OA - 1 - 1

Breaking down the barriers to mistreatment reporting: the University of Calgary mistreatment plan

Mike Paget University of Calgary, **Marguerite Heyns** University of Calgary, **Christopher Doig** University of Calgary, **Wayne Woloschuk** University of Calgary, **Janet de Groot** University of Calgary, **Deirdre Jenkins** University of Calgary, **Kevin Busche** University of Calgary, **Sylvain Coderre** University of Calgary

Background/Purpose: As part of the lead-up to our 2014-2015 accreditation cycle, our institution recognized the serious problem of both mistreatment, as well as the under-reporting of mistreatment events.

Summary of the Innovation: A task force was struck, which recommended five major steps, one of which was the creation (in 2016) of an on-line "safe zone" for reporting, which included a yearly report card compiling, in an anonymous fashion, mistreatment events and the resultant actions. The other steps (all implemented) suggested by the task force were: appointment of 2 faculty members to act as advocates for students in mistreatment situations, creation of an on-line module and faculty development sessions, create a session for new students during orientation week, and curriculum that focuses on positive behaviors and communication between students and preceptors. The following data outlines the reported mistreatment events before/after the creation of this website (2015 and 2016 before, 2017 and 2018 after) Reporting date / Total number of mistreatment reports / Source July 2015 / 8 / 6 direct, 2 anonymous July 2016 / 15 / 15 anonymous July 2017 / 25 / 12 anonymous, 13 direct July 2018 / 22 / 16 anonymous, 6 direct Student's who responded yes to the Canadian Graduate Questionnaire on "whether they know the procedure at your school for reporting the mistreatment of medical students" increased from 69.5% (2014) to 95% (2018).

Conclusion: The University of Calgary mistreatment plan has led to an increase in mistreatment reporting at our institution. Given student concerns about possible repercussions, the increase in anonymous reporting we believe is important. The report card outlines actions taken in response to these mistreatment concerns, including removal of nine preceptors since 2014.

OA - 1 - 2

A national look at the influence of accreditation on Medical Council of Canada Qualifying Examination (MCCQE Part I) scores

Timothy Wood University of Ottawa, **Marguerite Roy** Medical Council of Canada, **Kevin Eva** University of British Columbia, **Danielle Blouin** Queen's University

Background/Purpose: Accreditation aims at ensuring that training institutions meet agreed upon educational standards, and at promoting continuous quality improvement. Evidence of its effectiveness in meeting these goals is sparse. With rising accreditation costs, pressure is increasing to demonstrate that accreditation influences important and desirable outcomes. This study examines the relationship between accreditation cycle and student performance on a national licensing examination known to be predictive of practice outcomes.

Methods: We collected anonymized MCCQE Part I scores for the spring cohort of Canadian-trained first-time takers sitting the exam from 1999-2017. z-transformations within each year equated results across administration. An average score was then calculated for each medical program and submitted to a two-way ANOVA with "Medical School" and "Years since accreditation" treated as independent variables. In a secondary analysis we split the data into before vs after the practice of conducting informal interim reviews.

Results: The overall analysis and pairwise comparisons indicated significant changes in MCCQE

Part I scores across the accreditation cycle. Scores began to decline two years following an accreditation event and then increased sharply at years 5-6, coinciding with the period when schools start preparing for their next accreditation event. This pattern was driven by scores achieved prior to the implementation of interim review; no such differences were observed after lower stakes mid-cycle reviews.

Conclusion: Accreditation cycle impacts student performance on a national licensing examination. This finding supports the value of accreditation and has important implications regarding the means through which schools might optimize its benefit.

OA - 1 - 3

Accreditation and Canadian medical schools: Harnessing the power of affinity mapping for CQI

Shannon Venance CACMS/CACME, **Danielle Blouin** CACMS/CACME

Background/Purpose: An often-stated purpose of accreditation of medical schools is the promotion of quality improvement (QI). Through specific standards, CACMS is explicitly driving medical education programs towards CQI approaches. Yet the CACMS itself has not used CQI approaches in its operations. At a recent half-day workshop, an expert facilitator introduced the dimensions of QI and related tools such as affinity mapping and root cause analysis to CACMS.

Methods: The 13 CACMS voting members, 3 observers from partner professional associations, and 4 secretariat members participated in an affinity mapping exercise. Participants responded to the question "What are all the ways that CACMS can contribute to high-quality medical education?". Responses, written on individual sticky notes, were iteratively clustered by participants based on thematic affinity.

Results: Six themes emerged, representing ways that accreditation can contribute to high-quality medical education: CQI, Communication/Engagement, Standard Setting, Documentation, Processes and Recognition of Excellence. While participants value quality assurance, there was an appreciation that accreditation must meet evolving societal needs, would benefit from enhanced processes and outcomes through consistency, transparency and benchmarks, alongside improved training for visit teams and committee members. Promotion of excellence and innovation, supporting culture change and developing enhanced communication with stakeholders to improve accreditation efficiency were deemed important.

Conclusion: The affinity mapping exercise identified ways accreditation might influence the quality of medical education. More work is needed to understand and operationalize the components related to themes. The CACMS needs to continue its CQI processes to align with its own accreditation requirements for medical education programs to engage in CQI.

OA - 1 - 4

A National Survey of Canadian Program Directors on their Perceptions of Accreditation and CanMEDS Implementation

Kelly Dore McMaster University, **Bryce Bogie** McMaster University, **Karen Finlay** McMaster University, **Karen Saperson** McMaster University, **Parveen Wasi** McMaster University

Background/Purpose: Implications of national policy change are felt by all levels of the organization. It is critical is to reflect on implementations of the past to improve future changes. Within medical education, literature is sparse on how the levels of the education system interact to effect change.

Methods: We developed an anonymous online survey that included both quantitative and qualitative questions addressing opinions and experiences of program directors (PDs) on accreditation and the CanMEDS framework implementation. The survey was sent to all former Canadian specialty medicine PDs (N=684). Standard descriptive analyses were performed on the quantitative data, while the qualitative data were analyzed using thematic analysis.

Results: 265 (38.7%) former PDs responded to our survey. Quantitative analyses revealed that 53% of respondents did not feel involved in decision-making regarding policy changes, 43% of respondents did not feel adequately informed about methods for assessing the CanMEDS roles, and equal numbers of respondents agreed and disagreed that accreditation documentation is reasonable. Analyses of the qualitative data produced four themes: the flow of Communication through the educational hierarchy; the supply of Resources to support policy change implementation; Expectations of Outcomes from faculty and trainees' perspectives; and Buy-In from faculty and trainees to participate in the policy change implementation were all identified.

Conclusion: PDs reported unique challenges to policy change implementation that was not readily observable from the quantitative data. Findings from the current study provide insightful lessons to inform effective future policy change implementation procedures within medial education including CBME initiatives.

OA - 1 - 5

PSP Module Evolution Project: Leading CPD & Quality Improvement Practice

Sarah Tajani University of British Columbia, **Laura Beamish** University of British Columbia, **Mallory Crew** Practice Support Program, Doctors of BC, **Bruce Hobson** University of British Columbia, **Vivian Lam** University of British Columbia, **Shirley Sze** University of British Columbia

Background/Purpose: Family physicians are required to continuously update their knowledge and evolve their practices to provide patients with quality care. In recent years, physician feedback has indicated a growing demand for increased flexibility and diversity in continuing professional development opportunities. It is therefore vital to adapt educational programming to meet the diverse needs of busy physicians.

Summary of the Innovation: The Practice Support Program (PSP), a joint initiative of the Government of BC and Doctors of BC, supports physicians and their teams in making sustainable improvements in practice through evidence-based education and coaching supports. Currently, PSP's educational offerings include clinical modules that require a significant time commitment from learners. In response to physician feedback, PSP has partnered with educational experts at UBC CPD to evolve six of their existing topic areas into dynamic, multi-modal learning units. Education will follow best-practices in CPD to include microlearning theory and adult learning principles and support data-informed practice improvement. Harnessing expertise through numerous collaborations, themes such as quality improvement (QI), self-management support, and team-based care will be integrated to ensure the education is practical and meaningful for learners. This project will leverage PSP's provincial network of practice coaches and physician mentors to deliver education and support physicians' QI activities.

Conclusion: The Module Evolution Project will allow physicians to customize their learning pathway depending on individual needs and availability. Further, by aligning QI indicators with specific learning units, there is an opportunity to translate evidence-based education into data-informed practice change, improved content knowledge, and a better understanding of physicians learning needs.

OA - 1 – 6

Improving Resident Education on Practice Management

Ramona Neferu McMaster University, **Meghan Bhatia** University of Toronto, **Laura Chu** Memorial – University of Newfoundland, **Samik Doshi** University of Toronto, **Jordyn Lerner** University of Manitoba, **Brandon Tang** University of British Columbia

Background/Purpose: Practice management (PM) skills are essential for physicians. They are important components of residency program accreditation standards and CanMEDS competencies. However, the actual training offered in PM is lacking. A 2015 national survey conducted by Resident Doctors of Canada (RDoC) found that 28% of residents reported receiving no teaching on preparing for practice. In the 2018 RDoC national survey, 31% of residents had no understanding of billing codes within their specialty.

RDoC has made PM a priority. Previous initiatives include a PM infosheet and infographic, publications about principles on health human resources, entry disciplines, PM training in residency education and a statement on portable locum licensure. RDoC has also partnered with the Canadian Medical Protective Association (CMPA) for promotion and delivery of PM tools.

Summary of the Innovation: We present multiple innovations to bolster PM education in Canada. These include: a) Profiles of new-in-practice physicians, where physicians discuss how they prepared for practice; past profiles of residents gathered approximately 100,000 page views in 18 months; b) A podcast series discussing a wide range of PM issues; c) A PM curriculum co-developed with CMPA and piloted at the University of Toronto with plans for expansion to all Canadian medical schools by 2020; and d) A resident guide to investing, to serve as an unbiased resource, comparing and contrasting common investment strategies targeted at residents and early career physicians.

Conclusion: National surveys identified that residents do not feel sufficiently trained in practice management. We anticipate that this set of new RDoC initiatives will help fill these gaps.

OA - 2 - 1

The Modified Personal Interview's Predictive and Consequential Validity: Can the Compromise Approach Work?

Kulamakan (Mahan) Kulasegaram University of Toronto, **David Latter** University of Toronto, **Mark Hanson** University of Toronto

Background/Purpose: Application of multiple independent sampling (MIS) to admissions tools has been shown to improve measurement validity for admissions decisions such as in the case of the multiple mini-interview. Not all admissions contexts allow for extensive multiple sampling which may impact validity evidence. The University of Toronto compromised by introducing a 4-station admissions interview in 2014 known as the modified personal interview (MPI). In this study, we evaluated the predictive and consequential validity of the MPI.

Methods: The entry of class of 2014 (n=259) were tracked through their 4-year program. Predictive validity was analyzed with year 1, 2, and clerkship OSCEs through correlations, mixed-effects linear regression, and generalized estimating equations. Generalizability and decision studies estimated the effect of increasing the number of stations on prediction. Consequential validity was measured by evaluating the effect of various weightings of and interview scores on entry class composition.

Results: MPI correlated with OSCE global ratings and communication ratings (year1 r=0.41, year2 r=0.39, clerkship r=0.31). After controlling for year 1 and 2 OSCE performance, the MPI significantly explained unique variance in clerkship OSCE. Doubling the number of stations increased explained variance in the clerkship OSCE by 5.1%. Including MPI scores significantly changed class composition. None of the other non-academic admissions measures were predictive of in-program performance.

Conclusion: The MPI showed acceptable predictive and consequential validity. Increasing the number of stations increased reliability but offered limited return for prediction. We discuss implications for design of admissions processes and future work.

OA - 2 - 2

Contrasting Patient and Standardized Patient Engagement in Medical Student and Resident Selection

Mark D. Hanson University of Toronto, **Celeste Pang** University of Toronto, **Justine McLeod** SickKids, **Elena Springall** University of Toronto, **Kulamakan Kulasegaram** University of Toronto, **Kevin Eva** University of British Columbia

Background/Purpose: Spencer notes, "modern curricula strive to maximize [patient] contact, starting as early as possible in the course". This quote requires recognition that a point exists earlier than "the course" during which patient engagement might offer benefits: medical student and resident selection (MSRS). To determine why patients are not commonly engaged in MSRS we conducted a scoping review contrasting real patient (RP) and standardized patient (SP) MSRS engagement. We describe MSRS practices and future research.

Methods: Subject headings and key words were used to retrieve abstracts in Ovid MEDLINE (1946-2016). Using an iterative strategy, two reviewers conducted full text and bibliography review of RP and SP studies.

Results: Full text review was conducted for 10 RP and 22 SP studies. RP and SP engagement reflects different practices and goals. SPs engage within MSRS interviews as simulators or raters with goals to simulate RP presentations or directly assess applicants' non-academic attributes. RPs engage in recruitment and job analysis with goals to advance student diversity, patient-centeredness and broadened perspectives on desirable non-academic attributes. SP and RP practices include workplace experiences.

Conclusion: RP and SP engagement reflects different practices and goals. RP engagement focuses on

recruitment and job analysis. Current exemplars and evidence for RP engagement in assessing applicants' attributes is absent. RPs are recognized as contributing a unique MSRS perspective yet advantages gained maybe suboptimal if RPs are excluded from direct applicant assessment. Research into why RPs are excluded yet SPs are included in direct applicant assessment practice is warranted.

OA - 2 - 3

A Diversity Success Story: A Tailored Application Stream Leads to Increase of Black Students in Medical School

Hana Lee University of Toronto, **David Latter** University of Toronto, **Lindsay Jackowetz** University of Toronto, **Leslie Taylor** University of Toronto, **Ike Okafor** University of Toronto, **Lisa Robinson** University of Toronto, **Onyenyechukwu Nnorom** University of Toronto

Background/Purpose: In the fall of 2017, the University of Toronto (UofT)'s medical school launched the Black Student Application Program (BSAP) to increase and support black medical student representation. Prior to the launch, black students were severely underrepresented at the medical school despite the black population making up approximately 8.5 percent of the Greater Toronto Area's population (2011 Census).

Summary of the Innovation: The BSAP is an optional application stream for applicants who self-identify as Caribbean, Black North American, or multi-racial who identify with their Black ancestry. The BSAP aims to break down barriers that applicants may experience during the application cycle. Important features of the program include requiring applicants to meet the same academic requirements as the regular application stream and ensuring that at least 50 percent of the file reviewers and interviewers are recruited from the Black community, including physicians, faculty members, residents, medical students, allied health professionals, educational experts, and members of the public. The Black Canadian Admissions Subcommittee oversees the BSAP and collaborates with key stakeholder groups to promote the program.

Conclusion: With the implementation of the BSAP, the number of black medical students in the entering class increased from just 1 in 2016 to 14 in 2018. UofT's BSAP expands the black applicant pool by encouraging some students who otherwise would not have applied to any medical school and fosters an inclusive evaluation process. The BSAP, a trailblazer in the medical admissions area, provides a simple framework any medical school can implement to enhance the diversity of their medical student population.

OA - 2 - 4

"If you re-lived your life, would you still want to become a physician?": Unexpected Patterns of Ambivalence from Incoming MD Students through to Exiting Residents

Glen Bandiera University of Toronto, **Glenys Babcock** University of Toronto, **Mariela Ruetalo** University of Toronto, **David Latter** University of Toronto, **Hana Lee** University of Toronto, **Lisa Robinson** University of Toronto

Background/Purpose: Factors influencing affinity for a career in medicine are complex, and expectations of a pre-med student may not reflect reality. This study measured changes in the desire to be a physician among students and residents at the University of Toronto.

Methods: Online surveys were conducted among all incoming MD students (summer 2018), Year 1 and Year 2 MD students (May 2018), and residents (April 2017). Each survey included the question: "If you re-lived your life, would you still want to become a physician?" The response rate varied from 53% to 91%.

Results: Only 83% of incoming MD students would 'definitely' choose to become a physician again if they could start over. This proportion drops to 64% at the end of Year 1 of medical school, 50% at the end of Year 2 of medical school, and 35% after first year of residency. From second year of residency onwards, the proportion varies from 30% to 42% (with no improvement as new faculty member). Among incoming MD students, almost identical proportions of Caucasian, non-Caucasian, male and female

learners would 'definitely' choose to be a physician again. At the end of the first year of residency, however, only 13% of Caucasian females would 'definitely' choose to be a physician again, compared to 37% of Caucasian males, 30% of non-Caucasian males (30%), and 49% of non-Caucasian females.

Conclusion: This study reveals an ambivalence among learners about a career in medicine, and suggests that early interventions for 'off-ramping' might benefit both students and the medical profession.

OA - 2 - 5

Novel approach to standard setting an admission panel interview

Cassandra Barber Western University, **Robert Hammond** Western University, **Tisha Joy** Western University, **Saad Chahine** Western University

Background/Purpose: Medical school admissions decisions hold serious career implications for applicants. This study investigates the reliability and utility of standard setting methodology for performance-assessment measures in admission interviews. Drawing on psychometric theory, borderline regression method (BRM) was applied to establish defensible pass/fail interview cut-off scores to better inform applicant selection and decision-making procedures.

Methods: Retrospective data from a three-panel admissions interview across six cohorts (2007-2012) of applicants (N=2,593) were analyzed using borderline regression method (BRM) to establish a performance standard; where interview score served as the dependent variable and global score the independent variable. Reliability was calculated using root mean square error (RMSE) and odds-ratios were used to compare scores across raters and determine who was better at predicting matriculation.

Results: The BRM pass rate of all matriculates were high across raters/cohorts (89.6% to 99.3%). However, there remains a small percentage of matriculates each year with scores below the BRM standard. Analyses showed increased variation in interview scores explained by global scores (R2=0.820-0.857) and reliability of the BRM standard (RMSE=0.106-0.159) when interview scores were aggregated across raters, rather than used independently. While, odds-ratios for matriculation varied across raters/cohorts, one particular rater type had higher odds of predicting matriculation using the BRM standard.

Conclusion: BRM serves as a reliable and robust tool for setting creditable pass/fail performance standards. Overall, this study offers an innovated approach to setting standards within admission interviews to better inform applicant selection. The findings highlight the applicability and ease in this approach for institutions to apply in substantiating their selection decisions.

OA - 2 - 6

How to Integrate Situational Judgement Test Scores into Existing Medical Admissions Processes: A Simulation Study

Fern Juster New York Medical College, **Christopher Zou** Altus Assessments, **Harold Reiter** McMaster University, **Kelly Dore** McMaster University

Background/Purpose: Medical school admissions offices are required to balance two goals, to select the best students while ensuring their diversity to reflect the diverse patient population. Cognitive screening tools such as the MCAT and GPA are good indicators of future success, but also restrict diversity. Screening tools for personal competencies tend to demonstrate smaller subgroup differences but tend to show poorer psychometric properties. Situational judgement tests have recently been developed as a tool which provides meaningful indicators of students' personal competencies, while also widening access to a more diverse range of demographic groups. The popularity of SJTs have taken off in the past decade, but there has been little guidance on how best to incorporate information from an SJT into the existing admissions process.

Methods: We conducted a series of "What-If" analysis on a large database of applicants (n = 9096) from New York Medical College - School of Medicine. NYMC-SOM collects MCAT and GPA scores along with performance on CASPer®, an online SJT. Six different models were constructed to examine their impact on both student diversity (i.e., the composition of

gender, race and ethnicity, SES background) and student quality (i.e., MCAT scores, GPA, CASPer®, subsequent interview performance).

Results: Overall patterns suggest that an increased weighting of the SJT lead to increased diversity in the student population, with a slight dip in cognitive scores. Increasing the weighting of cognitive metrics resulted in slight increases in cognitive metrics, but restricted diversity.

Conclusion: Based on the results of this study, the answer of how an SJT should be incorporated into the admissions process would depend on the surrounding community needs and locally defined institutional goals.

Sunday, April 14th - 10:00-11:15

Oral Presentation – PGME

OA - 3 - 1

The Sociomaterial Implications of Procedural Variation for Assessment in Competency-Based Medical Education

Mary Ott Western University, **Sayra Cristancho** Western University, **Tavis Apramian** Western University, **Lorelei Lingard** Western University, **Kathryn Roth** Western University

Background/Purpose: Surgical residents navigate thresholds between procedural preferences and principles for each surgeon educator. Such 'thresholding' complicates attempts to assess resident operative competence. Using the case of tonsillectomy learning, we explore how the complexities of procedural variation might be accounted for in workplace assessment.

Methods: We studied a single procedure (tonsillectomy) in one early adopter CBME surgical program (Otolaryngology - Head and Neck Surgery) using situational analysis, a sociomaterial approach to grounded theory. Data consisted of 66 operative notes and 7 intraoperative observations. Our analysis of procedural variation in these data informed subsequent interviews with 4 surgeons and 8 residents on their response to variation in teaching, learning, and assessing tonsillectomy in light of entrustment-based assessment.

Results: Procedural variation in our tonsillectomy data was influenced by surgical instruments, spatial considerations, resonate practice narratives, and negotiations between matters of education and efficiency. These material, spatial, social and temporal actors contributed to the assessment of competence. For example, our interview data show that differences observed with instrumentation and positioning can be embodied decisions, workable extensions of the surgeon-as-instrument. Embodied differences may look like variations in need of correction, if this complexity is not understood as an opportunity for inquiry.

Conclusion: Understanding often overlooked sociomaterial dynamics through which variation emerges can serve to focus surgical education. This study contributes findings on when and how procedural variations are matters of fact or matters for question. We offer ways that documentation of inquiry and adaptation in resident thresholding can respond to complexity as CBME assessments continue to be developed.

OA - 3 - 2

Conflict Management: Perspectives from a Chief Resident Workshop

Loni Desanghere University of Saskatchewan, **Anurag Saxena** University of Saskatchewan, **Betty Rohr** University of Saskatchewan

Background/Purpose: In this project we reviewed common conflicts identified by resident leaders (chief residents, CRs) and discuss strategies for conflict management.

Methods: In July 2018, 30 chief residents participated in a survey (45% response rate) which was used to help develop sessions on conflict management for a CR workshop. The survey was designed to ask participants to identify CR role-specific conflict/crucial conversations that they had observed or experienced personally in both clinical and academic settings. Data were reviewed and common themes are reported.

Results: Conflict types identified within the CR roles involved both role/structure (e.g. responsibilities, power; 73%) and methods/interest (e.g., procedural, differences in approaches; 27%). Within the academic setting, equal representation of conflicts in role/structure (33%), information/data (e.g., different interpretation, lack of information; 33%), and method/interest (33%) were categorized. Within the clinical setting: method/interest (60%), personal/values (e.g., differences in beliefs, values or goals; 10%), role/structure (10%), information/data

(10%), and environment stress/relationship (e.g., communication, stress or uncertainty; 10%) were identified. Conflict management styles (competing, avoiding, accommodating, compromising, collaborating) were examined based on conflict types and who was involved (e.g., myself, supervisors, peers, juniors, patients, or other allied health professionals).

Conclusion: It is important to have a repertoire of strategies to identify, deconstruct, and manage challenging situations. This can help improve decision making, adaptation, cooperation, and communication; helping to create a healthier work place environment. Identifying conflicts common in certain roles, such as CRs, will help development of specific leadership skills and successful tenure in their position.

OA - 3 - 3

Application rates to surgical residency programs in Canada

Todd Dow Dalhousie University, **Connor McGuire** Dalhousie University, **Emma Crawley** Dalhousie University, **Dafydd Davies** Dalhousie University

Rationale/Background: In light of the continued perceived downward trend in surgical residency applications and lack of studies addressing this issue, we undertook this study to primarily investigate the surgical residency application trends across Canada from 2007 to 2017.

Instructional Methods: While CaRMS publishes annual reports on the number of students applying and matching to residency positions across Canada, there are few published studies examining trends over time. Small, speciality specific studies have been completed in a variety of surgical subspecialities however no study has examined Canadian rates over a recent or extended period of time.

Target audience: The goal of this study was to describe surgical specialty application rates within Canada from 2007 to 2017 and compare rates to medical school enrollment.

Summary/Results: The total number of residency positions, non-surgical residency positions, and Canadian medical graduates increased significantly by 26.9% ($p<0.01$), 29.6% ($p<0.01$) and 27.2% ($p<0.01$), respectively. The total number of surgery applicants ($p=0.21$) and surgical residency positions ($p=0.28$) did not change significantly. The total number of rankings to both orthopedic and vascular surgery decreased significantly by 15.7% ($p<0.01$) and 42.9% ($p=0.03$), respectively. The number of applicants to general surgery, orthopedic surgery, plastic surgery, otolaryngology, and vascular surgery decreased by 18.6% ($p<0.01$), 20.9% ($p<0.01$), 15.4% ($p=0.01$), 33.7% ($p=0.03$) and 71.4% ($p<0.01$), respectively. Only vascular surgery saw a change in the number of first choice rankings, decreasing significantly by 64% ($p=0.04$). The total number of rankings to surgical programs increased significantly at McGill (37.3%; $p=0.03$), with no significant change at other Canadian medical schools.

Conclusion: While medical school enrollment and non-surgical residency positions are increasing, the number of surgical applicants and surgical residency positions are not keeping pace. Orthopedic, vascular, general, plastic, and otolaryngology may be experiencing reduced interest as a career choice from medical students. Further research is necessary to investigate factors influencing choice of specialty and success in residency to ensure a strong physician workforce in the future.

OA - 3 - 4

Developing a medical assistance in dying curriculum in a family medicine residency training program

Susan MacDonald Queen's University, **Sarah LeBlanc** Queen's University, **Nancy Dalgarno** Queen's University, **Daniel Zimmerman** Queen's University, **Karen Schultz** Queen's University, **Emily Johnston** Calgary West Central Primary Care Network, **Mary Martin** Queen's University

Background/Purpose: Medical assistance in dying (MAID) became legal across Canada on June 17, 2016, creating a need for MAID-specific education for practicing physicians and medical learners. This study examined and compared perspectives of family medicine (FM) residents and faculty preceptors

regarding MAID in terms of interest in, knowledge, experiences, willingness and readiness to learn and/or teach, anticipated participation, and recommendations for curricular content, faculty development and continuing professional development.

Methods: Two anonymous surveys were distributed to residents (n=193) and preceptors (n=158) in one Canadian FM postgraduate training program using a Dillman approach. Data was analyzed with SPSS using descriptive and inferential statistics.

Results: Survey response rates were 45% for faculty and 33% for residents. Faculty were significantly more confident, competent and comfortable than residents in explaining and discussing MAID with colleagues and patients ($p<0.05$). Residents, however, were more willing to participate in administering MAID than faculty ($p<0.05$). Seventy-two percent of respondents believe it important to integrate MAID into core curriculum, with faculty who were non-conscientious objectors (COs) being more likely to believe it should be included in curriculum ($p<0.05$). The curricular elements deemed most important included advanced care/end-of-life planning (76%), technical aspects (73%), and regulations/ethical issues (56%).

