council (MSC) for use in unsupervised online assessment in the 2019-20 academic year. The formative online tests were available to complete over 72 hours and consist of between 50-150 SBA questions. Feedback was available to all students. Groups of remediating students were invited to participate in online, student led, tutorials via Zoom.

#### **Summary Of Results**

A large number of the MBBCh cohorts engaged with the online tests, with this increasing as the academic year progressed. The majority of students in the remediating group engaged with the tests and the weekly tutorials. Students in the tutorials were able to discuss 25-30 SBA questions in a tutorial of 2-3 hrs duration. Students found the tutorials a useful resource in developing their assessment literacy. The students in the tutorial group were able to be supported well to achieve remediation in the supplementary exam.

#### **Discussion And Conclusion**

Students that were required to remediate felt supported in a time where it was difficult to follow the normal practices that we previously used. The remediating students were able to perform to similar standards as the main cohorts in the supplemental exams.



### Take Home Messages

It is possible to support students that require additional help with developing assessment literacy with a high-quality formative question bank and online tutorials. The advantages of this approach are the ability to reach students in a wider geographical area when on clinical placements.

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## Oral Session 6B5 (0706)

**Date of presentation:** Sunday 28th August

**Time of session:** 09:00 - 09:15

**Location of presentation:** Rhone 2

### Gathering Validity Evidence Based on Response Process: A Clinical Reasoning Example

Melissa Margolis<sup>1</sup>, Christopher Runyon<sup>1</sup>, Monica Cuddy<sup>1</sup>, Su Somay<sup>1</sup>, Polina Harik<sup>1</sup>

<sup>1</sup> NBME, Philadelphia, USA

#### Background

Clinical reasoning is a foundational skill for physicians. The complexity of the reasoning process—which comprises numerous sub-competencies (e.g., information gathering, hypothesis generation) and requires consideration of contextual factors such as acuity, chronicity, and risk—makes it a difficult skill to assess with traditional multiple-choice questions.

NBME recently began a research program focused on developing question types to better assess clinical reasoning. Before introducing a new item format, however, it is important to collect validity evidence in support of anticipated score uses and interpretations. This presentation will describe a novel clinical reasoning item format and the program of research that is being conducted to collect validity evidence in support of its use.

#### Summary Of Work

The SHARP (**SH**ort **A**nswer **R**ationale **P**rovision) item format presents a patient chart and lead-in question (e.g., “What is the most likely diagnosis?”) and asks learners to (1) enter a brief free-text response to the question and (2) select information from the chart to support their answer.

Three interconnected research studies were designed to collect validity evidence supporting use of this format:

1. A qualitative analysis of 20 think-aloud interviews during which medical students engaged with and responded to 12 SHARP items;
2. Expert (physician-educators) review and evaluation of learner responses to the new item format;



3. A comparative analysis of think-aloud responses to SHARP items and traditional vignette-based multiple-choice questions.

### **Summary Of Results**

The focus of this work is on the methodological approach to collecting validity evidence. Initial research results indicate that the SHARP item format elicits information that 1) supports inferences about learners' clinical reasoning and 2) is not available via multiple-choice questions.

### **Discussion And Conclusion**

This work represents a systematic and thorough approach to collecting response process validity evidence for a new clinical reasoning item type that can serve as a model to educators and practitioners seeking to collect validity evidence supporting their assessments.

### **Take Home Messages**

Collecting cognitive response process validity evidence can and should be done by educators and practitioners across various contexts and settings. This critical activity is often overlooked, yet without it there is little support for inferences about the construct that is the intended target of measurement.

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## Oral - The OSCE

### Oral Session 6C1 (0520)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:00 - 08:15

**Location of presentation:** Rhone 3A

### The Progress OSCE: A simulation-based progress clinical skills examination for medical students

Candace Pau<sup>1</sup>, Carla Lupi<sup>1</sup>, Abbas Hyderi<sup>1</sup>

<sup>1</sup> *Kaiser Permanente Bernard J. Tyson School of Medicine, Pasadena, USA*

#### Background

Progress testing is an assessment approach that enables longitudinal visualization of growth in competency over time by administering a graduation-level examination multiple times throughout a student's training. While this concept is commonly applied to written examinations, the use of simulation-based progress testing remains relatively novel, particularly in undergraduate medical education. We propose that an objective structured clinical examination (OSCE) in a progress testing format can yield valuable information on learner performance in a wide range of clinical skills, as well as other competencies, such as inclusive behavior, ethical reasoning, and application of health systems science concepts.

#### Summary Of Work

By designing and administering a series of five similar, but not identical, Progress OSCEs over the developmental trajectory, we can generate and compare performance data for multiple clinical competencies across administrations. Each of the eight cases in our Progress OSCE covers at least 2, and in some cases as many as 6, of our 26 institutional educational program outcomes, or competencies. Content of the cases was selected to specifically target competencies for which longitudinal assessment data was not readily available from other modalities.

#### Summary Of Results

Student reception of the Progress OSCE has been positive, with learners recognizing its value in identifying the expectations for competency at graduation. Data from the Progress OSCE is reported in the form of milestones demonstrated for each relevant competency. This data is used on an individual and cohort level to effect iterative, targeted improvement toward desired learning outcomes.



### **Discussion And Conclusion**

Simulation-based progress clinical skills testing, while labor-intensive to develop and implement, provides information on learner progress in a number of competencies that would be difficult to obtain via other assessment modalities. Simulation replicates the environment of application and therefore may be a more accurate reflection of competency than written examinations, while allowing for levels of standardization and safety beyond what is possible in the workplace-based setting.

### **Take Home Messages**

- Simulation-based progress clinical skills testing is a valuable tool for programmatic assessment in a competency-based model of medical education.
  - A Progress OSCE can be designed to specifically target competencies for which longitudinal assessment data may be difficult to obtain in other settings.
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## Oral Session 6C2 (0777)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:30 - 08:45

**Location of presentation:** Rhone 3A

### **More Than Just a Number: The Use of Qualitative OSCE Data to Predict Future Student Performance**

Michael Allen<sup>1</sup>, Felise Milan<sup>2</sup>, Tavinder Ark<sup>3</sup>

<sup>1</sup> *The Icahn School of Medicine at Mount Sinai, New York, USA* <sup>2</sup> *The Albert Einstein College of Medicine, New York, USA* <sup>3</sup> *The Kern Institute at the Medical College of Wisconsin, Wisconsin, USA*

#### **Background**

Quantification of medical student's performances provides a trusted yet incomplete view of their clinical competence. This study aims to evaluate how standardized patient's (SP) qualitative comments can supplement existing quantitative markers, early on in student's training, to accurately predict which students are at future risk of struggling with clinical skills.

#### **Summary Of Work**

SP comments from 360 students over two years of Objective Structured Clinical Examinations (OSCEs) at Einstein University were analyzed. An in-depth and extensive descriptive codebook was developed to classify comments. This was established through an iterative process of having each rater code comments independently, discuss any discrepancy in descriptive codes, and completing the code book once no more unique codes could be identified from the comments (point of saturation). Student's clinical performance (clinical rotation/clerkship grades, STEP1 scores (US national licensing exam), and the internal medicine (IM) SHELF examination - a national, summative clinical rotation examination - were analyzed using latent class analysis (LCA). Differences in the prevalence of SP thematic codes in each profile will be analyzed for statistical significance.

#### **Summary Of Results**

A total of 75 unique descriptive thematic codes were identified in the domains of interpersonal/communication skills, global rating, history taking, and physical examination. Negative comments were more prevalent regardless of domain. Global rating's most common positive and negative comments centering around empathy.

The LCA revealed three significant profiles of students: high performing students, middle-range performing students, and low-performing students. The addition of multiple shelf exam scores reduced the number of statistically significant and independent profiles from three to two.



### **Discussion And Conclusion**

Our preliminary analysis reveals that SP's comments can be classified into useful thematic codes and be used to help identify a group of students that may be at risk. Themes identified within the domain of interpersonal and communication were often commented on in other domains (e.g, history gathering), suggesting these skills are important and required throughout the entire SP encounter. Next steps involve: (1) understanding the relationship between students flagged using this method and their clinical performance; and (2) whether this qualitative data provides meaningful feedback that is otherwise not captured by the quantitative measures used in these technical examinations.

### **Take Home Messages**

Qualitative data may help identify students who will struggle with clinical skills in the future in ways that quantitative data does not.

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## Oral Session 6C3 (0655)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:45 - 09:00

**Location of presentation:** Rhone 3A

### The systematic impact of examiner stringency on standard setting on OSCEs

Matt Homer<sup>1</sup>

<sup>1</sup> *Leeds Institute of Medical Education, School of Medicine, Leeds, UK*

#### Background

Under borderline regression, examiner grades and scores are used in combination to create cut-scores at the station, and then exam, level.

Variation in examiner stringency will impact on these standards, but there is little work on quantifying this effect.

#### Summary Of Work

This work uses linear mixed models to estimate the impact of different factors (examiner, but also station) on station-level scores and grades, and standards under borderline regression. The exam data is from 442 separate administrations of an 18 station OSCE for international medical graduates who want to work in the UK (PLAB2). A comparison is made between standards set using 'raw' (i.e. observed) scores and adjusted (i.e. 'fair') scores that take account of variation in examiner stringency.

#### Summary Of Results

Correcting for examiner stringency produces systematically lower cut-scores under borderline regression standard setting than using the raw marks - of the order of 3 percentage points. In essence, examiner variation weakens the association (correlation) between scores and grades, and overall this produces adjusted standards lower than they those derived in the normal way using raw marks.

#### Discussion And Conclusion

This is an unexpected finding - many might assume that overall the impact of variation in examiner stringency would be neutral on standards (as it is, approximately, on scores/grades across the exam as a whole). The extent to which this finding is context-specific is unknown, and it is possible that the effect in other contexts could be in the opposite direction - but this seems unlikely. The talk will



consider how this work should inform standard setting policy - i.e. in the setting of conjunctive standards (adding standard errors of measurement, and setting additional station hurdles).

### **Take Home Messages**

The issue of the potential systematic bias of borderline regression evidenced for the first time here, with sources of error producing cut-scores higher than they should be, also needs more investigation. However, in many contexts it would be very challenging to carry out the required analysis.

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## Oral Session 6C4 (0332)

**Date of presentation:** Sunday 28th August

**Time of session:** 09:00 - 09:15

**Location of presentation:** Rhone 3A

### **The socioformative rubrics in the OSCE to assess the level of achievement of the competencies comprising the graduate profile of the physician**

Haydeé Parra Acosta<sup>1</sup>, Alejandro Garcidueñas López<sup>1</sup>, Jessica Arely Pallares chavira<sup>1</sup>

<sup>1</sup> *Universidad Autónoma de Chihuahua, Chihuahua, Mexico*

#### **Background**

One of the challenges for teachers in the health area is competency assessment. The OSCE is designed to assess the performance of students in specific clinical situations. The objective of this study was to assess the level of achievement of the competencies proposed in the graduates; profile by applying the OSCE with socioformative rubrics and assessing their relationship with the written final exam and the general average of the degree.

#### **Summary Of Work**

Method: A cross-sectional study was carried out with graduates of the career of medicine; in which an OSCE was applied as part of its degree exam. The rubrics were the instrument that was applied to assess competencies.

#### **Summary Of Results**

Even when there are significant differences between the students who performed the OSCE in the month of January compared to those performed in May, does not show a tendency to affirm that there are disadvantages. This indicates that it is a reliable test. The correlational analysis highlights a significant positive correlation between the average of the OSCE and the average of the written exam of the students, which makes it clear that an adequate performance in the written exam that assesses the theoretical knowledge is related to an adequate performance in the clinical skills demonstrated in the OSCE.

#### **Discussion And Conclusion**

The OSCE, is an objective and reliable test, suitable as part of the professional exam of the career of medicine; with the use of the rubric, it is possible to determine the level of achievement with which the student graduates.



### Take Home Messages

Currently, medical schools are developing their curricula for competencies. Its main characteristic is that they are renewed continuously to face the current challenges of health and medical training in the knowledge society through different approaches. One way to evaluate the clinical competence of physicians is through the Objective Structured Clinical Examination (OSCE), which is designed to assess the performance of students in specific clinical situations, where they are tested their theoretical knowledge, clinical reasoning, skills and abilities, as well as their attitude and interpersonal communication skills.

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## Oral - Admission to Postgraduate Training

### Oral Session 6D1 (0194)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:00 - 08:15

**Location of presentation:** Rhone 3B

### Using Job Analysis for Identifying the Desired Competencies of 21<sup>st</sup>-Century Surgeons for Improving Trainees Selection

Noa Gazit<sup>1</sup>, Gilad Ben-gal<sup>1</sup>, Ron Eliashar<sup>1</sup>

<sup>1</sup> Hebrew University of Jerusalem, Jerusalem, Israel

#### Background

The current selection for surgical training is based on ineffective methods. To develop more valid selection tools to improve the selection, it is necessary to identify the competencies that are important for success in contemporary surgery. Therefore, the current study aims to identify what competencies are required for success as a surgeon in the 21<sup>st</sup>-century and to evaluate their relative importance for selection for surgical training.

#### Summary Of Work

Job analysis was conducted using a mixed-methods design. First, 104 senior surgeons from all surgical fields from various hospitals in Israel were interviewed in order to query their perceptions of competencies associated with success as a surgeon. Their answers were coded and analyzed to create a list of important competencies. Next, a larger sample of 1,102 surgeons and residents from all surgical fields completed a questionnaire in which they rated the importance of each competency in the list for success as a surgeon and for selection for surgical training in the 21<sup>st</sup>-century.

#### Summary Of Results

Twenty-four competencies (five technical skills, six cognitive abilities, 13 personality characteristics) were identified in the interview analysis. Analysis of the questionnaire's data revealed that all 24 competencies were perceived as important for success as a surgeon as well as for selection for surgical training. The perceived importance of personality characteristics was higher than both cognitive abilities ( $p < .001$ ) and technical skills ( $p < .001$ ). In addition, the perceived importance of all three groups for the profession was higher than their importance for the selection ( $p < .001$  for all). The results did not differ between different surgical fields.



### Discussion And Conclusion

Twenty-four competencies were identified as important for 21<sup>st</sup>-century surgeons and for selection for surgical training. Although all competencies were perceived as important, personality characteristics were perceived as more important than technical skills and cognitive abilities. This updated definition of required competencies may aid in developing more valid selection methods of candidates for surgical training.

### Take Home Messages

- An updated definition of the required competencies of 21<sup>st</sup>-century surgeons was created
  - The perceived importance of personality characteristics for the selection is higher than both cognitive abilities and technical skills
  - The perceived importance of competencies is similar across different surgical fields
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## Oral Session 6D2 (0722)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:15 - 08:30

**Location of presentation:** Rhone 3B

### **The evaluation of a selection process in postgraduate medical education subspecialty training program in Canada**

Natalie Buu<sup>1</sup>, Carlos Gomez-Garibello<sup>2</sup>

<sup>1</sup> McGill University, Montreal, Canada <sup>2</sup> Institute of Health Science Education, McGill University, Montreal, Canada

#### **Background**

The selection process of medical students to Canadian postgraduate-level subspecialty programs is dissatisfying. In 2015, our program decided to overhaul this process. The timing for this change was deliberate. Postgraduate programs in Canada were launching a competency-based medical education (CBME) curriculum. Our program was integrating CBME curriculum in July 2017. A multiple mini-interview (MMI) approach to selection was developed. Efforts focused on creating scenarios that best highlight strengths and weaknesses in CanMEDs-like realms identified as important by departmental staff, such as responsiveness to feedback and collaboration, aiming to prospectively track these attributes through five-year training program thanks to increased assessments with milestones within similar CanMEDS categories in addition to ITERs and daily evaluations.

#### **Summary Of Work**

Since implementation, about 380 candidates selected for interview underwent this new process. From these, this MMI selection process allowed elimination of more than half the candidates, leaving approximately 45% considered acceptable to be offered a ranking in the Canadian selection system called CaRMS. More than half of scenarios created over this time period have been deemed to be discriminatory and continue to be used.

#### **Summary Of Results**

Due to small numbers, despite being a medium-sized program, it remains difficult to report more than trends and tendencies. Our data demonstrate satisfaction of candidates and staff of the process. Preliminary comparison of trainees in the program 6 years prior to and 6 years since starting our MMI selection process suggests an approximate two-fold decreased number of residents requiring remediation. We herewith also discuss perceived differences in the ability to discriminate candidates among selected CanMEDS categories of different scenarios and challenges and advantages perceived after 2 years experience delivering virtual instead of in-person MMIs.



### **Discussion And Conclusion**

We demonstrate the benefit of MMI for selection for postgraduate-level subspecialty program and importance of annual review of the process and scenarios. Furthermore, with the upcoming graduation of the first cohort of residents in the CBME curriculum, it also becomes possible to begin to assess how scenarios may help predict strengths and weaknesses in trainees through their residency training.

### **Take Home Messages**

Although resource and time intensive, there is evidence to support using MMI for selection for our postgraduate-level subspecialty program.

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## Oral Session 6D3 (0727)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:30 - 08:45

**Location of presentation:** Rhone 3B

### **A National Initiative to Ease the Transition from Medical School to Residency: The Learner Education Handover Pilot Project (LEaPP)**

Aliya Kassam<sup>1</sup>, [Benedicta Antepim](#)<sup>1</sup>, Glen Bandiera<sup>2</sup>, Leslie Nickell<sup>2</sup>

<sup>1</sup> *Cumming School of Medicine, University of Calgary, Calgary, Canada* <sup>2</sup> *Temerty Faculty of Medicine, University of Toronto, Toronto, Canada*

#### **Background**

Learner handovers are increasingly employed to improve the transition from medical school to residency (postgraduate medical education, PGME). These handovers, initiated by residency programs, typically focus on knowledge and skills needed for practice for new residents. A holistic handover called the Learner Education Handover (LEH) includes learner-initiated sharing of information about their academic accommodation needs, professionalism issues, equity, diversity and inclusion concerns, mental health and social wellbeing needs. We sought to understand the experience of schools piloting the LEH.

#### **Summary Of Work**

The LEH was piloted at six Canadian medical schools in 2019 and 2020. Residents, administrators, and deans at the participating schools were interviewed to discuss their experience with the pilot. Administrators were also surveyed on the process of implementing the LEH pilot. Each school was asked to consider infrastructure, human resources and existing policies when implementing the LEH pilot. Forms were sent by each receiving school to incoming first year residents. Interviews were subsequently held with PGME deans, wellness office representatives and first year residents who completed the LEH. Thematic analysis of the data was conducted by two members of the research team who coded transcripts in duplicate. Discrepancies were resolved through discussion to attain consensus.

#### **Summary Of Results**

A total of 28 interviews were conducted across both the 2019 and 2020 pilots. Participants described the pilot handover as successful in improving awareness of available resources for incoming residents. Four major themes emerged from the data: 1) Perceived benefits of the LEH, 2) Perceived disadvantages of the LEH, 3) Mismatched expectations and 4) Impact of COVID-19.



### **Discussion And Conclusion**

The LEH was seen as a valuable tool that focuses on the transfer of relevant information related to academic progression including academic vulnerability and professionalism challenges. The handover also helped to facilitate early access and intervention for learners requiring accommodations. Additional improvements to the LEH process are required to address concerns around privacy and communication.

### **Take Home Messages**

- The LEH is feasible for implementation within the existing infrastructure of wellness offices.
  - More resident education about the LEH's purpose and the use of its information is needed.
  - More work is needed to help create a safer culture for resident disclosure.
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## Oral Session 6D4 (0632)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:45 - 09:00

**Location of presentation:** Rhone 3B

### **A Simulated Call to The Wards to Improve Preparedness in The Transition to Discipline for Incoming Internal Medicine Residents**

Laura Spatafora<sup>1</sup>, Rachel McDonald<sup>1</sup>, Rishi Sharma<sup>1</sup>, Zahira Khalid<sup>1</sup>

<sup>1</sup> *McMaster University, Hamilton, Canada*

#### **Background**

The transition from undergraduate to postgraduate medical education poses significant stress for incoming residents, particularly during on-call shifts due to reduced supervision and heightened responsibility. This period has been associated with poorer patient outcomes. There remains a paucity of data investigating the role of non-procedural simulation training during this period. We aimed to explore the role of simulation-based curricula in improving confidence and easing anxiety during independent on-call shifts in the transition to internal medicine residency.

#### **Summary Of Work**

A simulation curriculum was designed based on a needs assessment completed by staff and current and incoming residents. 35 incoming residents were assigned to intervention or wait-list control groups by matched pairs design. The intervention group completed the simulation prior to starting residency and the wait-list control group one month following. Participants completed pre- and post-simulation surveys, a structured debrief immediately following the simulation, and a focus group one-month post simulation. A mixed-method approach to data analysis with quantitative analysis, descriptive statistics and thematic analysis was utilized.

#### **Summary Of Results**

Approaching unstable patients was the skill associated with the most stress and feelings of a lack of preparedness yet was identified as one of the most important competencies to have by faculty. These scenarios were found to be the most useful components of the simulation curriculum with residents in both groups reporting an increase in confidence and decrease in stress levels when approaching unstable patients. There was a greater impact across all skills when the simulation was completed prior to the start of clinical training.



### **Discussion And Conclusion**

The simulation curriculum was well-received by residents. The simulation had a greater impact when completed earlier in the transition to residency period. As residents begin to complete overnight call shifts, practical experiences also improve confidence and stress levels, but even at this point residents appreciate additional practice in a simulation setting and would also likely benefit from the development of longitudinal simulation curriculum development.

### **Take Home Messages**

Our low-fidelity simulation bootcamp improved confidence and reduced anxiety for several key competencies required to successfully and independently perform patient care during overnight call shifts. This curriculum may be easily implemented across other internal medicine programs.

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## Oral Session 6D5 (0538)

**Date of presentation:** Sunday 28th August

**Time of session:** 09:00 - 09:15

**Location of presentation:** Rhone 3B

### **Multi-phase Remote Admission Examination for Health Professions Education Master's Degree**

Roghayeh Gandomkar <sup>1</sup>, Mahboobeh Khabaz Mafinejad<sup>1</sup>, Maryam Alizadeh<sup>1</sup>

<sup>1</sup> *Tehran University of Medical Sciences, Tehran, Islamic Republic Of Iran*

#### **Background**

Delivering admission examinations is a serious challenge for higher education institutions during the COVID-19 pandemic. We had run a Multiple Mini Interview (MMI) for the admission of Health Professions Education (HPE) master training at Tehran University of Medical Sciences for several years, and this was very difficult this year because of the mandates on social distancing. A multi-phase remote examination was offered in a flexible, strict as well as safe distancing context.

#### **Summary Of Work**

Candidates' competence was assessed through an online multiple-choice question (MCQ) test, followed by an electronic resume evaluation, and finally a two-station synchronous interview. The 30-minute online written test, consisting of fifty MCQs and designed to assess the application of knowledge via scenario, was administered as a screening test. Based on the scores obtained, of 130 candidates, 42 were called for the second phase and then asked to submit their electronic resumes. In the final phase, a video conference platform BigBlueButton with breakout rooms was used to run two online stations, 6 minutes each. Two examiners individually assessed the candidate's interviews and resumes using checklists. The total examination score was calculated with the sum of the scores of the MCQ test, resume evaluation, and two online stations. In the end, candidates completed a questionnaire.

#### **Summary Of Results**

Of 130 candidates, fifteen were admitted as MSc students through the remote admission examination. Both candidates and examiners appreciated the approaches to the admission process, which helped them participate in this high-stake exam under the circumstances. Although 58.6% reported the exam participation as a challenging experience, 86.2% of candidates announced their readiness to take other similar examinations. 68.9% of the candidates agreed with the educational effect of the test.



### **Discussion And Conclusion**

This remote solution was a success to assess the expected competencies of candidates to enter a Master's course in HPE. Choosing the multi-phase format instead of for example a one-day MMI helped us to manage the burden on examiners and coordinators. We administered scenario-based MCQs with a time limit to prevent potential cheating.

### **Take Home Messages**

Conducting a multi-phase remote examination can help to run a flexible and safe exam in a distancing context.

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## Workshop 6E (0114)

**Date of presentation:** Friday 26th August

**Time of session:** 08:00 - 09:30

**Location of presentation:** Rhone 4

### **Implementation of programmatic assessment: Planning strategies, understanding challenges, and exploring solutions**

Dario Torre<sup>1</sup>, Sylvia Heeneman<sup>2</sup>, Lambert Schuwirth<sup>3</sup>, Cees van der Vleuten<sup>2</sup>

<sup>1</sup> *University of Central Florida, Orlando, USA* <sup>2</sup> *Maastricht University, Maastricht, The Netherlands* <sup>3</sup> *Flinders University College of Medicine and Public Health, Adelaide, Australia*

#### **Background**

Programmatic assessment (PA) has renewed the way we think about assessment in a post psychometric assessment era. PA is an holistic approach to assessment that aims at optimizing learning from assessment and it seems to be readily embraced by educators. This workshop provides participants with recent insights on the paradigm shift that is needed for the implementation of programmatic assessment across different programs. Such shift entails an individual and organizational change in mindset, values and beliefs about assessment. Recent studies have shown that the ability of ‘people’ to navigate the complexity of the local context and culture are of utmost importance for a successful implementation. This workshop will provide participants with the opportunity to design an initial implementation plan for their own institution. They will identify critical factors in the implementation process such as reason for change, people who can drive the implementation process, and strategies to adapt to context, regulations, institutional beliefs and values.

#### **Who Should Participate**

Teaching faculty interested in programmatic assessment who are considering or embarking in the implementation of programmatic assessment

#### **Structure Of Workshop**

We will provide a brief overview of the PA model, and its main principles. We will provide two descriptions of an implementation of programmatic assessment from two different contexts with focus on how specific challenges were addressed.



Next participants, using a structured worksheet, will develop an implementation plan of programmatic assessment for their own institution. In small groups, participants will share and discuss surface assumptions, values, beliefs and challenges related to the curriculum redesign and implementation of PA.

The workshop will conclude with a large-group discussion about key aspects of implementation, identifying potential solutions to solve the unique challenges of utilizing this assessment approach in specific learning contexts.

### **Intended Outcomes**

At the end of this workshop, participants will be able to

- Describe the principles of the PA model and its implementation process
- Design and develop an implementation plan that can be applied to their own institution
- Identify implementation-related cultural and contextual challenges and develop strategies to mitigate their impact on implementation



## Oral - Impact of Covid-19 on Assessment

### Oral Session 6F1 (0685)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:00 - 08:15

**Location of presentation:** Saint Clair 1

### **Transitioning to a Virtual Examination Environment for Centralized Basic Orthopaedic Surgery Organized Structural Clinical Examinations: A Qualitative Assessment of End-User Experience**

Valerie Lemieux<sup>1</sup>, Jonathan Doyon<sup>1</sup>, Jong Lee<sup>1</sup>, Douglas Archibald<sup>2</sup>, Bandar Ahmed<sup>1</sup>, Ahmed Alanazi<sup>1</sup>, Andrea Chan<sup>1</sup>, Justues Chang<sup>1</sup>, Alexander Charalambous<sup>1</sup>, Harman Chaudhry<sup>1</sup>, Mansur Halai<sup>1</sup>, James Higgins<sup>1</sup>, Ismet Oral<sup>1</sup>, Muhammad Manjra<sup>1</sup>, Adil Mumith<sup>1</sup>, Sam Park<sup>1</sup>, Ryan Paul<sup>1</sup>, Daniel Pincus<sup>1</sup>, Sebastian Tomescu<sup>1</sup>, Dmitry Tsvetkov<sup>1</sup>, Peter Weiler<sup>1</sup>, Michael Zywił<sup>1</sup>, Veronica Wadey<sup>1</sup>

<sup>1</sup> University of Toronto, Toronto, Ontario, Canada <sup>2</sup> University of Ottawa, Ottawa, Ontario, Canada

#### **Background**

Centralized examinations are key to competency-based curriculums as they are carried out by neutral assessors who are not involved in teaching the learner and allow for evaluation of trainees against their peers. COVID-19 pandemic has limited the ability to gather to perform these in-person evaluations.

#### **Summary Of Work**

**PURPOSE:** Assess the effectiveness and end-user experience of virtual centralized OSCE for basic Orthopaedic Surgery modules that were previously validated using "in person" OSCE format.

**METHODS:** A reproducible virtual evaluation process including assessor training followed by online OSCE for basic Orthopaedic Surgery modules (Arthroplasty and Trauma) were developed. Pre-examination briefing and review of technology sessions were conducted. Surveys were used to assess the effectiveness of the assessor training and the overall examination environment for the learners and the assessors. Qualitative analyses were computed.

#### **Summary Of Results**

Fourteen (100%) assessors completed the post-training survey. Pre-examination briefing sessions were useful and should be repeated prior to virtual centralized examinations. All assessors applauded the virtual format as it eliminated the need to travel to examination centers. Seventy-four percent of residents (n=17) responded to the survey. Most trainees (59%) recommend that some but not all examinations be conducted virtually. The online platform did not alter trainees' preparation, comfort levels, stress levels prior or during the examination, or their ability to



demonstrate their knowledge. Technical difficulties were rare. Though, when one event did occur, the trainee perceived it to negatively impact their score. Most residents wished for increased frequency of formative examinations which is in keeping with CBD-education framework.

The next steps include developing virtual cases for other modules and determining the ideal balance of in-person and virtual examinations within the resident's training program to possibly identify residents in difficulty.

### **Discussion And Conclusion**

Given the minimal perceived difference between the virtual and in-person assessment environments, and with the added convenience of virtual examinations, the virtual platform may be a useful tool to facilitate increased frequency of formative assessments desired by learners during various stages of a learner's program. This principle is in keeping with the goal of Competence-by-Design curricula.

### **Take Home Messages**

Virtual centralized OSCE-style examinations offers a viable tool to provide convenient and timely formative feedback to residents.

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## Oral Session 6F2 (0413)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:15 - 08:30

**Location of presentation:** Saint Clair 1

### **Don't look back in anger: making sure the changes required are ones you can live with**

Sean Gehring<sup>1</sup>, Kehlyn Jansen<sup>1</sup>, Jon Dupre<sup>1</sup>

<sup>1</sup> *Royal College of Physicians and Surgeons of Canada, Ottawa, Canada*

#### **Background**

The COVID 19 pandemic presented several challenges that required unique solutions to allow for the successful administration of high-stakes examinations in 2020/2021. While these changes can have an impact on the validity of the examination, the value of the examination itself cannot be understated; ensuring the safety of candidates entering independent practice is essential. Working with all stakeholders is key throughout the process and making changes that can be sustained is also important since returning to “the way things were” may not be possible going forward.

#### **Summary Of Work**

Public health authority mandates drove several key changes to be implemented to the exam delivery strategy to ensure the safety of our candidates and examiners:

- Virtual development for 68 specialties
- All examinations were transitioned to a computer-based delivery platform
- Additional exam sites were integrated to minimize travel
- Decentralized delivery model

In addition, the following changes were implemented to mitigate risk:

- All OSCE components transitioned to 1 of 3 delivery models
- Elimination of Standardized Patients
- Embedding clinical lab values within the exam questions
- A subset of specialties transitioned from 2 to 1 examiner/station

#### **Summary Of Results**

The key stakeholder groups provided the following feedback following the successful delivery of exams:



- A high percentage of the candidates reported a positive exam experience
- Exam Board leadership reported the computerized delivery method achieved the objectives of the exam
- Negative impact on volunteer engagement due to the decentralized model
- Impact on the wellness of the staff

Based on this feedback the following operational changes have been implemented:

- No PM written exams
- Human resource model changes
- Recentralize examiners
- Written exams - No weekend/no Wednesday
- OSCE observer functionality

### **Discussion And Conclusion**

Elements to support the success of exams in 2022:

1. Stakeholder engagement is KEY!
2. Establish a balance between psychometrics and operational feasibility
3. Prioritize wellness for your exam delivery team
4. Change initiatives require prioritizing which problems to solve.....
5. ....and some problems will require a longer runway to solve

### **Take Home Messages**

1. Some forces are outside of our control and require unique solutions
  2. The level of stakeholder engagement will impact your exam performance
  3. Team wellness indicators aren't a secondary metric to success
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## Oral Session 6F3 (0410)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:30 - 08:45

**Location of presentation:** Saint Clair 1

### **Clinical Feedback During The COVID-19 A Study of Clinical Supervisors' And Students' Perceptions at Emergency Medical Services (EMS) Colleges in Saudi Arabia.**

MOHAMMED ALGABGAB<sup>1</sup>, Michal Tombs<sup>1</sup>

<sup>1</sup> *Cardiff University, Cardiff, UK*

#### **Background**

The impact of the pandemic on the education sector has undoubtedly been overwhelming, demanding the reinvention of methodologies required to deliver lessons, evaluate learners, provide feedback, and enable learners to practice the skills they have acquired. Most institutions of higher education have adopted virtual learning techniques that utilise technologies to ensure that the learning process encounters minimal disruption. Clinical feedback is an important factor in the outcome of students pursuing medical courses, as it enables them to better understand the concepts taught in class and how their application of knowledge in a practical clinical setting is perceived by their supervisors

#### **Summary Of Work**

Surveys and semi-structured interviews were used to collect data from the participants. Four institutions with emergency medical service programmes participated in the study. Participants were invited to participate in the study via email, and questionnaires were sent to them by the same method. A total of 376 students and 83 supervisors participated in the research.

#### **Summary Of Results**

Cronbach's alpha tested the internal consistency of the data collected. The data were not normally distributed, which necessitated the use of non-parametric methods for further analysis. The student respondents consisted of 84% males and 16% females. A significant finding of the study was the lack of adequate engagement between the learners and supervisors beyond their places of work. A total of 76% of the supervisor respondents were male, while the remaining 26% were female. The results from the analysis of the supervisors' data reiterated the findings in the students' data. Most supervisors considered feedback to be a key element of the learning process, whether delivered physically or via online platforms. A comparison of the responses from the supervisors and the students showed significant differences in their perceptions of online feedback. This finding was further reiterated by the qualitative analysis, which showed that students preferred face-to-face and



recorded feedback.

### **Discussion And Conclusion**

The study established that both students and supervisors of emergency medical service programmes in Saudi Arabia have adapted to new techniques of feedback delivery. Although there have been some challenges, the methods have largely been effective in ensuring that the learning process continues amidst the pandemic.

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## Oral Session 6F4 (0647)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:45 - 09:00

**Location of presentation:** Saint Clair 1

### Behavioural Changes Associated With E-Assessment- A Study Among The Undergraduate Students Of UCMD

Tayyaba Azhar<sup>1</sup>

<sup>1</sup> *University College of Medicine & Dentistry , lahore , Pakistan*

#### Background

COVID-19 resulted in a health crisis around the globe and resulted lockdown at the global level. The traditional face to face teaching and learning and assessment was shifted to online mode. This study was conducted to explore the students perception regarding remote e-exams.

#### Summary Of Work

A pre-validated questionnaire was distributed among the undergraduate medical & dental students. The questions include students' demographics, stress experience, and factors contributing to stress as well as behavioral changes related to remote E-exams.

#### Summary Of Results

Remote E-exams had negative impact on students' dietary habits (increase consumption of caffeine and high energy drinks, high sugar food, fast food), 70% of the students reported that their caffeine consumption increases in remote e-exam as compared to on campus assessment, students consumed more high energy drinks (57%) and soda drinks (60%) in remote e-assessment as compared to on campus assessment. Students reported that their healthy food consumption (43%) decreases in remote e-assessment and they consumed more fast food (65%) and food containing higher sugar content (59.8%) during remote-e exam. 50% of the students reported that their sleep duration was decreased during remote e-exams and they also reported that during remote- exams their physical activities were reduced (52.9%). The results show that the students spent lesser time (70%) with their family in remote- exams as compared to on campus exams. The consumption of analgesics (51%) tablets to reduce stress (41%) and insomnia (57.1%) was also increased during remote e-exam.



### **Discussion And Conclusion**

The study showed that the students experienced remote exams to be more stressful as compared to the on-campus exams. The remote e-exams had a negative impact on students' dietary, sleep and physical activities.

### **Take Home Messages**

Remote e-exams were more stressful and had a negative impact on students' behaviors. This stress and behavioural changes can be reduced by providing mock trainings of remote e-assessment to provide a stress-free remote e-exam environment. Also, introduction of a student well-being program in the institutes can help the students in coping with the stress and stress-related behavioral changes.

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## Oral Session 6F5 (0193)

**Date of presentation:** Sunday 28th August

**Time of session:** 09:00 - 09:15

**Location of presentation:** Saint Clair 1

### **Changes to Objective Structured Clinical Examinations (OSCE) at Australian medical schools in response to the COVID-19 pandemic**

Clare Heal<sup>1</sup>, Leanne Hall<sup>1</sup>, Karen D'Souza<sup>2</sup>, Jane Smith<sup>3</sup>

<sup>1</sup> James Cook University, Mackay, Australia <sup>2</sup> Deakin University, Melbourne, Australia <sup>3</sup> Bond University, Queensland, Australia

#### **Background**

Objective Structured Clinical Examinations (OSCE) are used to assess clinical skills. We investigated how exit OSCEs changed in Australian medical schools in response to the COVID-19 pandemic.

#### **Summary Of Work**

The lead exit assessment academic from 12 eligible Australian medical school members of the Australian Collaboration for Clinical Assessment in Medicine (ACCLAiM) received a 45-item semi-structured online questionnaire.

#### **Summary Of Results**

All schools (12/12) responded. Exit OSCEs were not used by one school in 2019, and 3/11 schools in 2020. Of eight remaining schools, four reduced station numbers and testing time. The minimum OSCE testing time decreased from 80 min in 2019 to 54 min in 2020. Other modifications included: a completely online 'e-OSCE' (n=1); hybrid delivery (n=4); stations using: videos of patient encounters (n=4), telephone calls (n=2) skill completion without face-to-face patient encounters (n=2). The proportion of stations involving physical examination reduced from 33% to 17%. Fewer examiners were required, and university faculty staff formed a higher proportion of examiners.

#### **Discussion And Conclusion**

Most schools that implemented changes to OSCEs as a result of the pandemic (64%) reported a desire to retain some modifications for future assessments, however the use of online simulated patients was not one of these features. This may be indicative of the value placed on face-to-face interactions in the assessment of physical examination and communication skills. Further research is



needed to explore the reasoning behind retention of COVID-19 modifications in a post-COVID environment as well as the consequences of these changes on all stakeholders.

All schools changed their OSCEs in 2020 in response to COVID-19. Modifications varied from reducing station numbers and changing delivery methods to removing OSCE and complete assessment restructuring. Several innovative methods of OSCE delivery were implemented to preserve OSCE validity and reliability whilst balancing feasibility.

### **Take Home Messages**

Opportunities and challenges resulted in innovative modifications to OSCE delivery and streamlining of resources in terms of examiners and simulated patients. These findings may be generalisable to other medical and health professional training institutions responsible for delivering OSCEs, both within Australia and internationally.

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## Workshop 6H (0567)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:00 - 09:30

**Location of presentation:** Saint Clair 3A

### Reflection to Support Professional Identify Formation with Metacognition

Amina Sadik<sup>1</sup>, Machelle Linsenmeyer<sup>2</sup>

<sup>1</sup> Touro University Nevada, Henderson, USA <sup>2</sup> West Virginia School of Osteopathic Medicine, Lewisburg, USA

#### Background

Medical students are often thrown into a maze of experiences and decisions, most of which are complex and challenging, without guidance on how to navigate these events as they begin to formulate their professional identity. The old adage of “see one, do one, teach one” makes the professional identity formation (PIF) process seem easy when in reality it is very complex. Therefore, reflection, metacognition and exploration of cognitive biases are being used to raise awareness of internal struggles that may impact decisions (especially clinical decisions) as student progress. The goal of this workshop is to describe frameworks of reflection and self-assessment that can assist both faculty and students as they nurture PIF and explore the experiences that can speak to their thinking and actions. The speakers will share their experiences and help attendees explore important considerations in the reflection/self-assessment process. Attendees will receive copies of the frameworks, guides, and worksheets to help them identify ways to incorporate these ideas at their home institutions.

#### Who Should Participate

Educators interested in reflection, self-assessment, metacognition, or professional identify formation.

#### Structure Of Workshop

- Introductions- 5 min
- Facilitated discussion about participants’ experiences in developing reflection and self-assessment activities - 10 min
- Introduction to reflection frameworks, connections to PIF with metacognition, guiding questions and tools to help students grow - 20 min
- Small group activity - Each group will be given a different case and set of guiding questions to use in the development of a reflective activity- 20 min
- Summaries will be reported to the larger group- 15 minutes



- Illustrations of these concepts in practice at two different institutions- 10 minutes
- Q&A/Wrap-up- Invitation to identify 1 action to perfect a plan at participant institution- 10 min

### **Intended Outcomes**

Participants will be able to:

1. Discuss the connections between self-assessment, reflection, metacognition, and PIF in the development of ideals and decisions for practice
2. Use of frameworks and guiding questions in planning reflection activities to develop PIF with metacognition
3. Develop a reflection activity using different case scenarios
4. Evaluate reflection activities from two different institutions



## Workshop 6I (0157)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:00 - 09:30

**Location of presentation:** Saint Clair 3B

### Formative and Summative Assessment Opportunities in Virtual Settings

Wendy Stewart<sup>1</sup>, Keith Wilson<sup>1</sup>

<sup>1</sup> *Dalhousie University, Halifax, Canada*

#### Background

The global pandemic required rapid changes in healthcare, with an unprecedentedly swift pivot to virtual care. This has had a significant impact on learners in clerkship and residents in training. Moving healthcare online has been challenging for many healthcare providers in practice, with both advantages and disadvantages to this model. Difficulties with technology and finding ways to ensure patients and learners are engaged online has been challenging.

The virtual environment is also a challenging space to assess learners and provide meaningful feedback depending on user comfort level and minimal ability to read non-verbal cues. This workshop will enhance participants' knowledge of the advantages and disadvantages of virtual care from an assessment perspective and provide tips and tricks for creating meaningful online assessment opportunities that can be used for both formative and summative feedback.

#### Who Should Participate

This workshop targets educators involved assessment of learners in the virtual clinical environment.

#### Structure Of Workshop

Combining brief didactic presentations and experiential learning, participants will develop a better understanding of the advantages and disadvantages of virtual care with regards to learner assessment. Activities will include individual reflection, pair-share, small group application of the concepts learned, followed by larger group feedback and discussions. Participants will have the opportunity to practice assessing learners using simulated online role play scenarios. Participants will need laptops and online access at the conference.



### Intended Outcomes

By the end of the workshop participants will be able to:

1. Explore the advantages and disadvantages of assessing learners in virtual care settings;
2. Provide examples of what can be effectively assessed in the virtual environment;
3. Demonstrate how to assess learners in the virtual environment using Simulation; and
4. Apply the concepts learned to an experience in their own environment.