Conclusion: Patients' access to compassionate end-of-life care can be improved through training that increases both faculty and residents' comfort, confidence and competence in the topic of MAID. Of importance is offering faculty development and continuing professional development to educate and support those involved with providing care for patients requesting MAID.

OA - 3 - 5

Working in the dead of night: Exploring the transition to after-hours duty

Ali Walzak University of British Columbia, **Deborah Butler** University of British Columbia, **Joanna Bates** University of British Columbia, **Laura Farrell** University of British Columbia, **Bosco Law** McMaster University, **Daniel Pratt** University of British Columbia

Background/Purpose: Transitions form an integral component of medical training. New post-graduate trainees (first-year residents) find themselves in an especially challenging transition, as they are expected to fulfill both learning and service expectations concurrently. Workplace learning theory has been suggested as a lens through which to understand this unique educational, yet service-oriented, role. The aims of our study were to explore the transition from medical student to resident with respect to the on-call experience, and to provide theory-based suggestions to enhance learning during this unique transition.

Methods: We conducted an interpretivist qualitative study by interviewing 8 medical students and 10 first-year residents from six different specialty training programs across four academic sites. Resident transcripts were initially coded for major themes, followed by coding of medical student transcripts for consistencies and discrepancies.

Results: Four inter-related themes were identified in students' and residents' descriptions of on-call experiences: (a) shift in responsibility; (b) supervisory support; (c) contextual conditions; and (d) clarity of expectations. Generally, students were not able to anticipate the challenges they would face as residents on-call, and residents perceived the transition as sudden with little emphasis placed on learning.

Conclusion: First-year residents face multiple challenges while on-call, which may prevent optimal learning. These challenges are amplified by the large transitional gap between medical students and residents. We identified promoters of and barriers to effective learning in this environment, and by using workplace learning theory, have provided recommendations for how we might be able to enhance medical students' preparation for, and first-year residents' learning while, on-call.

OA - 3 - 6

Are residents paying attention to your lecture? Neural signatures of mind wandering in orthopaedic surgery residents during live lectures

Anita Acai McMaster University, **Kiret Dhindsa** McMaster University, **Natalie Wagner** McMaster University, **Dan Bosynak** McMaster University,

Stephen Kelly McMaster University, **Mohit Bhandari** McMaster University, **Bradley Petrisor** McMaster University, **Ranil R. Sonnadara** McMaster University

Background/Purpose: Mind wandering can interrupt learning (Pachai, Acai, LoGiudice, & Kim, 2016). Current approaches to understanding this phenomenon typically rely exclusively on self-reported measures, which may be disruptive or biased (Seli, Carriere, Levene, & Smilek, 2013). Our study used electroencephalography (EEG) to explore whether a neural signature of mind wandering could be identified during didactic teaching sessions in orthopaedic surgery and eventually used for passive attention monitoring.

Methods: Sixteen-channel EEGs were collected from 15 orthopaedic surgery residents simultaneously during live lectures. The lectures were interrupted approximately every four minutes with a prompt instructing participants to report their state of attention just prior to the probe. EEGs were artifact-corrected and broken into a series of 80 two-second epochs referenced to the probes. Time-frequency maps were generated using wavelet decomposition, and cluster permutation tests with corrections for multiple-comparisons were performed for each participant (Maris & Oostenveld, 2007). In addition, a machine learning approach using common spatial patterns and support vector machines was used to train a predictive model of mind wandering (Ramoser et al., 2000).

Results: Participants reported mind wandering during 33% of the probes. We identified several EEG components showing statistically significant changes in activity (corrected $p < 0.05$) mainly reflecting activity in frontal cortex. Our machine learning approach demonstrated an average classification accuracy of 77%.

Conclusion: We can identify neural signatures of mind wandering and discriminate between mind wandering and attentiveness reasonably accurately in an individual during live lectures. With further study, these results may allow passive attention monitoring during didactic instruction and in other contexts.

OA - 4 - 1

Clarifying and contextualizing the relationship between evidence-based practice and clinical reasoning in rehabilitation education

Aliki Thomas McGill, **Meredith Young** McGill, **Euson Yeung** University of Toronto, **Stuart Lubarsky** McGill, **Valerie Dory** McGill, **Lara Varpio** Uniformed Services University of the Health Sciences, McGill University, **Mary-Ellen Macdonald** McGill

Background/Purpose: The foundations of evidence-based practice (EBP) and clinical reasoning (CR) are taught within the classroom, but the enactment, refinement, and monitoring of their development are contextualized in the clinical settings under the supervision of clinical preceptors. How preceptors experience and conceptualize, EBP and CR as well as the relationships between them remain largely underexplored. The purpose of this study was to explore preceptors' experiences and understanding of the relationship between EBP and CR as enacted, refined, and monitored in clinical teaching settings.

Methods: We used an interpretive description approach with maximum variation sampling to recruit 15 rehabilitation (physical therapy and occupational therapy) preceptors representing different levels of experience, different clinical teaching sites, and patient populations. We conducted in-depth semi-structured interview and analysed transcripts iteratively using constant comparison.

Results: Thematic results include:1) EBP and CR are inextricably connected; 2) The relative value of EBP and CR fluctuates depending on situation; 3) Forms of evidence impact CR differently; 4) An increasing emphasis on EBP and CR in healthcare is both a pressure and a blessing; 5) Students, need more support and exposure to fulfil their future role as scholarly practitioners.

Conclusion: Findings underscore the complex relationship between EBP and CR in clinical contexts. Preceptors recognize the impact of this complexity, and thus pay particular attention to how they support the development of EBP and CR among learners. This deeper understanding of preceptors' experiences and conceptualizations of EBP and CR may be leveraged to facilitate faculty development programs that support preceptors in their teaching role.

OA - 4 - 2

Implementing self-explanation and structured reflection to support clinical reasoning in undergraduate medical students: a longitudinal study

Martine Chamberland Université de Sherbrooke, **Jean Setrakian** Université de Sherbrooke, **Linda Bergeron** Université de Sherbrooke, **Christina St-Onge** Université de Sherbrooke, **Martin Plaisance** Université de Sherbrooke, **Lara Varpio** Uniformed Services University of the Health Sciences, **Aliki Thomas** McGill

Background/Purpose: Self-explanation (SE) and structured reflection (SR) can support the development of medical students' diagnostic reasoning. However, there are no studies documenting the implementation of these strategies in medical education.This study describes students' use of SE and SR following a one year large-scale implementation.

Methods: This longitudinal descriptive study involved 204 first-year medical students.The SE-SR activity consisted of 5 individual learning sessions per year on a web-based platform. In each session, students solved three clinical cases related to the preceding block's of learning activities. Students self-explained the case and then applied SR to compare and contrast alternative diagnoses. Students' uptake of the activity is monitored through platform data and surveys. Audio-recorded SE and written SR transcripts were analyzed to explore how the learners engaged with these techniques and their reasoning processes (e.g.,

biomedical/clinical inferences, arguments for/against specific diagnoses).

Results: The average completion rate was 87,6% (SD = 2,07) for overall cases. Students spent a mean time of 8:18 min (SD = 00:56) on SE and 25:18 min (SD = 2:20) / per case. The majority of learners (92%) reported that SE helped deepen their understanding of clinical topics and 96% reported that SE and SR helped identify gaps in their knowledge. During SE, students generated mainly clinical but also biomedical inferences. They express uncertainties and statements reflecting ongoing knowledge monitoring.

Conclusion: SE and SR can be implemented successfully across an undergraduate medical program. Students reported that these techniques supported knowledge building and the identification of knowledge gaps.

OA - 4 - 3

A scoping study of the role of ambiguity, uncertainty, and complexity in clinical reasoning

Meredith Young McGill, **Aliki Thomas** McGill, **Stuart Lubarsky** McGill, **Valerie Dory** McGill, **Nazi Torabi** University Health Network, University of Toronto, **Farhan Bhanji** The Royal College of Physicians and Surgeons, **Steven Durning** Uniformed Services University of the Health Professions

Background/Purpose: Modern medical practice is often characterized as being fraught with uncertainty, ambiguity, or complexity. Recognizing and responding to the uncertainty, ambiguity, and complexity of practice was included as an enabling competency of a Medical Expert in CanMEDS 2015. Despite attention, these concepts remain largely underspecified. Documenting the use and meaning of ambiguity, uncertainty, and complexity is warranted in order to support the development of teaching and assessment approaches to improve clinical reasoning.

Methods: With the Royal College as a knowledge user, we conducted a scoping review to map the literature on ambiguity, uncertainty, and complexity in clinical reasoning. A search was developed, peer reviewed, and executed in five databases. Two coders screened abstracts and a third adjudicated disagreements. We conducted quantitative and thematic analyses of the data extracted

Results: 292 of the 3310 abstracts screened were included in the review. Of key terms, 'complex(ity)' was the most frequently used (245; 84%), followed by 'uncertain(ty)' (195; 67%), and ambiguous/ambiguity (66; 23%). Only 29 papers explicitly defined the terms. Complexity referred to patients, tasks, tools, and 'the heathcare system'. Uncertainty was used in reference to 'input' (information), output (diagnosis) or outcome (prognosis). Ambiguity referred to information, tasks, and relationships/roles.

Conclusion: Though the concepts of ambiguity, uncertainty, and complexity are used in educational and policy statements, little consensus, and few explicit definitions of these concepts were identified in the literature. Findings provide an overview of existing definitions and suggest more work is needed to better understand and ultimately, teach and assess clinical reasoning in complex/uncertain/ambiguous problems.

OA - 4 - 4

Developing Interviewing and Clinical Reasoning Skills with a Novel Low-Cost Virtual Patient Simulator

Malgorzata Kaminska University of Northern British Columbia, **Richard Franke** Athabasca University,

Background/Purpose: Good interview skills are crucial in medicine. At our medical school, interview skills are taught and developed during physical examination Clinical Skills (CS) sessions, however these group interviews do not allow students to access their own unique knowledge base, nor do they allow students to reflect on their clinical reasoning patterns. Yet Vygotsky's zone of proximal development stages, widely recognized in medicine, requires that self-regulated learning must occur for effective skills development.

Summary of the Innovation: A low-cost virtual patient history-taking simulator operating in PowerPoint 2013 with custom Visual Basic

programming was piloted during a Respiratory Exam session. The simulator mimicked a Jeopardy format, incorporated multimedia, and required no prior preparation by students. It was used by student dyads playing the role of interviewer and patient. Only the patient-student was able to see the computer screen and relied on the software to provide answers to questions asked. The program provided feedback to the interviewer-student regarding areas that should have been addressed but were missed. A post-intervention anchored Likert-scale survey was completed by 15 students (100% response rate) who used this software. Student responses indicated the software was of educational value (100%), a useful tool for practicing history-taking (86%), and an efficient use of their time during the session (93%). Overall, 93% requested that this software be part of future CS sessions.

Conclusion: Students valued using this novel simulator to practice interviewing in an individual, guided manner, with immediate feedback, and without need for additional preceptor or preparation. Additionally, the tool promotes individual expertise development while incorporating differential diagnosis, data interpretation, and management skills.

OA - 4 - 5

Early development of clinical skills in a competence based undergraduate medical program

Martin Plaisance Université de Sherbrooke, **Isabelle Germain** Université de Sherbrooke, **Sylvie Mathieu** Université de Sherbrooke, **Ghislaine Houde** Université de Sherbrooke

Background/Purpose: The development of clinical skills is often delayed after acquisition of knowledge in several domains. It has however been shown that learners are more motivated, learn quicker and retain knowledge better when the usefulness of the teachings can be experienced. We designed a course allowing students to use their forming clinical skills early in the program with an array of authentic clinical situations and innovative educational methods.

Summary of the Innovation: The course consists of activities designed to stimulate clinical reasoning, questioning, physical examination, management, collaboration, professionalism, case writing. The clinical situations go from paper cases to standardized patients and real patients in emergency rooms, outpatient clinics and wards. Feedback comes from teachers, pairs and patients. Innovative pedagogical methods include: Self-explanation and structured reflection Voice recording of oneself reading and explaining of cases presented online followed by writing diagnoses with arguments for or against. It helps students see the clinical reasoning process and identify their knowledge gaps at the same time. Long OSCE type sessions Students meet with a standardized patient They receive immediate feedback from both teacher and patient. They have then to write the consult. Filming of physical exam Based on short clinical histories, students choose and perform the appropriate physical exam on video. It forces students to apply clinical reasoning to physical examination while constructing their procedural efficacy

Conclusion: Students and teachers judge this course concrete and motivating. It made explicit to the students the pertinence of theoretical learnings. It allowed teachers to witness and guide the rapid development of high quality clinical skills.

OA - 4- 6

"You cut like a girl" - A sequential explanatory mixed methods study of gender-based discrimination among surgical residents

Gabrielle Bonneville University of Calgary, **Allison Brown** University of Calgary, **Sarah Glaze** University of Calgary

Background/Purpose: Although surgery has traditionally been dominated by males, more women than ever are entering surgical specialties. In Canada, approximately 28% of surgeons are female, and an increasing number of surgical residents are women. Despite this recent increase, no studies have examined how female surgical residents experience

gender-based discrimination (GBD) during residency training.

Methods: A sequential explanatory mixed-methods design was used to examine GBD in surgical residents at the University of Calgary. Male and female residents across seven surgical programs were surveyed about their experiences of GBD. Following this, semi-structured interviews with 14 female residents were held to discuss their experiences.

Results: Women experienced significantly higher frequencies of GBD than men from every surveyed source and setting. Nurses and patients were the most common sources of discrimination. The most frequent type of discrimination was a lack of respect from others due to gender. Qualitative findings highlighted the challenges of GBD on residents during their training, including the common experience of being mistaken for a non-physician health professional, having to work "twice as hard" to receive the same respect, harassment and bullying from members of the healthcare team, failure to disclose these experiences out of fear of future repercussions, and the subsequent impact on wellness Despite these experiences, female residents proposed multiple solutions that could promote a more equitable training environment.

Conclusion: Female surgical residents experience higher rates of GBD from all sources in comparison to male residents. Recognition of these barriers and implementation of solutions can ultimately improve surgical training for everyone.

OA - 5 - 1

Customizing Support for New-to-Rural-Emergency Physicians through Peer Clinical Coaching

Claire Thomson University of British Columbia, **Bob Bluman** University of British Columbia, **Dilys Leung** University of British Columbia, **Kirstie Overhill** University of British Columbia

Background/Purpose: Starting an emergency medicine practice can be daunting for any physician. Rural emergency medicine can be particularly challenging, with the added complexities of navigating the transport system, acclimatizing International Medical Graduates (IMGs) to the Canadian healthcare system, and receiving feedback while working solo ER shifts without colleagues for comparison. This transition has historically been supported through informal mentoring within communities, but this can place an added strain on established physicians. Formalizing this process may be an effective strategy to support the recruitment and retention of full-scope physicians to rural communities.

Summary of the Innovation: The Emergency Medicine Peer Coaching pilot ran in one busy rural ER, pairing new physicians with trained peer coaches during paid shadow shifts. Coaches and coachees were interviewed following their participation, and program documents (e.g. shift notes) were also included in the analysis.

Conclusion: A major focus of the program for both coaches and coachees was working efficiently and developing the coachee's workflow over the shift. IMG coachees in particular appreciated having an experienced peer coach to help them acclimate to the Canadian healthcare system. Pairing coachees with their colleagues presented both opportunities and challenges due to pre-existing relationships. Future iterations of the program will foster early coaching relationships through a joint orientation session, improve communication with nursing staff, and provide additional administrative support to help participants make the most of the peer coaching opportunity.

OA - 5 - 2

Reflection and Professional Identity: Implementation of a Longitudinal Course at the Undergraduate Medical Education Level

Valerie Desilets Université de Sherbrooke, **Ann Graillon** Université de Sherbrooke, **Marianne Xhignesse** Université de Sherbrooke, **Kathleen Ouellet** Université de Sherbrooke, **Christina St-Onge** Université de Sherbrooke

Background/Purpose: In the context of complex and changing health care environments, developing reflection skills appears to be essential for future physicians and a defining trait of their professional identity. As trainees prepare for their role as physician, they need to acquire reflection skills while also developing their professional identity. Since no specific activity in our curriculum targeted these objectives, we developed a longitudinal course "Reflection on the development of professional practice and identity" (RDPP) integrated within our newly revised undergraduate medical education curriculum

Summary of the Innovation: The four-year RDPP course is structured around three educational activities taking place within one week: 1) thematic workshop with small group discussion (6 students) led by a mentor 2) reflective exercises documented in an electronic portfolio, and 3) an individual student-mentor meeting. This sequence is repeated 4-5 times a year throughout the curriculum. 64 students and 17 mentors completed an evaluation the first year the course was rolled out.

Conclusion: Students and mentors reported that course activities and themes were conducive to the development of reflection skills (mean score of 3.5 for mentors, and 3.3 for students on 4-point Likert scale).

Mentors' appreciation of the portfolio component was slightly more positive (M=2.82) than students' appreciation (M=2.06). Overall, students felt comfortable sharing their reflections (M =3.2) within the course, but their perception of the utility of the written feedback received at the end of each activity cycle, was somewhat less positive (M=2.97). Evaluation of course implementation will continue to inform its development and guide improvement of the written feedback provided by mentors.

OA - 5 - 3

Improving role modeling in clinical educators

Sara Mortaz Hejri Tehran University Of Medical Sciences, **Elaheh Mohammadi** Tehran University Of Medical Sciences, **Hooman Shahsavari** Tehran University Of Medical Sciences, **Amirali Sohrabpour** Tehran University Of Medical Sciences, **Azim Mirzazadeh** Tehran University Of Medical Sciences

Background/Purpose: Medical students learn from role models in a variety of clinical settings. Clinical educators contribute toward professional development of their students, but many of them find it challenging to act as an effective role model. We aimed at designing and implementing a longitudinal course on "role modeling" at Tehran University of Medical Sciences to help clinical educators be a powerful role models.

Summary of the Innovation: Having performing a systematic search and conducted an integrated review, we designed the course, and then, by holding an expert panel, we finalized details of course content. We, also, identified a variety of methods including lecture, group discussion, role play, reflection and self-directed learning. The course was composed of four face-to-face sessions, in addition to the assignments which were presented virtually. The course was held for 18 faculty members from different clinical disciplines, within their affiliated hospitals, during three months.

Conclusion: To evaluate the effectiveness of the program, the performance of faculty members was assessed by asking learners who were in contact with them to complete "RoMAT" questionnaire. Participants were also asked to explain their experience and understanding of role modelling through writing reflective papers. The analyses show faculty members were satisfied with the course, became acquainted with different dimensions of role modelling, and attempted to enhance their abilities in real settings, though their performance did not differ significantly. Considering the busy schedule of clinical educators, this study introduced an effective way to promote role modeling in clinical faculty members.

OA - 5 - 4

"Intro To Code Blue" Curriculum: Using OSCE-like Learning Checklists in 4 Tandem, Coached, Low-Fidelity Simulations to Consolidate Medical Students' Approach to Acute Care Situations

Anthony Seto University of Calgary

Background/Purpose: Objective Structured Clinical Examinations (OSCEs) can be used in simulations to evaluate students. OSCEs do not provide live feedback, so students leave without addressing deficiencies. Rather than scoring checklists post-simulation, in-simulation learning checklists can be used to coach and teach students. "Intro To Code Blue" was designed on the premise that consecutive low-fidelity simulations can be an effective learning model. Repetition is integrated as a teaching strategy, and the chosen fidelity retains conceptual realism, while eliminating physical and emotional distractions.

Summary of the Innovation: Teams of 2nd year medical students participated in 4 tandem acute care simulations, where facilitators coached and prompted students as needed. Utilizing an OSCE-like checklist of student action items, facilitators left a box unchecked if an item required prompting. Simulations had acute cases deteriorate into arrest. However, each presenting case and associated arrest rhythm differed. The percentage of teams (n = 48, 50, 48, 42) having each item checked was calculated. For each simulation, the percentage of A-scoring items (80-100% of teams had item checked), B-scores (65-79%), C-scores (50-64%), and D-scores (0-49%) were computed.

Conclusion: A-scores increased from 1st to 4th simulation (44%->92%). B-scores (26%->8%), C-scores (16%->0%), and D-scores (14%->0%) decreased. The percentage of non-A-scores fell (56%->21%->22%->8%). By the 4th simulation, non-A-scoring items were <10%, showing that it takes 4 tandem simulations to drastically improve performance. In-simulation learning checklists can be prepared for simulations to improve learners' performance rapidly, and the combination of tandem simulations, coaching, and low-fidelity in simulation is an effective learning consolidation strategy.

OA - 5 - 6

Clinical Faculty Mentoring: A pilot Program in Academic Medicine

Stephanie Ameyaw University of British Columbia, **Brenna Lynn** University of British Columbia, **Gurdeep Parhar** University of British Columbia, **Susan Paul** University of British Columbia

Background/Purpose: Existing literature demonstrates benefits of mentoring as key to professional integration. Evidence highlights high levels of mentee satisfaction including: increased job satisfaction, professional development and sense of well-being, confidence and clinical knowledge, and increased research productivity.

Summary of the Innovation Provide a learner centered formal mentoring program in an academic medicine setting for the University of British Columbia's Faculty of Medicine (UBC FoM) clinical faculty (primarily clinicians who also do some teaching, research and/or administrative leadership), that enhances connection to the university, supports engagement and recognition, increases capacity for administrative, research and teaching roles, increases confidence in effective student supervision, and supports career goals by providing a formal mentoring program. Methods: In the fall of 2017, an eight month formal Clinical Faculty Mentoring Program was initiated for twenty physician and physiotherapist clinical faculty who were local and distributed throughout the province. Mentors and mentees completed program evaluation surveys (pre/mid/post) where they reflected on engagement with the academic environment as clinical faculty and on their experiences as participants in the program. Results: Evaluation data from the ten mentoring pairs indicated a sound mentoring prototype was developed that supports clinical faculty. Results show that 1) pilot participants are developing and enhancing their confidence in leadership skills leading to better student placements; 2) health professionals are learning together creating an opportunity for meaningful feedback loops and quality improvement in an interdisciplinary environment; and 3) participants have increased access to education which is positively impacting practitioner resilience, recruitment and retention as well as supporting effective practitioner training.

Conclusion: Supporting distributed clinical faculty through a formal mentoring program fosters strong relationships, connection to the Faculty of Medicine and the University and promotes continuous quality improvement in the workplace. Programs like this present an opportunity to recognize the contribution and value of clinical faculty, which is especially important for health professionals who are not compensated financially for clinical teaching.

OA - 6 - 1

Conceptualization of Competency-Based Medical Education, Competency, and Competence within the CPD/CME and Residency Family Medicine Educational Literature

Heather Lochnan University of Ottawa, **Paul Hendry** University of Ottawa, **Simon Kitto** University of Ottawa, **Allyn Walsh** University of Ottawa, **Gary Viner** University of Ottawa, **Ivy Oandasan** University of Toronto

Background/Purpose: The implementation of a competency-based medical education (CBME) across the continuum (from undergraduate, postgraduate to continuing education), has been proposed as the ideal approach to improve quality and patient safety through contributing to the enhancement of physicians' knowledge, skills, attitudes, and behaviors. In order to promote understanding of this new educational framework and accelerate its uptake across CPD, it is important to focus on standardizing its language/vocabulary. Competence, competency and CBME are frequently used in the medical educational literature and lack consistent definitions within both CPD and family medicine (FM). The primary objective of this scoping review was to examine the range and extent of how CBME is conceptualized within the CPD FM North American educational literature

Methods: This study entails a scoping review using Arksey and O'Malley six-step framework and following five inclusion criteria, 80 articles were included in the dataset for analysis.Coders included several family doctors.

Results: Of 80 articles included 66% originated from Canada with the largest percent of studies (46%) categorized as original research articles, 33% as commentary/reflective papers, 14% as regulatory, and the remaining studies (6%) as review articles or editorial opinion. As expected, only 5 articles (6%) provided a referenced definition of CBME in FM residency and CPD/CME educational literature. No variations were found in the definitions of CBME.

Conclusion: The finding that more than 75% of the studies were published after 2010 suggests that competency-based education research in FM has been getting more attention in the recent years. The low number of scholarly definitions contained within the literature suggests more attention needs to be paid to conceptual rigor to advance the field. This review is the first to examine how CBME was conceptualized within the American and Canadian FM medical literature.

OA - 6 - 2

Innovative multimodal program training ultrasound experts in continuing medical education

Annie Ouellet Université de Sherbrooke, **Émilie Gosselin** Université de Sherbrooke, **Catherine Bertholet** Université de Sherbrooke, **Luc Mathieu** Université de Sherbrooke

Background/Purpose: Competency-based learning is a promising to support continuing medical education (CME) activities through hands-on practice and learner-centered approaches. Obstetrical ultrasound exams represent a specialized field which has developed over the past decades. However, since there is a variation in practices amongst ultrasonographers, it remains a challenge to respond to the experts' needs in CME.

Summary of the Innovation: A multimodal training program was developed based on the CanMEDS Framework applied to obstetrical ultrasonography practice, entitled Écho-Réalité. This innovative program combines different pedagogical approaches and took place over two days in a university center for three groups of twelve experts. Under the supervision of subspecialists, theoretical content alternating with hands-on simulation (practice on voluntary pre scanned patient and robot simulator) and immersion

into real-life practice (patients coming for their routine exam) allowed individualized 360° feedback (by patients, technician and a subspecialist). Moreover, a continued self-reflection process was achieved through an electronic platform from pre-training preparation, per training interaction and post-training follow-up. Satisfaction and level of participation were high (>90%). Participants' self-reflection confirmed that the majority had reached their specific learning objectives.

Conclusion: Écho-Réalité trainings demonstrated the feasibility and success of this multimodal CME training design, including the immersion in a real practice environment. This type of CME program could be transferred to other medical specialities and other health professional discipline. Future studies will be conducted to examine the effects on knowledge transfer in practice.

OA - 6 - 3

From lit to lightbulbs: A comprehensive approach to program and event needs assessments

Richard van Wylick Queen's University, **Eleftherios Soleas** Queen's University, **Nancy Dalgarno** Queen's University, **Ingrid Harle** Queen's University, **Mikaila De sousa** Queen's University

Background/Purpose: Continuing Professional Development (CPD), Faculty Development (FD), Education Scholarship (ES) and Global Health (GH) offices need to produce programs in compliance with the national standards. The foundation of every program should be a comprehensive and representative needs assessment. What constitutes a comprehensive needs assessment? Does this help a planning committee function optimally and achieve better outcomes? In this presentation, we offer answers and a paradigm for consideration.