## Round Table 6J (0616)

**Date of presentation:** Sunday 28th August

**Time of session:** 08:00 - 09:30

**Location of presentation:** Saint Clair 4

### **Let's talk: An organic conversation on the importance of incorporating DEI into undergraduate medical education and assessments.**

Douglas Koch<sup>1</sup>, Stacie Fairley<sup>2</sup>, Valerie Cadet<sup>3</sup>

<sup>1</sup> Philadelphia College of Osteopathic Medicine, Philadelphia, USA <sup>2</sup> Philadelphia College of Osteopathic Medicine, South Georgia, Moultrie, USA <sup>3</sup> Philadelphia College of Osteopathic Medicine, Georgia, Suwanee, USA

Incorporating diversity, equity and inclusion (DEI) into the curriculum and initiating a DEI assessment and evaluation program in medical education is critical for an institution to successfully graduate more culturally responsive healthcare providers. This effort can minimize the prevalence of bias and discrimination within healthcare systems. Additionally, it is critical to produce healthcare providers capable of meeting the needs of diverse patient populations amidst increasingly complex global healthcare challenges. This roundtable discussion is designed to facilitate an exploration of cultures, populations, perspectives, and viewpoints through the lens of patient outcomes. We will engage, challenge, and help participants identify opportunities in creating more inclusive curricula, assessments, and evaluations in medical education.

The facilitators will initiate the conversation by sharing their efforts and experiences at addressing DEI within the curriculum at Philadelphia College of Osteopathic Medicine in the United States. Participants will then explore a series of topics related to the importance of assessing and evaluating diversity, inclusion, and equity in medical education at their home institutions.

Topics may include:

- Why is DEI in medical education of global importance?
- What does DEI look like at your institution?
  - Curriculum development
  - Faculty/Staff development
  - Institutional commitment (mission, vision, strategic plan, etc)
- What are some ways you can assess DEI in the curriculum at your institution
  - Formative and summative assessments (language, images, etc)
  - Course and program evaluations



## Symposium 7A (0052)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:00 - 11:30

**Location of presentation:** Auditorium Lumiere

### The synergistic intersection of the Ottawa Consensus Statements on Performance Assessment and Technology in Assessment

#### Presenters

Katharine Boursicot<sup>1</sup>, Sandra Kemp<sup>3</sup>, Richard Fuller<sup>4</sup>, Viktoria Goddard<sup>5</sup>

#### Moderator

Trudie Roberts<sup>2</sup>

<sup>1</sup> Health Professional Assessment Consultancy, Singapore, Singapore <sup>2</sup> AMEE, Dundee, UK <sup>3</sup> Curtin University, Perth, Australia <sup>4</sup> Wirral University Teaching Hospital NHS Foundation Trust, Manchester, UK <sup>5</sup> University of Liverpool, Liverpool, UK

#### Background

The most recent Ottawa papers on Performance Assessment (Boursicot et al, 2021) and Technology in Assessment (Fuller et al, 2022) comprehensively review the evidence and expert consensus on complex aspects related to the respective areas. There is considerable inter-connectivity across these two Consensus Statements and we will bring elements from both papers together synergistically to inform and enhance future practice in assessment.

#### Topic Importance

Modern developments in technology have impacted on performance assessment in multiple ways (both positive and negative): we explore how best practice in the uses of technology and assessment can be understood, shaped and applied to guide and enable the implementation of coherent, longitudinal and valid assessment of clinical performance.

#### Format and Plans

*90 minute symposium*

*4 speakers: 10 minutes each + 5 minutes Q&A after each speaker*

*30 minutes for general discussion (moderator TER)*

Four international speakers with significant technology and assessment experience will explore a series of linked issues:



- Synergistic intersection: a validity perspective. By reviewing validity issues in performance assessment, this introduction will focus on the importance of design (rather than tools) in the implementation of assessment systems
- Synergistic intersection: an education perspective. Technologies and assessments need to be aligned with how individuals learn, and how individuals are able to demonstrate what they have learnt: how can we consider this in design of 'fit-for-purpose' performance assessments
- Choosing wisely: Is your technology truly enhancing assessment? By assessing 'readiness to adopt technology' alongside concepts of the 'assessment lifecycle', a framework of good practice principles will highlight lessons for colleagues seeking to introduce, or enhance, their use of technology in assessment.
- Choosing wisely: When the technology disadvantages learners, faculty and patients'. Whilst the last 24 months have seen great advances in the use of assessment technology, this closing section will explore some of the multiple examples of poor implementation, widened inequality and potential harm to learners and patients, highlighting learning points for faculty and institutions.

### **Take Home Messages**

1. Always consider the validity aspects of your performance assessment
2. Use technology in ways that align with learning and performance, and support your assessment strategy
3. Using technology to support learners' developmental trajectories in their clinical performance



## Oral - Assessment and EPAs

### Oral Session 7B1 (0492)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:00 - 10:15

**Location of presentation:** Rhone 2

### Developing and Validating Clinical Ladder EPAs for Certified Registered Nurse Anesthetists (CRNA) in Taiwan

Chien-Yu Chen<sup>1,2</sup>, Hui-Ju Yang<sup>3</sup>, Wen-Jan Dai<sup>1</sup>, Wen-Chi Liu<sup>1</sup>, Che-Wei Lin<sup>2</sup>, Shu-Liu Guo<sup>1</sup>

<sup>1</sup> *Taipei Medical University Hospital, Taipei, Taiwan* <sup>2</sup> *Taipei Medical University, Taipei, Taiwan* <sup>3</sup> *Taipei Veteran General Hospital, Taipei, Taiwan*

#### Background

Entrustable Professional Activities (EPAs) are professional tasks and responsibilities designed for competency-based training (CBT) and assessment in real-world settings. To adopt CBT to the CRNA curriculum in Taiwan, our team has developed six EPAs for their certification in 2021. This year, we aim to advance the EPA framework to CRNA clinical ladder and professional development.

#### Summary Of Work

Eight experts (five CRNAs, two anesthesiologists, and one medical educator) were purposively recruited to review and modify the six ad-hoc EPAs and co-constructed them for CRNA professional development. To validate the new EPAs, we invited 42 experts (29 CRNAs and 13 anesthesiologists) to employ a series of Modified Delphi Surveys to achieve the consensus.

#### Summary Of Results

Our experts have agreed that the six *ad hoc* EPAs remain the same to the contexts of the clinical ladder. Four scenarios (or target goals) have been identified and achieved the consensus as follows: 1) the various types or positions of anesthesia (e.g., total intravenous anesthesia, prone position, sitting position, lateral position, and regional anesthesia for Cesarean Section); 2) the particular groups for anesthesia (e.g., neonate/infant, obese, elderly patients); 3) the common three subspecialties in anesthesia (e.g., anesthesia for cardiac surgery, thoracic surgery, and brain surgery); and, 4) other rare subspecialties in anesthesia (can be decided by each medical center). The framework and one EPA under each level were chosen and delineated into 87 items of description. After three rounds of iterated opinion exchange, all of the eight items of the four levels of professional developments and 45 items among three EPAs have achieved either consensus (IQR<1) or stability (change <15%). However, there were 14 items either modified or deleted after our review.



### Discussion And Conclusion

This study attempts to extend the CBT from pre-certification to clinical ladder development. The consensus-achieving process facilitates the local stakeholders' engagement and constructs the shared mental model nationwide.

### Take Home Messages

Six *ad hoc* EPAs and three examples of *summative* EPA in each clinical ladder have been developed and validated for CRNA training in Taiwan.

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## Oral Session 7B2 (0530)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:15 - 10:30

**Location of presentation:** Rhone 2

### **Support for Assessment in a Unique Competency-Based Master's Program – 10 years of lessons learned**

Dawn Harris<sup>1</sup>, J. Tom Fitzgerald<sup>1</sup>, Larry Gruppen<sup>1</sup>

<sup>1</sup> *University of Michigan-Master of Health Professions Education Program, Ann Arbor, USA*

#### **Background**

The University of Michigan Master of Health Professions Education Program (UM-MHPE) is a competency-based master's program using 22 Entrustable Professional Activities (EPAs) for learners to acquire and demonstrate 12 competencies. Assessing the EPA submissions requires designated faculty Assessors, an Assessment Chair, and a Program Manager.

#### **Chair support**

The chair receives submissions, assigns assessors, compiles assessor feedback, communicates with the learner, and documents learners' EPA competency.

#### **Program Manager Support**

The program manager documents submissions and assessment discussions, and manages the learner database (i.e., tracks learner progress, records competencies earned, and documents formative and summative feedback)

#### **Assessor support**

Assessors review submissions and provide a report of formative and summative feedback for discussion. On average it takes an assessor 3-4 hours to review a submission.

#### **Summary Of Work**

The Assessment Committee is responsible for tracking and documenting learners' submissions and credits earned. Initially the assessment process included:

- Three assessors for each submission.
- Assessors provide formative and summative feedback for discussion.



- The chair summarizes the assessments and reports to the learner the committee's competency findings.

### **Summary Of Results**

#### **Assessment Scoring**

Due to the diversity of our learners and EPA submissions and our emphasis on learner reflection, we have avoided rigid criteria to demonstrate competence. We changed our scoring to provide an overall score for the entire EPA using a 5-point scale (1=Competent to 5=Evidence does not support competency) and score the individual competencies as "Pass" or "Insufficient".

#### **Submission Overload**

As the program has grown, new assessors were added, and processes adjusted to meet a growing number of submissions. Assessor training and calibration are major ongoing concerns.

#### **Discussion And Conclusion**

Given the uniqueness of the UM-MHPE program, there are few programs that we can use as models. The ability of faculty and administrators to adapt and generate unique solutions is critical for success. Assessment is critical to the program and requires considerable effort from the committee chair, program manager and assessors.

#### **Take Home Messages**

Support for assessment in a CBE program requires:

- Adaptability
- Administrative support to manage program data
- Asking assessors to have a wholistic assessment approach
- Considerable faculty effort (learner centered, not faculty centered)



## Oral Session 7B3 (0658)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:30 - 10:45

**Location of presentation:** Rhone 2

### **Theory meets practice: entrustment decision-making in a national EPA-based medical specialist training program**

Maaïke Smit<sup>1</sup>, Reinoud Gemke<sup>2</sup>, Marieke de Visser<sup>3</sup>, Matthijs de Hoog<sup>1</sup>, Janielle van der Velden<sup>4</sup>

<sup>1</sup> *Erasmus MC Sophia Children Hospital, Rotterdam, The Netherlands* <sup>2</sup> *Amsterdam University Medical Centers, Amsterdam, The Netherlands* <sup>3</sup> *Radboud University Medical Center, Radboudumc Health Academy, Nijmegen, The Netherlands* <sup>4</sup> *Radboud umc Amalia Children's Hospital, Nijmegen, The Netherlands*

#### **Background**

The EPA framework was introduced to operationalize and translate competency-based medical education into daily practice. EPAs are increasingly adopted, and supportive literature regarding recommendations, guidelines, entrustment decision-making, and trust is published. Systematic field studies evaluating the experiences of professionals (residents and supervisors) who work with an EPA framework in daily practice are lacking. Filling this knowledge gap is needed to support the design and implementation of new EPA-based medical training programs. Therefore this study offers in-depth insight and a more comprehensive understanding of the experiences of professionals working and learning in an EPA-based program.

#### **Summary Of Work**

We used focus groups to interview professionals regarding their experiences with the first EPA-based medical specialist training program in the Netherlands, Training Optimization for Postgraduate Pediatrics 2020 (TOP2020). Thematic analysis was used to explore the outcomes of the focus groups and to define relevant themes.

#### **Summary Of Results**

The framework, based on generic EPAs, proved helpful for residents to individualize their training. Personal leadership is essential for individualization, enabling them to balance the requirements from the national training program with their talents, experiences, and learning curves. A supporting and guiding role by supervisors is critical throughout the process of EPA-based entrustment. Supervisors and residents independently indicate that trust plays an essential role in the summative



assessment to award an EPA by Clinical-Competency-Committees (CCC). Supervisors acknowledge the role of a mandatory portfolio, compiled by the resident, to support their preparations for the CCC meeting. Starting to work without supervision after an EPA is entrusted is an important goal but challenging to implement. The ability to further individualize the training program after an EPA is entrusted varies among residents.

### **Discussion And Conclusion**

This study gives insight into the national experiences of professionals with an EPA-based medical training program. The delicate balance between individualization and program requirements requires a further definition of the supervisor role as well as leadership from residents. Incorporation of trust is fundamental for supervisors to make adequate decisions during CCCs and subsequently for residents who start working independently with an awarded EPA.

### **Take Home Messages**

EPA framework is helpful for individualization

A supporting and guiding role by supervisors is critical

Trust is essential

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## Oral Session 7B4 (0373)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:45 - 11:00

**Location of presentation:** Rhone 2

### **Getting Stakeholders to the Table: Development of Specialty-wide Entrustable Professional Activities for Emergency Medicine**

Holly Caretta-Weyer<sup>1</sup>, Stefanie S Sebok-Syer<sup>2</sup>

<sup>1</sup> *Stanford University School of Medicine, Palo Alto, USA* <sup>2</sup> *Stanford University Department of Emergency Medicine, Palo Alto, USA*

#### **Background**

Entrustable Professional Activities (EPAs) are widely used as a framework for assessment. The variability in Emergency Medicine (EM) programs and training settings, however, make it difficult to develop EPAs that are designed to meet the needs of the specialty as a whole. Furthermore, incorporating the perspectives of multiple stakeholders (i.e., supervisors, trainees, and patients) in the development of EPAs is also complex. Without a shared vision amongst stakeholders, our trainees may provide inconsistent care.

#### **Summary Of Work**

In an effort to tackle these challenges, we assembled an advisory board of 25 EM faculty to draft and reach consensus on a final list of EPAs using Delphi methodology; consensus was set at 80% over three rounds of voting. These EPAs were further refined based on feedback collated in focus groups from residents (3 groups, 9 participants) and patients (1 group, 8 participants). Data were analyzed using thematic analysis.

#### **Summary Of Results**

22 EPAs were adopted for EM residency training. The group additionally wrote an EM-specific supervisory scale to represent the unique constant presence of EM faculty and how autonomy is progressively awarded within the specialty. The resident focus groups highlighted differences in the priority of EPAs as well as when these should be achieved throughout residency when compared to faculty. All focus groups described differences in terms of how patients “fit” within the EPAs.

#### **Discussion And Conclusion**

These 22 EPAs create a unified set of expectations for EM residents from the perspective of faculty. Incorporating residents and patients as key stakeholders ensures optimal alignment of priorities and language within the EPAs across all affected by their implementation. It also situates patients as a



priority within the assessment of these EPAs. As these EPAs are enacted, all stakeholders must be invested and engaged in the evaluation of their use for assessment both for and of learning.

### **Take Home Messages**

Incorporating expert consensus is only one step in the development and implementation of EPAs. Engaging trainees and patients as key stakeholders ensures that intended societal and learning outcomes are both being addressed.

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## Oral Session 7B5 (0095)

**Date of presentation:** Sunday 28th August

**Time of session:** 11:00 - 11:15

**Location of presentation:** Rhone 2

### Multi-stakeholder validation of Entrustable Professional Activities in Family Medicine

Jose Francois<sup>1</sup>, Ben Clendenning<sup>1</sup>, Tamara Buchel<sup>1</sup>, Derek Fisk<sup>1</sup>

<sup>1</sup> *University of Manitoba, Winnipeg, Canada*

#### Background

The development of Entrustable Professional Activities (EPAs) has generally focused on expert panel approaches, which are often limited to physician stakeholders. Optimally, a much wider group of stakeholders should be consulted and include all people gaining value from trainees' patient care performance. The present study explored the perceptions of a variety of stakeholder groups regarding the relevance and comprehensiveness of EPAs developed for a Canadian Family Medicine Residency program.

#### Summary Of Work

Through the use of an online survey consisting of dichotomous and open-ended questions, this study explored and compared the perceptions of a variety of stakeholder groups (policy makers, health administrators, health professionals, teachers, and public) regarding the relevance and comprehensiveness of 25 EPAs articulated by a family medicine residency program.

#### Summary Of Results

Agreement on appropriateness of EPAs ranged from 90% to 100%, displaying a high level of alignment between stakeholders regarding the appropriateness of the 25 articulated EPAs. Stakeholders identify two gap areas within the EPA framework: 1) provision of surgical assistance and 2) addictions care.

Conventional content analysis identified three key themes that cut across multiple areas survey: 1) Interprofessional collaboration (IPC), 2) Inclusivity, and 3) Scope of EPAs.

Comparative analysis consisted of exploring agreements, gaps, and other differences of perspectives between stakeholder groups. Although many of the stakeholder groups made comments regarding IPC and Inclusivity, the patient group in particular was more likely to raise these themes. Comments from patient groups were also overall more general, identifying overarching trends rather than



specific pinpoint issues. Physicians, other health professionals, and resident groups, (ie. health professional groups) on the other hand tended to answer with much more specificity, identifying issues relating to scope of EPAs.

### **Discussion And Conclusion**

A multi-stakeholder approach can feasibly be used to validate an EPA framework. In addition to confirming that a previously articulated set of EPAs largely reflected the range of activities expected of family physicians serving a population, it identified a number of potential area of improvements in the framework.

### **Take Home Messages**

In a social accountable CBME approach, engaging a range of stakeholders in the development and review of EPA frameworks can ensure that outcomes of training align with societal needs.

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## Oral Session 7B6 (0173)

**Date of presentation:** Sunday 28th August

**Time of session:** 11:15 - 11:30

**Location of presentation:** Rhone 2

### Leveraging dashboards to document outcomes from EPA-based assessments and to empower learners

Deborah Engle<sup>1</sup>, Joe Cawley<sup>1</sup>, Aditee Narayan<sup>1</sup>, Saumil Chudgar<sup>1</sup>

<sup>1</sup> *Duke University School of Medicine, Durham, NC, USA*

#### Background

Medical schools are developing ways to provide students with real-time feedback utilizing the Entrustable Professional Activity (EPA) framework. A best practice for this is to leverage technology to compile, summarize, and visualize the large amount of data associated with competency-based assessment in a way that is usable, while also applying this technology to document and monitor learner progress over time.

#### Summary Of Work

We created a multi-pronged, systematic, literature-based approach to assessment of student progress toward achievement of EPAs during the core clerkship year. Specifically, EPA feedback was collected using web-based survey tool whose database was linked to Tableau. Within Tableau, we designed multiple stakeholder dashboards to visualize and track EPA data across clerkships and over time.

#### Summary Of Results

Upon completion of Academic Year 20-21, our traditional track clerkship students (n=104) received EPA feedback 6406 times, resulting in a median of 61 EPA evaluations per student across 48 weeks, resulting in 1-2 EPAs per week.

The most frequently evaluated are EPA1 and 6; the least frequently evaluated are EPA4 and 13. This pattern remained unchanged when comparing data from beginning versus end of year.

Tableau analytics confirm students view their personal EPA dashboard on average 7 times throughout the year, approximately once for each rotation.



### **Discussion And Conclusion**

Our aggregate data track similarly to recent literature in that total numbers of EPA ratings are high for EPAs 1 and 6. For EPAs 4 and 13, it is not surprising these activities are infrequently evaluated for students in their core clerkships, as these are advanced skills not often applied until later in medical school.

### **Take Home Messages**

We have successfully implemented a systematic approach to assessment of student progress toward achievement of the Core EPAs during the clerkship year. Tableau dashboards allow leadership to identify curricular areas in need of bolstering, to track longitudinal student progress on each EPA, and to continue to place this data in context of national trends. Furthermore, individualized student dashboards empower learners to view their own feedback and focus on identified areas of improvement across clerkships throughout the academic year.

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## Oral - Assessment and GP Trainees

### Oral Session 7C1 (0063)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:00 - 10:15

**Location of presentation:** Rhone 3A

### **Assessing candidates' consultations remotely as an emergency GP postgraduate qualifying exam: design and evaluation of the validity, reliability and precision of a COVID-19-compliant replacement for a high-stakes postgraduate OSCE – the RECORDED CONSULTATION ASSESSMENT (RCA), enabling the accreditation of 4,276 new UK General Practitioners in 2020-21**

MeiLing Denney<sup>1</sup>, Adrian Freeman<sup>2</sup>, Richard Wakeford<sup>3</sup>, Rich Withnall<sup>1</sup>

<sup>1</sup> Royal College of General Practitioners, London, UK <sup>2</sup> University of Exeter, Exeter, UK <sup>3</sup> Hughes Hall, University of Cambridge, Cambridge, UK

#### **Background**

In March 2020, the pandemic halted delivery of the RCGP's summative clinical assessment of GP trainees (CSA). This prevented trainees qualifying, threatening a potential workforce crisis. An emergency replacement assessment of recordings of trainees' consultations was devised and piloted.

#### **Summary Of Work**

Initial planning and development required the Group to:

1. Specify, commission and test technology for recording and assessing consultations
2. Agree psychometric approaches for an 'item-free' assessment
3. Specify content requirements for submissions
4. Develop GMC/GDPR-compliant consent; obtain legal guidance about confidential data
5. Identify and train experienced MRCGP examiners to assess recordings

Candidates provided 13 recordings of consultations, to a curricular blueprint. FourteenFish developed a system for candidates to submit recordings, using technologies including mobile phones. 267 experienced examiners were recruited and trained. The consultations were double marked.

A pilot enabled GMC approval; with minor blueprinting modifications, the RCA was delivered seven times July 2020 - July 2021, representing 5,618 candidate attempts, 82.3% of cases in audio, 17.7% using video. Examiner and candidate feedback was solicited.



### Summary Of Results

Reliability assessed by 'g' was approximately 0.82, and using alternate-forms "test-retest" correlation (COSE) as 0.65-0.74; measurement error (SEm) was 3.6%: these mimic the CSA's. Modelling predicted that universal single marking would lead to unacceptably lowered test reliability, test precision and pass rates.