Summary of the Innovation: As a collaborative union of several offices (CPD/FD/GH/ES) we brought together a diverse array of thinkers and professionals with the common goal of growing into a comprehensive research centre that simultaneously develops immersive professional education. Recognizing that our strength is having different talents housed in individual teams we instituted a process where every program or product to be developed begins with a thorough literature review spearheaded by ES. This review synthesizes themes and isolates educational opportunities for development. These opportunities would also be avenues for scholarship activities using representative stakeholder data sources including focus groups, interviews, and surveys. The sum of the findings from these independent sources would be combined with relevant past program evaluations and needs assessments followed by presentation to planning committees in CPD/FD/GH/ES to inform program/product designs.

Conclusion: We have been using this structure for the better part of a year and our program evaluation scores, diversity of attendees, participant satisfaction, and office synergy have noticeably improved. Our process provides a rigorous and representative foundation for our CPD/FD/GH events, while also generating opportunities for publications.

OA - 6 - 4

Charting a path to scholarship in Continuing Professional Development

Morag Paton University of Toronto, **Paula Rowland** University of Toronto, **Walter Tavares** University of Toronto, **Suzan Schneeweiss** University of Toronto, **Shiphra Ginsburg** University of Toronto

Background/Purpose: Continuing Professional Development (CPD) scholarship is necessary to support practice improvement but best practices in developing scholars remain elusive. Increasingly unclear boundaries between CPD, quality improvement, patient safety, knowledge translation and faculty development make charting a path difficult. This study is aimed at understanding the roles of CPD leaders and the challenges and opportunities of CPD scholarship.

Methods: In this environmental scan of CPD activity at the University of Toronto we first conducted systematic searches of scholarly activity in CPD produced by our faculty. We then conducted semi-structured interviews of identified CPD leaders and

scholars about their roles, challenges and opportunities in scholarship. Interviews were analyzed using principles of constructivist grounded theory.

Results: CPD related scholarly output was found to be wide-ranging, involving hundreds of Faculty members across our affiliated sites. Published scholarship was often identified as being CPD and one or more of QI, PS, KT or FD. Scholars and leaders usually did not enter into CPD deliberately as a well-planned out career path; often they were driven by passion for a particular clinical area. Leadership and scholarship was not often an end goal. Few have protected time or support for their scholarly work outside of resources dedicated to their CPD administrative role.

Conclusion: Despite a perceived lack of support or clear career path, interest and output in CPD-related scholarship remains strong among UofT CPD leaders and scholars. If CPD science is to advance, better support for, and recognition of, the work of leaders and scholars may be necessary.

OA - 6 - 5

Exploring Potential Mechanisms of Learning in Project ECHO: Understanding The "Why"

Sanjeev Sockalingam University of Toronto, **Carrol Zhou** University of Toronto, **Thiyake Rajaratnam** Centre for Addiction and Mental Health, **Eva Serhal** Centre for Addiction and Mental Health, **Allison Crawford** University of Toronto, **Maria Mylopoulos** University of Toronto

Background/Purpose: Project Extension for Community Healthcare Outcomes (Project ECHO©) is a growing hub-and-spoke tele-education model to bridge knowledge gaps between academic specialists and remote primary care providers (PCPs). Little is known about the mechanisms of learning in this model. This project aimed to identify how ECHO supports learning through analyzing recorded tele-video-education data from Project ECHO Ontario Mental Health (ECHO-ONMH).

Methods: Using the conceptual framework of adaptive expertise, a qualitative thematic analysis was conducted sampling sessions across an ECHO-ONMH 34 week cycle. Two individuals coded participant interactions during 2 hr recorded sessions using an iterative, constant comparative methodology until thematic saturation was achieved.

Results: The authors identified four key mechanisms of learning in ECHO: productive struggle with cases, integrated understanding, collaborative reformulation of cases, and generation of conceptual solutions based on a new understanding. Quotes from the sessions illustrated these four key learning mechanisms during the education program. Throughout the ECHO sessions, learning was observed to be bidirectional from both the hub to spoke as well as between spoke sites.

Conclusion: Despite the widespread implementation of Project ECHO, a paucity of research has focused on mechanisms of learning in this model. Our study demonstrated a bidirectional exchange of knowledge between hub specialist teams and PCP spokes that aligned with the development of adaptive expertise. These findings support the role of ECHO in supporting providers in their capability to problem solve and manage new clinical scenarios in their practice.

OA - 6 - 6

Improving patients' outcomes through better screening, treatment and follow up of lung cancer

Patricia Wade Fédération des médecins spécialistes du Québec, **Sam J. Daniel** Fédération des médecins spécialistes du Québec, **Beatriz Merlos** Fédération des médecins spécialistes du Québec, **Martin Tremblay** Fédération des médecins spécialistes du Québec

Rationale/Background: We wanted to increase the use of the algorithm tool from the Lung cancer Guidelines and for by medical specialists to recognize gaps and consequences when a systematic approach was not applied.

Instructional Methods: In 2014, Quebec's health Institute published an algorithm for the investigation, treatment and follow-up of lung cancer. The objective was to offer clinical pathways and guidelines to improve patient outcomes. Specialists reported that the 269 page document was not user-friendly.

Target audience: We developed a case-based, online module were participants are faced with options, consequences and alternative pathways associated with following or not the algorithm. First, they must provide medical care using their clinical judgement. Then, they are guided thru the same case using the algorithm, allowing them to compare their practice with new guidelines. The CPD REACTION questionnaire was used to measure impact.

Summary/Results: Self-reported intention to follow the algorithm was high (76%) and validated by REACT scores (mean of 6.2/7). The most prevalent indicators of change were the influence of the social (mean of 5.9) and moral (mean of 6.2) norms because clinicians believed there were benefits to using the algorithm both for patients and the health system. Self-reported Efficacy beliefs increased by 44% but REACT score indicated residual doubts (mean of 4.2/7) as to the ability to implement the pathways. Participants identified several barriers.

Conclusion: Although algorithms offer potential benefits for patient care, passive dissemination does not lead to implementation and behavioral changes. Coordinated CPD activities combined with « just-in-time» tools increase the likelihood of their application. However, patient care and clinical decisions remain based on medical judgement and data.

OA - 7 - 1

Retention of visa trainees following post-graduate medical residency training in Canada.

Maria Mathews Western University, **Ivy Bourgeault** University of Ottawa, **Yanqing Yi** Memorial – University of Newfoundland, **Dania Koudieh** The Association of Faculties of Medicine of Canada, **Morris Barer** University of British Columbia, **Lindsay Hedden** University of British Columbia, **Emily Marshall** Dalhousie University

Background/Purpose: Visa trainees are international medical graduates (IMG) who come to Canada to train under a student or employment visa and are expected to return home after their training. How many visa trainees remain in Canada after their training? We examine the retention patterns of visa trainee residents funded by Canadian (regular ministry and other), foreign, or mixed sources.

Methods: We linked data from the Canadian Post-MD Medical Education Registry with Scott's Medical Database to identify visa trainees who remained in Canada after their exit from post-graduate training. Eligible trainees were IMG who were visa trainee as of their first year of training, started their residency program no earlier than 2000, and exited training between 2006 and 2016. We used cox regression to compare the retention (work in Canada Y/N) of visa trainees funded by Canadian, foreign, and mixed sources. Potential covariates included gender, training program, region of medical graduation, age, legal status at training exit, and residency training region.

Results: Of the 1,913 visa trainees in the study, 431 (22.5%) were Canadian-funded, 1,353 (70.7%) were foreign-funded, and 129 (6.8%) had mixed funding. The largest group (70.6%) came from Middle Eastern and North African countries. 16% of visa trainees remained in Canada up to 11 years after exiting post-graduate training. Trainees who remained on visas (HR: 1.91; 95% CI 1.60-2.30), were funded exclusively by foreign sources (HR: 1.46; 95% CI 1.25-1.69), and who had graduated from 'Western' countries (HR: 1.39; 95% CI 1.06-1.84) were more likely to leave Canada than trainees who became citizen/permanent residents, were funded by Canadian sources, or visa graduates of Canadian medical schools, respectively.

Conclusion: 1 in 6 visa trainees remain in Canada after their residency training. Trainees with Canadian connections (funding and/or change in legal status) were more likely to remain in Canada.

OA - 7 - 2

Design of a Disease Based Clinical Training Curriculum in Paediatric Haematology/Oncology: Are we preparing our trainees better for independent practice?

Michaela Cada University of Toronto, **Angela Punnett** University of Toronto, **Marta Wilejto** Western University

Background/Purpose: On July 1, 2015 the division of paediatric haematology/oncology at SickKids hospital adopted a disease specific model of clinical care whereby all hospitalized patients are taken care of by physicians and a healthcare team with expertise in the patient's specific disease area, rather than generalists, a standard approach in large US institutions for years. There is no published data on the impact of this model on physician education. To align clinical training with the divisional clinical practise model, we designed a 2-year disease based clinical training curriculum and evaluated how this curriculum is preparing our trainees for independent clinical practise.

Summary of the Innovation: The authors held a number of focus group sessions to arrive at the 2-year disease based clinical training curriculum. Trainees spend consecutive 2-month blocks rotating through a specific disease section (ie. leukemia/lymphoma). During this time they move seamlessly between

inpatient and outpatient care, attend disease specific rounds and lectures, and go to the lab to discuss results and diagnostic testing. Approximately one year later, they return to each section in a senior trainee capacity, and assume a more supervisory role. We designed an electronic survey, administered anonymously, to evaluate our curriculum.

Conclusion: Trainees, who only practiced in the old model, feel more prepared to practice independently and feel they had more time during training to pursue non-clinical endeavors, compared to trainees who only trained in the new model. By contrast, those who had the opportunity to train in both models, feel the new model is superior in preparing them for independent practice and allowing them to complete non-clinical projects.

OA - 7 - 3

Easing the Transition to Residency: An Internal Medicine Boot Camp Pilot

Laura Goodliffe McMaster University, **Zahra Merali** McMaster University, **Daniel Brandt Vegas** McMaster University, **Leslie Martin** McMaster University

Background/Purpose: During the transition to postgraduate training, learners are faced with increased responsibilities, new environments, and unfamiliar systems. As a result, focused programs, called "boot camps" have been growing in popularity. We developed and evaluated a boot camp to increase internal medicine resident preparedness and mitigate stress associated with this transition.

Summary of the Innovation: We conducted a needs assessment to develop our curriculum by surveying clinical teaching unit directors, faculty, senior residents and allied health professionals to identify key topics. Three areas of focus were identified: clinical knowledge, logistics, and patient safety. Residents and faculty developed a half-day curriculum. Topics were compared to Royal College of Physicians and Surgeons of Canada Objectives of Training in the Specialty of Internal Medicine. The first session followed a patient from admission to discharge, familiarizing learners with expectations and logistics of caring for medicine patients. During the second session, approaches to common on-call scenarios were reviewed. After participation, residents were surveyed on the utility of the boot camp every two weeks during their first eight weeks of residency.

Conclusion: Survey respondents identified that the boot camp helped during situations encountered on the wards, particularly in the first four weeks of residency. The boot camp somewhat decreased stress. A thematic analysis of narrative comments revealed four themes: orientation to local practices and culture, medical expert, preparedness and community building. All survey respondents would recommend this boot camp to future residents. Our experience demonstrates an effective, short, introductory boot camp that could be easily be implemented within other programs.

OA - 7 - 4

Learner Handover: How does it influence assessment?

Tammy Shaw University of Ottawa, **Debra Pugh** University of Ottawa, **Claire Touchie** University of Ottawa, **Timothy J. Wood** University of Ottawa, **Susan Humphrey-Murto** University of Ottawa

Background/Purpose: Learner handover (LH) is the sharing of information about trainees between faculty supervisors. Its use allows trainees to build upon previous assessments fitting well within competency-based education. However, its potential to bias future assessments has been raised as a concern. Psychology studies suggest that prior performance information may bias ratings towards the previous performance level (assimilation effect). This study aimed to determine whether LH influenced assessment in the clinical context.

Methods: Faculty raters (n=42) randomized to 1 of 3 groups viewed 6 simulated patient-learner encounter videos. In a counter-balanced design, each group received either positive (PLH), negative (NLH) or no LH (C) prior to each video then rated the performance using the Mini-CEX. The LH was a brief written summary from the program director. Mean ratings were analysed by incorporating the crossover design in a 2x2 ANOVA. Content analysis was performed on questionnaire responses.

Results: There was a significant difference in mean ratings (p=.01; ηp2=.126) with the PLH (M=5.97) being higher than the NLH ratings (M=5.29) but similar to the C ratings (M=5.72). The difference between PLH and NLH reflects an assimilation effect. In the post-study questionnaire, the majority of faculty had correctly guessed the purpose of the study and expressed concerns about its potential to create bias.

Conclusion: LH led to an assimilation effect; faculty provided with NLH generated lower scores then faculty provided with PLH after viewing the same performance. This effect was noted despite raters' awareness of the potential for bias. These results suggest careful consideration of the potential implications on the widespread implementation of LH.

OA - 7 - 5

The influence of prior performance information on ratings of present performance: Implications for learner handover: A Scoping Review

Susan Humphrey-Murto University of Ottawa, **Aaron LeBlanc** University of Ottawa, **Claire Touchie** Medical Council of Canada, **Pugh Debra** University of Ottawa, **Timothy J. Wood** University of Ottawa, **Lindsday Cowley** University of Ottawa, **Tammy Shaw** University of Ottawa

Background/Purpose: Learner handover (LH) is the sharing of information about trainees between faculty supervisors involved in their education. Those in favour of LH believe it enables the trainee to build upon previous assessments and aligns well with competency-based education. Those opposed are concerned with its potential to bias future assessments. This review summarizes key concepts across multiple disciplines surrounding the influence of prior performance information (PPI) on current ratings.

Methods: Using the Arksey and O'Malley framework, a scoping review was completed to systematically select and summarize the literature from multiple cross-discipline databases. Inclusion criteria were selected to represent PPI relevant to LH in work based performance. Quantitative and thematic analyses were completed.

Results: Of 24,442 records, 24 studies were included. Most studies revealed an assimilation effect; i.e., ratings were biased in the direction of the PPI. Factors modifying this effect were observed with larger effects noted for negative compared to positive PPI, extremes of PPI, good compared to poor target performance and congruent compared to discordant PPI. Existence of specific standards, rater motivation, and certain rater characteristics mitigated context effects, whereas increasing rater processing demands heightened them. Rater expertise and training revealed mixed results.

Conclusion: Knowledge of PPI appears to lead to an assimilation bias across multiple settings. It is not clear if these findings are generalizable to the medical education context, but these findings should be considered by educators contemplating implementation of LH. Future studies should explore PPI in the clinical context and consider more authentic settings.

OA - 7 - 6

A multi-year pilot study of a longitudinal mindfulness curriculum in undergraduate medical education

Heather MacLean University of Ottawa, **Emelie Braschi** University of Ottawa, **Douglas Archibald** University of Ottawa, **Millaray Sanchez-Campos** University of Ottawa, **Danusha Jebanesan** University of Ottawa, **Diana Koszycki** University of Ottawa, **Carol Gonsalves** University of Ottawa

Background/Purpose: A longitudinal mindfulness curriculum in undergraduate medical education was launched in 2014 at the University of Ottawa. Study results are reported.

Methods: Medical students responded to questionnaires on mindfulness, empathy, resilience and perceived stress and were surveyed for demographics, home practice, and subjective experience. Questionnaires were completed at curriculum launch and yearly thereafter.

Results: Decreases in empathy (8%, 118.6 [SD 8.2] vs 107.8 [SD 16.0] p=0.004) and resilience (7%, 74.7 [SD 10.1] vs 67.9 [SD 14.3], p=0.050) are seen over the course of undergraduate medical training. Particularly low empathy and resilience are identified at transition times. Mindfulness correlates positively with empathy (0.286, p<0.001) and resilience (0.539, p<0.001) and negatively with stress (-0.380, p<0.001). Statistically significant benefits are seen in mindfulness (12% higher, 34.0 [SD 6.6] vs 40.9 [SD 9.2] p=0.008), empathy (5% higher, 111.8 [SD9.3] vs 118.2 [SD 11.3] p=0.045) and resilience (12% higher, 69.6 [SD 9.7] vs 81.3 [SD 12.7] p=0.002) and a trend toward improved stress (8% lower, 19.7 [SD 5.9] vs 16.7 [SD 5.9] p=0.080) in students who feel they apply mindfulness curriculum principles. Amount of home mindfulness practice is associated with stronger effects significant for all scales if students practice at least 2hrs per week (14% increase in mindfulness 34.9 (SD 6.6) vs 42.5 (SD8.1) p<0.001; 6% increase in empathy 112.7 (SD 11.9) vs 121 (SD 7.8), p<0.001, 10% increase in resilience 69.1 (SD12) vs 78.7 (SD12), p=0.003; 11% decrease in stress 19.4 (SD5.7) vs 15.2 (SD6.4), p= 0.008).

Conclusion: A longitudinal mindfulness curriculum integrated into undergraduate medical education is feasible. The importance of application of principles and personal practice is highlighted.

OA - 8 - 1

Indigenous students continue to face racial adversity at Canadian medical schools

Brent Young Dalhousie University, **Amanda Sauve** University of Toronto, **Amy Bombay** Dalhousie University

Background/Purpose: Canadian medical schools have committed to increase the admission and retention of Indigenous learners. Despite this, the medical school learning environment has yet to be examined from the perspective of these students at the national level.

Methods: This study surveyed 34 self-identified Indigenous medical students enrolled at 10 Canadian universities. Qualitative and quantitative measures were used to examine student demographics, cultural identity, racial adversity, institutional support, and perceived academic performance.

Results: Only 7. 9% (n=3) of respondents were reportedly raised in Indigenous communities. No students reported an Indigenous language as their first language. Among all participants, half (n=17; 50%) perceived weak ties to their classmates, over a third (n=13; 38. 2%) perceived microaggressions from faculty and/or staff, more than a quarter (n=10; 29. 4%) perceived microaggressions from their classmates, and almost half (n=15; 44. 1%) were able to provide a narrative describing at least one instance where they perceived racism or discrimination in the learning environment. Bivariate analysis showed that student experiences vary significantly when examined from the lenses of Indigenous enculturation and mainstream acculturation.

Conclusion: Indigenous students continue to face racist attitudes at Canadian medical schools. As a community, we must redouble our efforts to extinguish racism from our cultural milieu, and we must strive to achieve equity for Indigenous people pursuing medical education.

OA - 8 - 2

Against the odds: Experiences of Canadian Medical Learners with Disabilities

Pamela Liao University of Toronto, **Tal Jarus** University of British Columbia, **Shyama Das** University of British Columbia, **Vera, MD Krejcik**, **Julia Tikhonova** University of British Columbia, **Alfiya Battalova** University of British Columbia

Background/Purpose: Medical learners have unique accommodations needs given their diverse and ever-changing learning environments, direct contact with patient-care, and systemic stigma. There is very limited policy and resources available to inform medical learners and educators about accommodations . We aimed to identify challenges and opportunities for creating inclusive educational experiences for medical learners with disabilities.

Methods: Phase 1 - a content-based analysis of policies for learners with disabilities at 14 Canadian English medical universities. Phase 2 - interviews with 8 medical undergraduate and resident learners with disabilities. Interviews focused on their experience with policies related to disability in their institutions and recommendations for changes to reduce barriers. Interviews were thematically analyzed.

Results: Policy analysis showed great variance in the policies available for medical learners across the country. Only 5 out of the 14 programs have formal disability offices within the medical school, while others have more ad-hoc approaches. Data from the interviews corroborated this gap in services. Participants identified barriers related to 1) bureaucracy, 2) navigating the system, 3) power dynamics, and 4) perceptions of disability in medicine.

Conclusion: This study identifies gaps in accommodation policies of Canadian medical schools. The main recommendations are to 1) change attitudes and focused engagement and recruitment of students with disabilities, 2) streamline the

delivery of services, and 3) develop capacity among educators and administrators.

OA - 8 - 3

Identity, Trust, and Care: Moving through discomfort towards meaningful care for transgender patients

Lindsay Baker University of Toronto, **Victoria Boyd** University of Toronto, **Emilia Kangasjarvi** University of Toronto, **Stella Ng** University of Toronto, **Beck McNeil** The 519 Church Street Community Centre

Background/Purpose: Our health care system can fall short in providing safe access to care for trans /non-binary (trans) people. Recent funding for gender confirmation surgery has made physicians accountable for meeting this need, with few additional resources. Within this system patients often feel dehumanized, and clinicians feel disempowered. If medical education is to help address these gaps, critical pedagogy offers a way forward. We wanted to explore empirically what critical pedagogy looks like in practice.

Methods: Using a constructivist grounded theory approach, we conducted 18 semi-structured interviews with trans patients and family heath team clinicians in downtown Toronto. This practice context was chosen because we believe critical pedagogy is already occurring in aspects of teaching to care of trans patients. We structured our analysis by exploring re-humanizing practices for patients and empowering conditions for clinicians.

Results: We identified dominant themes from patients and clinicians/clinical teachers. Patients indicated that trust for all aspects of care is fundamentally broken when their identity is denied in early interactions with a clinician or clinical experience. Clinicians/clinical teachers stated that confidence and competence in caring for transgender patients comes from working through feelings of discomfort (e.g. when their assumptions are challenged, knowledge gaps are identified). Both groups attributed positive experiences of care to establishing a place of mutual respect and navigating the system together.

Conclusion: We recommend that medical education extend beyond the characteristics of a patient population, to centre on health professionals' ability to work through moments of discomfort. Critical pedagogy must involve open, safe partnerships between clinicians and patients.

OA - 8 - 4

The Implicit Association Test in Health Professions Education: A Critical Narrative Synthesis

Javeed Sukhera Western University, **Michael Wodzinski** Western University, **Maham Rehman** Western University

Background/Purpose: Implicit bias is an area of interest among health professions educators. Educational strategies used to recognize and manage biases include the use of the Implicit Association Test (IAT), an online metric of response time. Although the topic of implicit bias in healthcare is gaining attention, growing critique of the IAT suggests the need to subject its use to greater theoretical and empirical scrutiny.

Methods: We employed a critical narrative synthesis to review existing research on the use of the IAT in health professions education. Four electronic databases were searched using key terms yielding 1151 titles. After title, abstract and full-text screening, 39 were chosen for inclusion.

Results: Two distinct theoretical perspectives on the IAT were described in the literature. The dominant perspective utilizes the IAT as a metric of implicit bias to evaluate the success of an educational activity aimed at reducing implicit bias in participants. A contrasting perspective considers the IAT as a tool to promote awareness of biases while triggering discussion and reflection. In the latter, the IAT itself is often coupled with a learning activity that involves debrief, discussion or reflection.

Conclusion: Whether used as a tool to measure bias, or to foster reflexive practice, the IAT provokes tension between divergent theoretical perspectives. Our findings suggest that future research regarding implicit bias in health professions may be enhanced by critical reflexivity regarding assumptions, values and epistemological positioning related to the IAT.

OA - 8 - 5

Mistreatment, abuse, unprofessionalism and erosive behaviours: How do medical learners make sense of negative interpersonal behaviour in the clinical workplace?

Meredith Vanstone McMaster University, **Cavanagh Alice** McMaster University, **Block Emily** McMaster University, **Bell Amanda** McMaster University, **Connelly Catherine** McMaster University, **Mountjoy Margo** McMaster University, **Lawrence Grierson** McMaster University

Background/Purpose: Over half of graduating Canadian medical students report experiencing mistreatment or abuse. What type of behaviour are they reporting? Existing definitions of mistreatment and abuse tend to refer to violations of legislation and human rights codes, without addressing the less defined "grey areas" e.g. incivility, neglect, aggression, deception. Drawing upon an understanding of professional behaviour as dynamic and contextual, this research examines medical learner understandings of what constitutes maltreatment in the clinical workplace.

Methods: Using constructivist grounded theory, we conducted semi-structured interviews with 28 Canadian medical students and residents. We elicited personal stories of negative behaviour in the clinical workplace. These stories became the prompts for participant exploration of how learners made sense of their experiences, particularly around the distinction between abusive behaviour compared to behaviour that was rude, erosive or unprofessional.

Results: There was very little consistency across the type of events participants offered as examples of maltreatment, beyond agreement about actions which would qualify as criminal or Human Rights offences. Our data is replete with examples of "grey area" offences. Participants drew on six factors to make sense of their negative experiences in the clinical environment: personal factors, intent, context, relationship, outcomes and target.

Conclusion: This analysis emphasizes the challenge in defining maltreatment in the clinical learning environment, highlighting the importance of considering the holistic context of the experience. The breadth and depth of negative experience defies categorization, lending insight to the complex puzzle of why mistreatment and abuse is so infrequently reported and so difficult to remediate.

OA - 8 - 6

A Human Library Intervention to Address Bias towards LGBTQ Individuals

Michelle Anderson University of Alberta, **Derek Fehr** University of Alberta, **Helly Goez** University of Alberta, **Joanne Rodger** University of Alberta, **Lia Daniels** University of Alberta, **Hollis Lai** University of Alberta, **Vijay Daniels** University of Alberta, **Tracey Hillier** University of Alberta

Background/Purpose: Health disparities amongst the LGBTQ population have been linked to implicit and explicit physician bias. Providing medical students the opportunity for direct communication with LGBTQ individuals is correlated with positive attitudes and reduced bias. This project addressed LGBTQ competency training by using a human library session to increase awareness of and address bias.

Summary of the Innovation: A literature review and curriculum map was conducted to identify gaps in LGBTQ health training within our program. We identified 7 competencies which related to physician bias and health disparities. A working group of LGBTQ community members, educators and health professionals selected the human library approach to address these competencies. Over 50 local LGBTQ individuals were recruited through social media and community organizations to facilitate a half-day human library session. They each discussed their personal experiences of stigma and discrimination with groups of 2-3 medical students. All 2nd year medical students participated and wrote a reflection essay afterwards using the utility-value framework to make it applicable to their own lives and future career. Thematic analysis of these essays was done to assess student's achievement of competencies.

Conclusion: Our project is an example of an innovative educational approach in a medical school curriculum, aiming at decreasing bias and discrimination towards a minority group. It also

demonstrates the value of working with community stakeholders in creating competencies related to understanding diversity in provision of health care. Analysis of results showed students achieved many of the target competencies, including understanding the need for safe healthcare environments, the value of inclusive language, and the impact of stigma on health disparities.