Examiners: regarded consultations representative of pandemic GP work ; as providing a good curricular sample; were positive about the digital platform and support arrangements; but were hesitant about their judgments of candidates' performance vis-a-vis the CSA.

Candidates: were positive about the digital platform and support resources; most regarded the RCA as a fair assessment; a larger majority reported difficulty providing cases.

### Discussion And Conclusion

The RCA was developed rapidly. We regard it as technically successful, not problem-free, but acceptable for emergency use: it enabled 4,276 GP trainees (76.1% of all attempts) to qualify and enter practice 07.20-07.21. It provides data towards future assessments of doctors' consultation skills.

### Take Home Messages

An assessment of trainees' consultations may provide a defensible emergency replacement for an OSCE.

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## Oral Session 7C2 (0462)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:15 - 10:30

**Location of presentation:** Rhone 3A

### Developing resources to ensure fair, consistent, transparent outcome decisions at ARCP panels

Olivia Jagger<sup>1</sup>, Janet McGee<sup>1</sup>

<sup>1</sup> HEE, Working across Wessex, Otterbourne, Winchester, UK

#### Background

The Annual Review of Competency Progression (ARCP) panel is a formal process of reviewing evidence to ensure GP trainees are satisfactorily progressing through training and awarding an outcome, which determines next steps for the trainee. A satisfactory outcome confirms a trainee has met the required competences to progress. It's important that consistent processes are followed at ARCP panels to ensure fair, transparent, decision-making.

In 2021 Health Education England (HEE) Wessex School of General Practice saw a significant increase in number of ARCP panels conducted, with increasingly complex outcome decisions. As a Wessex HEE ARCP fellow and new panel member, I observed that the Associate Deans vast knowledge and expertise informed decision-making during panels but these invaluable insights were not formally captured and useful resources they'd developed, such as mandatory requirement checklists, were not formally collated, shared or updated.

#### Summary Of Work

We developed resources to standardised ARCP panel processes and support fair, consistent, transparent outcome decision-making. We collated existing resources and developed new tools informed by qualitative interviews with new and experienced panel members and observing and participating in panels.

#### Summary Of Results

We developed resources which:

- establish roles and responsibilities of panel members, panel Chair and admin team
- provide key information and checklists to support decision-making
- provide 'how to' guides for key panel processes



### **Discussion And Conclusion**

The resources:

- provide transparency and continuity by standardising local ARCP processes
- support fair, consistent outcomes
- streamline panels by providing practical support and tips for successful panels
- provide user-guides for new panel members
- have potential to be shared Nationally

Next steps are to produce a guide for trainees highlighting what ARCP panels look for and how demonstrate this evidence clearly in their Portfolios. This will be delivered alongside another Fellows project developing assessment 'roadmaps' for ST 1-3, with the aim of supporting trainees to achieve satisfactory outcomes at the earliest point.

### **Take Home Messages**

ARCP panels have the important job of assessing whether trainees have met the curriculum, revalidation and quality requirements to progress through training and be awarded a Certificate of Completion of Training to practice independently as a GP. We developed resources to support ARCP panels to make fair, consistent, transparent outcome assessments.

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## Oral Session 7C3 (0378)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:30 - 10:45

**Location of presentation:** Rhone 3A

### Reflections on the AKT 'I just didn't give it enough respect'

Tessa Lambton<sup>1</sup>, Johnny Lyon-Maris<sup>1</sup>, Samantha Scallan<sup>1</sup>

<sup>1</sup> *Southampton GP education unit, Southampton, UK*

#### Background

The Applied Knowledge Test (AKT) is one third of the licensing exam to become a General Practitioner in the United Kingdom. It is a computer-based, machine-marked multiple-choice examination with an overall pass rate of around 70% but statistics reveal international medical graduates to have lower rates of passing.

#### Summary Of Work

We aimed to find the key features in preparation for the exam that have been used by successful candidates and compare these to the strategies used by unsuccessful candidates. A questionnaire was sent to recently successful GP trainees in Southampton. The results were further informed by a group interview and three in-depth interviews with unsuccessful candidates.

#### Summary Of Results

A series of six areas were identified within exam preparation, that featured as common themes for all candidates. Further analysis showed the parameters around these areas suggesting the ability to maximise the candidates' chances of success. The areas included: Preparation; time management; expectations; peer support; change of approach and impact on trainee mental health.

#### Discussion And Conclusion

A period of at least ten hours per week for at least three months revision, using four to six resources and using question banks to consolidate learning rather than as a primary tool were found to be the key parameters with successful candidates. When to take the exam should be discussed with the trainer, the difficulty of the exam needs to be acknowledged by candidates, working in study groups can be beneficial and planning of the approach to revision was found to be essential. The impact of failure on trainee mental health must not be underestimated.



### Take Home Messages

Setting early, realistic, and specific expectations of the work needed to pass the AKT exam may improve outcomes. Increasing the support available to trainees in planning their preparation and after an unsuccessful attempt is encouraged.

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## Oral Session 7C4 (0771)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:45 - 11:00

**Location of presentation:** Rhone 3A

### Comparing patterns in low-stakes (formative) workplace-based assessments prior to and during COVID-19

Shelley Ross<sup>1</sup>, Christopher Donoff<sup>1</sup>, Michelle Morros<sup>1</sup>, Kiran Dhillon<sup>1</sup>, Alyssa Fortier<sup>1</sup>, Jonathon Lee<sup>1</sup>, Paul Humphries<sup>1</sup>, Darren Nichols<sup>1</sup>

<sup>1</sup> *University of Alberta, Edmonton, Canada*

#### Background

The pandemic containment measures associated with COVID-19 caused disruptions to many aspects of health professions education. The disruptions were particularly felt in programs where workplace-based assessment is prioritized. Family medicine postgraduate training in Canada uses a competency-based education approach, including programmatic assessment that occurs primarily in clinical workplace settings and incorporates multiple low-stakes (formative) assessments. COVID-19 public health measures altered our local family medicine patient care and learning environments, especially through a shift to virtual care. Learners spent less time in clinics in person, and instead learned and trained primarily through virtual visits with patients and virtual interactions with preceptors. Given this reduction in face-to-face training, we wanted to explore whether there have been any systematic differences in the assessment data collected about learners before and during COVID.

#### Summary Of Work

We used secondary data analysis to compare low-stakes assessments called Field Notes (FN) that were entered into an online portfolio between July 1, 2018 and December 31, 2021. All FN up to and including March 14, 2020 were coded as Pre-COVID (PC), the remainder During COVID (DC). Data visualization identified trends in FN variables in aggregate across all program sites; statistical analyses at the site level are ongoing.

#### Summary Of Results

The dataset included 20.5 months of PC and 21 months of DC data (FN N= 21788). Mean monthly FN were similar between conditions (PC=520; DC=536). No large differences were found in percentages of FN across each Progress Level, Clinical Domain, or Sentinel Habit (competency). Significant differences were seen in learner-entered FN compared to preceptor-entered FN (PC: 45% vs 55%; DC 31% vs 69%).

#### Discussion And Conclusion



Our assessment system appears robust: data generation was surprisingly consistent PC to DC, despite challenges of pandemic containment measures. The increase in preceptor-entered FN contradicted our assumption that preceptors would have less capacity for assessment, but was a welcome finding. Future research includes examination of the data between rural and urban streams.

### **Take Home Messages**

The demands of the pandemic, including increased virtual visits, did not result in fewer formative assessments of family medicine postgraduate learners.

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## Oral Session 7D1 (0171)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:00 - 10:15

**Location of presentation:** Rhone 3B

### **Validation of a 'Fit-for-Purpose', Customized, Innovative, Mixed Methods Online Admission Individual Assessment for Integrated Intrinsic Attributes**

Debra Sibbald<sup>1</sup>, Andrea Sweezey<sup>1</sup>

<sup>1</sup> *University of Toronto, Toronto, Canada*

#### **Background**

Intrinsic attributes, important interdependent capacities for health care professionals, are demonstrated through integrated behavioural patterns. Measuring these 'non-expert' abilities is challenging. Traditional interviews are limited in identifying skill interplay and predicting performance, and further confronted by pandemic restrictions. This study examines appropriateness of a mixed methods online recorded individual assessment combining blueprinted, validated, weighted assessments to discriminate between large numbers of admission applications.

#### **Summary Of Work**

An innovative online instrument was designed to evaluate Pharmacy applicants (N=608) using multiple methods to assess intrinsic attributes in situational judgement contexts: recorded verbal responses; a written passage response and multiple-choice questions. In ten verbal recordings, applicants responded to objective and reflective questions related to challenging, standardized scenarios assessing interpersonal, cognitive and decision-making skills, aligned to previous MMI interviews. The written passage response addressed attributes and English skills. Trained expert/non-expert assessors rated verbal and written responses asynchronously using global ratings for subscores and overall performance. Assessors provided written comments to describe red flag performances. The objective MCQ component measured attributes and English comprehension. Applicant results were compared to a pre-launch validation pilot (2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> year students) and a concurrent pilot (1<sup>st</sup> year students; recent graduates). The conjunctive pass score combined weighted cut scores for each component. Interview scores were merged with academic GPA scores to determine and rank acceptable applicants.

#### **Summary Of Results**

All three formats showed appropriate means, difficulty, discrimination and Z-scores individually and when combined in a weighted average. MCQs displayed positive point bi-serials. Reliability



coefficients were acceptable (written-  $\alpha$ ,  $\omega = 0.9$ ; verbal-  $\alpha$ ,  $\omega = 0.70$ ). Verbal responses performed well independently ( $p < 0.001$ ) and contributed positively to overall results. Unprofessional behaviours were infrequent, in applicants who also received lower scores. The pass rate was 73%. Assessor consistency was acceptable. Assessor and applicant survey feedback was positive, reflecting feasibility, authenticity and sustainability.

### **Discussion And Conclusion**

The design was effective as an online admission screening instrument, discriminated well between applicants with an acceptable pass rate, providing evidence of interdependent competencies derived through multiple measures and perspectives.

### **Take Home Messages**

This innovative tool offers mixed methods, online assessments of intrinsic (non-expert) attributes and was successful in the selection of Pharmacy applicants.

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## Oral Session 7D2 (0476)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:15 - 10:30

**Location of presentation:** Rhone 3B

### Student's opinion in using non-cognitive attributes in student selection

Tipaporn Thongmak<sup>1</sup>, Boonyarat Warachit<sup>1</sup>, Pairoj Boonluksiri<sup>1</sup>, Araya Khaimook<sup>1</sup>, Chutima Jiranakorn<sup>1</sup>, Wasin Kampeera<sup>1</sup>

<sup>1</sup> *Hatyai Medical Education Center, Hatyai, Songkhla, Thailand*

#### Background

Attempts have been made in many medical schools not to be only cognitive attributes in student selection, but how can we make it with fairness and acceptable methods.

#### Summary Of Work

First step for local recruitment of applicants from high school students in three provinces was using portfolio of the past three years which contain their activities and there are committees who rank the portfolio. Second step was done at Medical Education Center for three days with Multiple Mini-Interview (MMI), situational judgment test (SJT) semi-structure interview. Both MMI and SJT are testing most of non-cognitive attributes. Questionnaires were applied for evaluation of student selection process.

#### Summary Of Results

There are 223 applicants from 40 high schools who are eligible for application with portfolio. Sixty six applicants were proceeded for the second step and forty applicants were selected. Overall satisfaction was 98.6%. Most of the students were appreciated with our fair and quality process of selection.

#### Discussion And Conclusion

These selection methods can set according to competencies of medical students we need, however it may not applicable to large number of applicants.

#### Take Home Messages

Not only cognitive, but non-cognitive attributes play an important role for medical practice.



## Oral Session 7D3 (0666)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:30 - 10:45

**Location of presentation:** Rhone 3B

### Interventions Aiming at Widening Participation to Higher Education– Are They Working?

Shagaf Bakour<sup>1</sup>

<sup>1</sup> *Aston Medical School, Birmingham, UK*

#### Background

Widening participation (WP) to higher education (HE) is a fundamental priority within the UK education agenda. There remain gaps in our knowledge in terms of which interventions are the most effective. This study explores whether WP interventions to enhancing self-belief and confidence do impact on widening access to HE. The systematic review of Younger et-al.(2019) reported some effectiveness when there were multiple interventional elements in any one WP programme.

**Theoretical framework:** based on Ryan&Deci's (2002) self-determination theory (SDT). The juxtaposition between intrinsic vs. extrinsic motivators for behavioural change and the three psychological components of SDT: autonomy, competence and relatedness, used in this study to evaluate WP.

#### Summary Of Work

**Methods:** Purposive sample of independent participants who are deemed to be WP experts were invited to semi-structured interviews. 6 telephone interviews were conducted. Data was analysed using Thematic Analysis by Braun& Clarke (2008,2013,2014).

Purposive sampling was used because the opinion of experts in a WP field was key for this study (Martínez-Mesa et-al. 2016). The participants' selecting criteria included those who are senior academic and professional individuals interested in the WP ethos, deemed knowledgeable in the field, and have been involved in teaching in WP programmes. They are likelier to situate their narratives gauging not only their own views, but also their perception of the students', as to whether WP programmes are working and thus justified.



## Summary Of Results

Participants addressed WP interventions pertinent to the research question. Twenty codes were extracted, and the saturation point was reached by completing the fourth interview. Four themes emerged: ‘Spectrum of self-motivation’, ‘WP as a medium to success’, ‘Layers of inequality’ and ‘Limitations of WP’.

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Table: Themes, codes, and summaries with reference to theory



| Theory  | Overarching theme 1<br>Actualisation of student potential   |   | Overarching theme 2<br>The structural failing of WP students  |  |
|---|---|---|---|--|
|   | Theme 1<br>Spectrum of self-motivation  | Theme 2<br>WP as a medium to success  | Theme 3<br>Layers of inequality   | Theme 4<br>Limitations of WP   |
| <i>SDT with its 3 pillars, autonomy, competency and relatedness</i> |   |   |   |  |
| <i>Lack of self-competence</i>                                      | Fatalism in the WP community  | WP as a necessity   | Limiting factors at home  | Missed Opportunity for WP  |
| <i>Lack of self-determination</i>                                   | Lack of self-belief and confidence  | Mentorship  | Financial barriers  |  |
| <i>Relatedness</i>  | Power of the peer group   | Demystifying HE   | First Person to University<br>Community as a resource   |  |
| <i>Autonomy</i>   | Student autonomy  | HE is opening doors   | Failure of the community to realise student's potential<br>Meritocracy  | WP as a short-term solution to a long-term problem   |
| <i>Intrinsic self-motivation against extrinsic regulators</i>       | Having to engage with activities to be successful (self-initiative)   | WP encouraging future planning  | Levelling the playing field<br>Cultural barriers  |  |
| <i>Summaries of the 4 themes</i>                                    | Students in WP are self-motivated, therefore self-selected into WP. Self-determination is the differing factor that allows students to access WP, enter HE and fulfil their potential         | WP encourages students to take autonomy of their own trajectory in life and make their own decisions by enhancing their self-perceived competence | Self-determination to overcome barriers is not enough by itself. Against deep rooted layers of political, socioeconomic and cultural inequalities | To succeed, students need resources and guidance on HOW to overcome layers of inequalities. Currently, WP can partially overcome some of these barriers, WP is far from perfect in achieving this objective. |
| <i>Summaries of the 2 overarching themes</i>                        | Students can be intrinsically self-determined to fulfil their potential. WP interventions facilitate this by moving students along the spectrum of self-motivation as an extrinsic motivator. |   | The data narratives strongly addressed the structural inequalities WP students face from day-to-day, limiting the impact of WP interventions.     |  |



### **Discussion And Conclusion**

**Discussion:** A contextual understanding of the themes revealed that WP appeared to be partially working in balancing the under-representation in HE. There was a coherent sense amongst participants acknowledging the extrinsic 'polishing' factor that WP provides for the students' pursuit to HE. There was also a strong sense in the participants' narratives of the structural inequalities that WP students face day-to-day, limiting the impact of WP.

### **Take Home Messages**

WPI is probably moderately working at enhancing self-belief and confidence to empower the able, determined students into HE.

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## Workshop 7E (0356)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:00 - 11:30

**Location of presentation:** Rhone 4

### **Improving workplace feedback conversations between learners and educators: the role of Intellectual Candour**

Elizabeth Molloy<sup>1</sup>, Margaret Bearman<sup>2</sup>

<sup>1</sup> *The University of Melbourne, Melbourne , Australia* <sup>2</sup> *Deakin University, Melbourne , Australia*

#### **Background**

Feedback conversations are important for trainee learning but too often they don't deliver on this potential. Despite calls for learners to be more actively involved, feedback conversations often resemble ritualised supervisor monologues where learners play the role of the grateful recipient. These feedback rituals can deny learners important opportunities to discuss problems that matter to them, as well as co-construct strategies for improvement. However educators find it difficult to relinquish control and learners often avoid deep engagement in conversations.

This workshop introduces the concept of "intellectual candour" in the context of feedback conversations – "characterised by brainstorming, improvisation and disclosure for the purpose of one's own learning and the learning of others" (Molloy and Bearman 2018, p 1). Illustrative examples of intellectual candour in workplace feedback conversations will be presented. We will foreground how the milieu of workplace learning in healthcare influences the propensity of both parties to render themselves vulnerable for the sake of learning and how 'the moves' of the educator can promote or stifle learner intellectual candour.

#### **Who Should Participate**

This 90 minute workshop is designed for educators who have an interest in workplace feedback and assessment conversations. The workshop will draw on participants' experiences, as well as share research findings on feedback encounters exploring the role of trust, as well as the tension between vulnerability and credibility.



### Structure Of Workshop

Embracing the spirit of ‘intellectual candour’ participants will have opportunities to critically discuss their own experiences of feedback processes. Participants will have opportunities to draw on their own experiences of feedback, dissect empirical ‘exemplars’ in the context of workplace feedback, and experiment with simulations with an explicit objective to promote intellectual candour of both parties in conversation.

### Intended Outcomes

By the end of this workshop, participants will be able to:

1. Define intellectual candour in the context of workplace feedback conversations
2. Discuss how workplace educators and educational designers can promote intellectual candour within the feedback process
3. Identify sociocultural influences on educator and learner preparedness to reveal hearts and minds in feedback conversations
4. Trial linguistic approaches that encourage intellectual candour within feedback conversations (adding in a further opportunity for feedback on feedback).



## Workshop 7H (0306)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:00 - 11:30

**Location of presentation:** Saint Clair 3A

### **A New Tool for Assessment of Clinical Reasoning, the Diagnostic Justification Questionnaire (DXJ)**

Debra Klamen<sup>1</sup>

<sup>1</sup> *Southern Illinois University School of Medicine, Springfield, USA*

#### **Background**

One of the core abilities of physicians is the ability to organize and use their knowledge to collect pertinent data about patients, to generate an appropriate list of likely diagnoses given the chief complaint of the patient, and to make good diagnostic decisions based on the available data. We refer to this constellation of abilities as diagnostic justification (DXJ) ability. Developing DXJ abilities is a primary goal of medical school training.

The clinical reasoning abilities of entire classes of medical students are not systematically and uniformly examined during the clinical years of training. Most commonly, faculty members evaluate diagnostic reasoning ability using secondary evidence such as oral case presentations or patient notes. There are problems with this method, one of the most important being that students are not systematically reviewed across a range of cases but, instead, only on those cases they encounter on a given clinical rotation. Medical schools rarely require students to perform totally independently on a systematic set of cases, and, as a result, the schools are seldom in a position to assess the diagnostic reasoning ability of entire classes of medical students.

We developed a free-response written measure of DXJ ability. This measure directly probes medical students' DXJ ability following completion of individual standardized patient cases. Our DXJ measure is based on current conceptualizations of clinical reasoning ability that come from clinical reasoning research, research in psychology on "dual-process" models of thinking, and research on diagnostic errors made by practicing physicians.

#### **Who Should Participate**

Any faculty interested in the evaluation of clinical reasoning



### **Structure Of Workshop**

Introductions (5 minutes)

Explanation and demonstration of DXJ tool (10 minutes)

Participants will be given a set of 3 sample student DXJ responses, and will learn how to evaluate the responses using the DXJ tool. Questions and discussion will occur during this time period as well (remainder of session)

### **Intended Outcomes**

By the end of the workshop, participants will be able to:

- 1) State the three main questions comprising the diagnostic justification questionnaire
- 2) Understand the use of the tool in evaluating clinical reasoning
- 3) Use the DXJ to evaluate sample student answers to the DXJ



## Workshop 7I (0319)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:00 - 11:30

**Location of presentation:** Saint Clair 3B

### **Developing a pedagogically-informed, authentic interprofessional educational intervention and robust assessment approach**

Hamde Nazar<sup>1</sup>, Jan Illing<sup>2</sup>

<sup>1</sup> *Newcastle-upon-Tyne University, Newcastle-upon-Tyne, UK* <sup>2</sup> *Royal College of Surgeons in Ireland, Dublin, Ireland*

#### **Background**

Interprofessional education (IPE) is acknowledged as a strategy to develop the knowledge, skills and behaviours of undergraduate healthcare students to facilitate effective interprofessional working later in clinical practice. Such practice is recognised to achieve more effective, collaborative and safer patient care.

IPE in the undergraduate curriculum is notoriously challenging to organise and manage across different programmes, timetables, priorities and sometimes different institutions.

IPE interventions are considered most effective when they require active learning, present an authentic experience for students and include a patient.

Assessing student performance during IPE also presents a challenge with no one recommended, evidence-based approach.

#### **Who Should Participate**

Trainers and educators of under- and post-graduate healthcare students interested in the designing and developing IPE interventions and assessment.