OB - 1 - 1

Improving residents' confidence and accuracy in making clinical judgement: Evidence from a multi-institutional simulation based study

Bren Thoma University of Saskatchewan, **Nancy Dalgarno** Queen's University, **Rylan Egan** Queen's University, **Jeffrey Gu** University of Saskatchewan, **Tamara McColl** University of Manitoba, **Tim Chaplin** Queen's University, **Nicholas Cofie** Queen's University

Background/Purpose: The accuracy of self-assessed performance and clinical judgment of first year on-call residents with limited support is essential for patient safety, resident development and clinical improvement. We investigated whether structured reflection based on self vs. expert assessment improves first year residents' ability to accurately judge their performance.

Methods: We employed variance-components modeling techniques and analyzed 226 self-assessed confidence scores among 59 residents from 15 medical specialties at Queen's University and the University of Saskatchewan. We compared scores prior to and after completing 17 resuscitation scenarios and assessed residents' confidence in making clinical judgement. We also compared residents' post scenario self-assessment scores to physician faculty scores and assessed their accuracy in making clinical judgement.

Results: We found that residents' confidence in making clinical judgement increased significantly between their pre-scenario assessment scores and their post scenario assessment scores ($\alpha = 0.113$, $z = 2.16$, $p = 0.031$). Residents' post scenario assessment scores did not differ significantly from faculty scores ($\alpha = -0.081$, $z = -1.01$, $p = 0.311$), particularly among residents from the University of Saskatchewan ($\alpha = 0.052$, $z = 0.52$, $p = 0.600$).

Conclusion: Residents were more confident after the scenario and their post scenario scores aligned well with faculty scores. Simulation based resuscitation training may increase residents' confidence and accuracy in making clinical judgements.

OB - 1 - 2

Multiple Choice exams at the UGME level: Ensuring quality pre- and post-exam administration

Christina St-Onge Université de Sherbrooke, **Meredith Young** McGill, **Jean-Sébastien Renaud** Université Laval, **Olivia Drescher** Université Laval, **Beth-Ann Cummings** McGill, **Lara Varpio** Uniformed Services University of the Health Sciences

Background/Purpose: Multiple Choice Question (MCQ) exams are a key assessment strategy in health professions education (HPE), frequently used to provide feedback, determine proficiency, and for licensure decisions. However, traditional psychometric approaches for monitoring the quality of MCQ exams require larger samples than are typically available in HPE contexts. We conducted a descriptive exploratory study to document how undergraduate medical education (UGME) programs ensure the quality of their MCQ exams in the context of small cohorts.

Methods: Using a Qualitative Description methodology, we conducted semi-structured interviews with 16 key informants from 10 Canadian UGME programs. Interviews were transcribed, anonymized, coded by the PI, and co-coded by a second team member. Data collection and analysis were conducted iteratively. Research team members engaged in analysis across phases, and consensus was reached on the interpretation of findings via group discussion.

Results: Participants used several indicators of quality for MCQ exams, such as alignment between items and course objectives, and psychometric properties (e.g. difficulty and discrimination). We clustered our findings around two main approaches used by participants: 1) strategies to monitor the quality of MCQ-based exams after use, and 2) strategies to build quality into MCQ exams.

Conclusion: Participants implemented multiple strategies to ensure the quality of MCQ-based exams, in the context of small cohorts. Reported behaviours in this study are aligned with findings of recent work on a conceptualization of validity as a social imperative, in which quality can be 'built into' assessment during the development phase.

OB - 1 - 3

Dual-Purposing Assessment Data: The Impact of Assessment Purpose on Rater Behaviour in the Assessment of Competence

Walter Tavares University of Toronto, **Meredith Young** McGill, **Genevieve Gauthier** Université de Sherbrooke, **Christina St-Onge** Université de Sherbrooke

Background/Purpose: Educational programs have adopted the use of programmatic assessment and the premise that all assessment should be formative in nature, yet be used to inform summative decisions. However, the same assessment event used for different purposes may affect the way raters execute the assessment task. The objective of this study was to explore the impact of foregrounding different purposes of assessment (formative vs. summative) on rater behaviour.

Methods: In this between-groups mixed methods study, participants observed and rated three pre-recorded clinical performances under formative or summative conditions. Participants scored performances using a rating tool and provided narrative comments consistent with the assigned purpose. Both groups were then asked to reconsider their ratings from the alternative perspective and given the opportunity to alter their ratings / comments.

Results: Foregrounding purpose did not alter discrimination between cases, nor did it influence inter-rater reliability. There were no significant differences for narrative comments in terms of amount, type (both emphasized summative over formative statements) or construct representation. When considering an alternative purpose, there were small changes to scores or comments, arguing in general that the way they engage in the process is similar and that the data they generate can be dual-purposed.

Conclusion: We found no evidence that foregrounding assessment purpose results in systematic differences in assessment data generated. Raters seem to emphasis summative over formative statements regardless and suggest what they contribute may be dual-purposed. Future research will need to explore whether these results hold in social / workplace-based contexts.

OB - 1 - 4

An evaluative analysis of rater variability in Modified Personal Interviews for the MD Program, University of Toronto

Yuxin Tu University of Toronto, **David Latter** University of Toronto, **Kulamakan (Mahan) Kulasegaram** University of Toronto, **Hana Lee** University of Toronto

Background/Purpose: Modified Personal Interview (MPI) is a four-station interview for selecting students at the University of Toronto MD Program. With a fewer number of stations, the issue of rater variability may have a greater effect on rating decisions. This study assesses rater variability, the consistency of rater behaviour and makes recommendations to reduce unwanted rater effects.

Methods: MD program applicants who proceed to the interview stage attend four independent semi-structured interviews. Each interview lasts 12 minutes conducted by a single rater and focuses on a set of defined qualities the University of Toronto believe are important in physician performance. Each raters assesses 12 different applicants. Rater variability was analyzed for a 5-year cycle from 2014 to 2018 (3044 applicants; 753 unique raters including 171 repeating raters) using Linear Mixed Models with the type of rater as a fixed factor and applicant and rater as random effects.

Results: The MPI process had inter-rater reliability in the range of 0.442 to 0.515 from 2014 to 2018 and an overall inter-rater reliability of 0.493 in the 5 cycles. This Linear Mixed Model analysis identified

approximately 3% interviewers at each cycle as being too lenient or severe. The data also exhibited a moderate to high level of rater consistency among the repeating raters. The strongest correlation were found in the mean scores and estimates of the 39 repeating raters between 2017 and 2018 cycles (r =0.75 and 0.83).

Conclusion: These findings provide valuable insights into rater rating behavior and can serve to guide future rater training and development of rating scales.

OB - 1 - 5

Taken out of context: hazards in the interpretation of written assessment comments

Shiphra Ginsburg University of Toronto, **Christopher Watling** Western University, **Andrea Gingerich** University of British Columbia, **Jennifer Kogan** University of Pennsylvania, **Chris Watling** Western University, Meghan Lynch University of Toronto

Background/Purpose: Written comments are becoming increasingly valued in assessment processes. However, a culture of politeness and face saving, and a tendency to conflate assessment with feedback, lead to ambiguity in the written language. Reading between the lines is often necessary for interpretation, and is guided by contextual cues. We aimed to explore the elements of context that influence the meaning assigned to written comments.

Methods: We used constructivist grounded theory to conduct and analyze interviews with 17 experienced Internal Medicine faculty, asking them to provide interpretations for two lists of words: those that might be viewed as "red flags" (e.g., good, improving) and those that might be viewed as signaling feedback (e.g., should, try). We focused on how they ascribed meaning to words.

Results: Participants struggled to attach meaning to words that were presented without context. Four elements of context were identified as critical for accurate interpretation: 1) the identity and role of the writer; 2) the intended audiences for the comments, which might shape their construction; 3) the intended purpose(s) for the comments (assessment, feedback, documentation of a permanent record); and 4) the culture, including its norms around assessment language. Contextual cues are not always apparent; thus readers must balance the inevitable need to interpret others' language with the potential hazards of second guessing intent.

Conclusion: Comments are written for a variety of intended purposes and audiences, sometimes simultaneously, which creates dilemmas for those who must interpret them. Attention to context is essential to reduce interpretive uncertainty and ensure that written comments can achieve their potential to enhance both assessment and feedback.

OB - 1 - 6

Scenes, symbols and social roles: OSCE performativity and identities

Gerry Gormley QUB, **Mairead Corrigan**, **Jennifer Johnston** QUB

Background/Purpose: OSCEs are powerful mediators of learning and identity. We used video ethnography to explore these issues, drawing on symbolic interactionism to explore role construction in the core OSCE triad (candidate, standardised patient, examiner).

Methods: Typical summative OSCEs were videoed (n=18 triads, 126 minutes of film). Analysis was iterative, with video data, transcripts and field notes coded interpretively with concurrent memo writing.

Results: Candidate and examiner formed a dyad, with SPs sophisticated 'props'. Examiners played a supporting role, but also formed the audience. Candidates treated OSCEs as a performance, preparing 'backstage'. Reading time constituted a liminal space, before pulling back the cubicle curtain and entering front stage. Performances were defined spatially by physical ecology, in small cubicles resembling clinical spaces and divided by curtains, and temporally by the bells which controlled entry and exit from stations. Both physical symbols (clipboards, stethoscopes) and semiotic symbols were crucial; conversations constituted a recognisable speech genre which bore little relevance to clinical consultation.

Conclusion: OSCEs are performative, constituting important identities and maintaining power relationships. OSCEs performances were tightly scripted and controlled, with resultant identities clearly defined and traditional hierarchies maintained. SPs in particular occupied a subordinate position with little agency. Both physical and semiotic symbols were significant but interactions appeared stilted and bore little relation to real life consultations. OSCEs thus have underrecognised pedagogical implications, including the maintenance of inequal power relations and the need to better reflect clinical practice.

OB - 2 - 1

Towards improved entrustability judgments through exploration of supervisors' real-time assessment

Kimberly Luu University of British Columbia, **Kevin Eva** University of British Columbia, **Neil Chadha** University of British Columbia, **Ravi Sidhu** University of British Columbia

Background/Purpose: Clinical supervisors are known to assess trainee performance idiosyncratically, causing concern about validity. The literature has relied on retrospective interpretation of decisions, risking inaccurate information about perception formation. Capturing in-the-moment information about supervisors' impressions could yield better insight regarding how to intervene. Our purpose is to use real-time judgments to understand when/how assessors make entrustment decisions.

Methods: This was a prospective cross-sectional study of Otolaryngology-Head&Neck supervisors. The real-time recording of rater impressions mimicked polling methods developed to capture shifts in perceptions of political debate. While observing simulated video-based performances, participants adjusted a rating scale in real-time, capturing judgment in 1-second increments. Assessors then provided final entrustability ratings and interviews solicited opinions of how impressions were formed.

Results: 20 participants viewed 2 clinical vignettes. Rater variability was confirmed when real-time rating changes were triggered by different behaviours for different raters. That said, particular moments appeared generally influential, just to varying degree. Correlations between the final assessment and score assigned upon first movement on the scale, upon last movement, and the mean score over time were r=0.13, 0.32, and 0.57, respectively, indicating overall impressions to be cumulative.

Conclusion: Our results demonstrate that real-time ratings can capture idiosyncratic impressions of trainee performance while giving specific guidance regarding what behaviours were most influential. The findings highlight the potential for a new methodology to provide insight into factors that determine assessor judgments.

OB - 2 - 2

Entrustment, competence and tensions in assessment: the realities of entrustment in Internal Medicine

James Rassos University of Toronto, **Lindsay Melvin** University of Toronto, **Lynfa Stroud** University of Toronto, **Shiphra Ginsburg** University of Toronto

Background/Purpose: A key unit of assessment in competency based medical education (CBME) is the Entrustable Professional Activity (EPA). The variations in how entrustment is perceived and enacted across specialties are not well understood. We aimed to develop a thorough understanding of the concept and language of entrustment as it pertains to Internal Medicine (IM).

Methods: We purposively sampled diverse faculty who attend on the IM Clinical Teaching Unit. Semi-structured interviews were conducted and analyzed using constructivist grounded theory. 16 interviews were completed prior to reaching saturation.

Results: Four major themes were identified. 1) The concepts of entrustment, trust and competence are not clearly distinct and were sometimes conflated. 2) Entrustment is often automatic, being pre-determined by program or trainee level, rather than resting on deliberate decisions by supervisors. 3) Tension exists because EPAs are intended to be point-in-time assessments, yet both tasks and relationships between trainee and supervisor in IM are not discrete. 4) Entrustment was perceived as a dichotomous variable, rather than existing on a continuum. Much of the language on the EPA forms did not resonate with how participants view performance and competence. Entrustment or lack

thereof changes supervisor action rather than trainee behaviour.

Conclusion: A tension arises between the need for a common language of CBME and the need for authentic representation of supervision within each specialty. With new assessment instruments required to operationalize the tenets of CBME, it becomes critically important to understand the nuanced and specialty-specific language of entrustment to ensure validity of our assessments.

OB - 2 - 3

Some Assembly Required: 'Problematic evidence' and the interpretative work of Clinical Competency Committees

Rachael Pack Western University, **Sayra Cristancho** Western University, **Chris Watling** Western University, **Lorelei Lingard** Western University, **Saad Chahine** Western University

Background/Purpose: In CBME, Clinical Competence Committees (CCC) must sift and synthesize multiple pieces of assessment data to make decisions about trainee progress. We know little about how they achieve this. We aimed to describe how CCCs interpret, weight and grapple with information about trainee performance to inform their decisions about progression.

Methods: Over 8 months, two researchers observed 10 CCC meetings across four post-graduate programs at a Canadian medical school, spanning over 25 hours and 100 individual decisions. Following each CCC meeting, a semi-structured interview was conducted with one member. Following constructivist grounded theory methodology, data collection and inductive analysis were conducted iteratively.

Results: Members of the CCCs held a shared assumption that learner portfolios would contain high-quality data that would enable them to make fair and transparent decisions. This assumption was frequently challenged by the discovery of what we have termed 'problematic evidence' - evidence that is perceived to be of questionable quality, validity, or reliability - within learner portfolios. When CCCs were confronted with problematic evidence they engaged in effortful discussions informed by a wide range of data, including experiential knowledge, to make sense of the learner's portfolio. This process of effortful discussion enabled CCCs to arrive at individualized decisions that were evidence-informed, yet tailored.

Conclusion: The phenomenon of problematic evidence illuminates that the process of systematically collecting and reviewing evidence of performance does not, by itself, ensure an "objective" decision; rather, interpretation of evidence is often not straightforward, and subjective elements of decision-making are inescapable.

OB - 2 - 4

Competency-based medical education: setting an evidence-informed research agenda

Ryan Brydges University of Toronto, **Victoria Boyd** University of Toronto, **Shiphra Ginsburg** University of Toronto, **Lynfa Stroud** University of Toronto, **Ayelet Kuper** University of Toronto, **Walter Tavares** University of Toronto

Background/Purpose: Competency-based medical education (CBME) is being implemented as an outcomes-based framework for assessment across medical specialties. Many assumptions underlie CBME, relating to its effectiveness, clarity, and how competencies can be assessed. We aimed to collect, synthesize, and evaluate the existing evidence underpinning some previously established key assumptions.

Methods: We conducted a systematic review of publications in Medline from 2000 to November 2017. We included all articles focused on the using CBME in the training or assessment of healthcare professionals and/or on evaluating such programs. We focused on the evidence related to 15 fundamental assumptions about CBME that we identified in a prior critical discourse analysis (e.g., competencies can be assessed as independent constructs). In duplicate, reviewers independently judged whether included studies produced evidence that supported, undermined, or was mixed related to each of the assumptions.

Results: From 7268 abstracts, we identified 526 articles, of which 150 contained evidence related to the 15 assumptions. We found significant amounts of evidence for some assumptions (e.g., there is a linear, progressive pathway to reach competence), and little to no empirical data for others (e.g., CBME training improves patient care). Within the assumptions with ample evidence, our analysis suggests the evidence base for most is mixed.

Conclusion: By analyzing the available evidence for 15 key assumptions of CBME, we have derived a prioritized research agenda highlighting tensions that need resolving (where evidence is mixed), and questions that need asking (where evidence is absent). Our community is now poised to identify and evaluate our assumptions about CBME to ensure evidence-informed implementations.

OB - 2 - 5

Developing academic advisors and competency committee members competencies: A grassroots community approach to Faculty Development

Richard van Wylick Queen's University, **Denise Stockley** Queen's University, **Damon Dagnone** Queen's University, **Kendall Garton** Queen's University, **Eleftherios Soleas** Queen's University, **Ingrid Harle** Queen's University

Background/Purpose: New faculty in medicine undergo extensive training in their residency, but receive little training in being an effective teacher. Since Queen's University has transitioned to a CBME model, the School of Medicine (SoM) required the development of Teaching Competencies among their faculty. This encompasses the changing roles of Academic Advisors and Competence Committee members in this new model.

Methods: This study followed a grassroots, multiphasic approach. First, a systematic literature review of competencies for medical education was conducted (n= 37 eligible articles). Competencies were distilled into those appropriate for Academic Advisors and/or for Competence Committee members. A questionnaire was delivered to stakeholder groups throughout the SoM one year before (n=86) and one year after the transition to CBME (n=136). Participants ranked the competencies they felt were most important and proposed other missing competencies. The resulting competencies were validated using a modified-Delphi process by international CBME experts (n=5).

Results: Our developed competencies were well received with an overwhelmingly positive reception from all stakeholders. Respondents to the survey reported varied levels of approval with a tendency for higher acceptance after CBME implementation. Assessment and mentoring competencies were the most positively received. From the Delphi-process, the validated competencies are the main product of this investigation and were used to develop faculty development modules.

Conclusion: The variety of perspectives provided a rich and comprehensive lens on what is required by faculty to be well-informed Academic Advisors or Competence Committee members. These competencies were informed by literature, molded by expert consensus, but still uniquely aligned to the SoM.

OB - 2 - 6

Anticipating Competence by Design: faculty and resident perspectives

Jason Lord University of Calgary, **Jonathan Gaudet** University of Calgary, **Reuben Eng** University of Calgary, Rachel Ellaway University of Calgary, **Cinde Adegbesan** University of Calgary, **Surakshya Pokharel** University of Calgary, **Kelly Millar** University of Calgary

Background/Purpose: Canadian residency specialty-training programs are transitioning to Competence by Design (CBD). We wanted to understand how learners and teachers perceived this generational shift in medical education to help us in its implementation. We sought to determine how faculty and residents at the University of Calgary perceive the basis for, and the barriers, enablers, and benefits of transition to CBD.

Methods: We surveyed faculty and residents from all programs scheduled to launch between 2017 to 2020 at the time of our study regarding their perceptions

of transitioning to CBD. Data were reported as frequencies or descriptive statistics. Comparisons between groups were performed using independent samples t-tests.

Results: We found a general ambivalence about the need for CBD and concerns over the lack of compelling evidence to support the transition. Participants lacked expertise in all aspects of CBD. Implementation barriers included insufficient time, insufficient training in assessment and feedback, and a lack of faculty engagement. Engaged faculty and residents, effective and supportive leadership and identification of clear expectations and responsibilities were perceived to be important enablers of success. Anticipated benefits included identifying residents in difficulty, and managing performance expectations. Better quality healthcare for society, greater physician accountability and faculty and resident satisfaction were viewed as less important.

Conclusion: We found unanticipated levels of uncertainty and confidence in CBD implementation at our institution. While this is in part to be expected of any change, the specific concerns we identified have changed our implementation strategies for CBD and have implications for the CBD project as a whole.

OB - 3 - 1

Vocal Coaching Through Song: Exploring the Impact of Pedagogical Vocal Training on Clinical Interactions

Bruce Radmacher University of Saskatchewan, **Greg Malin** University of Saskatchewan, **Andrea McCulloch** Voice Instructor

Background/Purpose: Clear physician-patient communication is critical for safe and effective patient care. Patients may be unwilling or unable to comprehend complex material if there is interference in the physician's vocal tone. This research evaluates if singing lessons for medical students improves clinical interactions by improving skill and confidence in correct phonation. Physicians must authentically connect with patients, but first they must connect with their own instrument.

Methods: Four students participated in weekly hour-long, classical singing lessons for 10 weeks. Additionally, participants performed in a group masterclass where they had the opportunity to hear the transformation in each other's voices. Participants applied their vocal skills in a pre-/post-intervention 3-station OSCE-style simulated patient interaction. All interactions were recorded and evaluated for vocal technique. After 10 weeks, exit interviews were conducted to evaluate the participants' journey through this process.

Results: Participants reported not only greater awareness of their own vocal habits and communication deficiencies, but in others' as well. They felt they had developed tools to address these deficiencies. Fear of vulnerability was cited as a reason for poor communication and vocal production. Their ability to manage that fear improved, leading to stronger communication. Participants felt empowered by this new skill.

Conclusion: Students discovered that excavating their unedited voice was a liberating and empowering process. Paring down their voice to its authentic core elicited a clearer tone, and a strong feeling of authenticity and grounding. By empowering physicians to feel comfortable with themselves, patients will feel more comfortable in their presence, and more confident in their abilities.

OB - 3 - 2

Writing as thinking: A study of documentation practices and their implications for medical education

Dillon Bowker McMaster University, **Mark Goldszmidt** Western University, **Jacqueline Torti** Western University

Background/Purpose: Clinical documentation has been described by some educators and trainees as a low-value activity. Moreover, research often examines its value in communication and information storage but not its function in shaping trainee learning and reasoning. The purpose of this study was to explore these latter functions. A better understanding of how documentation supports learning can guide curriculum and future el ectronic documentation development.

Methods: The study was conducted using constructivist grounded theory, with data collection and analysis occurring iteratively. Data included field notes and field interviews from over 50 hours of observing senior medical students and first-year residents during admission and follow-up on an internal medicine ward at an academic centre. Analysis was supported by sensitizing concepts from Pare and Smart's framework for studying workplace-based communications.

Results: From a learning and reasoning perspective, clinical documentation has two critical periods, with different tasks: (1) Before patient encounters - focusing on past medical history, medications and available investigation results- documentation and chart review are used to construct what is known, flag gaps in knowledge and develop a preliminary

understanding of the patient's problem(s); (2) After patient encounters - focusing on results of investigations and the development of the assessment and plan - documentation and chart review are used for sensemaking, the identification of omissions and knowledge gaps.

Conclusion: Clinical documentation is a time consuming but essential task during which trainees make sense of their patients' issues and how to manage them. While documenting, trainees must be able to easily move between existing sources of patient information within the electronic health record.

OB - 3 - 3

Embodied empathy, a phenomenological study of physician touch.

Martina Kelly University of Calgary, **Clark Svrcek** University of Calgary, **Tim Dornan** Queen's University Belfast

Background/Purpose: Empathic physician behavior is associated with improved patient outcomes. One way to demonstrate empathy is touch. Literature identifies a need for more explicit instruction on sensitive use of touch, but research in medical education is limited. To inform teaching, this study examined physicians' experiences communicating with touch.

Methods: Interpretative phenomenological inquiry. Fifteen physicians (7 men), from different specialties, both recent graduates and experienced doctors, described in detail specific instances of touch. Interviews (40-100 mins) were analyzed with template analysis, followed by a process of dialectic questioning, moving back and forth between the data, to synthesize a final interpretation.

Results: Touch was identified as a powerful form of non-verbal communication which established human connection. Physicians used touch to share emotions, demonstrate empathy and presence. Finlay's model of embodied empathy is used to illustrate three levels of empathic engagement through touch; physicians embodied responses in a given context informed possible use of touch. Physicians 'act[ed]-into' the situation, by imagining how a patient might feel. Finally, some physicians, recalled instances where they were unable to differentiate between physical and emotional 'touch', illustrating a 'merg[ing]-with' patient experience. Empathic touch involved attending to shared context, as an intersubjective experience, rather than focusing on the individuality of either experiencer.

Conclusion: Touch shows empathy in clinical practice. Phenomenological accounts of empathy, which emphasize its embodied intersubjective nature, could be used to inform pedagogical approaches to touch in medical education and deepen our understanding of empathy.

OB - 3 - 4

Learning to take a sexual history in the Pediatric population: A Canadian medical school clinical skills curriculum

Alexandra Hudson University of Alberta, **Kim Blake** Dalhousie University

Background/Purpose: Taking a thorough sexual history during clinical interviewing of pre-adolescents and adolescents is a challenging topic to teach in medical school, with limited dedicated curriculum time and patient interactions. There is a need for collaboration and sharing of innovative curriculum ideas across institutions.

Summary of the Innovation: We describe in detail one Canadian medical school's curriculum for sexual history taking in the Pediatric population, including the use of simulated adolescent/parent pairs and a validated patient feedback tool. We also demonstrate the potential for continued use of this tool in postgraduate medical education and with practicing physicians. The Structured Communication Adolescent Guide (SCAG) is a programmatic validated assessment tool developed for HEADSS interviewing skills. Assessment is provided by the patient, not faculty, and is given using a structured guide. It allows for multiple types of feedback (numeric and written) over multiple time points, evaluating for learning rather than of learning. Medical students have an initial observation session of a Pediatrician taking a sexual history when interviewing an adolescent patient/parent pair, and then subsequently practice

these skills with the SCAG in their clerkship. Transgender health sessions have also recently been added to the curriculum framework.

Conclusion: We hope that this presentation will inform attendees of new medical education tools and ideas that can be implemented at their institutions for the teaching of sexual history taking in the pre-adolescent and adolescent patient population.

OB - 3 - 5

Best Practices in Medicine (BPiM): Right-Sizing Laboratory and Diagnostic Imaging Test Orders at a Community Teaching Hospital

Mallory Jackman University of Toronto, **Elizabeth Wooster** OISE/University of Toronto, **Victor Tron** University of Toronto, **Ajay Kapur** University of Toronto, **Rishie Seth** University of Toronto, **Jerry Maniate** University of Ottawa, **Maria Pasic** University of Toronto, **Raheem Kherani** University of British Columbia, **Sharon Mulsant** University of Toronto, **Donna Arab-O'Brien** University of Toronto, **Craig Barnes** St Joseph's Health Centre, **Jennifer Taher** University of Toronto

Background/Purpose: Changes in Canada's demographic trends call for health care reforms, with test utilization as a common target. While overutilization increases financial and resource strain on the health system, underutilization can result in misdiagnoses and deficient patient care. The Best Practices in Medicine (BPiM) project combined a personal audit and feedback system with complementary educational activities to influence practitioner's knowledge-attitudes-behaviours (K-A-B) cycle for test ordering1. By "right-sizing" diagnostic and laboratory test utilization, BPiM aimed to maximize test efficiency and improve patient care.