#### **Structure Of Workshop**

(candidates will be asked to work in interprofessional pairs or groups where possible)



1. Brief introduction on: the evidence for and about effective IPE and its assessment, and employment of entrustable professional activities (EPAs) to frame authentic IPE experiences.
2. Working in pairs, candidates will be supported to:
  1. Identify an authentic interprofessional learning experience using EPAs;
  2. Identify the interprofessional learning outcomes using the principle of constructive alignment;
  3. Explore the possible active learning strategies for their IPE intervention, e.g. problem based learning, simulated case based discussion, SIM-MAN scenario, and where feasible to involve a patient.
3. Pairs feedback to the wider group, and all participants will be involved in a discussion about how to overcome some of the challenges of IPE, e.g., using online environments.
4. Brief presentation about the assessment strategies for IPE using the Kirkpatrick/Barr model, and promotion of the evidence-based decision aid to support selection of an appropriate IPE assessment tool.

### **Intended Outcomes**

Candidates will gain generic knowledge and understanding the application of various pedagogical theories and concepts, e.g. collaborative learning, EPAs, active learning, constructive alignment.

Candidates will leave the workshop with a basic blueprint of a pedagogically informed IPE intervention and evidence-based assessment approach that they can operationalise with their students/trainees.



## Workshop 7K (0765)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:00 - 11:30

**Location of presentation:** Roseraie 2

### Assessing individual trainee performance within a team context

Briseida Mema<sup>1</sup>, Dominique Piquette<sup>2</sup>, Anne Kawamura<sup>2</sup>

<sup>1</sup> Hospital for Sick Children, Toronto, Canada <sup>2</sup> University of Toronto, Toronto, Canada

#### Background

Physicians work as part of large teams and patient outcomes are rarely related to the competence of an individual physician, but rather are related to the competence of the team. Despite this, assessments within CBME frameworks are based on the competence of the individual trainee. In this workshop, the presenters will discuss circumstances in which trainee's actions, decisions, and performance are not independent, setting the stage for the need for innovative assessment strategies that examine individual competence within a team context.

Presenters will discuss the challenges of assessing for collective, team performance in the complex clinical environment and then share their experience with two strategies for assessing individuals whose performance is dependent on other team members. One of these assessment strategies is based on studies in educational measurement and provides an approach for assessing collaboration to capture aspects of independent and non-independent performance along a spectrum by describing individual relations with different team members and their contributions to outcomes. The second strategy is based on Multi Source Feedback (MSF) and uses team members' assessment of the individual trainee on a particular case to capture trainee's and team members' contributions.

These assessment strategies attempt to determine the contribution of the trainee to the final clinical outcome rather than attributing the clinical outcome to the individual trainee. In the last part of this workshop, the authors explore the validity of these assessment strategies.

#### Who Should Participate

Educators creating assessment of assessing individuals where performance is based on a team work.



### **Structure Of Workshop**

Large group discussion on the need for new assessment strategies

Mini lecture with a case study and demonstration of strategies

Mini lecture and small group discussion on validity of these assessment strategies

### **Intended Outcomes**

Discuss the need for innovative assessments that look at the individual trainee within a team context

Describe two strategies to assess individual and team contribution to the final performance and clinical outcome

Explore the validity of these two assessment strategies



## Meet the Expert Session 7L (0829)

**Date of presentation:** Sunday 28th August

**Time of session:** 10:00 - 11:30

**Location of presentation:** Roseraie 3

### Brainstorm about your OSCE plans

Elizabeth Kachur<sup>1</sup>

<sup>1</sup> *Medical Education Development, Global Consulting, New York, USA*

OSCEs have become common place in health professions education. Although they are sometimes referred to by a different name, these formative or summative assessments consist of multiple stations and require standardization of scenarios, tasks and assessment instruments. This session will provide an opportunity to address the logistics connected with such educational interventions. Elizabeth Kachur organized the first OSCE in the New York City area in 1986 and has published and presented on this topic extensively ever since. She will be available to help you brainstorm about your particular OSCE plans.



## Plenary 8A (0825)

**Date of presentation:** Sunday 28th August

**Time of session:** 11:45 - 13:15

**Location of presentation:** Amphitheatre

### What's Right and what's Wrong with Assessment and what can we do about it?

#### Plenary Speakers

Brian Hodges<sup>1</sup>, Lorelei A Lingard<sup>2</sup>, Geoff Norman<sup>3</sup>, Ronald Harden<sup>4</sup>, Maria Al Rachid<sup>5</sup>, Jason Frank<sup>6,8</sup>,

#### Moderator

John Norcini<sup>7</sup>, Deborah O'Mara<sup>8</sup>

<sup>1</sup> University Health Network, Toronto, Canada <sup>2</sup> Western University, London, Canada <sup>3</sup> McMaster University, Hamilton, Canada <sup>4</sup> AMEE, Dundee, UK <sup>5</sup> Medical Student at Université Saint Joseph de Beyrouth- Lebanon , Beirut, Lebanon <sup>6</sup> Director, Centre for Innovation in Medical Education, University of Ottawa, Ottawa, Canada <sup>7</sup> SUNY Upstate Medical University, Syracuse, USA <sup>8</sup> Chair, International CBME Collaborators, Ottawa, Canada <sup>8</sup> Office of Medical Education, University of Sydney , Sydney, Australia

A group of eminent assessment experts will each give a short presentation, some highlighting what's right with assessment to serve as a focus for ongoing development in the area, and others proposing what's wrong with assessment and what could be done to tackle the problems. The students' view will also be presented. The ensuing discussion involving the audience will offer some ideas about the future development of assessment in the healthcare professions.



## Symposium 9A (0818)

**Date of presentation:** Sunday 28th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Auditorium Lumiere

### **Situational Judgment Tests: Challenges and Insights in Research, Development, and Test Administration**

#### **Presenters**

Thomas Geiger<sup>1</sup>, Fiona Patterson<sup>2</sup>, Deborah O'Mara<sup>3</sup>

#### **Moderator**

Alison Whelan<sup>1</sup>

<sup>1</sup> Association of American Medical Colleges (AAMC), Washington, USA <sup>2</sup> Work Psychology Group, Derby, UK <sup>3</sup> Office of Medical Education, University of Sydney, Sydney, Australia

#### **Background**

Situational Judgment Tests (SJTs) are a popular assessment methodology used to evaluate non-academic competencies in examinees via responses to hypothetical scenarios. SJTs have long been popular in the employment sector but have more recently been introduced to the medical education space. This symposium will provide insights into research, development, and administrative practices involving high-stakes SJT programs. Panelists will share insights and address challenging questions related to establishing validity and fairness, mitigating coaching and faking risks, ensuring fairness in content development and evaluation, and pursuing meaningful measurement of competencies.



## Oral - Assessing Clinical Reasoning and Other Competencies

### Oral Session 9B1 (0470)

**Date of presentation:** Sunday 28th August

**Time of session:** 14:30 - 14:45

**Location of presentation:** Rhone 2

### **REACT: A tool for formative assessment of clinical reasoning during urgent clinical care**

Brian Peterson<sup>1</sup>, Charles Magee<sup>1</sup>, James Martindale<sup>2</sup>, Jessica Dreicer<sup>1</sup>, Laura Parsons<sup>1</sup>, Karen Warburton<sup>2</sup>, Andrew Parsons<sup>1,2</sup>

<sup>1</sup> *University of Virginia Health System, Charlottesville, Virginia, USA* <sup>2</sup> *University of Virginia School of Medicine, Charlottesville, Virginia, USA*

#### **Background**

Clinical reasoning encompasses the process of patient data collection, synthesis, and interpretation forming a working diagnosis, facilitating management decisions. Situated Cognition Theory suggests that knowledge is relative to contextual factors, and clinical reasoning in urgent situations adds pressure of consequential, time sensitive decision-making. These unique aspects of urgent clinical care may limit the effectiveness of traditional efforts to assess, teach, and remediate clinical reasoning utilizing deliberate and analytical processes.

#### **Summary Of Work**

Using the Society to Improve Diagnosis in Medicine's (SIDM) validated Assessment of Reasoning Tool (ART) and the Association of American Medical College's (AAMC) Entrustable Professional Activity 10 (EPA10) designed to assess a learner's recognition of patients requiring urgent care, a multidisciplinary group of clinician educators representing internal and hospital medicine, emergency medicine, pediatrics, anesthesiology, family medicine, critical care, and obstetrics and gynecology iteratively designed the novel Rapid Evaluation Assessment of Clinical Reasoning Tool (REACT). REACT is a behaviorally anchored assessment tool scoring five domains used to provide formative feedback to learners seeing patients in urgent clinical situations.

A pilot study to support validation was performed during the 2021 Intern Readiness Course (IRC) for fourth year medical students at the University of Virginia School of Medicine. Simulated patient interactions requiring rapid evaluations and management were recorded and scored by a separate multidisciplinary group of clinician educators using the REACT. REACT scores were analyzed for internal consistency across raters and observations.



### **Summary Of Results**

Overall internal consistency for the 41 patient simulations as measured by Cronbach's Alpha was .86. A mean weighted Kappa statistic was used to assess overall score inter-rater reliability. Moderate reliability was observed at .56.

### **Discussion And Conclusion**

REACT is a novel tool with validity evidence for formative assessment on a learner's clinical reasoning in urgent clinical encounters. Future directions include deploying the REACT tool in authentic, non-simulated clinical environments for both undergraduate and graduate medical education. REACT scores could also guide targeted coaching opportunities across the five assessed behaviors.

### **Take Home Messages**

REACT can reliably serve as a guide to clinician educators in their formative assessment of learners and may assist in the identification of learners who struggle with clinical reasoning skills in high-risk urgent clinical scenarios.

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## Oral Session 9B2 (0690)

**Date of presentation:** Sunday 28th August

**Time of session:** 14:45 - 15:00

**Location of presentation:** Rhone 2

### **Pilot-testing an OSCE rubric for assessment of medical students' clinical reasoning abilities through an oral debrief task.**

Alexis Régent<sup>1</sup>, Mini Singh<sup>2</sup>, Harish Thampy<sup>2</sup>

<sup>1</sup> *Université de Paris, Paris, France* <sup>2</sup> *Manchester Medical School, Faculty of Medicine, Biology and Health, University of Manchester, Manchester, UK*

#### **Background**

Clinical reasoning (CR) is a complex skill that enables transition from diagnostic novice to expert decision maker. The Objective Structured Clinical Examination (OSCE) is widely used to evaluate clinical competency, though there is limited literature exploring how these assessments are best used to assess medical students' CR skills. This pilot study explored the use of a post-station CR assessment, named Oral Debrief (OD).

**Purpose.** 1) Develop the OD post-station task including examiner questions and standardised marking rubric 2) Evaluate examiner application of this rubric against simulated OD videos 3) Explore examiners' views on the OD approach.

#### **Summary Of Work**

1) Drawing upon existing literature and our medical school's existing workplace-based CR tool, a draft OSCE OD rubric was created and modified iteratively through academic panel discussion, 2) Six simulated 8-minute ODs were scripted and recorded to represent three levels of candidate ability (failing, satisfactory, excellent). Sixteen examiners were recruited to observe and score three allocated videos using the rubric whilst thinking-aloud their justification, 3) Following the video-scoring exercises, examiners undertook individual semi-structured interviews to explore their views on the novel OD approach. Recordings were transcribed, anonymised and then thematically analysed deductively and inductively for recurring themes.

#### **Summary Of Results**

Consistent scoring outcomes were observed between examiner scores and the pre-determined level of CR performance. Examiners reported that the OD approach was a useful way to assess students' CR ability and were able to use the rubric with ease. When scoring, examiners paid particular attention to students ability to analyse data, establish links between information, prioritise and



justify their thinking. Description of thoughts with a structured approach enabled sharing of the student's illness script. Examiners assessed students' CR skills against their personal illness scripts rather than external cues and kept in mind patient's safety.

### **Discussion And Conclusion**

We demonstrated promising pilot results for the use of a novel post-station OD task to evaluate student's CR ability. Having established the utility of the marking rubric, further work is planned to evaluate how examiners conduct an OD in an actual OSCE setting and how well standardisation of this approach can be maintained.

### **Take Home Messages**

We developed a post-station OD to evaluate student's clinical reasoning

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## Oral Session 9B3 (0007)

**Date of presentation:** Sunday 28th August

**Time of session:** 15:00 - 15:15

**Location of presentation:** Rhone 2

### Remote Assessment of Visual Literacy in Undergraduate Medical Students Using Webcam Eye-Tracking Methodology

Dogus Darici<sup>1</sup>, Johannes Brockhaus<sup>1</sup>, Carsten Reissner<sup>1</sup>, Markus Missler<sup>1</sup>

<sup>1</sup> *Anatomy and Molecular Neurobiology, Münster, Germany*

#### Background

Visual literacy (VL) stands for a complex interplay between perceptual and cognitive processes, evolved due to training, and leading to higher accuracy in image search, recognition, and decision-making. Developing VL is essential for image-based fields in medicine such as radiology, gross anatomy, and histopathology. The reliable assessment of VL remains a practical challenge for the community to evaluate the outcome of online-only education.

#### Summary Of Work

Using novel (open access) remote webcam eye-tracking methodology VL was longitudinally assessed during a curricular online-only histology course in the Summer Term 2021. Third-semester medical students were prompted to identify six different histological slides after 10 ( $n = 51$ ;  $21.56 \pm 2.21$  years; 35 females), and 20 ( $n = 77$ ,  $21.97 \pm 2.25$  years; 59 females) course sessions, respectively. Eye movements, testscores, and viewtime were collected, and analyzed for each timepoint separately. Multiple linear regression models were performed with several eye movement metrics as independent variables, and the test performance as the dependent variable.

#### Summary Of Results

The results are threefold: First, remote webcam eye-tracking provides objective, and reliable visual literacy measurements, comparable with those gathered on-site. Second, eye movements predict test performance at both time points ( $R^2 = 0.402$ ,  $p < 0.001$ , and  $R^2 = 0.277$ ,  $p < 0.001$ ). Third, specific eye movements were identified as reliable, and robust predictors: At both time points, students with higher testscores showed an increase of their total fixation count ( $\beta = 0.467$ ,  $0.876$ ;  $p = 0.011$ ,  $< 0.001$ ), a reduced scanpath length ( $\beta = -0.418$  to  $-0.687$ ,  $p = 0.017$ ,  $< 0.001$ ), and an increased fixation count on task-relevant areas ( $\beta = 0.334$ ,  $0.615$ ;  $p = 0.025$ ,  $0.002$ ).

#### Discussion And Conclusion



These results show for the first time that visual literacy can be reliably assessed using open access webcam eye tracking technology, and paves the way for the low-budget online assessment of students' implicit pattern-recognition competencies. The use of this technology implies more unused potential of online assessments that is likely to be used in future variants of outcome-oriented course formats.

### **Take Home Messages**

Webcam eye-tracking methodology proves its feasibility for the assessment of early visual literacy.

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## Oral Session 9B4 (0455)

**Date of presentation:** Sunday 28th August

**Time of session:** 15:15 - 15:30

**Location of presentation:** Rhone 2

### Assessment of Handover Skills in Medical Trainees

Melissa Margolis<sup>1</sup>, Marcia Winward<sup>1</sup>, Patricia Hicks<sup>2</sup>

<sup>1</sup> NBME, Philadelphia, USA <sup>2</sup> UT Southwestern, Dallas, USA

#### Background

Transitions of patient-care responsibilities are vulnerable to communication breakdowns and errors. Objective tools such as IPASS and SBAR have been developed to address these vulnerabilities, and they have done so with varying degrees of success. Standardizing the information-collection process at the point of handover is a clear benefit, yet this standardization constrains the information the handover receiver has for managing the patient. In addition, these tools do not address decision-making processes that are essential to good patient care. Similarly, from a training perspective, the tools are designed to standardize the transition of care and not to provide feedback about how well trainees manage the handover process.

#### Summary Of Work

A unique set of workplace-based assessment instruments was developed to evaluate the process of collecting information about the same event from different perspectives: the handover sender, receiver, and post-handover shift supervisory resident. To address limitations of other tools, this assessment solicited feedback on learner strengths and areas for improvement. Performance reports displayed scores and feedback for four content areas: *preparedness, uncertainty, contingency planning, and completeness*.

#### Summary Of Results

Participants in different roles often reported different perspectives on the same handover. The graphical display of performance ratings across the four roles allowed for comparison of role-based ratings in the four content areas, and free-text comments such as “Excellent organization and coordination of care” and “Would recommend prioritizing sick patients early and following up with interventions sooner” provided learners with specific positive and constructive feedback on their performance in each area.

#### Discussion And Conclusion



This assessment delves deeper than existing tools by having participants consider the context of a particular handover and what was necessary for good clinical decision-making in that context. It also yields a report containing specific and actionable feedback. Though this assessment initially focused on receiver performance, it has potential as a broader training tool to increase decision-making awareness and help to identify the specific points of information breakdown across learner levels and roles.

### **Take Home Messages**

A handover process that incorporates multiple perspectives and accommodates both training and assessment functions can add significant value to a critical patient-care process that is vulnerable to significant error.

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## Oral Session 9B5 (0540)

**Date of presentation:** Sunday 28th August

**Time of session:** 15:30 - 15:45

**Location of presentation:** Rhone 2

### **Identity at the Center of Assessing Interprofessional Education: Development of the Rubric InterProfessional Identity Development (RIPID)**

Gabriël Cantaert<sup>1</sup>, Peter Pype<sup>1</sup>, Emelien Lauwerier<sup>1,2</sup>

<sup>1</sup> Ghent University, Department of Public Health and Primary Care, Ghent, Belgium <sup>2</sup> Ghent University, Department of Experimental-Clinical and Health Psychology, Ghent, Belgium

#### **Background**

Interprofessional identity (IPI) is asserted to be a missing link between professional development and interprofessional collaboration, for which a concept analysis and critical interpretative synthesis of the literature were conducted to establish a conceptual framework. Considering that assessment based on this framework may prove vital to adopt in educational strategies, the Rubric InterProfessional Identity Development (RIPID) was constructed.

#### **Summary Of Work**

A first version was piloted by analyzing reflection documents from medical students in their last undergraduate year, in which they were instructed to reflect on their development from an interprofessional perspective. Five documents were analyzed independently by two psychology graduate students and the first author, followed by calculation of the interrater reliability and the resolving of inconsistencies. Revisions were applied after analyzing an additional 24 documents and through triangulation with the second and third author. A final version was subjected for content and face validation to three researchers and one teaching assistant.

#### **Summary Of Results**

The RIPID comprises eight criteria, in which the suitability of the material for assessment is first scanned by 'context-dependency'. Then, 'values', 'awareness', 'openness', 'self-efficacy', 'commitment' and 'team mental model' are scored on a three-point Likert Scale to be not present, somewhat present or clearly present. The sum scores informs 'calibration' that determines if these criteria somewhat (>9/18) or clearly (>13/18) appear to be integrated into a developing IPI. The Krippendorff's alpha of the pilot version show a high reliability (0,82) and illustrative vignettes in addition to an instruction manual containing definitions and (non)fictitious examples per criterium were created to further improve consistency in scoring.



### **Discussion And Conclusion**

The RIPID is novel in its kind as it is the first instrument that assesses the development of IPI through reflective writing as well as by means of discussions and observations in a consistent way. Nonetheless, further measures are required to determine the feasibility of this instrument for formative assessment and to evaluate the reliability and validity in other programs and with practitioners.

### **Take Home Messages**

The RIPID appears to be a theoretically supported and versatile instrument that was developed to assess the IPI development within different context and across the professional continuum, although further validation is warranted.

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## Workshop 9E (0187)

**Date of presentation:** Sunday 28th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Rhone 4

### Engaging Hybrid Core OBGYN Clerkship experience with focus on Improving the UME / GME Transition

Vishal Surender<sup>1</sup>, Sreekrishna Penna<sup>1</sup>, Bikramajit Singh<sup>1</sup>

<sup>1</sup> Windsor university school of medicine, Basseterre, Saint Kitts and Nevis

#### Background

At Windsor University School of Medicine, Like many others during COVID-19, we explored ways of engaging students virtually, including using APGO educational resources in our year 3, six (6) week Ob/Gyn clerkship. As the pandemic continued and rotations resumed in person, the challenge of limited clinical experiences--both due to lack of patient volume and a reduced number of clinical sites--remained for our students. We decided to keep components of our virtual experience and create a long-term hybrid rotation to ensure students met the goals and objectives of the required clinical experiences in a structured way.

As we refined our approach, we found success in carefully linking our learning objectives to APGO objectives, ACGME level 1 milestone, and various assessments methods. Our focus was also to meaningfully engage students in a variety of active learning strategies for online active learning in preparation for face-to-face skills sessions. By implementing this approach, we saw NBME shelf exam and OSCE scores improve, and student confidence rise. In addition due to the alignment of our objectives and assessment methods with APGO objectives and ACGME level 1 milestone, we believe we are working towards a better UME/GME transition during core clerkship experience rather than working on a separate boot camp or fourth-year elective.

#### Who Should Participate

clerkship directors, department chairs & faculty

#### Structure Of Workshop

**Didactics-10 minutes:** PowerPoint presentation of the curriculum including curriculum map, relaying survey results, and levels of satisfaction.

**small groups- 20 minutes:** Assigning each group(total 5) weekly curriculum for identification of best



practice for that week in terms of instruction and assessments methods that categorizes either as virtual or face to face.

**Apply what was learned:** Get the participants to make a commitment to try this at “home” or to reflect on how they can use this-15 minutes

Consensus best practice tips

### Intended Outcomes

- Outline the structure of our hybrid clerkship curriculum.
- Describe our experience including successes, challenges and student satisfaction
- Brainstorm to identify best practice curricular components and assessment methods.
- Brainstorm and identify the significance of UME-GME continuum through mapping of APGO objectives, level 1 milestones, and assessment methods.



## Workshop 9F (0614)

**Date of presentation:** Sunday 28th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Saint Clair 1

### **The journey to incorporate DEI into undergraduate medical curriculum, assessment and evaluation.**

Douglas Koch<sup>1</sup>, Valerie Cadet<sup>2</sup>, Stacie Fairley<sup>3</sup>

<sup>1</sup> Philadelphia College of Osteopathic Medicine, Philadelphia, USA <sup>2</sup> Philadelphia College of Osteopathic Medicine, Georgia, Suwanee, USA <sup>3</sup> Philadelphia College of Osteopathic Medicine, South Georgia, Moultrie, USA

#### **Background**

Incorporating diversity, equity, and inclusion (DEI) into the curriculum is critical for an institution to successfully graduate more culturally responsive healthcare providers. This effort would help reduce the prevalence of bias and discrimination within the healthcare system as a means to meet the needs of diverse patient populations. We will discuss the context of the undergraduate medical program at the Philadelphia College of Osteopathic Medicine (PCOM). In 2021, PCOM consolidated the three medical campuses, collectively comprising approximately 475 students per class, into one centrally administered program. The three campuses represent a diverse student population and are located in Philadelphia, PA; Suwanee, GA; and Moultrie, GA in the United States, urban, suburban, and rural settings, respectively.

#### **Who Should Participate**

Healthcare educators interested in collaborating and deepening their knowledge around DEI curriculum, assessments, and evaluations to meet the needs of a diverse population by developing culturally aware students.

#### **Structure Of Workshop**

This interactive workshop is designed to engage, challenge, and help participants move forward in creating more inclusive curriculums, assessments, and evaluations for undergraduate medical education. The session will begin with a didactic portion outlining the importance of diversity in education and assessments, including the impact on the students, institution, and communities our graduates serve. Subsequently, we will present an overview of the new tri-campus medical school curriculum which incorporates elements of DEI through cases, standardized patients, interprofessional education experiences, humanities, patient perspectives, and assessment questions



- to name a few. We will finish by discussing different methods of assessing and evaluating our progress from computer-based testing to student evaluations.

Next, attendees will break into small groups to discuss strategies for curricular change relevant to DEI then reconvene to exchange their ideas with the larger audience.

### **Intended Outcomes**

At the end of this session participants should be able to:

- communicate the importance of DEI in a healthcare curriculum to their institution.
- identify opportunities for the incorporation of DEI content within the curriculum.
- initiate a DEI assessment and evaluation program.



## Workshop 9H (0166)

**Date of presentation:** Sunday 28th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Saint Clair 3A

### Theory to Practice: Implementation of CIPP model for Program Evaluation

Syed Latifi<sup>1</sup>, Mark Healy<sup>2</sup>

<sup>1</sup> Weill Cornell Medicine-Qatar, Doha, Qatar <sup>2</sup> Weill Cornell Medicine - Qatar, Doha, Qatar

#### Background

Higher education needs to keep pace with advances in programmatic evaluation and ensure rigorous framework for evaluation is in place. This promotes structured continuous quality improvement (CQI) while also bolstering self-review and site-visit evidence for program accreditation/audit. This workshop will distil the system of evaluation using examples from an undergraduate medical education program. Attendees will be introduced to the theoretical basis of a decision-oriented model, as well as the process of identifying program-outcomes indicators.

Through examples, discussions, and hands-on exercises, the following topics will be covered:

- Evaluation models and institutional strategy for program evaluation
- Overview and relevance of Stufflebeam's *Context, Input, Process, and Product* (CIPP) model
- Development of a hierarchical framework for curriculum monitoring and evaluation
- Case-study discussion: Connecting CQI and CIPP, and implications for practice

Summary: Attendees will understand and be able to apply the CIPP model (Stufflebeam, 2004) to their own programmatic evaluation.

#### Who Should Participate

Medical educators, program evaluators, administrators, and anyone with an interest in programmatic assessment and evaluation frameworks would benefit from this workshop. Familiarity with concepts such as focus of program, hierarchical indicators of evaluation, and related concepts are recommended, however, an overview will be provided.



## Structure Of Workshop

Using presentation, discussions, and hands-on activities participants will explore the application of Context, Input, Process, and Product (CIPP) model and its application for the undergraduate medical education program, as outlined below:

*Part-1: **Overview** of programmatic evaluation and few exemplars of evaluation framework*

*Part-2. **Review** of CIPP framework for programmatic evaluation and its application for continuous quality improvement (CQI) of a MD program of studies*

*Part-3. **Hands-on application** of the concepts and methods from part-2 using a case study, in a large-group activity (handouts will be provided\*)*

*Part-4. **Summarize** the case study and final thoughts*

*\* electronic worksheets will be provided to the participants*

## Intended Outcomes

The workshop has following intended outcomes:

1. Review the application and limitations of evaluation models (focus of evaluation, feasibility, utility, and transferability).
2. Review the application of models for programmatic assessment
3. Recognize the concept of evaluation framework and its linkage with foci of evaluation
4. Apply the CQI reporting system for decision making and program enhancement



## Workshop 9I (0224)

**Date of presentation:** Sunday 28th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Saint Clair 3B

### Using competency-based feedback to coach professional development in early medical students

Neil Osheroff<sup>1</sup>, Kimberly Dahlman<sup>2</sup>, Cathleen Pettepher<sup>1</sup>

<sup>1</sup> *Vanderbilt University School of Medicine, Nashville, TN, USA* <sup>2</sup> *Vanderbilt University Medical Center, Nashville, TN, USA*

#### Background

Health professionals require skills and attitudes beyond medical knowledge. However, because of the heavy focus on medical knowledge during pre-clerkship training, programs often struggle to incorporate experiences and assessments that prepare students for all aspects of clinical work. One approach to addressing this important issue is to incorporate competency-based feedback schemes into the pre-clerkship curriculum. While maintaining the importance of medical knowledge, competency-based feedback strategies provide students with a roadmap that addresses all aspects of their performance and encourages learner development and sustainability. Furthermore, they allow for the development of students with greater inquiry, more holistic thought processes, and enhanced maturity.

#### Who Should Participate

This workshop will benefit curricular leaders, administrators, and faculty who are involved in health professional education and assessment. Although the workshop will focus on pre-clerkship learners, educators who teach in the clinical workplace will also benefit greatly.

#### Structure Of Workshop

The workshop will begin with an interactive discussion that will provide an understanding of competency-based feedback. It will explore the advantages and challenges of incorporating competency-based feedback into health professions curricula and the use of written and oral feedback. Attendees will break into small groups and with the assistance of facilitators, will devise approaches for integrating novel activities into their curricula that could be used to observe specific student behaviors and apply competency-based feedback. Participants will share their strategies in a report out session and return to their small groups to develop approaches for delivering oral and written feedback to trainees. The workshop will close with an interactive group discussion about how



competency-based feedback can be leveraged to enhance student development and sustainability as well as the successes and challenges of providing feedback to early health professional trainees.

### **Intended Outcomes**

Attendees will leave with an understanding of the advantages of competency-based written and oral learner feedback and with practical strategies for incorporating them into the pre-clerkship science curriculum at their institutions. The approach described in this workshop enhances curricular integration and encourages learners to shift their focus from course grades to their preparation for the profession. It also fosters habits of self-reflection and life-long learning.



## Round Table 9J (0511)

**Date of presentation:** Sunday 28th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Saint Clair 4

### **Critical appraisal of self and others as part of ‘feedback literacy’: Are the demands on students too steep?**

Elizabeth Molloy<sup>1</sup>, Wendy Hu<sup>2</sup>, Christy Noble<sup>3</sup>

<sup>1</sup> *The University of Melbourne, Melbourne, Australia* <sup>2</sup> *University of Western Sydney, Sydney, Australia* <sup>3</sup> *The University of Queensland, Brisbane, Australia*

Students’ dissatisfaction with feedback coupled with educators’ concessions that feedback is often untimely and unfocussed has created a crisis. This has led to a re-conceptualisation of feedback as a process where learners have an active role to play in the seeking and using of performance information (Boud and Molloy 2013, Carless and Boud 2018). Studies have sought to define these learner capacities or ‘feedback literacy’ in different contexts (Molloy Boud Henderson 2020) and recent work examined the impact of explicitly orienting students to their feedback role in clinical settings (Noble et al. 2019).

A ‘feedback literate’ student should be open to critical evaluation of their own work whilst being comfortable in sharing honest performance information with peers, teachers and others within their social context. In doing so, they may gain in their learning, but risk losing their standing within the group when membership is measured through performance and/or social cohesion. Whilst there is a buzz surrounding feedback literacy, we are concerned that there is insufficient accounting for the broader societal expectations on learners as they navigate these processes. These expectations may rub against the ambitions of the feedback literacy movement. For example, to gain entry into medicine, students need to present themselves as confident and knowing. Equally, social media demands a presentation of self that is much more polished than can be expected of ‘ordinary’ people. We argue that learners have been cornered into a position where they must exhibit confidence that they do not feel in order to be successful.

In this session, we ask you to consider the benefits of feedback literacy for students but also unearth some fundamental tensions at play. Perhaps an underexamined component of feedback literacy is the learner’s ability to identify and negotiate these tensions, and the teacher’s capacity to model ‘real time’ this negotiation of: vulnerability and credibility, humility and confidence, honesty and social cohesion? It may not make the ask of being a feedback-literate student any easier, but it may make learners’ decisions about what to say and whose opinion to seek out in a particular moment, more deliberate.



## Workshop 9K (0601)

**Date of presentation:** Sunday 28th August

**Time of session:** 14:30 - 16:00

**Location of presentation:** Roseraie 2

### **Using modified Consultation Observation Tools (COTs) for formative and summative assessment of video consultations between trainee General Practitioners (GPs) and patients.**

Alexia Papageorgiou<sup>1</sup>, Maria Perdikogianni<sup>1</sup>, Panayiota Andreou<sup>1</sup>, Zoe Giannousi<sup>1</sup>

<sup>1</sup> *University of Nicosia Medical School, Nicosia, Cyprus*

#### **Background**

The Consultation Observation Tools (COTs) are broad assessments of communication and consultation skills, data gathering and decision making on a wide range of direct observations and discussions. Both students and assessors can use the Consultation Observation Tool to support holistic judgments about a doctor's primary care performance. Students will use COTs to collect evidence for their portfolio as part of the Workplace Based Assessment. The assessment for this key component aims to demonstrate learning and integration of consultation and communication skills into every day clinical practice as well as a doctor's ability to reflect on their primary care performance. To achieve the latter, our students have to video tape at least three doctor patient consultations and write a reflective essay (500 words in length) for each one of these.

#### **Who Should Participate**

Clinical and non-clinical faculty who assess/supervise the communication and consultation skills of trainee GPs

Trainee GPs who would like to use the COT for assessing and improving their practice

#### **Structure Of Workshop**

- Short power point presentation
- Experiential work using videos
- Plenary discussion with feedback

Participants' experience and knowledge of COTs will be explored along with their expectations at the end of the workshop. This will be followed by a short presentation on the Consultation Observation



Tools (COTs) and how these have been modified and used to assess the communication and consultation skills of trainee GPs of an online MSc programme in Family Medicine. They will then observe 3 video recorded consultations between GPs and their patients and they will be asked to assess them using the COTs. A discussion will be followed at the end of each assessment to standardise the grading system.

A plenary session will be held at the end of the workshop to discuss the participants' experience and possible use of COTs in their practice and assessment.

#### **Intended Outcomes**

- Participants will have familiarised themselves with a modified COT assessment suitable for assessing video consultations between trainee GPs and their patients
- Participants will be able to experience how to use COTs for online/distant learning of WPBA assessment of trainee GPs



## Online Oral - Programme Evaluation: Examples 3

### Online Oral Session 9.1 (0073)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:00 - 16:15

**Location of presentation:** Online Session

### Assessing mental health: Analysis of the Wellness Check Program for Medical Students at the University of Ottawa

Kay-Anne Haykal<sup>1</sup>

<sup>1</sup> *University of Ottawa, Ottawa, Canada*

#### Background

Depression affects nearly one third of medical learners and physicians worldwide. The demands of medical education and residency training are extreme, and many studies confirm that the prevalence of psychological distress is very high among medical learners. These rates are even higher than that of the general population of the same age.

#### Summary Of Work

Medical students have a mandatory wellness check during their first and third year. This evaluation includes a questionnaire addressing demographic information and questions on mental health and its risk factors such as physical health, sleep, social support, financial stress, studies and career, stress and drug and/or alcohol use. The primary objective of this study is to verify the risk factors for mental health in medical students at the University of Ottawa. The secondary objectives are to verify the impact of demographic variables on these risk factors, and the change in the students' mental health throughout their studies.

#### Summary Of Results

The results of the quantitative analysis indicate that there is no statistically significant difference in mental health between first- and third-year students when co-variables are accounted for. However, the results indicate that 59% of the variation of the average score for mental health is explained by the following risk factors ( $R^2=0.594$ ;  $F(9, 895)=145.31$ ;  $p<0.01$ ): physical health ( $\beta=0.055$ ;  $p<0.05$ ), sleep and fatigue ( $\beta=0.269$ ;  $p<0.001$ ), social support ( $\beta=0.167$ ;  $p<0.001$ ), studies and career ( $\beta=0.240$ ;  $p<0.001$ ), and stress and drug and/or alcohol use ( $\beta=0.241$ ;  $p<0.001$ ). Some demographic variables also have a statistically significant effect ( $p<0.05$ ) on these risk factors.



### **Discussion And Conclusion**

In conclusion, there is no statistically significant difference between the psychological health of first-and third-year students, but other risk factors can have an impact. Thus, this study will help determine how to allocate resources strategically based on risk factors to improve mental health in medical students.

### **Take Home Messages**

This study is important to help allocate resources strategically based on risk factors to improve mental health in medical students. With the knowledge gained, current Student Affairs programs can be revised and robust and individualized strategies can be developed to cultivate sustainable wellbeing in students at the start of their program.

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## Online Oral Session 9.2 (0082)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:15 - 16:30

**Location of presentation:** Online Session

### **"Building a More Inclusive Blood System in Canada": A Mixed-Methods Evaluation of a Workshop to Guide Medical Students to Develop as Health Advocates Through Advancing Health Equity in Blood Product Donation for Gay, Bisexual, and Queer Men**

Aaron Rosenfeld<sup>1,2</sup>, Romy Segall<sup>2,3</sup>, Owen Baribeau<sup>2,4</sup>, Kasey Berscheid<sup>2,5</sup>, Sze Wah Samuel Chan<sup>2,4</sup>, Kaveh Farrokhi<sup>2,6</sup>, David Herman<sup>1,2</sup>, Anna Lee<sup>2,4</sup>, Navjit Singh<sup>2,7</sup>, Hayley Wroot<sup>2,8</sup>, Warren Fingrut<sup>2,9</sup>

<sup>1</sup> *University of Ottawa, Ottawa, Canada* <sup>2</sup> *Stem Cell Club, Toronto, Canada* <sup>3</sup> *Dalhousie University, Halifax, Canada* <sup>4</sup> *University of Toronto, Toronto, Canada* <sup>5</sup> *University of Saskatchewan, Saskatoon, Canada* <sup>6</sup> *Western University, London, Canada* <sup>7</sup> *University of Manitoba, Winnipeg, Canada* <sup>8</sup> *University of British Columbia, Vancouver, Canada* <sup>9</sup> *Adult Bone Marrow Transplantation Service, Memorial Sloan Kettering Cancer Center, New York, USA*

#### **Background**

The CanMEDS framework for physician competency outlines that, as Health Advocates, physicians work to determine and understand patient and community needs, speak on behalf of others when required, and support the mobilization of resources to effect change. Although recognized as essential for medical trainees to develop, health advocacy is challenging to teach and assess.

#### **Summary Of Work**

Here, we describe the development and evaluation of a workshop to support medical students to develop as health advocates through advancing health equity in blood product donation for gay, bisexual, and other men who have sex with men (gbMSM). Topics discussed included blood product donation policies for gbMSM in Canada and a campaign to engage gbMSM as stem cell donors ([stemcellclub.ca/savingliveswithpride](http://stemcellclub.ca/savingliveswithpride)). Pre- and post-workshop surveys were delivered to assess learning outcomes. Participants thereafter attended focus group sessions where they reflected on donation policies for gbMSM and their consequences, and discussed how to concurrently advocate for gbMSM and patients in need of blood products.

#### **Summary Of Results**

We hosted this workshop for 104 medical students at 8 Canadian medical schools. Post-workshop, mean scores on a 6-question blood product donation for gbMSM improved from 33% to 79% ( $p < 0.001$ ), and 88% felt the workshop prepared them to discuss blood and stem cell donation for



gbMSM with others. 98% strongly agreed/agreed the workshop supported their development as health advocates. 94% felt that the workshop should be incorporated into medical curricula. Qualitative analysis of focus groups with a subset (n=39) of workshop participant, identified rich examples demonstrating their development as health advocates, including through recognizing bias/discrimination in health policy, the need for inclusivity, and barriers to policy change, and applying health advocacy learnings to future practice.

### **Discussion And Conclusion**

A national cohort of medical students felt that participating in a workshop on advancing health equity in blood product donation for gbMSM contributed to their development as health advocates. This workshop can be adopted by medical educators seeking to build health advocacy teaching into medical curricula.

### **Take Home Messages**

1. A health equity workshop can contribute to the development of medical students as health advocates
  2. This workshop is a model for teaching health advocacy
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## Online Oral Session 9.3 (0188)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:30 - 16:45

**Location of presentation:** Online Session

### Engaging Hybrid Core OBGYN Clerkship experience with focus on Improving the UME / GME Transition

Vishal Surender<sup>1</sup>, Bikramajit Singh<sup>1</sup>, Sreekrishna Penna<sup>1</sup>

<sup>1</sup> Windsor university school of medicine, Basseterre, Saint Kitts and Nevis

#### Background

The COVID-19 pandemic has led to several challenges, including lower engagement of clerkship students due to the risk of exposure to infection. We used what was created for virtual experience during the start of the pandemic and turned it into a long-term hybrid engaging clerkship learning experience.

#### Summary Of Work

The goal was also to make it easier for instructors to deliver the instruction in easy-to-use learning platforms like Google classroom that allowed better assessment without adding cognitive load on instructors of learning a new platform. We used several appropriate online resources, some internally developed, and others from virtual patient case banks (Aquifer, APGO, COMSEP, OPENPediatrics, American college of surgeons, and Alliance for Academic Internal Medicine). The online portion of the curriculum is delivered in conjunction with face-to-face rotation. The key feature of this hybrid learning was using once a week per rotation synchronous active learning instructional sessions like Team-based learning (TBL). These sessions were guided by dedicated instructors, this method of instruction helped us in making sure the topics assigned for the week were assessed and ensured better compliance.

#### Summary Of Results

The majority of the students felt the Hybrid curriculum was well organized. Due to hybrid curriculum, students felt more prepared for clinical rotation and shelf exam (pre 1.2 v post 3.8,  $p < 0.05$ ) on 1-5 Likert. Students cohort in hybrid curriculum performed well compared to the previous traditional face-to-face only cohort on the shelf examination (hybrid mean score 73 vs. traditional 70,  $p = 0.27$ ). Students towards the end of each clerkship rotations have shown proficiency in level 1 and in certain cases level 2 of the ACGME milestones and achieving required EPA's.



### **Discussion And Conclusion**

This hybrid approach, with closer alignment of objectives between instruction and assessment, ensures a better foundation from which students do better during their face-to-face clerkship rotations. Certain innovative tweaking of the resources on professional websites--like usage of cases as a base for creating standardized patient OSCE and including a TBL session utilizing teaching cases during synchronous sessions, aids in closer compliance from students of preassigned topics.

### **Take Home Messages**

A hybrid approach is an effective comprehensive learning avenue if challenges with traditional clerkship experience are faced.

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## Online Oral Session 9.4 (0243)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:45 - 17:00

**Location of presentation:** Online Session

### **Evaluation of The Entrepreneurship in Healthcare Seminar Series: Innovating Medical Education Through Entrepreneurship**

Michael Balas<sup>1</sup>, Aazad Abbas<sup>1</sup>, Amanda Mac<sup>1</sup>, Hayley McKee<sup>1</sup>, Aida Ahrari<sup>2</sup>, Dante Morra<sup>1,3</sup>, Sarah McClennan<sup>1,3</sup>, Alison Freeland<sup>1,3</sup>

<sup>1</sup> Temerty Faculty of Medicine, University of Toronto, Toronto, Canada <sup>2</sup> Department of Diagnostic Imaging, University of Toronto, Toronto, Canada <sup>3</sup> Trillium Health Partners, Toronto, Canada

#### **Background**

Given their clinical experience and knowledge of healthcare challenges, physicians are in an ideal position to spearhead medical innovation. However, many physicians are unaware of innovation methodologies and lack the skills necessary to successfully launch and run an entrepreneurial venture. A novel, student-led initiative, the Entrepreneurship in Healthcare Seminar Series (EHSS), was designed to address this gap by hosting seven online educational seminars annually for University of Toronto medical students, taught by invited subject matter experts. This study assesses the implementation of the EHSS from September 2020 to January 2022.

#### **Summary Of Work**

Quantitative and qualitative evaluations of the program were acquired from anonymized feedback forms that were distributed at the end of every session. Thematic analysis was used to interpret the qualitative feedback students provided. Results of the quantitative feedback were reported using descriptive statistics.