Methods: Test ordering data (Vitamin D, TSH) was retrospectively collected over a 3 or 6 month period. Personalized score cards were distributed to staff practitioners in relevant departments. Practitioners were invited to complete a supplementary online learning activity, presented as a short guideline refresher in conjunction with an interactive self-reflective survey. One month after online learning was made available, test ordering data was prospectively collected over the same time period, and new score cards were distributed. An institution-wide survey was circulated following audit completion.

Results: The BPiM project was successful in raising awareness and discussion regarding appropriate test utilization. Self-reflective module results, institution-wide survey results and direct feedback indicated that after receipt of their score cards, practitioners engaged in at least one of the following activities: independent reflection, guided reflection, review of test ordering guidelines, discussion among colleagues, or discussion with medical education/administrative personnel.

Conclusion: Employment of evidence-based CPD strategies effectively began the process of "right-sizing" test ordering at this institution, by modifying the K-A-B cycle of practitioners regarding test utilization. 1. Bettinghaus, EP. Health Promotion and the Knowledge-Attitude-Behaviour Continuum. Prev Med. 1986; 15:475-491.

OB - 3 - 6

Developing and Implementing the Best Practices in Medicine (BPiM) Framework: a "Right-Sizing" Test Utilization Campaign

Elizabeth Wooster OISE/University of Toronto, **Mallory Jackman** University of Toronto, Jerry Maniate University of Ottawa, **Ajay Kapur** University of Toronto, **Craig Barnes** St Joseph's Health Centre, **Donna Arab-O'Brien** University of Toronto, **Maria Pasic** University of Toronto, **Victor Tron** University of Toronto, **Rishie Seth** University of Toronto, **Raheem Kherani** University of British Columbia, **Sharon Mulsant** University of Toronto, **Jennifer Taher** University of Toronto

Background/Purpose: In Canada test ordering continues to increase, disproportionate to demographic shifts. Systematic reviews identify common sustainability, generalizability and quality issues among campaigns targeting this problem. These campaigns often overlook the impact of underutilization and misutilization by exclusively targeting overutilization. A 2010 Institute of Medicine

report[1] emphasized the importance of realigning continuing medical education (CME) with the constructs of continuing professional development (CPD) to translate practice guidelines into high quality care. Targeting multiple facets of inappropriate resource utilization with a multi-level, interdisciplinary, evidence-based CPD framework may be the key to effectively implementing test ordering best practices.

Summary of the Innovation: The Best Practices in Medicine (BPiM) project combines evidence-based facets of successful and accessible CPD delivery[2] to promote a culture of continuous improvement in test ordering practices across hospital departments. The delivery framework includes a phased, sequential, personalized audit & feedback methodology, combined with self-reflective online educational activities. The program focuses on "right-sizing" diagnostic and laboratory testing. Self-directed behavioural modifications are supplemented with systems level measures to promote sustainable change.

Conclusion: Outcome analyses indicate success in raising awareness and discussion of appropriate test utilization, and beginning the behavioural change process. The BPiM framework is a long-term test utilization program which makes use of existing infrastructure to effectively support institution-wide resource stewardship and improve patient care. Ultimately, this framework will be used to develop and implement an automated internal auditing system. Suitable for many health institutions, BPiM is capable of improving physician performance and patient health outcomes (as described by Moore[3]) related to appropriate resource utilization.

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OB - 4 - 1

Addressing the Opioid Crisis: Evaluating the Safer Opioid Prescribing Program (SOP)

Justin Hsu University of Toronto, **Abhimanyu Sud** University of Toronto, **Kathleen Doukas** University of Toronto, **Amber Miatello** University of Toronto, **Morag Paton** University of Toronto

Background/Purpose: Overprescribing opioids for chronic pain is a contributor to the opioid crisis in Canada. Education has been identified as a key intervention but there is lack of evidence in terms of what constitutes programs that are effective in changing prescribing practices. Opioid related harms have been disproportionate in rural and remote communities; thus, accessibility of education programs must be integrated when considering program effectiveness. Traditional asynchronous online programs suffer from low completion rates and thus a low likelihood of substantially changing practice. Safer Opioid Prescribing is a multi-intervention, blended learning and flipped classroom educational intervention developed according to Moore's Framework. The content is based on national clinical practice guidelines.

Methods: We conducted a mixed methods retrospective program evaluation of SOP participant data from 2014-2017. This presentation will report on descriptive statistics relating to multiple variables of participation and satisfaction.

Results: Of the 518 participants, 77% were family physicians and 7.7% were emergency physicians. 97.8% of webinar and 95.2% of workshop participants reported the workshop as balanced and unbiased. In terms of relevance to practice, the program was consistently rated highly relevant, in the 90th percentile. 88% of participants completing the first webinar completed the full series.

Conclusion: This study adds to existing evidence that CPD can contribute to solutions in the opioid crisis. A diligent application of program development and evaluation is feasible and effective, and achieved objectives at Moore's Framework levels of participation and satisfaction.

OB - 4 - 2

CPD by the Minute: an innovative use of mobile technology to improve continuing medical education and physician self-assessment

David Wiljer University of Toronto, **Peter Slinger** University of Toronto, **Alexandra Rotstein** University of Toronto, **Rebecca Charow** University Health Network, **Brent MacLellan** University of Toronto, Connor Moore University Health Network, **Tina Papadakos** University Health Network, **Meredith Giuliani** University of Toronto

Background/Purpose: In the Royal College Phase II Report evaluating its Maintenance of Certification program, its members reported lack of time and self-assessment activities as significant barriers to participation, with two-thirds advocating for the provision or development of more self-assessment programs. Given that physicians traditionally lack proficiency in self-assessment, we developed and evaluated the feasibility of the 'CPD by the Minute' mobile application ("app").

Summary of the Innovation: App users are sent two multiple choice questions each week, having one minute per question, after which, the correct answer and references providing relevant background information are displayed. Utilizing frequent, low-stakes testing, learners can identify areas of strength and weakness, increasing the effectiveness of subsequent learning and self-assessment. Our feasibility study consisted of 17 participants (staff, fellows, residents) from the University of Toronto's Department of Anesthesia using the app for a 5-week trial period and completing a post-trial usability survey and follow-up interview.

Conclusion: Users reported this app was an effective learning tool (13; 76.5%) and indicated high ease of

use (11;64.1%). From the interviews, we learned that users valued the minimal time commitment, automation, and quality of the MCQ and feedback, but sought a performance comparison feature to contextualize their performance against their peers. As such, this innovation has several unique strengths: accessible to physicians in a variety of practice settings, knowledge strength and weakness identification, low ongoing time commitment, longitudinal performance tracking, potential for spaced repetition of learning over time, and adaptable for any specialty.

OB - 4 - 3

Rethinking CPD: Building a simulation program through collaboration

Patricia Wade Fédération des médecins spécialistes du Québec, **Sam J. Daniel** Fédération des médecins spécialistes du Québec, **Marie-Josée Bouchard** Fédération des médecins spécialistes du Québec, **Martin Tremblay** Fédération des médecins spécialistes du Québec

Rationale/Background: The Royal College MOC program requires specialists to complete 25 self-assessment credits over 5 years. New regulation in Quebec requires 10 hours of practice assessment to maintain licensure. Practice assessment activities are not readily available for medical specialists.

Instructional Methods: After a comprehensive needs assessment, we concluded that centers focused the majority of their programs on students and simulation programs for specialists were limited. Course description and learning objectives were difficult to find on organizations' websites.

Target audience: To meet our members' needs, we collaborated with five centers to update their simulation courses and several experts to develop new courses for specialists. The objective was to offer multiple simulation sessions in a one day program and develop long-term partnerships with accredited simulation centers and experts.

Summary/Results: In 2017, our one day program offered 13 simulations in 5 centers. 250 participants experimented with simulation as a new CPD approach. Participants were highly satisfied with the content and the experts. 90% of participants stated they would change specific aspects of their practice. 95% stated they would participate in simulation again. Using standardize assessment tools, experts from every session reported an increase in participants' competencies.

Conclusion: Despite skepticism from Program Directors as to the need for simulation programs for specialists, our success anchored this need in the simulation community. Rethinking CPD needs for physicians and developing partnerships allows organizations to offer innovative programs. In 2018, we are offering our 2nd simulation day and added new partners.

OB - 4 - 4

A Needs Assessment to Support Implementation of the Electronic Medical Record (EMR) in Newfoundland and Labrador (NL)

Pamela Snow Memorial – University of Newfoundland, **Vernon Curran** Memorial – University of Newfoundland, **Lisa Fleet** Memorial – University of Newfoundland

Background/Purpose: In 2017/2018, the Office of Professional Development (OPD), Faculty of Medicine, Memorial University collaborated with the Newfoundland and Labrador Centre for Health Information (NLCHI), the Newfoundland and Labrador Medical Association (NLMA), and eDOCSNL to explore physician and administrator perceptions and experiences of using an electronic medical record (EMR) and specifically, the provincial EMR (Med Access).

Methods: Mixed-methods: literature review; environmental scan; online survey-questionnaire (with users/non-users of Med Access); and semi-structured interviews with administrators/practice advisors.

Results: Forty-seven (N=47) current Med Access users responded to the survey (response rate 35.3%). There were N=58 non-Med Access user respondents and N=2 interview respondents. The majority of survey respondents, regardless of EMR experience,

recognize the potential value of using an EMR in practice. Benefits include continuity of patient care, improved quality of patient care, access to patient resources, improved patient safety, and improved efficiency and workflow. Current Med Access users report concerns related to patient workflow and patient care. Non-Med Access users report perceived challenges around workload and increased time for data entry. Interview respondents suggest that physicians tend to underestimate the adoption process and potential learning curve of using an EMR in practice.

Conclusion: The data collected highlighted the perceived and unperceived educational needs of physicians related to using Med Access in practice and supported the development of a CPD strategy to address these needs. Some suggestions for training included: the provision of templates, referral and consultation tools; and ongoing support for workflow and transition.

OB - 4 - 5

Physician Continuous Quality Improvement in Rural British Columbia: A Qualitative Analysis

Bob Bluman University of British Columbia, **Brenna Lynn** University of British Columbia, **Dilys Leung** University of British Columbia, **Dawson Born** University of British Columbia, **Ray Markham** University of British Columbia

Background/Purpose: Engaging physicians in practice improvement (PI)/quality improvement (QI) activities is an important component of improving healthcare, enhancing patient and provider experience, and reducing the cost of care (Geonnotti, 2015). Although the importance of continuous quality improvement (CQI) has been recognized for decades, sustaining a CQI culture is a daunting undertaking especially in rural and remote settings. The following research questions were determined in order to understand how to better support effective PI/QI in rural BC: (1) What is the interest and understanding of rural physicians to engage in PI/QI? (2) What is the willingness and readiness of rural physicians to engage in PI/QI? (3) What has enabled rural physician's success in engaging in PI/QI? (4) What are barriers for rural physicians to engage in PI/QI? (5) What would help for rural physicians to be able to engage more fully in PI/QI?

Conclusion: Seven 90-min focus groups were held with 33 participants and were designed to increase our understanding of how to support and engage rural practitioners in CQI as part of a larger study that included a survey. Participants included rural physicians (family physicians and specialists, fee for service and alternate payment model physicians, team and facility-based providers), program leaders, and health regulators. Transcripts were coded independently by research team members using NVivo and then discussed and condensed into thematic categories.

Results: Analysis revealed that the following themes were essential to enabling CQI for rural physicians: imbedding approaches into current practice, compensation models and incentivization, collaboration and feedback, accountability, team-based approaches, support staff, access to high quality data, creating a culture of safety - permission to be wrong as a way to promote a culture of learning. Additionally, the relationship and tensions between quality improvement and quality assurance along with the importance of "fire walling" was elucidated as a major theme.

Conclusion: Significant barriers, enablers and support gaps were identified in the PI/QI process. The findings will highlight and inform resources and educational programming to better support improved PI/QI for BC rural physicians.

OB - 4 - 6

Reaching Far and Wide: Assessing the Uptake of British Columbia (BC) Centre for Excellence in HIV/AIDS (BC-CfE) Multimodal Learning Opportunities

Silvia Guillemi British Columbia Centre for Excellence in HIV/AIDS, **Cathy Puskas** British Columbia Centre for Excellence in HIV/AIDS, **Karah Koleszar** British Columbia Centre for Excellence in HIV/AIDS

Background/Purpose: The expansion of HIV testing and treatment (TasP®) and HIV prevention strategies in BC, required innovative learning strategies for health care providers and the community. Using program registration and evaluations, we assess the uptake of multimodal BC-CfE educational programming from 2011 to 2018.

Summary of the Innovation: BC-CfE Clinical Education and Training Program developed a series of learning opportunities including: lecture-based (HIV/ARV Update, Forefront Lecture Series, HIV Care Rounds, GP-CPD Evenings, Journal Clubs, and BC Corrections lectures), online (Webinar Learning Series, courses, and mentorship forum), and onsite clinical training (Intensive Preceptorship Training (IPT), enhanced skills residency (PGY3), and elective placements for medical trainees. From Jan. 2011 to Jun. 2018, over 13,446 participants engaged in these programs, including 11,421 in lecture-based events, 1,441 through online learning, and 584 with onsite training. Broad and differing professional and geographic profiles were observed across education and training formats. Lecture-based events were attended by health care providers (79%), community workers (9%), and others (12%); participants in onsite clinical training were: 49% medical residents, 18% medical students, and 17% clinicians (IPT participation: 78% physicians, 22% nurse practitioners); and online opportunities attracted diverse professions from all provincial health authorities, and out-of-province/international trainees (29%).

Conclusion: These multimodal education and training programs for HIV prevention and care in BC increased learning opportunities and decreased interprofessional and geographic barriers to continuing professional development of health care providers and community workers in BC.

OB - 5 - 1

Aligning Requirements of Training and Assessment in Radiation Planning in the Era of Competency-Based Medical Education

Catherine de Metz Queen's University, **Maria Kalyvas** Queen's University, **Nikitha Moideen** Queen's University, **Eleftherios Soleas** Queen's University, **Nancy Dalgarno** Queen's University, **Rylan Egan** Queen's University, **Angela Coderre-Ball** Queen's University

Background/Purpose: Radiation treatment planning (RTP) is a unique skill that requires interdisciplinary collaboration among Radiation Oncologists (RO), Dosimetrists, and Medical Physicists (MP) to train and assess residents. With the adoption of competency-based medical education (CBME) in Canada, it is essential that residency program curricula focus on developing competence in RTP.

Methods: This qualitative study of one academic hospital RO department's RTP approach conducted 4 focus groups with ROs (n = 11), Dosimetrists (n = 7), MPs (n = 7), and Residents (n = 7), and interviews with one Resident and 2 ROs. Thematic analysis revealed the strengths challenges, and opportunities for change in RTP.

Results: Stakeholders described program strengths including effective teaching, and increased student learning and engagement through competency-based assessment. They believe CBME will catalyse more useful and frequent resident feedback. Emergent challenges included workload demand exacerbated by providing quality learning opportunities versus the costs of delaying treatment to patients, ensuring explicit expectations for competence at each stage of development, increasing direct coaching of residents, and ensuring systemic change. Stakeholders suggested opportunities for improvement including developing case libraries where Residents could practice their RTP in a safe-space without delaying time-sensitive RTP, developing structured RTP assessments, providing consistent policies for RTP, and developing teaching and learning strategies for developing quality RTPs.

Conclusion: There is a need to modify treatment planning competency development of RO residents to better align training and assessment in a competency-based framework. Our findings will help guide our future endeavours and other programs implementing a CBME curriculum.

OB - 5 - 2

A systematic review of content rating methods for courses in medical schools

Marcel D'Eon University of Saskatchewan, **June Harris** Memorial – University of Newfoundland, **Claire Wright** Chaminade University, **Harold Bull** University of Saskatchewan, **Greg Malin** University of Saskatchewan, **Kyle Anderson** University of Saskatchewan, **Damon Sakai** University of Hawaii, **Trustin Domes** University of Saskatchewan, **Kalyani Premkumar** University of Saskatchewan

Background/Purpose: Selecting content for courses is one of the most important activities of curriculum and course development. Medical knowledge is growing and new topics are being added to an already crowded curriculum. Course planners need to make decisions about the amount of content to include and/or exclude. The purpose of our systemic review was to identify, analyze, and critique the approaches that medical schools have used to rate content so people are better equipped to make these content decisions.

Methods: We searched MEDLINE, Embase and ERIC data bases with content, courses, undergraduate, medical school, and curriculum among others and found 8251 articles published between 2002 and 2017. At least two authors screened the titles and abstracts, then conducted full text reviews, and finally data extraction. We started with 8251 titles, then 182 articles for full text review finally arriving at 106

articles for data extraction. Disagreements were resolved by discussion (phone, email, or in person).

Results: A wide variety of methods are used to identify and then rate content for courses or parts of courses:

- The most popular method was the Delphi technique
- Few of the studies justified their choices for method, judges, criteria, and threshold for including or excluding content
- Studies rarely attempted or planned to empirically validate their choices of content

Conclusion: A wide range of content rating methods are used in medicine with little rationale or justification. Further research on the various elements of the rating methods is needed to determine their efficacy and validity.

OB - 5 - 3

When Strangers MEET: Making Every Encounter Therapeutic

Adrienne Tan University of Toronto, **Zarah Chaudhary** University of Toronto, **Maria Mylopoulos** University of Toronto, **Sanjeev Sockalingam** University of Toronto

Background/Purpose: Relational aspects of patient-physician communication are often embedded within communication skills courses utilizing algorithms and pre-formulated clinical scenarios. This study explored pre-clerkship medical students' experiences in a therapeutic communication curriculum that allowed patients and medical students to co-construct the clinical encounter.

Summary of the Innovation: MEET (Making Every Encounter Therapeutic) involves 4 sessions: two small group sessions and two unstructured individual patient encounters involving "real world" patients from a preceptor's practice. Students were instructed to try and make a connection with the patient's illness narrative. Feedback following patient interviews involved patients, preceptors and student self-reflection immediately following patient encounters. At a final small group debrief session, students were asked to provide a written reflection to the prompt, "What did you learn about listening and responding to patient's stories from this experience?" Qualitative analysis of 25 student reflections were analyzed for themes about students' experiences in an unscripted clinical encounter.

Conclusion: Three key learning experiences emerged from analysis of medical students' reflections: experiencing the value of the patient perspective; struggling during an unstructured encounter with a complex population; and the importance of receiving immediate, targeted feedback. Providing opportunities for pre-clerkship medical students to participate in observed, unscripted clinical encounters may allow for the challenge and support needed to grapple with the uncertainty, novelty and complexity in communicating with patients in clinical settings. Such opportunities may also foster important capacities required for lifelong learning: learning from failed problem-solving attempts or so-called "productive failure"; critical reflexivity and adaptive expertise.

OB - 5 - 4

Competency-based Internal Medicine Point-of-Care Ultrasound Super User Program

Drew Brotherston University of Calgary, **Janeve Desy** University of Calgary, **Marcy Mintz** University of Calgary, **Irene Ma** University of Calgary

Background/Purpose: Point-of-care ultrasound (POCUS) is increasingly used in Internal Medicine but the limited number of trained faculty remains a barrier for training programs. Peer training may offer a solution.

Summary of the Innovation: Our group developed the 'Ultrasound Super User Program' to provide focused, longitudinal POCUS training to pre-selected first year Internal Medicine residents ("super users", n = 5). Super users attended six monthly sessions, each lasting 4 hours led by 1-2 POCUS preceptors on an Internal Medicine Inpatient Unit. The sessions covered: basic and advanced knobology, image optimization, thoracic ultrasound, abdominal free fluid, inferior vena cava, internal jugular vein, focused

cardiac ultrasound, renal ultrasound, and image review. To assess skill acquisition, competence in performing and interpreting thoracic scans was serially tracked in four workplace-based assessments over six months. The assessment tool consisted of a 32-item checklist, with five potential diagnoses and a summary 5-point global assessment of entrustability (1=preceptor had to do, 2=preceptor had to talk trainee through, 3=preceptor had to prompt, 4=preceptor needed to be there just in case, 5=preceptor didn't need to be present). Entrustability is attained with scores of 4 or higher. Baseline mean entrustability was low [2.6 ± standard deviation 0.5], but improved significantly at six months (4.3 ± 0.5, P=0.006). Diagnostic accuracy for the five diagnoses did not increase significantly (68 ± 30% vs.100 ± 0%, P=0.18).

Conclusion: Incorporating longitudinal assessments in a peer training program can assist in determining competency and entrustability.

OB - 5 - 5

Responding to requests for hastened death: Promoting quality care and education in the era of medical assistance in dying

Kayonne Christy McMaster University, **Meredith Vanstone** McMaster University, **Lawrence Grierson** McMaster University, **Joshua Shadd** McMaster University, **Alexandra Farag** McMaster University, **Tejal Patel** McMaster University

Background/Purpose: Medical Assistance in Dying (MAiD) allows health care providers to administer or prescribe medication for the purpose of ending a patient's life. With the 2016 legalization of MAiD in Canada, physicians must be prepared to respond to these requests in a way that provides high quality care for patients and their families. As a first step to creating Canadian educational materials, we aimed to understand how physicians and nurses in other jurisdictions that permit MAiD make sense of, and respond to, patients' expressed wishes for hastened death.

Methods: A systematic review and qualitative meta-synthesis of the empirical qualitative literature relevant to the research question were conducted. This included 19 studies describing perspectives of physicians and nurses in five jurisdictions in which MAiD is legal.

Results: The analysis identified that sensitive responses to a patient's hastened death request require providers to engage in 'sense making' across 7 distinct domains: the patient-provider relationship, their professional roles and identities as providers, their emotional/psychological responses to the request, their personal values/beliefs, patient autonomy, the actual request for hastened death, and the regulations pertaining to MAiD in their jurisdictions.

Conclusion: The identified domains for sense-making provide insight into the processes that inform sensitive provider responses to patients' requests for hastened death. These findings are instructive for the development of educational material that will foster compassionate care for those requesting MAiD.

OB - 5- 6

A Theory-based Curriculum, a Medical Student, and a CBL Tutor Walk into a Bar: Evaluating Curriculum Enactment, Adaptation, and Resistance during Reform

Betty Onyura University of Toronto, **Jana Lazor** University of Toronto, **Sechiv Jugnundan** University of Toronto, **Claudia Barned** McGill, **Victoria Boyd** University of Toronto

Background/Purpose: Curriculum reform is often motivated by the desire to introduce evidence-informed educational practices. In medicine, reform is further motivated by a desire to ensure responsiveness to emerging healthcare needs. However, implementing and sustaining curricula change is a formidable challenge. As agents of curriculum delivery, medical teachers are central to successful enactment of reform and the teacher-curriculum relationship warrants further study. This research explores how curriculum reform is enacted by medical teachers, from the perspectives of teachers and students. Within the context of a new case-based learning (CBL) curriculum, we examine how tutors and students enact, adapt, or discount key

curricular principles with specific implications for faculty development.

Methods: We conducted 19 CBL tutor interviews and 3 student focus groups (N=19). After iterative review of select transcripts, interview data were analyzed using directed summative content and matrix analyses, as well as by cross-case comparison.

Results: Tutors were generally attuned to the principles underlying the curriculum; yet, made multiple adaptions within their teaching practice. Whereas some modifications advanced curricular goals, others undermined them. Factors influencing adaptations included pedagogical beliefs, affective concerns, quality of curricular materials, and students' learning practices. Students enacted and subverted curricular processes in response to personal beliefs, work demands, and tutors' teaching practices.

Conclusion: Medical teachers have a participatory relationship with the formal curriculum, which can varyingly enhance or subvert curriculum goals. Sustainable reform requires greater attention to the teacher-curriculum relationship and expanded strategies for faculty development.

OB - 6 - 1

The Impact of Self-Reported Socioeconomic Disadvantage and Education-Occupation Classification on MD Application Metrics at the University of Calgary

Ian Walker University of Calgary, **Shannon Cayer** University of Calgary

Background/Purpose: Available data suggest that socio-economic disadvantage is negatively association with academic measures used in the assessment of MD applicants, but its impact on other elements such as interview / MMI scores is largely unknown. The "Education / Occupation" or EO scale has been previously validated as measure of socio-economic status.

Methods: All applicants for the 2017-18 cycle were given the opportunity to provide parental education and occupation information and self-report socioeconomic disadvantage as a supplement to their application. This information was not used in the assessment of applications. For each applicant who provided the required data, an EO category was calculated. Mean scores across file review categories, GPA, MCAT and interview scores of applicants in each of the 5 EO categories were compared using an ANOVA. A t-test was used to to compared mean scores on the same metrics between those applicants who self-reported socio-economic disadvantage vs those that did not.

Results: 94.5% of applicants provided the information necessary to assign an EO category. 95.4% answered the self-reported disadvantage question. Our analysis showed a clear positive association between EO classification and the academic metrics (GPA and MCAT scores), but no relationship with any other scores used in the assessment of MD applicants. Although no overall relationship with MMI scores was noted, a single MMI station specifically designed to assess empathy for the lives of marginalized populations showed an negative association between SES status / EO category and performance (p=0.024) A total of 151 applicants and 54 interviewees self-reported socioeconomic disadvantage. These applicants scored lower on all measures of academic ability (p=0.004 to

Conclusion: The admissions process at the University of Calgary has been designed intentionally to mitigate advantages associated with socioeconomic privilege. Our analysis suggests that at a single institution, the impact of socioeconomic status on admissions outcomes can be restricted to traditional academic metrics and remain modest overall. The possibility that interview stations could potentially be designed specifically to play to the strengths of socio-economically disadvantaged applicants is intriguing and worthy of further study.

OB - 6 - 2

Experiences of Black physicians/physician trainees in medicine in Ontario

Joseph Mpalirwa University of Toronto, **Aisha Lofters** University of Toronto, **Joseph Mpalirwa** University of Toronto, **Onye Nnorom** University of Toronto, **Mark Hanson** University of Toronto

Background/Purpose: Black physicians and trainees constitute a minority physician group within Ontario. Further, the size of Ontario's Black physician and trainee population is unknown. As an initial step towards advancing Black physician and trainee representation in Ontario, we conducted a survey of this group to better appreciate the influences of visible minority status upon their education and career paths.

Methods: An anonymous online survey of Ontario's physicians and trainees who self-identify as Black/of African descent was administered through the Black Physicians' Association of Ontario (BPAO) list serve. A snowballing sampling method was employed whereby BPAO members forwarded the survey to eligible non-BPAO colleagues to maximize response.

Survey data was qualitatively analyzed and key themes described.

Results: 51 responses were obtained. Data was categorized into themes: ethnicity influences on career, positive (patient impact/collegiality) and negative (racism/discrimination) experiences and mentorship. Participants reported influences upon selection of practice location but not career choice. Positive experiences included collegiality with Black colleagues and strong bonds with Black patients. Negative experiences included various forms of racism (overt racism to microagressions) and differential treatment from peers, superiors and patients. Mentorship was lacking with a strong call for increased mentorship particularly from mentors with similar backgrounds.