#### **Summary Of Results**

A total of 260 viewers attended the series, 122 (47%) of which were unique. 38 (31%) attendees were present for at least three of the seven sessions. 184 (71%) feedback forms were completed, primarily by first (64%) and second year (26%) medical students. The majority (>90%) of attendees responded positively across all quantitative questions; agreeing that the sessions were engaging and well-organized, that learning objectives were met, and that the knowledge and skills they gained will be useful in practical settings. Thematic analysis revealed three key themes of: 1) aligning personal values with entrepreneurial ventures; 2) the importance of experiential learning to innovate in healthcare; and 3) learning from peers and mentors.



### **Discussion And Conclusion**

The student responses to this seminar series have been overwhelmingly positive, and their feedback will be used to iteratively improve this initiative. The next steps of the EHSS will be incorporating entrepreneurship into core undergraduate medical curricula and further refining educational seminars as well as expanding them to other institutions.

### **Take Home Messages**

Physicians are uniquely positioned to drive clinical innovation through entrepreneurship, though they typically lack the necessary skills and training. Our entrepreneurial seminars were created to address this gap, and so far student feedback surveys have shown them to be highly effective and engaging.

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## Online Oral Session 9.5 (0683)

**Date of presentation:** Sunday 28th August

**Time of session:** 17:00 - 17:15

**Location of presentation:** Online Session

### **Relationship between self-directed visuospatial conditioning and performance in learning basic laparoscopic simulated skills . A pilot study**

Ricardo Vergara-Escudero<sup>1</sup>, Federico Calderón-Correa<sup>1</sup>, Ana Isabel Pineda-Gomez<sup>1</sup>, Maria Alejandra Nieto-Rojas <sup>1</sup>, Sandra Ximena Jaramillo Rincón <sup>1</sup>

<sup>1</sup> *Universidad de los andes, Bogota, Colombia*

#### **Background**

Minimally invasive surgery demands complex and highly specific tasks practiced through altered perception with no haptic feedback, requiring the development of Visuospatial Skills (VS) (spatial orientation, mental representation, and perception dimensional shift). Practicing VS through a remote e-learning program may influence training speed and enhance mental abilities promoting better performance.

#### **Summary Of Work**

We conducted a pilot study in which laparoscopy naive (LN) undergraduate medical students completed a self-directed, remote program using visuospatial exercises (VSE) apps for at least 15 minutes daily over 3 weeks. Laparoscopy non-naive (LNN) medical students served as a control group. Performance was measured by the Global Operative Assessment of Laparoscopy Skills(GOALS). Both groups then completed an adapted *Fundamentals of Laparoscopy Surgery* program (AFLSP) (6-hours) after which they were then reassessed with GOALS.

#### **Summary Of Results**

The LN group (n=13) initially achieved a higher GOALS score vs LNN (n=50) (9.44 vs 9.69  $p=0.53$ ). This GOALS score correlated directly with the number of VSEs completed (20-25: 11.5, 25-30: 11.7, >30: 12.8). Those who completed 20 - 25 VSE achieved the greatest absolute increase in score (20-25: 3.5, 25-30: 2.0, >30: 2.5;  $p=0.166$ ). After the AFLSP, both groups improved their performance (GOALS change LN:2.23  $p<0.01$ ; LNN: 2.28,  $p<0.01$ ). Both groups increased their GOALS score in all five domains (depth perception, bimanual dexterity, efficiency, tissue handling, and autonomy) but the increase was not significant ( $p>0.05$ ).



### Discussion And Conclusion

Our results suggest that a training program containing only VS is non-inferior to prior exposure to laparoscopy simulators for inexperienced trainees. Adopting remote e-learning may benefit laparoscopic training as it decreases extrinsic cognitive load while increasing germane load. Additional variables such as skill acquisition speed, time spent training and individual *cusum* analysis will be accounted for in the following stage of our study.

### Take Home Messages

- Visuospatial conditioning alone prior to laparoscopy training may reduce cognitive load during formal training.
  - Visuospatial conditioning combined with laparoscopy training may reduce cognitive load in learning new mental abilities.
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## Online Oral Session 9.6 (0533)

**Date of presentation:** Sunday 28th August

**Time of session:** 17:15 - 17:30

**Location of presentation:** Online Session

### **What We Think about Professional and Unprofessional Behaviors: Differences between Perception of Clinical Faculty Members and Medical Students**

zahra sadat tabatabaei<sup>1</sup>, Mahboobeh Khabaz Mafinejad<sup>1</sup>, Azim Mirzazadeh<sup>1</sup>, Homayoun Amini<sup>1</sup>

<sup>1</sup> *Tehran University of Medical Sciences, Tehran, Islamic Republic Of Iran*

#### **Background**

Differences in the viewpoints of clinical faculty members and medical students about prioritizing professional norms accepted by the professional community and lack of alignment of these views can lead to distortion of understanding, problems in learning and assessment of professionalism, and failure in students' professional identity formation. This study aimed to identify the differences in viewpoints of faculty members and students about prioritizing the importance and prevalence of professional and unprofessional behaviors among medical students.

#### **Summary Of Work**

A multi-stage qualitative study was conducted at Tehran University of Medical Sciences during 2020-2021. At first, a systematic search was conducted to identify professional and unprofessional behaviors, using the directional content analysis method. To verify the accuracy of the codes obtained from reviewing the literature and also to evaluate its compliance with the context, a panel of experts was formed. Then, the modified nominal group technique sessions were held with clinical faculty members and medical students to strengthen the codes extracted from the studies and to systematically integrate their views to achieve a comprehensive list of professional and unprofessional behaviors in accordance with the context. Finally, consensus was made among them about prioritizing the importance and prevalence of these behaviors in students.

#### **Summary Of Results**

A total of 490 codes of professional behaviors and 595 unprofessional behavior codes were identified in the literature review. In the following sessions of the modified nominal group, 13 clinical faculty members listed a total of 105 codes of professional and unprofessional behaviors and 51 medical students also listed 313 codes. The results of modified nominal group technique showed that the faculty members reported the importance of unprofessional behaviors higher than professional behaviors. While Students rated the importance of professional behaviors higher than unprofessional



ones. Both faculty members and students rate the prevalence of professional behaviors in medical students as high and the prevalence of unprofessional behaviors as low.

### **Discussion And Conclusion**

The results showed a difference of views between faculty members and students about prioritizing professional and unprofessional behaviors. To develop the professional identity, it is essential to align their viewpoints to understand, learn and value professionalism.

### **Take Home Messages**

correct formation of professional identity in medical students

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## Online Oral - Postgraduate Education

### Online Oral Session 10.1 (0207)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:00 - 16:15

**Location of presentation:** Online Session

### Impact of COVID-19 pandemic on the implemented electronic medical records (EMR) I-PASS based handover in ACGME-I training program

Manasik Hassan<sup>1,2</sup>, Fatma Al-khori<sup>3</sup>, Amira Mustafa<sup>2,3</sup>, Abubakr Imam<sup>2,3</sup>

<sup>1</sup> Hamad Medical Corporation , Doha, Qatar <sup>2</sup> Weill Cornell medical collage , Doha, Qatar <sup>3</sup> SIDRA medicine , Doha, Qatar

#### Background

COVID-19 Pandemic caused an unprecedented disruption in medical education and healthcare systems worldwide. EMR I-PASS based handover was a remarkable tool to overcome face-to-face handoff during the pandemic, however, this in itself lead to other challenges; how to provide an effective and yet comprehensive tool for this handover that might require focused user training. We aimed at constant monitoring for the handover process with a goal of achieving >60% completion of the elements in the American Academy of Pediatrics (AAP) guidance for written handover.

#### Summary Of Work

A cross sectional intervention study among the pediatric training program at Sidra Medicine started in June-2019 using screening surveys for the patients' medical records. It included multiple phases starting from PDSA cycle-1(phase-1:Screening non-EMR handover for patients and hands-on training on I-PASS, Phase-2:Safe transitioning to I-PASS EMR handover for all patients, phase-3:post-implementation evaluation) then PDSA cycle2(during COVID-19). All the records were screened using the 15elements of AAP guidance for written handover.

#### Summary Of Results

100% achievement transfer of pediatric inpatients' written handover from non-electronic method to an electronic one over 2-month's period. The average completion of the 15-elements AAP guidance of handover in phase1-was 56%which improved to65%. In phase2, new trainees joined the program, the average completion dropped down to53%, which improved after refreshment training



courses to 73% and 70%. In PDSA cycle 2 average completion dropped to 43% in which multiple factors were identified; mainly related to COVID-19 pandemic.

### **Discussion And Conclusion**

Our project showed that implanting EMR I-PASS handover was achieved safely over 2-month-period with appropriate planning and follow-up monitoring. It represents an excellent tool to decrease human error in the hospital setting and ensure patients safety with many factors led to initial success: team work, excellent communication at all levels, and the continuous support from the IT services, however, the pandemic had a huge effect on the compliance that was showed by regression in previous achieved percentages of completion and compliance. Its consistent monitoring, this mandates future plans to include additional training for juniors and newly joined trainees using different methods, such as electronic learning modules and hands on training.

### **Take Home Messages**

The pandemic affected the healthcare system globally and its consequences was reflected on the training program.

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## Online Oral Session 10.2 (0322)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:15 - 16:30

**Location of presentation:** Online Session

### **Experiences and Perceptions of the First Internal Medicine Year 3 Cohort at a District General Hospital in London, United Kingdom**

Carmel Bergbaum<sup>1</sup>, Alice Macerola<sup>1</sup>, Beth Carr<sup>1</sup>, Philip Shea-Simonds<sup>1</sup>, Clifford Lisk<sup>1</sup>

<sup>1</sup> *Barnet Hospital, Royal Free London NHS Foundation Trust, London, UK*

#### **Background**

Internal Medicine Training (IMT) was introduced in the United Kingdom (UK) in August 2019. This programme is designed to prepare trainee Physicians for Specialty Registrar training. A major difference between the IMT programme and its predecessor is the inclusion of a third year (IMY3). The purpose of this is to ease transition into the Medical Registrar role, instead of entering specialty training at Year 3 (ST3) and becoming Medical Registrar simultaneously. In August 2021, the first IMT cohort progressed into IMY3. The aim of this project was to explore experiences of IMY3 trainees and perceptions of Consultant Physicians and other junior doctors of IMY3s.

#### **Summary Of Work**

In September 2021, electronic surveys were disseminated to the three groups in a District General Hospital in London, UK. Subsequently, newly rotating Specialty Registrars received formal induction on the IMY3 role, following which they completed a follow-up survey, and a Medical Grand Round discussion was held.

#### **Summary Of Results**

13 IMY3s, 15 Consultants and 36 junior doctors responded to the initial survey (response rate 42%). When 'on call', most IMY3s stated that they held the role of the Medical Registrar, but some reported undermining behaviours from Specialty Registrars. All Consultants and more than 90% junior doctors felt that an IMY3 could run the Acute Medical Take. When working within a Specialty, all IMY3s felt their role should be that of a Registrar, but 54% felt they were working at a more junior level. Only 53% Consultants and 45% other junior doctors stated that IMY3s were equivalent to ST3 in this role. 33% Consultants had good understanding of IMY3 training needs. 7 Specialty Registrars responded to the follow-up survey, all of whom stated there was no distinction between IMY3 and ST3.



### **Discussion And Conclusion**

The role of the IMY3 as the Medical Registrar seems to be well understood when 'on call.' However, the training needs and role within a Specialty are less clear. Education improved understanding. Next steps will include evaluation of the IMY3 role at other centres for validation.

### **Take Home Messages**

Education regarding the purpose and role of IMY3 needs to be spread more widely, to improve training and ensure a collaborative work environment.

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## Online Oral Session 10.3 (0448)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:30 - 16:45

**Location of presentation:** Online Session

### **Competency of Chest X Ray Reading by Pediatric Residents at Sudan Medical Specialization Board and its Determinants.**

Thanaa Alagraa<sup>1</sup>, Israa Elamin <sup>2</sup>

<sup>1</sup> Alneelain University, khartoum , The Sudan <sup>2</sup> Sudan Medical Specilization Board, khartoum , The Sudan

#### **Background**

The chest x-ray is a simple diagnostic tool, cheap, and available in most health care facilities. Although there are many advanced tools, cx-ray is still very important in making timely decisions on patient management, especially in limited-resource settings. Residents need to be competent in reading x-ray as they are the frontliner in managing patients. The authors noticed that there is a deficiency in this competency. So this study was conducted to assess the Competency of Chest X-Ray Reading by Pediatric Residents at Sudan Medical Specialization Board and its determinants.

#### **Summary Of Work**

This is an observational analytical cross-sectional study. Two hundred seventy-eight residents were involved in the study. The data collection sheet was constructed of two parts, the first is a questionnaire that includes many variables which influence this competency. The second part consists of 10 pediatrics chest x-rays selected by a radiologist and pediatrician to be read by residents. The data collection sheet was distributed online.

#### **Summary Of Results**

Eighty percent of the study participants were females. The overall assessment of competency showed that 58.6% of the resident detected the normal x-ray, 34.3% of the residents mentioned the right diagnoses while only 19.3% of the residents mentioned the right next step needed to confirm the diagnosis or needed to proceed with the patient's management. Regarding the determinants of this competency, the senior level of residency has a very highly significant association with detecting the normal, stating the diagnosis, and the next step with a P-value of 0.00. There is a strong association between competency and attending radiology courses and



workshops with a P value of less than 0.05. The study found a strong association between the resident competency and the number of x-rays reviewed per week with a P-value of 0.00.

### **Discussion And Conclusion**

The study showed there is a deficiency in this competency among residents and highlighted the way to improve it by Well-designed radiology courses, increasing the number of mandatory chest X-rays read by residents, and regular radiology meetings which should be part of the resident's curriculum.

### **Take Home Messages**

Continue to observe the trainer's capabilities

Assess these observations

Technology is feasible in the assessment

Reform their curriculum

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## Online Oral Session 10.4 (0583)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:45 - 17:00

**Location of presentation:** Online Session

### Distinguishing Patients'/Caregivers' Assessments of Residents' Non-Technical Skills from Satisfaction with Care

Katherine Moreau<sup>1</sup>, Kaylee Eady<sup>1</sup>

<sup>1</sup> *University of Ottawa, Ottawa, Canada*

#### Background

Patients/caregivers can be valuable contributors to programs of assessment. While faculty members are most apt to assess learners' medical expertise, patients/caregivers can assess learners' non-technical skills (NTS). However, as researchers in patient/caregiver involvement in learner assessment, we often encounter demands to situate the findings from our studies in the patient/caregiver satisfaction literature. While we recognize that residents' NTS are crucial to the quality of care provided and a determinant of patient/caregiver satisfaction, we speculated if such assessments are distinct from satisfaction with care.

#### Summary Of Work

This study took place in a pediatric emergency department. Using the Parents' Assessment of Residents Enacting Non-Technical Skills (PARENTS) assessment tool, we investigated if there was a positive correlation (greater than 0.5 for practical significance) between residents' total scores on the PARENTS and parents' satisfaction with care, as measured by the three-item Client Satisfaction Questionnaire (CSQ-3).

#### Summary Of Results

During the study, 207 out of the 272 (76%) eligible parents approached participated. The majority of parents were mothers (65.5%) and presented with a child who was 48 months old or younger (55.5%). The average score on the CSQ-3 was 3.74 out of 4 (SD = .41), indicating that, on average, parents were quite satisfied with the services received. The total score of the PARENTS was correlated with the CSQ-3 total score. The totals were significantly correlated ( $r = .441$ ,  $p < .001$ ), however, the correlation was below the pre-determined level of 0.5 required for practical significance.



### **Discussion And Conclusion**

Although residents' NTS are a determinant of patients'/caregivers' satisfaction with care, it is important to recognize that other variables, including perceived wait times, triage procedures, and interactions with other healthcare personnel, can influence patients'/caregivers' levels of satisfaction with care. Given the findings from this study, we argue that patients'/caregivers' assessments of residents' NTS can be distinct from satisfaction with care. Thus, it is not always relevant to situate the findings from studies on patient/caregiver involvement in learner assessment in the patient/caregiver satisfaction literature.

### **Take Home Messages**

Patients'/caregivers' assessments of residents' non-technical skills can be distinct from satisfaction with care.

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## Online Oral Session 10.5 (0472)

**Date of presentation:** Sunday 28th August

**Time of session:** 17:00 - 17:15

**Location of presentation:** Online Session

### **The role of an instructional designer in the creation of post-graduate medical assessments**

Ivy Young<sup>1</sup>, David Anderson<sup>2</sup>

<sup>1</sup> *University of Calgary Cumming School of Medicine, Calgary, Canada* <sup>2</sup> *UCalgary Cumming School of Medicine, Precision Health Program, Calgary, Canada*

#### **Background**

In this session we will share three distinct processes that were used to develop three post-graduate courses in the Precision Medicine master's program at UCalgary.

In support of CBME some medical schools are now employing instructional designers to support the course development work of busy medical experts. But what role do instructional designers play? How are they able to support instructors when they are not medical experts themselves?

In this short presentation one instructional designer (Ivy Young, CTD) and graduate program developer Dr. David Anderson discuss three different courses and the role the instructional designer played in developing medical assessments, assessment instructions and rubrics. Step by step processes will be provided as resources for participants as one model to be built upon/modified to suit your context.

The first example is of a standards-based course, the second is a process based course, and the third is a compressed, block week course.

#### **Summary Of Work**

Between Fall 2021 and Spring 2022, an instructional designer (ID) worked on six graduate level courses with a variety of medical experts. The processes used to develop performance based assessments were documented and are illustrated here as a case study of the ID role in developing PGME.

#### **Summary Of Results**

Through the three examples shared, the role of an instructional designer in shifting to competency based medical education is illustrated. We know that medical professionals are overtaxed so it's time



to give them the support required in order to keep pace with instructionally sound curriculum development techniques which support students' ability to meet the learning outcomes.

### **Discussion And Conclusion**

Discussion questions raised:

- How might reflecting on the three processes inform your perspective about instructional designers in your own organization?
- What is needed (from a student perspective) to ensure success on assessments? What is the role of an instructional designer in developing these pieces?
- What supports are needed for your institution to shift to CBME?

### **Take Home Messages**

The role of an instructional designer is still new at many Canadian medical schools. By learning more about how one school makes use of this important resource, you can evaluate whether an instructional designer may be of use in your medical school.

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## Symposium 10A (0103)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Auditorium Lumiere

### **Ottawa Consensus Statement:: Big Data Research in Assessment and Medical Education: Ethics, Equity, and Emerging Practices**

#### **Presenters**

Lawrence Grierson<sup>2</sup>, Saad Chahine<sup>3</sup>, Jennifer Cleland<sup>4</sup>, Daniel Schumacher<sup>5</sup>, Eric Holmboe<sup>6</sup>

#### **Moderator**

Kulamakan (Mahan) Kulasegaram<sup>1</sup>

<sup>1</sup> *University of Toronto, Toronto, Canada* <sup>2</sup> *McMaster University, Hamilton, Canada* <sup>3</sup> *Queen's University, Kingston, Canada* <sup>4</sup> *LKCMedicine/University of Aberdeen, Singapore, Singapore* <sup>5</sup> *Cincinnati Children's Hospital Medical Center, Cincinnati, USA* <sup>6</sup> *Accreditation Council for Graduate Medical Education, Chicago, USA*

#### **Background**

Big Data research that connects assessment and other data across the continuum of physician training promises to provide novel insights and answer significant questions in medical education. However, this research is dependent on linking and sharing data that is often held and governed by different institutions and organizations. Engaging in big data requires navigating new ethical, equity, governance, and logistical challenges. The consensus statement will identify recommendations for big data research that accounts for these issues. We will address best practices in the execution of this research approach using frameworks and illustrative examples from within and beyond medical education.

#### **Topic Importance**

Reconciling the risks and complexities of connecting education data across the continuum is a major challenge. Achieving the promise of Big Data research requires that scholars address ethical, governance, and logistical/technical issues in manner that balances risks against benefits for all stakeholders. This symposium will discuss how these challenges have been navigated in different research contexts including intra-institutional, inter-institutional, and national collaborations to enable the conditions necessary for Big Data research. The focus will be on generalizable principles for navigating challenges.



### **Format and Plans**

Each presenter will provide a 8-minute overview of a Big Data collaboration with a focus one of the issues raised in the symposium: ethical dilemmas, governance challenges, and logistical/technical considerations of data sharing. Examples and presentations will be at the conceptual level. Following general Q&A, participants will be invited to work through a structured case study that exemplifies the challenges of Big Data research. Participants will answer questions that prompt them to analyze potential benefits at the local and national level for project, potential privacy risks, ethical concerns, equity and diversity challenges, values conflicts, and technical processes. At the end of the case study, the panelists and participants will engage in a large group discussion.

### **Take Home Messages**

1. Big Data in medical education requires collaborative engagement of multiple institutions and organizations which requires thoughtful and accountable governance.
2. The ethical, equity, and logistical challenges of Big Data research requires new conceptual and technical skills for scholars and stakeholders.
3. Developing consensus on the governance principles and technical processes is necessary to deliver on the promises of Big Data.



## Oral Session 10B1 (0710)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:30 - 16:45

**Location of presentation:** Rhone 2

### **Using a design thinking approach to develop a series of workplace-based assessments to promote the development of prescribing skills in final year medical students in preparation for practice.**

Kellie Charles<sup>1</sup>, Aspasia Manos<sup>2</sup>, Carl Schneider<sup>1</sup>, Sarah Hilmer<sup>3,4</sup>, Nicholas Buckley<sup>5,6</sup>

<sup>1</sup> Sydney Pharmacy School, The University of Sydney, Sydney, Australia <sup>2</sup> Orange Hospital, Western NSW Local Health District, Orange, Australia <sup>3</sup> Sydney Medical School (Northern), The University of Sydney, Sydney, Australia <sup>4</sup> Royal North Shore Hospital, Northern Sydney Local Health District, St Leonards, Sydney, Australia <sup>5</sup> School of Medical Sciences, The University of Sydney, Sydney, Australia <sup>6</sup> Dept of Clinical Pharmacology, Royal Prince Alfred Hospital, Sydney Local Health District, Camperdown, Australia

#### **Background**

Final year medical students have consistently expressed a lack of preparedness for prescribing as junior doctors both in Australia and internationally. The emergence of COVID19 challenged pharmacology academics to answer the question: How do we prepare an underprepared final year medical student to complete prescribing tasks in the support our COVID-19 surge medical teams?

#### **Summary Of Work**

We used the 5 step Stanford model of design thinking to the develop of a series of complex, clinically-authentic scenarios that would prepare students for the real-world expectations of prescribing as a pre-intern. Ethics approval was obtained to quantitatively and qualitatively evaluate the effectiveness of the new curriculum and assessments for learning using a realist evaluation framework.

#### **Summary Of Results**

**Ideate and interpret:** We combined Year 4 student evaluations in 2018 and 2019 with a comprehensive literature review to identify the core learning gap for novice prescribers as practical prescribing skill development and resource familiarisation.



**Ideate:** In March 2020, staff responsible for teaching prescribing and/or supervising interns brainstormed potential solutions. Using a theory-based approach (e.g. motivational theory, social constructivism and novice-to-mastery skill development) we created complex clinical-authentic scenarios and assessment for pre-entrustment level prescribing.

**Experiment:** The first prescribing activity was delivered in April 2020 online using a blended learning approach - assessment pre-submission, academic review, then a zoom debrief. Subsequent iterations across 2020-2021 allowed for refining assessment submissions, marking rubrics and debrief session structure.

### **Discussion And Conclusion**

**Evaluation:** Post-teaching and Year 4 student surveys showed students perceived the tasks were beneficial for learning (median 3.5-4/5 in 2020, 2021) due to practice of new prescribing skills, knowing how to use relevant resources and the structure debrief of experts providing critical and constructive feedback. Further in-depth realist interviews are being conducted with current students.

### **Take Home Messages**

Using a design-theory framework allowed the team to incorporate more theoretical approaches into curriculum development as well as promoting iterative educational design. The use of a formal realist evaluation approach enables a more meaningful analysis of the how and why rather than does it work with the research findings will continue to be integrated into the cycle to further improve future deliveries.

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## Oral Session 10B2 (0072)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:45 - 17:00

**Location of presentation:** Rhone 2

### Validity evidence and psychometric evaluation of a socially accountable health index

Cassandra Barber<sup>1</sup>, Cees van der Vleuten<sup>1</sup>, Saad Chahine<sup>2</sup>

<sup>1</sup> Maastricht University, Maastricht, The Netherlands <sup>2</sup> Queen's University, Kingston, Canada

#### Background

There is an expectation that medical schools address and respond to the priority health needs in the communities they serve. This expectation is largely based on the underlying assumption that schools are aware of the priority needs in their communities. However, the ability for health professions schools to identify and respond to societal health needs remains a global challenge. This paper demonstrates how open-access, pan-national health data can be used to create a reliable socially accountable health index to assist schools identify relevant societal needs.

#### Summary Of Work

Using open access data a psychometric evaluation was conducted to examine the reliability and construct validity of a conceptual health indicator model in Canada. A non-linear confirmatory factor analysis (CFA) on 67 health indicators at the health region level (n=97) was used to assess the model fit of the hypothesized 10-factor model. Reliability analysis using McDonald's Omega was conducted, followed by Pearson's correlation coefficients to investigate the inter-relationships between factors.

#### Summary Of Results

Findings from the non-linear CFA rejected the original conceptual model structure of the health indicator framework. Exploratory post hoc analyses were conducted using modification indices and parameter constraints to improve model fit. A final 5-factor multidimensional model demonstrated superior fit, reducing the number of indicators from 67 to 32. The 5-factors included: Health Conditions (8 indicators); Health Functions (6 indicators); Deaths (5 indicators); Non-Medical Health Determinants (7 indicators); and Community & Health System Characteristics (6 indicators). All factor loadings were statistically significant ( $p < 0.001$ ) and demonstrated excellent internal consistency reliability ( $> 0.95$ ).



### **Discussion And Conclusion**

Schools struggle to identify and measure socially accountable outcomes. The process highlighted in this paper and the indices developed serve as starting points to allow schools to leverage open access population health data as an initial step in identify relevant societal needs. Identifying societal needs is imperative to advancing social accountability agendas of medical schools.

### **Take Home Messages**

To date, health professions education has largely overlooked the use of secondary databases, despite their use and importance in other fields. This information can be used to set education priorities, better inform service areas of needs, and draw meaningful links to community health outcomes.

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## Oral Session 10B3 (0592)

**Date of presentation:** Sunday 28th August

**Time of session:** 17:00 - 17:15

**Location of presentation:** Rhone 2

### **Social Empathy Index: A Psychometric Study and Group Comparisons among Japanese Medical Undergraduates**

Shishu Sun<sup>1</sup>, Yuko Takeda<sup>1</sup>, Makoto Kaneko<sup>2</sup>, Sachiko Ozone<sup>3</sup>, Ayumi Takayashiki<sup>3</sup>, Hiroki Hori<sup>4</sup>

<sup>1</sup> *Juntendo University, Tokyo, Japan* <sup>2</sup> *Yokohama City University, Yokohama, Japan* <sup>3</sup> *University of Tsukuba, Tsukuba, Japan* <sup>4</sup> *Mie University, Tsu, Japan*

#### **Background**

Education in social determinants of health (SDH) is acknowledged to foster students' understanding of society and health; however, more research is needed to assess student learning in SDH and evaluate the impacts of the SDH program. This study examines the psychometric properties of the Japanese version of the Social Empathy Index (SEI, by Segal et al.) among medical undergraduates and identifies the factors affecting Japanese medical students' social empathy.

#### **Summary Of Work**

The SEI was translated into Japanese and distributed to 414 medical students from three years of school at a Japanese private medical school with a sociodemographic questionnaire. 279 students completed both surveys (response rate 67.39%, valid responses 61.59%). Exploratory factor analysis was used to investigate the factor structure and verify the construct validity. Known-group validity was established by examining differences in mean scores of responses via t-test and ANOVA. Cronbach alpha coefficients and the split-half coefficient assessed the internal consistency reliability.

#### **Summary Of Results**

Factor analysis yielded four factors: "macro perspective-taking," "cognitive empathy," "emotion regulation," and "affective response," accounting for 46.59% of the overall variance. Cronbach alpha coefficients of each factor ranged from .66 to .92, and the split-half coefficient was .94. Significant differences were found between groups of genders ( $p < .001$ ), volunteering experience during middle/high school ( $p < .01$ ), the future clinical specialty preference ( $p < .01$ ), interest in reading non-medical literature or arts ( $p < .05$ ), experience of studying abroad ( $p < .05$ ), and among groups of students in different school years ( $p = .001$ ), with the willingness to volunteer in the future ( $p < .001$ ) and self-evaluations on the knowledge and understanding of SDH ( $p = .007$ ).



### **Discussion And Conclusion**

This study verifies that the Japanese version of the SEI is psychometrically sound to measure Japanese medical undergraduates' social empathy and identifies factors influencing their social empathy. Future research needs to conduct among Japanese medical students in different school years for more representative data.

### **Take Home Messages**

Medical schools can utilize SEI to assess student learning in SDH courses, evaluate SDH programs' impacts, and facilitate student selection in the admission process.

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## Workshop 10E (0048)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Rhone 4

### **Assessing the quality of telephone consultations: do we have a tool that is fit for purpose?**

Richard Darnton<sup>1</sup>, Riikka Hofmann<sup>1</sup>

<sup>1</sup> *University of Cambridge, Cambridge, UK*

#### **Background**

In the UK the COVID-19 pandemic has resulted in a greater proportion of medical consultations taking place over the telephone rather than face to face. Consequently, telephone consultations have become more central to the process of learning medicine.

For example, UK medical students are now starting to undertake telephone consultations with patients (<https://doi.org/10.1080/0142159X.2021.1990239>) Similarly, the face-to-face Clinical Skills Assessment (CSA) for membership of the UK Royal College of General Practitioners has been replaced by the submission of recorded consultations, which may be exclusively undertaken over the telephone (<https://www.rcgp.org.uk/training-exams/mrcgp-exam/mrcgp-recorded-consultation-assessment.aspx>).

An effective consultation requires application and integration of skills relating to communication, clinical reasoning, efficiency, organisation, clinical examination, professionalism, and patient safety. Commonly in the UK consultations are assessed using the same tool irrespective of whether contact with a patient was face to face, via video or over the telephone. However, tools for assessing the quality of out of hours telephone triage do exist and it could be argued that unlike face to face consultations, all telephone consultations contain an element of triage (i.e. considering whether the patient needs to be seen face-to-face). This raises the question whether there is a need for tools specifically designed to assess the quality of telephone consultations and whether suitable tools exist.

#### **Who Should Participate**

Educators with an interest in teaching/assessing the consultation



### Structure Of Workshop

Introductory talk will

- Describe the UK context of increased telephone consultation experience by undergraduate and postgraduate learners
- Introduce a range of tools/scales for assessing consultation quality and telephone triage quality

Using the tools/scales as a stimulus for discussion, small groups will then form to discuss the following questions

- In what ways are telephone consultations different to face to face consultations?
- What skills, if any, are specific to telephone consultations?
- How satisfactory might each tool be for assessing the quality of a generic telephone consultation? (i.e. what are the strengths and omissions of each tool)
- Could the strengths of the different tools be combined into a hybrid version?
- What steps are needed to determine whether there is a need for new telephone consultation assessment tool and to develop such a tool?

### Intended Outcomes

To address the questions listed above



## Workshop 10F (0430)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Saint Clair 1

### Using a novel strategic framework to evaluate your start-up plans or processes for a new education or health venture

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#### Background

Establishing new health services or educational programs can involve many complex political, social, economic, educational, and organisational considerations. The process requires intricate negotiations with multiple stakeholders and can be riddled with obstacles and problems.

A novel conceptual framework for successfully navigating the establishment gauntlet has been developed by the primary author through her doctoral research on successfully establishing new medical schools in medically under-served areas. The Eight C's Framework (8CF) is based on Institutional Entrepreneurship theory and Critical Realist Multiple Case Study research spanning three continents. It is a multi-dimensional, interleaved framework that takes a system-wide view to starting up a new educational/health initiative. 8CF describes that new ventures can be successfully set up when "*Catalysts act within their Contexts to undertake various tasks of Conducing, Convincing, Collecting, and Connecting in order to produce desired Consequences and overcome Challenges*". This workshop will use the elements of 8CF to allow participants to evaluate their own plans or processes to start up a new education or health undertaking. It will allow them to strategically identify innovations, new solutions, gaps, or potential problems for their project.

#### Who Should Participate

Anyone involved in the planning or set up of a new educational or health venture including academics, clinicians, administrators, politicians, and community members.



### Structure Of Workshop

Participant introductions (5-10 min)  
Background (10 min)  
The Eight C's Framework (15 min)  
Small group exercise & discussion (25-30 min)  
Small group report back (15 min)  
Whole group discussion (14 min)  
Thanks and Close (1 min)

### Intended Outcomes

By the end of this workshop, participants will be able to:

- Evaluate their own project processes for setting up a new health/educational initiative using the author's theory-based and empirically-supported novel Eight C's Framework for successful establishment
- Critique 8CF as an evaluation tool for the efficient and effective establishment of a new health/educational venture
- Identify the value of theoretical concepts (such as Institutional Entrepreneurship, field structure, human agency, power dynamics, political diplomacy, and social accountability) to drive practical strategic action when setting up new ventures
- Gain new insights into possible innovations, new solutions, gaps, or problems for their own new educational/health project



## Workshop 10H (0639)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Saint Clair 3A

### Designing Entrustable Professional Activities to Assess Healthcare Teams

Maryam Wagner<sup>1</sup>, Melina Vassiliou<sup>1</sup>, Melanie Lavoie-Tremblay<sup>2</sup>, Carlos Gomez-Garibello<sup>1</sup>

<sup>1</sup> McGill University, Montreal, Canada <sup>2</sup> Université de Montréal, Montreal, Canada

#### Background

Patients rarely receive healthcare from a single health professional regardless of the nature of their healthcare concerns; rather, multi- or interdisciplinary healthcare teams are trusted to deliver their care. Whilst it is important to assess the competence of individuals working within this team, it is equally important to make assessment judgments about the team's competence. Entrustable professional activities (EPAs) provide the opportunity to gather this information by integrating assessment with curriculum and teaching, and ultimately generating meaningful feedback for learners. However, the uses of EPAs to assess multi/interdisciplinary teams has remained unrealized. The purpose of this workshop is to provide a structured guide for the development of multi/interdisciplinary EPAs. This approach draws upon frameworks that guide assessment development (i.e., Mislevy et al.'s evidence-based framework), as well as literature on essential aspects of effective teamwork (e.g., Salas et al.'s Big Five Framework).

#### Who Should Participate

This workshop is intended for any attendee interested in the process of assessment development and use, as well as health professions educators who are interested in multi/interdisciplinary approaches to assessment.

#### Structure Of Workshop

The workshop will be delivered through plenaries, a hands-on activity, and discussions. The workshop will begin with a presentation devoted to teaching the educational tenets of EPAs and their components (e.g., competencies, milestones), and their uses for assessment and feedback. Additionally, we will illustrate an evidence-based approach (Mislevy et al, 2003) to develop multi/intradisciplinary EPAs, and incorporate Salas et al.'s Big Five Framework of teamwork. In the second part of the workshop, participants will be provided a selection of EPAs from different health professions (e.g., nursing, general surgery, anesthesiology, respiratory technology) providing them the opportunity to develop multi/interdisciplinary EPAs that may guide team-based assessment and



feedback. The work will conclude by engaging participants in a discussion of how to apply the ideas and principles in their educational contexts.

**Intended Outcomes**

Participants will be able to: 1) Use an evidence-based approach to develop EPAs; 2) Gain familiarity with designing multi/interdisciplinary EPAs to assess healthcare professionals and generate meaningful feedback for both individuals and teams; 3) Strategize the uses of multi/interdisciplinary EPAs to advance assessment uses in their respective contexts.



## Workshop 10I (0769)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Saint Clair 3B

### The 10th Event of Instruction: Evaluating Session Design

Delores Amorelli<sup>1</sup>, Gia DiGiacobbe<sup>1</sup>, Jordan Parker<sup>2</sup>

<sup>1</sup> *Kaiser Permanente Bernard J. Tyson School of Medicine, Pasadena, CA, USA* <sup>2</sup> *Kaiser Permanente Bernard J. Tyson School of Medicine, Pasadena, USA*

#### Background

Many medical schools are undergoing curriculum revisions to bring their models in line with best practices in the science of learning, particularly active learning methodologies, and our literature search shows that no peer-reviewed form exists for evaluating active learning session design. Many faculty do not have previous training in designing curriculum for active learning; therefore, it is important for educationalists to develop tools to evaluate this new model of session design and support faculty in developing the skills required to design effective active learning. Additionally, active learning sessions are often delivered in independent small group settings led by different facilitators. In this model, small group facilitators are likely delivering session content that has been written and developed by other authors. Therefore, it is important that faculty have tools to evaluate the quality of session design and ensure effectiveness across differences in implementation.

#### Who Should Participate

- Instructional designers
- Faculty developers
- Classroom-based faculty
- Course directors

#### Structure Of Workshop

Introduction (15 mins)

- Large group discussion on the purpose of evaluating curriculum at the session level
- Overview of Gagne's Events of Instruction and proposed 10<sup>th</sup> event of session evaluation

Review of Session Design Protocol (15 mins)



- Presenters will review the session designed protocol and discuss what evidence is needed for each criterion
- Q&A with participants for clarification on protocol elements

#### Apply Session Design Protocol to Small-Group Learning Sample (40 mins)

- Participants will review session materials, including facilitator notes
- Participants will watch a recording of a small group, active learning activity and apply the rubric
- In small groups, participants will discuss their ratings for each criterion

#### Debrief and Share Results (15 mins)

- Large group debrief on experience using the protocol and share suggestions for application in other learning contexts

#### Take home Points/Q&A (5 mins)

- Presenters will emphasize key take-home points and answer questions from participants

#### Intended Outcomes

- Distinguish between the evaluation of teaching quality and session design
- Describe how the “10th event of instruction” builds on Gagne’s model of designing engaging and meaningful instruction
- Apply a session design observation form to a recording of a small group active learning session to evaluate the quality of session design



## Workshop 10J (0017)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Saint Clair 4

### **Assessing cross cultural competence in health professions education; challenges and tools**

Marwa Schumann<sup>1</sup>

<sup>1</sup> *Alexandria Faculty of Medicine, Alexandria, Egypt*

Cross-cultural competence is defined as the ability to understand and act “in a culture different from one’s own”. Migration of healthcare professionals and patients have resulted in a growing diversity of populations, with a corresponding increase in the interest of cross-cultural medical education. Another reason is the negative clinical consequences of poorly handled cross-cultural issues which may result in negative clinical consequences, e.g. patient noncompliance and delays obtaining informed consent leading to a lower quality of care. Cross-cultural competence not only prepares healthcare providers to meet the needs of diverse populations but also improves patient-centered communication.

In response to accreditation bodies, cross-cultural competence is becoming an integral part of the undergraduate medical education programs either as separate courses or as parts of professionalism and communication curricula.

Whether adopted from socio-cultural sciences or developed specifically for medical education, several conceptual approaches exist to train and assess cross-cultural medicine.

Examples of training approaches include the cultural sensitivity/awareness approach (focusing on attitudes), the multicultural/categorical approach (focusing on knowledge) and the cross-cultural approach (focusing on skills).

Although several tests measure cross-cultural competence, their validity and reliability are still questionable which makes evaluation of the impact of cultural training particularly challenging. Assessment approaches include self-assessments after cultural training, objective behavior-based measures and measuring the impact of training on patient behavior change or health outcomes. Examples of tests include the Cross-Cultural Adaptability Inventory (CCAI), the Cross-Cultural Sensitivity Scale (CCSS) and the cross-cultural competence instrument for the healthcare profession (CCCHP).



This session aims at discussing the components of cross- cultural competence from the healthcare perspective, exchanging experiences and challenges of assessing cross-cultural competency and providing assessment tools from socio-cultural and health professions education sciences.



## Workshop 10K (0791)

**Date of presentation:** Sunday 28th August

**Time of session:** 16:30 - 18:00

**Location of presentation:** Roseraie 2

### Workshop on the Assessment of the competencies of bioethics in medical and health profession education

Professor Russell D'Souza DSouza<sup>1</sup>, Princy Palatty<sup>2</sup>, Kristen Jones Bonofiglio<sup>3</sup>, Mary Mathew<sup>4</sup>, Gerhard Fortwengel<sup>5</sup>

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#### Background

Bioethics has evolved to become a comprehensive and integral part of medical and health profession education. Training students in this facet equips them to deal with a variety of situations that they may face in their clinical practice, research work, and policy administration. The assessment of competencies in bioethics relates to the Cognitive, Psychomotor (behavioral) and Affective domains. The assessing of the cognitive and psychomotor domains are amenable to assessment, with tools available, but the affective domain poses a greater challenge in the valid assessment of bioethics as it relates to internalization and actual practice which is somewhat difficult to assess. A multi-modal approach is necessary to assess bioethics in medical and health profession education from varied situations. This workshop will expose new developed formative and summative assessment strategies and tools to evaluate bioethics competencies in medical and health profession students in the affective, cognitive, and behavioral domains. The tools for the assessment of bioethics presently involve Standard assessment tools and developed and validated Innovative assessment tools.

#### Who Should Participate

Medical and Health Profession Education teaching faculty.

#### Structure Of Workshop

Interactive The workshop will have three parts. Part one will focus on the assessment tools. Part two will deal with the assessment implementation. Part three will concentrate on the analysis of the assessment Participants will be given all the tools for assessment and the groups are at the liberty to choose an assessment strategy and administer it. They will debrief together on the analysis of the tool and then be assessed.



### Intended Outcomes

Knowledge on the assessment of competencies in the affective, cognitive and behavioural domains of bioethics in medical and health profession education.

Use of developed validated innovative assessment tools and standard assessment tools. The analysis of the assessment of competencies.



## Plenary 11A (0823)

**Date of presentation:** Sunday 28th August

**Time of session:** 18:40 - 19:30

**Location of presentation:** Amphitheatre

### **You can't Assess what you haven't Defined: Climbing the Evolutionary Mountain of OBE Transformation**

#### **Plenary Speaker**

William Spady<sup>1</sup>,

#### **Moderators**

Ronald Harden<sup>2</sup>, Jason Frank<sup>3</sup>

<sup>1</sup> *International Network for Outcome Based Education (IN4OBE), Portland, USA* <sup>2</sup> *AMEE, Dundee, UK* <sup>3</sup> *University of Ottawa, Ottawa, Canada*

Although Outcome-Based Education has been around for countless millennia, modern education systems overlook its straightforward meaning and intent: *Basing* education on the clearly defined qualities and abilities societies want all graduates to embody and consistently apply in their careers and lives. Instead, most systems Base their Outcomes on limiting paradigms of human existence, obsolete curriculum structures, and misleading assessment practices, credentialing systems, and accreditation standards – all needing fundamental transformation. Dr. Spady explains the key concepts and breakthroughs in authentic OBE's five decades of paradigm-shifting evolution and invites medical educators to join him in climbing its mountain of personal and professional empowerment.