Conclusion: Ontario's Black physicians and trainees confront complex experiences through their training and into their careers. Increasing awareness of these experiences across medical, hospital, patient and public communities, and the building of mentorship networks may be key to fostering sustainable education and career paths for minority Black physicians and trainees.

OB - 6 - 3

Islamophobia in Residency

Anita Balakrishna University of Toronto, **Glenys Babcock** University of Toronto, **Mariela Ruetalo** University of Toronto, **Glen Bandiera** University of Toronto, **Lisa Robinson** University of Toronto

Background/Purpose: A key purpose of the University of Toronto's 2017 annual survey of residents was to better understand the experiences of Muslim residents, particularly those who say their religion is "easily identifiable" by their appearance, and to understand who was engaging in this type of inappropriate behavior.

Methods: From March 31 to May 8, 2017, we conducted an online survey of all University of Toronto residents and received a 53% response rate (n=1080).The sample data were weighted by gender to match the known resident population gender ratio.

Results: We conducted univariate and nested bivariate analysis. Only a slightly larger proportion of Muslim residents than the resident population as a whole said they had experienced discrimination during the past academic year (41% vs. 33%); however, 60% of Muslim residents whose religion is 'easily identifiable' by their appearance had experienced discrimination during the past academic year. The data show surprising patterns in the perpetration of discrimination and harassment. Twice as many Muslim residents (32%) than Christian (15%) or Jewish (17%) residents experienced discrimination/harassment from faculty. Further, Muslim residents whose religion is identifiable were twice as likely as other Muslim residents to have experienced discrimination and harassment by U of T faculty members (44% vs. 20%). Only 6% of residents who experienced discrimination/harassment reported all incidents.

Conclusion: The survey findings indicate strongly that identifiably Muslim residents are targeted for discrimination, including by faculty, residents and other healthcare workers. The data offer direction for responding to discrimination and harassment with targeted programming for faculty.

OB - 6 - 4

Equity: Colliding Perceptions of Advantage among Medical Students

Glenys Babcock University of Toronto, **Mariela Ruetalo** University of Toronto, **Onye Nnorom** University of Toronto, **Anita Balakrishna** University of Toronto, **Lisa Robinson** University of Toronto

Background/Purpose: With society divided between call for greater diversity and laments of 'reverse discrimination' and with medical schools committed to greater diversity, equity and inclusion, this study was undertaken to understand how medical students perceive the equitable treatment of their fellow students related to gender and race/ethnicity.

Methods: An online survey of all first and second year medical students at the University of Toronto was conducted in May 2018, which resulted in a 62% response rate (n=159). Sample data were weighted by

gender nested in MD year to match the known population data.

Results: Among first and second year medical students, 6% say female students in their MD program get preferential treatment, while 17% say male students get preferential treatment. Four times more females than males say that male students get preferential treatment (26% vs. 7%); conversely, fewer females than males say male students get preferential treatment (1% vs. 11%). With respect to race and ethnicity, 33% of Non-Caucasian students feel that Caucasian students get preferential treatment, while only 4% of Caucasian students feel they do. Non-Caucasian females and males feel the same what about the treatment of Caucasians; however, 17% of Non-Caucasian males say female students get preferential treatment compared to 0% of Non-Caucasian females.

Conclusion: Conflicting perceptions of unfair advantage may impact student morale, learning, well-being, and relationships with faculty and fellow students, as well as impede implementation of programs intended to enhance diversity, equity, and inclusion.

OB - 6 - 5

"Visibility as survival, visibility versus survival": The experiences of trans and gender non-conforming medical students in balancing professionalism, authenticity, and safety

Kat Butler McMaster University, **Albina Veltman** McMaster University, **Adryen Yak** University of Toronto

Background/Purpose: Trans and gender non-conforming (TGNC) people face significant health disparities compared to their cisgender (non-trans) counterparts. Physician-level factors play a role in these disparities, and one avenue to improve physician ability to care for diverse patients is to increase the participation of individuals from under-represented communities in medical training. Over the last two decades, multiple calls have been made to increase the representation of medical students from lesbian, gay, bisexual, transgender, and queer (LGBTQ+) communities, and a small number of studies exist which examine the experiences of LGB medical students, however little is known about the experiences of TGNC medical students. This study aimed to understand how TGNC students navigate the process of medical training in Canadian universities.

Methods: Seven participants completed semi-structured interviews. Inclusion criteria included (i) identification as TGNC and (ii) being currently enrolled in or recently graduated from a Canadian medical school. The authors transcribed interviews verbatim and analyzed them using a constructivist grounded theory approach.

Results: The authors developed five overarching themes. These included (i) navigating cisnormative medical culture; (ii) balancing authenticity, professionalism, and safety; (iii) negotiating privilege and power differentials; (iv) advocating for patients and curricular change; and (v) seeking mentorship in improving access and quality of care to TGNC patients. This presentation will focus on the theme of balancing authenticity, professionalism, and safety.

Conclusion: The results of this study provide rich and contextualized data regarding the experiences of TGNC medical students and suggest avenues of intervention for institutions seeking to support the well-being of TGNC learners.

OB - 6 - 6

What's in a name: An analysis of ethnic origins of patient and provider names in Case-Based Learning

Inna Berditchevskaia University of Toronto, **Amira Balbaa*** University of Toronto, **Sylvie Bowden*** University of Toronto, **Sarah Freeman*** University of Toronto, **Abirami Kirubarajan*** University of Toronto, **Natalie Klostermann*** University of Toronto, **Mariam Naguib*** University of Toronto, **Jana Lazor** University of Toronto, **Mariam Naguib** University of Toronto

Background/Purpose: At the University of Toronto, Case-Based Learning (CBL) is medical learners' first introduction to patient care through exposure to

virtual cases. CBL aims to reflect the patient populations and health care needs that students will see in their training and beyond. With the recent student-led development of an educational primer on social identities in medical curriculum (1), a group of students looked to investigate the diversity and ethnic origins of patient and provider names used in CBL cases, and whether names are reflective of Toronto's diverse population.

Summary of the Innovation: All patient and healthcare provider names used in 56 cases were extracted and categorized by most likely ethnic origin. Amidst the CBL patient population, names of non-European origin were used 17% of the time with a range of 4-46% between courses; amidst the provider population, this value was 27% (20-33%). Based on most recent census data, 53% of the Greater Toronto and Hamilton Area (GTHA) population identifies as being of non-European origin, suggesting an opportunity to enhance how CBL cases reflect the surrounding population. Consultations with faculty led to the creation of patient and provider name banks, which proportionally represented common ethnic origins reflected in the census. The name banks were validated through community consultation from peers who self-identified as being of each ethnic descent represented. The name banks were provided to curriculum leadership for consideration when using names in CBL cases.

Conclusion: A purposeful approach to selecting patient and provider names can help learners envision a variety of future patients and colleagues, ultimately sensitizing them to diversity, creating an openness to inclusion, avoiding stereotyping, and making them better future physicians.

References:

1. http://ofd.med.utoronto.ca/resources/portraying-social-identities

OB - 7 - 1

Identifying hawkish and dovish faculty assessors in anesthesiology clinical assessments

Melinda Fleming Queen's University, **Nancy Dalgarno** Queen's University, **Nicholas Cofie** Queen's University, **Michael McMullen** Queen's University, **Rylan Egan** Queen's University

Background/Purpose: Performance-based assessments in residency training have been shown to be invaluable methods for assessing medical knowledge and clinical skills, yet the use of human judgement makes such assessments vulnerable to rater effects. To assess effectiveness, we present a method of identifying hawkish and dovish assessors, and examining factors influencing assessor dovishness.

Methods: We analyzed 449 global entrustment assessments provided by 43 faculty assessors among 15 residents in one Department of Anesthesiology. We computed assessor hawkishness or dovishness by comparing an assessor's average rating for a resident to the average rating assigned by all other assessors. Using the Gaussian distribution, we transformed the resulting scores into z scores, and defined assessors whose standardized scores were below z = -1.96 as hawks and those with standardized scores above z = +1.96 as doves. We also applied linear regression models.

Results: We found that 5% and 2% of assessors were respectively identified as hawks and doves. Hawkish assessors ($\bar{x}$ = 3.04, SD = 1.05) scored 0.77 less than all other assessors ($\bar{x}$ = 3.81, SD = 0.66) and 1.71 more than dovish assessors ($\bar{x}$ = 4.75, SD = 0.27). Assessor leniency in organisational efficiency (β = 0.64, p = 0.000), situational awareness (β = 0.73, p = 0.000), and critical thinking (β = 0.69, p = 0.000) assessments significantly increased the likelihood of being dovish in global entrustment assessments.

Conclusion: The method described here may help identify effective assessors and their characteristics. It will inform faculty development program targeted at improving competency-based entrustment assessments.

OB - 7 - 2

Supporting Canadian Athletic Therapy Supervisors in their Clinical Educator Role

Jeffrey Owen University of Calgary, **Maria Palacios** Mackay University of Calgary, **Elizabeth Oddone Paolucci** University of Calgary, **Mark Lafave** Mount Royal University, **Michelle Yeo** Mount Royal University

Background/Purpose: Canadian athletic therapy (AT) programs are currently revising curricula and evaluative processes to emphasize workplace-based assessment as we transition to competency-based education (CBE). The role of practicum supervisors who educate students in clinical and sport contexts will likely adapt as their insight becomes more valuable in programmatic assessment. Understanding supervisory role conceptualizations and current supports and challenges will assist programs with providing supervisory support to effectively transition to CBE.

Methods: 14 AT supervisors were purposively sampled across Canadian programs and interviewed. Phenomenography was used as a qualitative methodology to describe the variations in understanding of the supervisor role amid the transition to CBE.

Results: Supervisory role conceptualizations centered on bridging theory to practice. Addressing a student's individual needs was key to facilitating learning for some supervisors; others were challenged to offer students learning opportunities due to practice demands and organizational pressures. A lack of perceived standardization between placement types (university- and community-based) and autonomy from the AT program often translated to supervisors forming their own student expectations. Collegial

support networks and program resources such as practicum coordinators aided supervisory role fulfillment.

Conclusion: Some supervisors may be better equipped for the CBE transition despite uncertainty related to potential role changes. We need to ensure AT supervisors recognize the importance of their role and are provided with the necessary organizational supports and program resources such as faculty development if we intend to both educate students effectively in their practicums and assess competence development in the workplace.

OB - 7 - 3

Essentials of Teaching: Interprofessional Faculty Development in the Clinical and Classroom Settings

Richard van Wylick Queen's University, **Mikaila De Sousa** Queen's University, **Ingrid Harle** Queen's University, **Eleftherios Soleas** Queen's University, **Jennifer Carpenter** Queen's University, **Laura McDiarmid** Queen's University

Background/Purpose: New faculty in medicine undergo extensive training in their residency but receive little training in being an effective teacher. Effective training as a teacher includes quality teaching in the clinical and classroom environments which is a skillset that typically occurs outside the scope of residency training. Therefore, it falls to Faculty Development initiatives in addition to new and established faculty seeking out self-driven opportunities to develop their skills.

Summary of the Innovation: To this end, with our partners in the Faculty of Health Sciences, Queen's CPD offers recurring full-day accredited Faculty Development programs entitled 'Essentials of Classroom Teaching' and 'Essentials of Clinical Teaching'. The Essentials series programs are composed of interprofessional mix of active and didactic learning with breakout sessions into small groups.

Conclusion: The program evaluation surveys conducted after each cohort indicate that the events are well-received, but faculty members favour a change towards active and blended learning as opposed to the didactic learning commonly favoured in the past. In particular, faculty express the need for teaching resources and learning about teaching settings outside the conventional classroom with a particular focus on effective feedback strategies and how to structure meetings with students and trainees to develop self-regulated learning.

OB - 7 - 4

Faculty development to support curriculum renewal: An aligned approach

Jana Lazor University of Toronto, **Lori Innes** University of Toronto, **Jennifer Bell** University of Toronto

Background/Purpose: Our challenge was to create a faculty development (FD) program that aligns faculty capacities and skills with goals and pedagogy of a new undergraduate medical curriculum that was undergoing significant innovation and change.

Summary of the Innovation: To ensure alignment, an eight step situational analysis was undertaken to understand: (1) proposed curriculum changes; (2) faculty roles/tasks; (3) core knowledge, skills and attitudes required to perform the tasks; (4) faculty characteristics; (5) student learning needs/characteristics that may need to considered; (6) health care environment context in which the students will be learning and faculty will be teaching; (7) educational evidence used to inform curriculum renewal; and (8) potential impact on faculty and that may need to be managed. Using this approach, FD team designed a tailored strategy for each of 12 teacher roles. Tailored tools and resources as well as multi-modal learning design were adopted for each role. During the first 2 years of the new curriculum FD offerings included 82 workshops located close to faculty clinical practice, 4 webinars, 17 educational videos, 23 print materials, 5 e-learning modules, 186 Educafe Cafes that offer coaching in local communities of practice, and peer coaching. Evaluation and scholarship are embedded in the program development process.

Conclusion: FD should be iterative and responsive to ongoing curriculum changes and newly identified

faculty needs. Evaluation is key, specifically different FD modalities need to be evaluated to examine what can work, when, and why. Intentional alignment between FD and curriculum development can create a continuous quality improvement loop between the two practices that inform ongoing refinement of the curriculum as well as the faculty resources and FD learning events.

OB - 7 - 5

Academic Productivity: Valuing the Clinician Teacher

Risa Freeman University of Toronto, **David White** University of Toronto, **Morag Paton** University of Toronto, **Paul Krueger** University of Toronto, **David Tannenbaum** University of Toronto, **Ruth Heisey** University of Toronto, **Stuart Murdoch** University of Toronto, **Kulamakan Kulasegaram** University of Toronto

Background/Purpose: How do we recognize the excellent academic work of family medicine teachers outside of publications and grant capture? Most medical schools struggle to systematically collect data to understand and recognize the tremendous contributions of our dedicated clinician teachers.

Summary of the Innovation: The Department of Family and Community Medicine (DFCM) at the University of Toronto convened a Task Force (2015) to make recommendations for the development of a robust and cohesive system to document all relevant scholarly activities. After careful review of the literature, and wide stakeholder input, the Task Force recommended the development of a survey that would be easy to complete and included an expanded scope of activity aligned with promotion guidelines. Thus, the Academic Activity Survey (AAS) was designed to capture all facets of academic contributions including: Teaching and Education Activities; Presentations, Publications, Grants and Awards; Creative Professional Activity (CPA); Administrative Service; Mentorship; and Comments.

Conclusion: An overall response rate of 83% in the first year reflected a highly acceptable format and process. The AAS has become an exemplar for its ease of use, incorporation into the faculty review process, and utility in strategic planning. A system aligned with institutional priorities can facilitate promotion and recognition. By providing an opportunity to reflect on current activities and set future goals, such a system can contribute to faculty well-being and development.

OB - 7 - 6

The Art of the Possible: What have we learned about creating an education scholarship grant program?

Risa Freeman University of Toronto, **Rick Penciner** University of Toronto, **Risa Bordman** University of Toronto, **Rachel Ellis** University of Toronto, **Milena Forte** University of Toronto, **Abbas Ghavam-Rassoul** University of Toronto, **Kulamakan Kulasegaram** University of Toronto, **Melissa Nutik** University of Toronto, **Joyce Nyhof-Young** University of Toronto, **Betty Onyura** University of Toronto, **Cynthia Whitehead** University of Toronto, **Sarah Wright** University of Toronto, **Nicole Woods** University of Toronto, **Viola Antao** University of Toronto

Background/Purpose: An alarming decline in Family Medicine education publications has occurred since the 1990s. To address this concern, the Department of Family and Community Medicine at the University of Toronto established the Office of Education Scholarship (OES) in 2012. The Art of the Possible education grant program (AOP) was created by the OES to provide support and encouragement to our family medicine educators to think about their work in a scholarly fashion.

Summary of the Innovation: We have held three annual competitions for the AOP. Faculty members receive consultations in a unique model with both a clinician educator (MD) and an education scientist (PhD) before submitting applications. Successful recipients also receive support from implementation to analysis and dissemination. Quarterly faculty development events provide feedback and networking opportunities. Project leads are required to submit periodic reflective reports addressing successes and challenges. Through an iterative process, data from these reports have prompted

modifications and program improvements for subsequent iterations.

Conclusion: The grant holders struggled with issues of time (clinical, teaching and project responsibilities), resources (securing research assistants), and unforeseen administrative hurdles (navigating the ethics approval process). These challenges are not unique to our clinical faculty engaging in education scholarship; however, what is unique is how we have adapted the program to meet the challenges. We will outline the feedback mechanisms that allowed us to respond creatively with mid-program modifications and facilitate timely completion of projects. Educators can learn from our insights into the design and implementation of the AOP and thus be better equipped to develop a similar program at their school.

Sunday, April 14th - 15:30-17:00

Oral Presentation – UGME

OB - 8 - 1

Towards Sexual Health for Every Body? Exploring First Year Medical Students' Experiences with an LGBTQ2S-inclusive Sexual History Education Session

Kaiwen Song University of Toronto, **Laurence Biro** University of Toronto, **Joyce Nyhof-Young** University of Toronto, **David Wong** University of Toronto

Background/Purpose: Gender and sexual minorities (i.e. lesbian, gay, bisexual, transgender, queer, and two spirit [LGBTQ2S] individuals) face barriers to socially-competent healthcare. The University of Toronto MD program created a novel clinical skills session using an infographic, videos, standardized patients (SPs), peer roleplays, and discussion questions, to teach inclusive communication skills to first year MD students in small group settings.

Methods: Hour-long focus groups (FG) were conducted, audio-recorded, and transcribed to investigate factors influencing student learning and their recommendations for change. Descriptive thematic analysis was performed by two researchers. Course evaluations were reviewed.

Results: Students evaluated the session highly with a mean score of 4.3/5 (N=20). Five FG (N=35; 74% female and from all 4 academies) indicated variable student experience. Preliminary themes include experiential learning, tutor-student relationships, complexity, and structure. Clinically knowledgeable faculty contributed positively, while others' biases caused discomfort. Students valued the lived experiences of SPs from the LGBTQ2S community. SP case complexity provided clinical learning preparation for some students, while others felt overwhelmed. They all appreciated modeling, opportunities for productive failure, and deliberate practice.

Conclusion: This study highlights the variability of student experiences in clinical skills education. Faculty development, appropriate complexity, and opportunities for deliberate practice were essential for success. Study findings can inform curriculum development for the session, other at-risk populations, and communication skills in other health professions' educational contexts.

OB - 8 - 2

Building the "good" doctor: Changing patterns of humanism in medical students

Alyson Holland McMaster University, **Elyse Platt** McMaster University

Background/Purpose: Medical education literature has consistently reported a decline in empathy as medical students progress through their education, which results in poor patient-physician relationships. This trend is linked to intense curricula and strong implicit modelling that overpowers explicit classroom teaching. The purpose of this project is to explore changes in medical student empathy at McMaster University, a medical school that uses a problem-based learning approach rather than traditional didactic teaching as well as a compressed program.

Methods: Individual, semi-structured interviews were conducted with 25 male and female participants, representing all levels of medical students. Interviews explored medical students' perceptions of what makes a good doctor and the effects of the learning environment on empathy. All interviews were transcribed and analysed using qualitative thematic content analysis.

Results: The majority of medical students in clerkship reported higher rates of compassion fatigue and decreased empathetic responses. The time and content demands of medical school led to a decreased focus on being empathetic in upper year students, while the first year students expressed greater importance surrounding empathetic behaviour. However, all medical students stated that empathy was valuable and most felt that this was

modeled for them in both practical and classroom situations to some degree.

Conclusion: While consistent with previous research showing a decline in empathy in medical learners, McMaster medical students perceived less of a disconnect between implicit and explicit models of behaviour. Medical students were aware of their loss of empathy, and many chose role models who exhibited empathetic practice as a reminder.

OB - 8 - 3

Wilderness Education - Becoming an Expert Teacher at the Distributed Medical Education Campus

Nicole Didyk McMaster University, **Meredith Vanstone** McMaster University

Background/Purpose: Medical schools across Canada have extended their walls beyond the university centre to include distributed campuses in smaller and often more remote regions. The physicians in practice in these smaller cities and towns are conscripted into a teaching role, sometimes willingly but often grudgingly. Medical teachers need faculty development to succeed, however the barriers to access are numerous and the facilitators are not well known. We sought to explore the perceptions of DME campus faculty regarding faculty development with a view to optimizing this segment of CPD for community physicians.

Methods: Constructivist Grounded Theory Methodology with intensive interviews of distributed medical education (DME) campus faculty and observations of DME faculty development events.

Results: The community in which a DME campus medical school is implanted is transformed through a process of interaction between learners, medical teachers, and the community itself. The process is akin to a chemical reaction with the learners acting as a catalyst and iterative feedback acting as an agent that perpetuates the reaction, which results in the production of expert community teachers.

Conclusion: Community based physicians can develop teaching expertise but they require faculty development to maintain interest and skill. These community clinicians can access high quality, relevant faculty development within their own practice groups, a model referred to as a Community of Practice. These communities can be virtual or in-person and need several elements to be successful, including facilitation and mentorship. More research is needed to determine the best way to reward community teachers, most of whom are part time faculty in private practice.

OB - 8 - 4

Consulting the Oracle: Heterogeneity and Health of Distributed Medical Education in Canada - Results of a National Delphi Study

John Murray PhD University of Manitoba, **Peggy Alexiadis-Brown MA** Dalhousie University, **Sharon Hatcher MD MSc FCMF** Université de Sherbrooke, **Catherine Larouche PhD** Universite du Quebec a Chicoutimi, **Charles Penner MD FRCPC** University of Manitoba

Background/Purpose: Constructing typologies of DME is recognized among lacunae in the medical education literature and warrants an examination in its present form to inform its future. The Research and Metrics sub-group of the Association of Faculties of Medicine (AFMC) conducted this research into existing and developing DME models across Canada. The purpose of the study was to: 1) Characterize the distinguishing and defining features of DME; 2) To identify external and internal pressures which facilitate or inhibit the deployment of DME, and; 3) To establish consensus on the barriers and opportunities to the realization of desired outcomes for distributed medical education systems in Canada.

Methods: The study used a hybrid consensus group methodology in the form of a modified Delphi/RAND UCLA technique among 127 invitees from all 17 Canadian medical schools comprising 13 distinct professional profiles. Initial response rate was N=75 (59.1%) with 37.3% of these self-identifying as occupying decanal appointments. A representative expert panel of 42 individuals engaged further in two rounds of anonymous, online, asynchronous deliberations with N=41/42 or 97.6% response rate. Seventeen semi-structured interviews were

conducted following the second round and formed a voluntary post-hoc focus group. Criteria for consensus positions was standardized.

Results: Significant to expansion of DME: 1) Greater emphasis on residents' sited in Indigenous communities (36/42, 85.7%); 2) Distributed sites contributing directly to governance and curriculum control (35/42, 83.3%); and 3) Increased Royal College exposure at distributed sites (30/42, 71.4%). External/Internal negative pressures were associated with faculty workload, including: teaching/learner demands and clinical practice and research (37/42, 88.1%). Emphasis on developing rural generalists (41/42, 97.6%), developing culturally-responsive models of care (37/42, 88.1%), and establishing Longitudinal Integrated Clerkships (31/42, 73.8%) were identified as significant opportunities for DME.

Conclusion: This first national-level Delphi study of DME in Canada has implications for the development of regional typologies in DME. Going forward with expansion of DME, the study demonstrated that certain matters of urgency have emerged: 1) What characterizes a "community of practice" in distributed environs today?; 2) Managing teaching, research, and clinics, and; 3) How best to deploy decentralized site identity, curriculum design and implementation, and governance with local decision-making?

OB - 8 - 5

Perspectives of Urban First Year Medical Students in Choosing Practice Location

Rebecca Malhi University of Calgary, **Jill Konkin** University of Alberta, **Douglas Myhre** University of Calgary, **Tom Smith-Windsor** University of Saskatchewan, **Wayne Woloschuk** University of Calgary, **Daniel Lemoine** University of Alberta

Background/Purpose: There is a chronic shortage of physicians in rural areas in Canada. Medical students of rural origin are likely to establish a rural practice, but little is known about how students from an urban background determine their eventual practice location. The current study gathered data about first year students' past experiences and plans for future medical practice.

Methods: Students with an urban background participated in semi-structured interviews. Open-ended questions elicited information about the participant's choice of medicine as a career, decision-making about practice location, and opinions about rural medicine. Interviews were recorded and transcribed. Data were analyzed using thematic analysis.

Results: Sixteen interviews were conducted. Few participants had definite ideas about medical specialty or eventual practice location. Factors suggesting eventual rural practice included a strong pre-existing desire to practice rurally, having a "service orientation", appreciating the advantages of a rural lifestyle, and wanting an expanded scope of practice. Participants who were hesitant about working rurally expressed concerns about isolation, restricted career opportunities, and limited educational options for children.

Conclusion: Our findings showed "celebratory" and "critical" discourses about rural medicine. Students intending to have a rural practice tended to draw upon celebratory discourses. Interviewees who were unsure or intended to have urban practices seemed to draw on critical discourses. The results of this study may have important implications as educators in medical schools and administrators in rural communities may be able to provide targeted incentives that encourage recruitment of physicians in non-urban areas.

OB - 8 - 6

Probability of an offer based on pre- and post-interview rank at McMaster University's Undergraduate MD Program

Raquel C. Burgess McMaster University, **Margo Mountjoy** McMaster University, **Meredith Vanstone** McMaster University, **Lawrence E. M. Grierson** McMaster University

Background/Purpose: In the penultimate stage of admission into McMaster University's Undergraduate MD program, the 550 applicants scoring highest on a composite metric of admission outcomes are invited to participate in a Multiple-Mini Interview (MMI). The 200 highest scoring applicants after the MMI receive

an offer of admission. The purpose of this study was to investigate if we are interviewing applicants who are unlikely to receive an offer of admission.

Methods: Pre-interview rankings for all interviewed applicant cohorts between 2013 and 2017 (n = 2,659) were organized into bins of 50 applicants (i.e., 11 bins/cohort). The offer probability per bin was determined by finding the quotient of successful applicants and total applicants in each bin. An ordinal (linear) Chi-square test and adjusted standardized residuals with an applied Bonferroni correction were used to determine if the observed frequencies in each bin were different than expected by chance. Finally, a Spearman Rank-Order Correlation analysis between pre- and post-interview ranks was conducted.

Results: All applicants have between a 48.0 and 78.4% chance of being offered admission. Observed frequencies are significantly different than chance ($\chi(1)=50.835$, $p < .000$), with a significantly greater number of offers seen in the bins between 1 and 100 ($p<.001$ for both bins). There is a weak positive relationship between pre- and post-rank, $r_s(2657)= 0.258$, $p<.000$.

Conclusion: Applicants ranked 101 to 550 have a relatively equal chance of receiving an admission offer. This finding will be discussed with respect to determining a just, efficient, and feasible number of interview offers.

OC - 1 - 1

Longitudinal examination of residents' development of surgical competence using a national formative test

Carlos Gomez-Garibello McGill, **Maryam Wagner** McGill, **Paola Fata** McGill, **Brock Vair** Dalhousie University

Background/Purpose: Attainment of competence is better understood longitudinally. Formative assessment serves a dual purpose of providing opportunity to understand the development of competence and offering timely and meaningful feedback to learners. The Canadian Association of General Surgeons national exam was developed as a formative assessment to offer specific information to residents about the application of surgical knowledge in the breadth of general surgery field.

Methods: A total of 322 General Surgery residents across Canada completed the formative test examining different domains in surgical specialties in 2017 and 2018. The exam comprised 143 questions examining different surgical domains (e.g., breast, hernia) across two types of knowledge: foundational and core. Within-subjects analyses were computed to track residents' test results across the 10 surgical domains measured, and compare their overall performance.

Results: Overall, residents' performance on the test demonstrated significant progress from 2017 to 2018 ($F(1,321) = 402.32$; $p = .01$). Analyses of performance across surgical domains indicated that residents' scores improved in all but one domain (small bowel). Analysis of segments of the slope suggests that learners who improved the most were those who took the exam on 2017 as PGY-2 in contrast to those who took the exam in 2017 as PGY-3.

Conclusion: This exam captures the development of clinical and surgical knowledge over time. Even though the general tendency is to improve in all surgical domains, the identification of one area in which there was no progression, and one transition in which the learning trajectory is stagnant helped learners and program directors to identify gaps in training and to generate educational strategies to surmount those challenges.

OC - 1 - 2

Moving from the operating room to the exam room: The behavioural and cognitive skills used by clinicians to develop a formative exam for residents in General Surgery

Maryam Wagner McGill, **Carlos Gomez Garibello** McGill, **Paola Fata** McGill, **Brock Vair** Dalhousie University

Background/Purpose: Formative assessments are a powerful mode of advancing learning by providing learners with feedback that highlights strengths and identifies areas for improvement. However, developing multiple choice exams that capture the complexities of the clinical context and achieve the potential of formative exams is not easy. Our purpose was to identify the cognitive and behavioural processes used by clinicians to develop a formative test of surgical knowledge and judgement.

Methods: The Canadian Association of General Surgeons developed a formative exam for all General Surgery residents. We conducted a cognitive task analysis of two test development and revision sessions of their examination committee (N=5) to identify both the explicit (behavioural) and tacit (cognitive) skills and knowledge they employed. We used observational field notes to identify explicit behaviours. We qualitatively analyzed transcribed audio recordings of the sessions to identify participants' knowledge and skills.

Results: Results revealed that the clinicians i) integrated different types of knowledge; ii) synthesized information across multiple domains; and iii) analyzed clinical procedures and tasks to identify sub-skills. One key multi-step process was resolving differences by: identifying target difficulty level; examining alternatives; questioning

alternatives; providing counterarguments; reaching agreement and finalizing decisions.

Conclusion: Translating the complexities of the clinical context into a written exam requires: identifying knowledge and skills underlying clinical processes; determining plausible misconceptions and deconstructing task features to target multiple levels of difficulty. We offer a framework to advance clinicians' skills in developing written tests of clinical knowledge and judgement.

OC - 1 - 3

Daily encounter cards are superior for student assessment compared to single rater in-training evaluation reports.

James Johnson University of Manitoba, **Maury Pinsk** University of Manitoba

Background/Purpose: Ambulatory pediatrics in the University of Manitoba's clerkship transitioned to assessments using daily encounter cards (DECs). This was done in the hopes of providing an equitable, timely, and actionable assessment of learner progress. Using the validated CCERR tool, we compared the assessment quality of the old single ITER to the new DEC-based system.

Methods: Block randomization was used to select from a cohort of ITER-based assessments (n = 48) and DEC-based assessments (n = 48) during equivalent points in clerkship training. Numeric scores and written comments were transcribed and anonymized, and subject to CCERR scoring by two blinded raters. Student's t-test was used to compare the mean CCERR scores of the DEC and the ITER assessments.

Results: The proportion of assessments ranked "good" or "better" in the DEC cohort was 87.5%, compared to 16.7% of the ITER cohort. Inter-rater reliability for total CCERR scores was substantive (>0.6) for both cohorts. Mean total CCERR score for the DEC cohort was significantly higher than for the ITER cohort (25.32 vs. 16.76, t-score = 10.78, $p < 0.001$). Mean scores for each item on the CCERR were significantly higher for the DEC cohort than the ITER cohort (2.81 vs. 1.86, t-score = 3.39, $p = 0.0039$).

Conclusion: There is a statistically significant improvement in the average quality of student assessments associated with the transition from an ITER-based system to a DEC-based system. However, the average CCERR score for the DEC cohort requires continued faculty development to ensure that trainees receive frequent, high-quality feedback.

OC - 1 - 4

Progress Test Predictive Analytics: Understanding Student Engagement with Assessment for Learning

Pauline Pan University of Toronto, **Richard Pittini** University of Toronto, **Kulamakan Kulasegaram** University of Toronto, **Tamica Charles** University of Toronto, **Yuxin Tu** University of Toronto, **Glendon Tait** University of Toronto, **Frazer Howard** University of Toronto, **David Rojas** University of Toronto

Background/Purpose: Progress Tests (PT) are comprehensive knowledge-based tests designed to assess exit competency of trainees. In this study, we evaluated time and the use of optional formative assessments to predict and understand student learning behaviours.

Methods: Over two academic years, 249 UofT MD Program students participated in two 60 MCQ PTs in 2016-17, and three 100 MCQ PTs in 2017-18. Our unique design allowed students an opportunity to indicate whether they were 'sufficiently confident' or 'not sufficiently confident' when selecting their answers for each question on the PT. We examined several metrics and their possible correlations with PT scores in order to investigate behaviours of high vs. low performing students: 1) Time spent completing tests; 2) Attempts of optional Weekly Feedback Quizzes (WFQs); and 3) Engagement in Teacher/Course feedback.

Results: Students who performed higher on the PT spent more time on the PT (partial Eta^2 = .072) and missed fewer WFQs (Eta^2 = .065) and evaluations (Eta^2 = 0.25). Further, we found that students who scored higher on 'not-sufficiently confident' questions spent more time on the PT (Eta 2 = .059), and missed fewer WFQs (Eta^2 = .054) and evaluations (Eta^2 = .022).

Conclusion: Our results suggest that high and low performing students may be motivated differently and that high performing students are more responsive to assessment for learning activities. This analysis has implications for understanding how students engage with programmatic assessment's emphasis on formative assessment.

OC - 1 - 5

Introducing Progress Testing in the University of Toronto's New Foundations Curriculum: an Examination of Facts of Validity for the First Two Years of Assessments

Yuxin Tu University of Toronto, **Richard Pittini** University of Toronto, **Glendon Tait** University of Toronto, **Kulamakan (Mahan) Kulasegaram** University of Toronto, **Katina Tzanetos** University of Toronto, **Pauline Pan** University of Toronto

Background/Purpose: Progress Testing is a well-established method for assessing medical student longitudinal progress using standards of exit competency in MD program. The University of Toronto launched progress testing as a part of its Programmatic Assessment Program in September 2016. This study used Kane's validity framework to examine four facets of validity including "Scoring", "Generalizability", "Extrapolation" and "Implications".

Methods: Five and three Progress Tests (PT) were administered to the classes of 2T0s (n=249) and 2T1s (n=259), respectively. Senior students (3rd and 4th year students) (total n=206 over 5 PTs) volunteered their time to take the tests. Students' data on other assessment modalities were also included in the analysis.

Results: The PTs demonstrated validity in Scoring, with statistically significant differences between 2T0 and 2T1 over 3 PTs ($p<.001$ for all 3, $\eta 2=.28$, .43 and .40) as well as a steady increase in internal consistency (KR20) across test administrations (from .35 in 2016-2017 to above 0.6 in 2017-2018). PTs' validity in Generalization was established by using a sampling strategy of adhering to MCC blueprint. Validity in Extrapolation was supported from the stronger correlation between PT and OSCE from 0.17 among 2T1s to 0.40 among the 2T0s. Student performance on PT was also moderately correlated with their test scores in each of the concurrent courses.

OC - 1 - 6

High-stakes testing accommodation: What is happening in the field? The Medical Council of Canada's (MCC) Research on Testing Accommodations (TA)

Ilona Bartman Medical Council of Canada, **Claire Touchie** Medical Council of Canada, **Kathryn Condon** Medical Council of Canada

Background/Purpose: The Medical Council of Canada is one of many testing organizations that administers credentialing high-stakes examinations and provides testing accommodations (TA) when requested. The number of candidates requesting TA has been increasing exponentially in recent years. To explore organizational processes and policies, an environmental scan of other testing organizations was conducted.

Methods: An electronic survey was sent out to 12 different testing organizations. The MCC also provided answers to all questions as a participant of the environmental scan. The survey included nine questions on policies and processes of TA and six demographic questions about the organizations themselves. Descriptive analyses were performed.

Results: Nine of thirteen organizations (69%) completed the survey. Candidates' volumes range from small (testing under 200 candidates per year) to large (testing over 100,000). Testing locations (owned centers vs using vendors) varied as well as types of assessments delivered (from written to performance-based examinations). The respondents indicated that a wide variety of documents are requested from candidates; however, 100% require appropriate health professional documentation. Seventy-eight percent of organizations have between 1-5% candidate requests for TA. Learning-related functional limitation is the most common reason (56%) for requesting TA. The most commonly granted

TA is for more time to complete the assessment (67%).

Conclusion: The survey illustrates varied approaches to TA across organizations. All surveyed organizations grant TA as per legal requirements. However, lack of consistent definitions around functional impairments could lead to a disjointed approach translating to hardship for both candidates and testing organizations. A national approach to TA would be beneficial.

OC - 2 - 1

Feeling overwhelmed: Does CBME create graduates who are dependent upon coaching?

Ivy Oandasan The College of Family Physicians of Canada, **Lorelei Nardi** The College of Family Physicians of Canada, **Dragan Kljujic** The College of Family Physicians of Canada

Background/Purpose: The College of Family Physicians of Canada (CFPC) implemented the use of competency based medical education (CBME) across all family medicine (FM) residency programs in 2010. One key outcomes was to produce self reflective life-long learners who identify & address areas of improvement. A resident survey was given at entry, at exit and 3 years into practice. Research Question: Do graduates' perceptions of their problem solving abilities, assessment of learning needs, feelings of being overwhelmed with complex health issues change after supervision with a competency coach?

Methods: Inferential statistical analysis with Chi-squared test and confidence interval to test the null hypothesis were used on de-identified aggregate data of participating residents from 7 FM residency programs at the end of residency: T2-2013 FM Longitudinal Survey (FMLS) (n=392) and those who responded 3-years post graduation: T3-2016 FMLS (n=104)

Results: 3 years post residency respondants reported a significant increase in their abilities to identify their learning needs (T2 90%, T3 98% p <0.01) and to problem solve effectively when faced with complex patient presentations (T2 77%, T3 92% p<0.01). However, respondants also reported increased feelings of being overwhelmed when dealing with complex patients three years into practice. (T2 50%, T3 71% p<0.01).

Conclusion: The first cohort of graduates from FM's CBME Pan-Canadian residency intervention reported improved problem solving skills and assessment of learning needs Yet, even with a coach at the end of residency, they felt overwhelmed when dealing with complex ambiguous health issues. 3 years into practice respondants highlighted even further increased feelings of being overwhelmed when dealing with complex patients. In the context of CBME learning, if learners feel more overwhelmed while in practice without a coach, are we giving our new graduates enough mentorship in the first five years or have we created a dependency upon competency coaches. More research is needed.

OC - 2 - 2

Resource Optimization in Proficiency-Based Suturing Skills Training

Madeline Lemke Queen's University, **Hillary Lia** Queen's University, **Alexander Gabinet-Equihua** Queen's University, **Guy Sheahan** Queen's University, **Andrea Winthrop** Queen's University, **Stephen Mann** Queen's University, **Gabor Fichtinger** Queen's University, **Boris Zevin** Queen's University

Background/Purpose: Suturing is a fundamental skill in undergraduate medical education. It can be taught by faculty-led, peer-led, and holography augmented methods; however, the most educationally effective and cost-efficient method for proficiency-based teaching of suturing is yet to be determined.

Methods: We conducted a randomized controlled trial comparing faculty-led, peer-led, and holography augmented proficiency-based suturing training to pre-clerkship medical students. Holography augmented training provided holographic, voice-controlled instructional material. Technical skill was assessed using hand motion analysis every ten sutures and used to construct learning curves. Proficiency was defined by one standard deviation within average faculty surgeon performance. Intervention arms were compared using one-way ANOVA of the number of sutures placed, full-length sutures used, time to proficiency, incremental costs incurred. Participant preferences were surveyed.

Results: Forty-four students were randomized to the faculty-led (n=16), peer tutor-led (n=14) and holography augmented (n=14) intervention arms. At proficiency, there were no differences between groups in the number of sutures placed, full-length sutures used, and time to achieve proficiency. The holography augmented method was costlier ($247.00 ±$12.05, p<0.001). Faculty-led teaching was the most preferred method (78.0%), while holography augmented was the least (0%). 90.6% of students reported high confidence in performing simple interrupted sutures, which did not differ between intervention arms (faculty-led 100.0%, peer tutor-led 90.0%, holography augmented 83.3%, p=0.409). 93.8% of students felt the program should be offered in the future.

Conclusion: Proficiency-based teaching of suturing using faculty-led and peer tutor-led instructional methods were superior to holography augmented with respect to costs and participants' preferences despite being educationally equivalent.

OC - 2 - 3

Competency-based education frameworks across Canadian health professions and implications for multisource feedback

Kerry Wilbur University of British Columbia, **Brandon Tong** University of British Columbia, **Megan St. John** University of British Columbia, **Emily Li** University of British Columbia

Background/Purpose: Assessment in competency-based education may be further optimized by drawing upon the judgements of multiple assessors, including those outside a student's discipline. Specific interprofessional competencies have been deemed appropriate for multisource feedback of student performance, but these may not be uniformly described across disciplines.

Methods: We conducted a document analysis of the educational outcomes of seven health professional training programs in Canada. Competency frameworks for dietetics, medicine, nursing, occupational therapy, pharmacy, physiotherapy, and respiratory therapy were located and systematically compared. The seven key competency roles for medicine and pharmacy served as the first points of reference against which other disciplines were compared.

Results: All professions organized educational outcomes according to core competencies. As anticipated, communicator, collaborator, and professional were distinct categories in almost all frameworks, but with distinctions in described emphasis and scope. Scholar is not typically identified as an interprofessional competency but is similarly represented across the majority of disciplines.

Conclusion: Our review suggests common understanding of shared competencies should not be taken for granted insofar as how roles are described across disciplines' educational frameworks and may pose additional threats to perceived feedback credibility. Conversely, additional competencies may merit consideration for inclusion in existing typical multisource feedback processes.

OC - 2 - 4

Engaging Ophthalmology departmental stakeholders in shaping their program of resident assessment

Heather Braund Queen’s University, **Stephanie Baxter** Queen’s University, **Nancy Dalgarno** Queen’s University, **Laura McEwen** Queen’s University, **Rylan Egan** Queen’s University, **Mary-Anne Reid** Michigan State University

Background/Purpose: As competency-based medical education (CBME) is being adopted across Canada, the assessment process is changing with increased emphasis on direct observation of residents' clinical performance. Engaging key stakeholders may improve buy-in while implementing CBME. The purpose of this study was to involve stakeholders in the selection and modification of workplace-based assessment (WBA) tools for use in Ophthalmology and potentially enhance subsequent engagement.

Methods: This qualitative case-study was conducted in one Ophthalmology department at a mid-sized teaching hospital in Eastern Ontario. Phase 1 consisted of faculty piloting four WBA tools in an Ophthalmology emergency eye clinic and providing

written feedback. Phase 2 consisted of two focus groups, one for residents (n=9) and one for faculty (n=6) which explored: qualities of effective feedback, feasibility, usability, value, challenges, and recommendations for the tools. Data were analyzed thematically.

Results: Residents and faculty raised ongoing concerns with buy-in and formalizing feedback through the new assessment process. Residents also reiterated the need for more constructive feedback delivered in a timely and sensitive manner. Generally, residents preferred narrative comments and devalued numerical scales. Residents and faculty valued verbal feedback over written, given its more interactive nature.

Conclusion: These results informed the development of WBA tools within the department and highlighted the importance of shifting the assessment culture to accommodate programmatic approaches to assessment in CBME. Involving key stakeholders in the change process has been a valuable engagement strategy. Future research should examine whether or not these perspectives change following CBME implementation.

OC - 2 - 5

Resident Perceptions of Assessment and Feedback in Competency Based Medical Education (CBME)

Leora Branfield Day University of Toronto, **Amy Miles** University of Toronto, **Lindsay Melvin** University of Toronto, **Shiphra Ginsburg** University of Toronto

Background/Purpose: As key participants in the assessment dyad, residents must be engaged with the process. However, residents' experience with Competency-Based Medical Education (CBME), and specifically with Entrustable Professional Activity (EPA)-based assessments has not been well studied. We explored junior residents' perceptions regarding the implementation of workplace-based assessment (WBA) and feedback initiatives in an internal medicine (IM) program.

Merhods: Using a constructivist grounded theory approach, we conducted 4 focus groups with first-year IM residents from the University of Toronto to explore their experiences with EPA assessments in the first year of the CBME initiative. Residents had been exposed to EPA-based feedback tools from early in residency. Themes were identified using constant comparative analysis to develop a framework to understand the resident perception of WBA and feedback initiatives.

Results: Residents' discussion reflected a growth mindset, as they valued the idea of meaningful feedback through multiple low-stakes assessments and coaching. However, in practice, feedback seeking was onerous. While the quantity of feedback has increased, the quality has not; some residents felt it had worsened, by reducing it to a form-filling exercise. The EPA forms were felt to have altered the dynamics of trainee-supervisor relationships, increased daily workload with disrupted workflow and diminished the distinction between formative and summative assessment.

Conclusion: Residents embrace the driving principles behind CBME, but their experience suggests that changes are needed for CBME to meet its goals. Efforts are needed to reconcile the tension between assessment and feedback and to effectively embed meaningful feedback into CBME learning environments.

OC - 2 - 6

Examining trends in low stakes assessment information collected in a competency-based residency program

Shelley Ross University of Alberta, **Paul Humphries** University of Alberta, **Mike Donoff** University of Alberta, **Shirley Schipper** University of Alberta, **Deena Hamza** University of Alberta

Background/Purpose: One of the goals of competency-based medical education is to capture information about learner competence across all of the competencies of a safe and effective practicing physician (i.e., more than medical knowledge). The objective of this study was to examine the assessment information being captured in the Competency-Based Achievement System (CBAS) to determine if this assessment approach was capturing information

about residents across all of the competencies of family medicine.

Methods: Design: Retrospective cohort secondary data analysis. Setting: Canadian family medicine residency program. Data source: Archived de-identified low stakes assessment data (FieldNotes). Main outcomes: Numbers of FieldNotes by competencies and by clinical domains. Analyses: Descriptive statistics and content analysis.

Results: Since full implementation in 2010, distribution of FieldNotes has been relatively consistent across the competencies of family medicine. Nearly half of the FieldNotes in each year are in the areas of medical knowledge, clinical reasoning, and procedural skills; the remaining FieldNotes are across all other competencies, including patient-centered care, communication, and professionalism. Most FieldNotes are in the Care of Adults clinical domain, but there has been a slow increase over time in other domains, including Palliative/End of Life Care.

Conclusion: The CBAS approach resulted in low stakes assessment information across all competencies of family medicine, with a slow increase over time in variety of clinical domains. These findings suggest that CBAS is achieving the goal of capturing information about all of the competencies of a safe and effective family physician.

OD - 3 - 1

Which feedback do radiologists give on CanMEDS roles? What if residents ask?

Alexandre Lafleur Université Laval, **Marc Vincent** Université Laval, **Luc Côté** Université Laval, **Caroline Simard** Université Laval, **Holly Witteman** Université Laval, **Isabelle Martin-Zément** Université Laval

Background/Purpose: Preceptors' feedback is central in competency-based medical education. Combining feedback on medical expertise and CanMEDS intrinsic roles (e.g. communication) will foster the development of a broader range of competencies. While studies based on self-reported comments enriched our understanding of feedback, how it operates in clinical settings has rarely been measured quantitatively. What proportion of feedback targets CanMEDS intrinsic roles? Does the explicit expression of an educational need by the resident change the duration, type and alignment of the feedback?

Methods: In a randomized blinded study, 15 radiologists supervised three standardized simulated cases with a resident in the environment and time constraints of an imaging department. Participants were unaware that each case targeted an intrinsic role: communication, collaboration or professionalism. An educational need regarding intrinsic roles was explicitly stated or implicitly conveyed by the resident according to randomisation. Using mixed-methods analysis, we measured the duration, type and alignment of feedback. Written questionnaires studied preceptors'insight on the recognition of the educational need, the predominant role in the case and the feedback given.

Results: In imaging cases that provided preceptors with an opportunity to give feedback on communication, collaboration, or professionalism, 24% of the feedback time targeted intrinsic roles: 66 % by giving advice, 21 % by initiating a reflection and 7 % by agreeing. Although desirable, preceptors rarely asked a clarification or a probing-challenging question (3.3 and 2.8%). Although recognized by preceptors in 69 % of cases, the explicit expression by the resident of an educational need related to intrinsic roles did not affect significantly the type and duration of feedback observed (71,6 vs 49,8 sec, p= 0,14). Feedback from preceptors was 52 % aligned with the predominant role in the case even if in 66 % of cases preceptors could not identify this role in writing. In 59 % of cases, preceptors were unaware of the role they predominantly provided feedback on.

Conclusion: A significant proportion of the feedback given by radiologists targeted CanMEDS intrinsic role, even when the resident did not explicitly ask for it. Preceptors have limited insight about the feedback given on intrinsic roles, acting intuitively rather than purposefully.

OD - 3 - 2

Learning Conversations: A Reflective Analysis of Theoretical Roots and Manifestations of Feedback and Debriefing

Walter Tavares University of Toronto, **Walter Eppich** Northwestern University, Feinberg School of Medicine, Departments of Pediatrics and Medical Education, **Adam Cheng** University of Calgary, **Stephen Miller** Dalhousie University, **Pim Teunissen** School of Health Professions Education (SHE), Faculty of Health Medicine and Life Sciences, Maastricht University, **Chris Watling** Western University, **Joan Sargeant** Dalhousie University

Background/Purpose: Experiential models of learning depend on experience-informed dialogues such as feedback and debriefing. Largely independent efforts to understand each have split these educational strategies into potentially unnecessary and problematic factions. The purpose of this study was to delineate the areas of overlap and of differentiation to identify a way forward, either by maintaining the status quo with distinct concepts or by creating a unified conceptual framework.

Methods: We undertook a reflective analysis and purposeful exploration of conceptual, theoretical and pragmatic details within and across strategies. We traced the developmental theoretical paths of feedback and debriefing to determine points of convergence and divergence and to synthesize the findings, searching for common foundational conceptual approaches and for theoretical similarities and differences.

Results: Feedback and debriefing were derived from different theoretical roots, leading to variations in how they have been structured and enacted. Both draw on multiple educational theories, influencing ways each have been operationalized. While independent theory-oriented advances have led to some distinguishing features, there is considerable commonality, with both leveraging cognitive and social factors. Space exists to merge these educational strategies as learning conversations, treating their distinguishing features as deliberate strategies to shape educational practice.

Conclusion: Gains may exist in the conceptual integration of feedback and debriefing into post-event learning conversations. Educators require a sophisticated repertoire of adaptable conversational strategies to support learning across an ever-expanding range of contexts and settings. An integrated approach to studying and enacting functionally aligned learning conversations may accelerate progress.

OD - 3 - 3

Perceptions of the Non-Physician Health Care Professional Providing Multisource Feedback in Competency Based Medical Education.

Amy Miles University of Toronto, **Shiphra Ginsburg** University of Toronto, **Matthew Sibbald** McMaster University, **Walter Tavares** University of Toronto, **Rabia Khan** University of Toronto, **Christopher Watling** Western University, **Lynfa Stroud** University of Toronto

Background/Purpose: Competency Based Medical Education (CBME) emphasizes involving non-physician health care professionals (HCPs) in the provision of formative feedback to medical residents, yet it is unclear how these HCPs perceive their role in this process. We aimed to understand the dynamics of feedback provision from the perspective of non-physician HCPs in an inter-professional team.

Methods: Using a grounded-theory approach we conducted six focus groups (two each for social work, pharmacy, and occupational/physical therapy). Analysis was iterative, using constant comparison to explore participants' perceptions of and experiences with feedback provision to medical residents.

Results: Within each profession, feedback to learners is given with developmental intent. In contrast, feedback given to medical residents lacks clarity of intent and often has a course correction goal. While feedback is described as being specific, based on observed performance, actionable, and aligns well with several CanMEDS domains, it usually focuses on operational improvement rather than learner growth. Teacher-learner relationships in this context face tension when a profession's role is neither understood nor valued. This issue of role awareness alters the content and impact of feedback but may be mitigated by developing respect in a longitudinal relationship.

Conclusion: Multisource feedback creates opportunities for formative feedback in CBME. Unlike the culture within a profession, professional development is often not the primary goal during assessment of a medical trainee. Conceptualization and content of feedback is influenced by one's clinical role. Our findings have implications for the usefulness of multisource feedback to inform or assess competency.

OD - 3 - 4

Bedside Observation and Feedback Practices in Internal Medicine: A Longitudinal Survey Study

Michael Wang McMaster University, **Kristyne Onizuka** McMaster University, **Christopher Foster** Western University, **Ramy Khalil** Queen's University, **Daniel Brandt Vegas** McMaster University

Background/Purpose: While its use has significantly declined over the last several decades, bedside

teaching (BST) remains an important modality for acquiring and assessing clinical skills. However, little is known about direct observation and feedback practices at the bedside.

Methods: A single center longitudinal survey study of medical students and residents rotating through inpatient internal medicine teaching units at five academic affiliated hospitals was distributed between October 2017 and May 2018. Surveys addressed BST experiences during the previous one week.

Results: The response rate was 63% (n = 192/304), with 189 responses included in the final analysis. Learners received BST 4 patients per week, with 18% receiving no BST. Bedside skills were observed 6 times per week, with 24% receiving no direct observation. Half of observations were regarding clinical decision making. History taking, physical examination, procedural skills, discharge instructions, and patient or family updates were observed 3 times per week combined. Over half of learners were not observed in each of these skills, and inconsistent feedback was commonly reported (42% - 71%) when skills were observed. Observation and feedback rates were particularly poor for history taking and provision of discharge instructions. While attending physicians provided regular feedback more often than senior residents (p = 0.003), there was no difference in the quality of feedback given.

Conclusion: Bedside observation and feedback remain under-utilized tools for skill assessment. Further research is needed to elucidate underlying reasons behind their poor usage, and the effect of Competency by Design on bedside teaching practices.

OD - 3 - 5

Physician Scorecards as a Novel Approach to Performance Feedback and Education: Should Quality be Negotiable?

Brandon Tang University of British Columbia, **Anand Lakhani** University of Toronto, **Amir Ginzburg** University of Toronto, **Dante Morra** University of Toronto

Background/Purpose: Performance feedback is not routine for physicians. In the hospital setting, current performance evaluation protocols are largely reactive to issues and complaints, with physicians deciding for themselves when and how to make changes to their practice. Here we propose a physician scorecard solution for a major community academic health sciences center, which provides physicians with objective feedback based on metrics aligned both with the goals of individual providers and the strategic priorities of the hospital. The scorecard is meant to be an educational tool, and fosters a team-based learning approach.

Summary of the Innovation: We conducted a literature review, environmental scan of best practices in physician scorecards nationally, as well as current state analysis of performance management. Based on our findings, a novel scorecard solution was proposed: The Physician Accomplishment and Learning (PAL) dashboard. The PAL dashboard is a web-based tool consisting of five modules which provide physicians with performance feedback on organizational, department-specific, and teaching metrics, as well as compiles qualitative accolades and comments for each physician. Finally, we designed an implementation strategy for the PAL dashboard as well as an evaluation protocol involving a differences-in-differences approach at multiple sites over the initial year of launch.

Conclusion: By providing meaningful and actionable feedback, physician scorecards help align physician performance to hospital strategy and improve quality of care. Key tensions include whether to implement passive or active performance management, and whether the performance measurement instruments should be used for physicians only or extended to all hospital staff.

OD - 3 - 6

Adapting comment prompts to improve narrative feedback for learners

Hollis Lai University of Alberta, **Vijay Daniels** University of Alberta, **Tracey Hillier** University of Alberta, **Karen Forbes** University of Alberta

Background/Purpose: Medical learners rely on formative narrative feedback to improve their clinical performance. However, the static nature of

traditional narrative prompts often solicits generic feedback which lacks task-specificity. To improve the quality of clinical feedback, we propose a novel method of adapting the prompts for narrative feedback based on learner performance and results from a pilot application of the framework.

Summary of the Innovation: The adaptive prompt framework consists of three components: a) an item-level blueprint of relevant skills scored in the clinical assessment, 2) a performance-based adaptive algorithm that determines what domain should be prompted as an area for narrative feedback based on learner specific and recent performance, and 3) a model-based text generator that adapts the feedback prompt based on the requirements of the adaptive algorithm. This method was piloted with 160 medical students across 6 core clerkship rotations in one academic year.

Conclusion: The new method was able to elicit more comments from preceptors. On average, each student received 75 comments compared to 12 in the previous year. A total of 8342 formative comments and 3964 summative comments were collected from preceptors using this new method, an increase of 563% compared to the previous year. However, the length of the comments were reduced from an average of 465 to 151 characters per comment. The importance of timely and relevant feedback is well documented, in the education literature. This method can make a significant contribution toward improving feedback to better capture learner competence.

OC - 4 - 1

Using photo-elicitation to capture patients' and physicians' perspectives about the Health Advocate role

Sarah Burm Western University, **Chris Watling** Western University, **Sayra Cristancho** Western University, **Kori LaDonna** University of Ottawa

Background/Purpose: The Health Advocate (HA) role remains challenging to train and assess, in part because we are missing patients' perspectives about the role advocates play in their care. Visual methods are useful tools for exploring complex topics; using these participatory approaches with physicians and patients might evoke understanding of the HA role that words alone cannot.

Methods: Constructivist grounded theory guided data collection and analysis. Data was collected through semi-structured interviews and photo-elicitation, a visual research method that uses participant-generated photographs to elicit participants' knowledge and experiences around a particular topic. Participants included patients (n=10) and physicians (n=14).

Results: Both groups found photo-elicitation useful for unpacking their role of health advocates. Patients took photos of themselves, loved ones, or allied health professionals engaged in activities centered on helping them take ownership of their health. By contrast, physicians' photographs tended to capture the challenges of incorporating advocacy into their practice. Also, by sharing stock images of iconic advocates like Mother Theresa or Oprah, some physician participants seemed to suggest that physicians do not possess the superhuman qualities required to enact change.

Conclusion: Findings revealed differences in patients' and physicians' perceptions of health advocates that challenge us to reconsider training for this competency. Specifically, since participants' depictions of advocates rarely, if ever, represented physicians, non-physician advocates-including patients-may be more authentic assessors of the HA role. Photo-elicitation was useful for generating discussion around HA; educators might consider using this visual way of expression to augment teaching for this challenging competency.

OC - 4 - 2

Social Support Processes of Students and Clinicians with Disabilities in Healthcare Educational Journeys

Yael Mayer University of British Columbia, **Jarus Tal** University of British Columbia, **Michal Shalev** University of British Columbia, **Alfiya Battalova** University of British Columbia, **Laura Yvonne Bulk** University of British Columbia, **Laura Nimmon** University of British Columbia, **Michael Lee** University of British Columbia

Background/Purpose: Healthcare professions have the lowest representation of workers with disabilities compared to any other Canadian workforce sector. Health education is the gate to working in health professions. Therefore, we need a better understanding of how to support people with disabilities in entering and graduating from healthcare education. Objective: To explore social support (SS) processes of healthcare students and clinicians with disabilities in their educational journeys.

Methods: In a longitudinal study, 27 students and 31 clinicians with disabilities from 5 healthcare professions (medicine, nursing, occupational therapy, physiotherapy, and social work), at three sites in Canada: UBCV, UBCO and Queens University, were interviewed. Data analysis was informed by Grounded Theory.

Results: Data revealed three SS dimensions: 1. Who? 15 types of support sources were identified as having an impact on participants' educational experiences (e.g. faculty members, accommodation centers, placements policies, and supervisors); 2. What? 3

Types of SS were identified: informational, tangible, and emotional; 3. How? The active ways in which students and clinicians with disabilities navigate the support they need throughout their educational and professional journeys were identified (e.g. issues of navigating disclosure, SS and identity formation, and stigma).

Conclusion: These results have important implications regarding the types of supports needed for healthcare students and clinicians: emotional support, guidance in navigating disclosure and the formation of integrative professional identities are examples of ways to reduce barriers. Policy change might be needed to formalize those, currently very limited, supports, and create more inclusive environments for people with disabilities in healthcare education.

OC - 4 - 3

Mapping the Health Advocate role across postgraduate medical education

Kaitlin Endres University of Ottawa, **Dalia Karol** University of Ottawa, **Daniel Weiman** University of Ottawa, **Lindsay Cowley** University of Ottawa, **Sarah Burm** Western University, **Nancy Dudek** University of Ottawa, **Kori LaDonna** University of Ottawa

Background/Purpose: Many programs struggle to demonstrate how they formally embed Health Advocacy (HA) into curricula, in part because educators remain uncertain about what advocacy means, and how it can be effectively taught and assessed. By understanding how programs conceptualize and train the HA role, we may be able to develop more robust pedagogical strategies to meet learners' training needs.

Methods: We conducted a content analysis of curricular documents for 9 direct-entry specialties at each Ontario Medical School. Objectives were thematically grouped based on key competencies for the HA role, then compared across schools. Objectives that did not seem to readily fit these competencies were analyzed separately.

Results: We identified inconsistencies across programs regarding the comprehensiveness and specificity of HA objectives. Some seemed either overly broad or misaligned with the CanMEDS definition, while others were clear, detailed, and linked to specific clinical activities. Additionally, assessment criteria varied, with most programs requiring learners to demonstrate competence by explaining the meaning of HA and identifying instances where it was needed, while others required explicit engagement in HA-related activities. We could not identify a clear link between these criteria and stage of training.

Conclusion: As they progress through residency, learners require a clear plan for learning and demonstrating competence. However, lack of clarity about the relevance of some objectives to advocacy, coupled with variable assessment criteria, add to confusion about HA. To better understand this problem, we will interview educators to both clarify expectations, and identify opportunities to make training for this key aspect of clinical practice more rigorous.

OC - 4 - 4

Realistic Preparation for Going Global: Pre-departure Training Driven by Role-Playing Case Study Simulations

Guy Sheahan Queen's University, **Jennifer Carpenter** Queen's University, **Elizabeth Matzinger** Queen's University, **Linda Chan** Queen's University, **Eleftherios Soleas** Queen's University, **Mikaila De Sousa** Queen's University, **Jessica Baumhour** Queen's University

Background/Purpose: Associated with the increasing interest in student global health placements is the recognition that these placements impose unique ethical demands for involved stakeholders (Pinto & Upshur, 2009). These ethical demands are situations that can be anticipated using simulation cases (e.g. Mills et al., 2014). Pre-departure training is the opportune time to engage students with these ethical demands through simulations with role-playing peers to bring a sense of realism to probable observership scenarios that often occur.

Methods: This mixed methods research investigates the perspectives of participants in active role-playing simulations that occurred during a pre-departure

training curriculum. Participants completed a mixed-survey immediately afterwards.

Results: The participant reaction to the simulated cases was overwhelmingly positive (83.3% approval) and with 75% of participants reporting the scenarios increased their preparedness to confront ethical issues on their observership. Participants reported that the simulations allowed them to experience and confront uncomfortable, but realistic situations safely with peers and mentors supporting them with immediate feedback. Participants also credited the role-playing with fostering greater sense of teamwork and facilitating an impromptu post reflection where they would have to reconsider their efforts for sustainable advocacy.

Conclusion: Participants were immensely positive and despite some initial discomfort with acting in front of their peers they participated enthusiastically. We aim to show that case study role play simulation is an effective way to give students exposure to the kinds of ethical dilemmas that they might encounter in their global health observerships and beyond.

OC - 4 - 5

Rehearsing the role of 'Health advocate' through research-based theatre: Lessons learned from engaging with lived experiences of homelessness

Rahat Hossain McMaster University, **Natalie Ramsay** McMaster University, **Mo Moore** McMaster University, **Michael Milo** McMaster University

Background/Purpose: Medical training around health equity and the social determinants of health, especially centering on the needs of homeless individuals, has been ineffective in improving gaps in care and physician competency in these areas. Fostering empathy and improving attitudes towards vulnerable populations in undergraduate medical education will help address gaps in health equity and advocacy for these patients.

Summary of the Innovation: A participatory, research-based theatre activity illustrating barriers to care for homeless individuals was implemented for preclerkship medical students at McMaster University in Hamilton, Canada. The play had been developed through qualitative interview research with homeless participants and evaluated for knowledge translation. Over 90 minutes, more than 200 students divided into groups of 8-10 to perform the scenes, and their peers were able to 'intervene' by stepping into a role (e.g. patient or clinician) to attempt to address the barriers in that scenario. Students would then discuss if they were successful or 'realistic' in their improvisations, and what policy or procedural changes they could propose to improve the patient's outcome.

Conclusion: The majority of the student groups recognised the strength of theatre as a proxy for experiential learning, with its opportunities to practise communication and clinical empathy and be immersed in the challenges of improving health care for the homeless. When students were improvising solutions, they were able to identify how 'business as usual' may not be successful for their homeless patients. Students challenged each other to overcome conventional health care practices and were sometimes confronted with 'failure' when unable to succeed in bettering the outcomes.

OC - 4 - 6

Voices from Within: An analysis of physicians' reflective narratives about flaws with the "system"

Tracy Moniz Department of Communication Studies, Mount Saint Vincent University (primary appointment); Faculty of Medicine, Dalhousie University (adjunct), **Rachael Pack** Western University, **Lorelei Lingard** Western University, **Chris Watling** Western University

Background/Purpose: Physicians often express frustration with the "system" in which they work. Over time, this frustration may put them at risk of burnout and disengagement, which may impact patient care. Contemporary training, however, aims to empower physicians as systems-literate advocates. In this study, we aimed to understand the nature of the system flaws that physicians most often identified and to explore their sense of self as agents of change.

Methods: We reviewed all reflective narratives published in four major medical journals (NEJM, JAMA, CMAJ, Annals IM) between January 2015 and December 2017 (n=906). By consensus, we identified those that addressed system flaws (n=90). Using content and narrative analysis, we analyzed the types of flaws, the purpose of the story, and the physicians' orientation to the flawed system.

Results: Most stories pointed to medical culture as flawed, focusing on issues of communication, education, and stigma. Physicians' narratives also exposed flawed institutional practices and systemic inequalities. Physicians told stories to make a point, as a call to action or advocacy, to work through tension, to persuade, and to unburden themselves. While physicians most often positioned themselves as part of the flawed system, they expressed varying degrees of agency to propel collective or individual change.

Conclusion: Physicians' narratives represent important internal conversations about the challenges they face within the complex systems they must navigate and their role in perpetuating flawed systems and/or creating change. These narratives may offer insights into how training on health advocacy, communication and professionalism is playing out in practice.

OC - 5 - 1

Simulation through research-based theatre: Using drama in interprofessional education to improve healthcare for persons experiencing homelessness

Adam Gabara Queen's University, **Rebecca Harrison** McMaster University, **Grecia Alaniz** McMaster University, **Tanisha Birk** McMaster University, **Karen Essah** McMaster University, **Caitlin Ross** McMaster University, **Rahat Hossain** McMaster University

Background/Purpose: People experiencing homelessness are limited in their access to healthcare. Interprofessional models in education may address these issues, as interprofessional teams better impact the health of people experiencing homelessness. Given its affective dimensions, simulation-based training using research-based theatre may be particularly effective for changing attitudes, readiness, and perceptions towards interprofessional education when delivering care to the vulnerable.

Methods: Health and social care students (n = 20) from McMaster University in Hamilton, ON, Canada, participated in a 50-minute research-based theatre activity, improvising with professional actors to remedy scenes of suboptimal care. The Interdisciplinary Education Perception Scale (IEPS), Readiness for Interprofessional Learning Scale (RIPLS), and Attitudes Towards Interprofessional Health Care Teams Scale (ATHCTS) were administered as pre-post surveys.

Results: Results demonstrated non-significant increases in quartile and median scores on most items and subscales of the IEPS and RIPLS. The ATHCTS demonstrated statistically significant change on Item 4, "The interprofessional approach makes the delivery of care more efficient," $p < 0.02$, 95% CI [3.92, 4.60] and the overall mean score, $p < 0.00$, 95% CI [3.39, 4.47], with the Cohen's d statistic (0.18) indicating small effect size.

Conclusion: Simulation-based learning using research-based theatre is a promising strategy to enhance interprofessional education. Learners experienced improvement in their attitudes towards healthcare teams and effect on the process and quality of care. This finding merits further study to explore possible improvements in interprofessional practice and the quality of care delivered to vulnerable populations.

OC - 5 - 2

Implications of work context on help-seeking and help-provision behaviours in interdisciplinary clinical teams: A multidisciplinary perspective

Erin Kennedy Western University, **Lorelei Lingard** Western University, **Chris Watling** Western University, **Sayra Cristancho** Western University, **Jeanna Parsons Leigh** Western University, **Roberto Hernandez-Alejandro** The University of Rochester Medical Center

Background/Purpose: In clinical environments, work is and must be variable and flexible, requiring practitioners to recognize what they don't know and seek help when required. Given that much of care delivery occurs within teams, how individuals navigate the complexity of collaborative care whilst attending to their own knowledge/skill gaps can be difficult. Medical education literature has historically focused on individual attributes that promote or inhibit helping behaviours. What is lacking is an understanding of how work context influences collaborative team functionality with respect these behaviours.

Methods: A constructivist grounded theory approach using semi-structured interviews with participants from ICU and transplant teams was utilized. This methodology was selected to allow us to build theory around the complex processes of helping behaviors and to utilize the sensitizing concepts of collective

competence, systems thinking and psychological safety.

Results: We found several intersecting features of workplace context that promoted or inhibited helping engagement. These contextual features included: 1) structure of the physical and hierarchical environment, 2) workplace diversity, 3) institutional support for risk taking/innovation, 4) strength of relationships, and 5) perception of a "speak-up" culture.

Conclusion: If we desire to create and support clinical teams that effectively and safely deliver high quality care, we must consider the individual attributes as well as the work context in which individuals and teams are situated. Traditionally, medical education literature has focused on individuals with respect to helping engagement. Our work has expanded upon those notions of individual traits to include a broader understanding of work context that may promote or inhibit helping behaviours.

OC - 5 - 3

Evidence-based recommendations for collaborative care education programs: A scoping review

Nelson Shen University of Toronto, **Sanjeev Sockalingam** University of Toronto, **Rebecca Charow** University Health Network, **Sharon Bailey** Centre for Addiction and Mental Health, **Thérèse Bernier** University of Toronto, **Alison Freeland** University of Toronto, **Aceel Hawa** University of Toronto, **Deepy Sur** McMaster University, **David Wiljer** University of Toronto

Background/Purpose: The collaborative care model (CCM) is an evidence-based approach to integrating mental health care into primary care and specialist settings. Given its proliferation across North America, education programs play a pivotal role in building capacity in CCM, as the workforce may not have the necessary skills and attitudes to support this service integration. However, there is no knowledge synthesis to inform the development of effective education.

Methods: This scoping review followed Arksey and O'Malley's methodology to determine: (1) what programs exist, (2) what was taught, (3) how programs were delivered, (4) evaluated outcomes, and (5) experienced-based critical success factors and recommendations. Descriptive statistics were calculated and implementation factors were thematically analyzed and validated.

Results: Thirty-nine articles were identified, detailing forty unique programs. Majority of programs had a multidisciplinary audience (n=25;62.5%), focusing on clinical knowledge/skill acquisition (n=38;95.0%) as opposed to attitudes toward mental health and collaboration (n=27;67.5%). Mostly didactic (n=34; 85.0%) and in-vivo training (n=32; 80.0%) program delivery methods were used, with 15 (37.5%) programs using these two methods in tandem. Critical success factors fell within four themes: (1) supportive learning environments, (2) program development, (3) supportive resources, and (4) clinical change agents/leaders.

Conclusion: This scoping review provides a baseline understanding of CCM education literature. While limited, commonalities in literature suggest education programs should: adopt a user-centred development process, engage clinical change agents/leaders to drive implementation, include routine multidisciplinary interaction and curricular emphasis on CCM attitudes.

OC - 5 - 4

Using graphic illustrations to uncover how a community of practice can influence the delivery of compassionate healthcare

Nancy Dalgarno Queen’s University, **Trisha Parsons** Queen’s University, **Deborah Tregunno** Queen’s University, **Leslie Flynn** Queen’s University, **Mala Joneja** Queen’s University

Rationale/Background: Our modern-day frenetic healthcare culture promotes a detachment from patients' emotions by healthcare professionals. The AMS Phoenix Project: A Call to Caring was implemented to instill and sustain empathy and compassion in clinician's working environments.

Instructional Methods: Compassion is a complex construct and represents the ability to relate to the vulnerability of others in meaningful ways. Compassionate care is the driving force and a core value for most healthcare professionals.

Target audience: To report on how an interprofessional community of practice (CoP) of healthcare educators can contribute to a cultural shift in promoting and delivering compassion in healthcare through health professionals education.

Summary/Results: Using an imaginative creative autoethnography that adopts a narrative design through graphic illustrations, data was collected from 25 members of the Phoenix@[Institution] CoP during a one-day retreat. Three themes emerged from the analysis: the call to caring is a long and winding road with many barriers and rewards; CoP members experienced personal growth in and through the community; and the Phoenix@[Institution] CoP matters for professional relationships, leadership, and enacting a shared agenda about practicing compassionate healthcare.

Conclusion: This study describes the development of a CoP that moves away from traditional committees and discussions to an experiential creation of connections and shared meaning by its members. By using autoethnography and demonstrating how graphic illustration can be an innovative method for recording and interpreting group discussions, we have demonstrated the accelerated development of an authentic CoP where the shared goals of healthcare professional educators are more likely to be achieved.

OC - 5 - 5

Development of an interprofessional trauma-informed care workshop

Julia Pasquale University of Toronto, **Sarah Kanji** University of Toronto, **Rachelle Marek** University of Toronto, **Aja Toste** University of Toronto, **Daniela Graziano** University of Toronto, **Athena Hau** University of Toronto, **Sarah Freeman** University of Toronto

Background/Purpose: 76% of Canadian adults report exposure to some form of trauma in their lifetime, so healthcare providers in all domains frequently interact with trauma survivors. Trauma-informed care (TIC) is a treatment framework that aims to understand, recognize, and respond to the effects of trauma. In doing so, it increases a patient's sense of control and safety. A group of medical and nursing students perceived training about trauma and TIC as a gap in their health professions training.

Summary of the Innovation: The student team designed a full-day TIC workshop for 75 participants. The event began with an audio presentation of anonymous patient stories about adverse healthcare interactions to highlight the importance of TIC. This was followed by a keynote lecture about TIC principles and a multidisciplinary expert panel. Next, students attended small-group clinical skills sessions focused on interviewing, physical assessment, and responding to trauma disclosure. For the interviewing session, students developed a standardized patient case in collaboration with psychiatrists. Organizers also created a handbook of evidence-based practice tools and resources as a reference for participants. Pre- and post-event surveys were distributed to evaluate the training model's impact on knowledge and confidence in practicing TIC.

Conclusion: The workshop allowed participants to develop a foundational approach to TIC for use in clinical practice. Of 20 survey respondents, 95% felt more capable of discussing trauma in clinical settings following the workshop. 100% of respondents felt that it is essential for healthcare professionals to have TIC training. Since the workshop, medical students have been successful in collaborating with faculty to incorporate increased TIC training into the medical school curriculum.

OC - 5 - 6

Key considerations when sharing interprofessional simulation courses across healthcare contexts

Laura M Naismith University of Toronto, **Maria Mylopoulos** University of Toronto, **Therese Salenieks** Centre for Addiction and Mental Health, **Catharine M Walsh** University of Toronto

Background/Purpose: Interprofessional simulation is an effective, but resource-intensive, educational method for improving the collaborative care of patients with complex healthcare needs. Sharing simulation courses between institutions can facilitate wider implementation and help build a community of practice. Sharing presents challenges, however, as the courses must be adapted to local culture and context to ensure maximal utility. Information regarding the factors that educators should consider in making these adaptations is lacking.

Methods: We used constructivist grounded theory methodology to explore the nuances of decision-making when adapting a UK-based interprofessional simulation course to run in two different Canadian healthcare contexts. Data collection methods included textual analysis of course-related documents and semi-structured interviews with 16 individuals involved in the development and/or implementation of the courses. Data were thematically analyzed using a constant comparative approach.

Results: Documents revealed major adaptations to the overarching course aims, professions targeted, scenario content, and debriefing model. Few adaptations took into account the logistical affordances and constraints of the different contexts. Interview findings identified contextual considerations influencing the adaptation process including: cultural values, norms and expectations, available educational resources and expertise, health care systems and practices, and locally-driven needs and priorities. Tensions were identified between the imperatives of alignment, both educational and strategic, and sustainability. Participants perceived that the adaptation process facilitated development of local expertise.

Conclusion: Our findings suggest that the successful sharing of a simulation course requires careful consideration of the cultural, educational, strategic, logistical, and sustainability needs of the contexts in which it will be run.

OC - 6 - 1

Monitoring of curriculum implementation- an often neglected process?

Annabelle Cumyn Université de Sherbrooke, **Isabelle Moreau** Université de Sherbrooke, **Sondos Samandi** Université de Sherbrooke, **Sylvie Mathieu** Université de Sherbrooke, **Ghislaine Houde** Université de Montréal, **Ève-Reine Gagné** Université de Sherbrooke

Background/Purpose: Implementation of curricular change relies on faculty endorsement and correct application of planned educational strategies. Concomitantly, significant resources are directed to the process of evaluation. However, information derived from evaluation may lose some significance if curriculum managers have not also planned the process of monitoring the quality and fidelity of implementation.

Methods: We developed a monitoring plan to document three dimensions; a) respect of the fundamental characteristics of the planned curriculum; b) correct implementation of novel educational strategies, and c) respect of the general orientations that underpinned curriculum reform. The plan was based on analysis of faculty documents that justified the need for curriculum reform, on principles of a competency-based professionalizing curriculum as well as on concerns raised by curriculum developers. Data collection was linked as much as possible to the ongoing evaluation process.

Results: In parallel to the final steps of curriculum change, we constructed a detailed plan of indicators for the monitoring of curriculum implementation. Dedicated data collection was only required for a minority of indicators. After the first year of implementation of a reviewed 4-year Doctorate of Medicine program, a document was presented to the Faculty with major and minor recommendations for ongoing implementation and curriculum maintenance.

Conclusion: Major curriculum reforms launch a cycle of evaluation, needs assessment, altered educational strategies, implementation, etc. Curriculum monitoring is a process that can parallel planned evaluation and deliver vital information without becoming resource-intensive. Monitoring of curriculum implementation is essential to ensure proper alignment between the planned and enacted curriculum.

OC - 6 - 2

Humanism in medicine: supporting empathy

Anna Byszewski University of Ottawa, **Heather Lochnan** University of Ottawa, **Melissa Forgie** University of Ottawa, **Philippe Rousseau** University of Ottawa

Background/Purpose: Physicians who demonstrate empathy garner greater patient satisfaction and may have reduced malpractice claims. Insufficient empathy has been linked to burnout and in turn diminshed quality and medical error. Previous studies have reported that empathy may erode as medical students progress through their studies. This study was designed to determine if the medical curriculum has successfully instilled or maintained empathy in medical students.

Methods: The Interpersonal Reactivity Index (IRI) was used to measure emotional and cognitive empathy. IRI was preferred over other measures due to high psychometric properties, widespread use within medical fields, and validation in multiple languages. Students were contacted by email and participation was voluntary.

Results: Empathy was statistically significantly different between the four academic years, $F(3,192)= 35.474, p < .001, \eta^2=0.357$. Tukey post hoc analysis revealed that students enrolled in year one of the medical program ($M=9.5, SD=1.3$) had lower empathy scores than students enrolled in year two ($M=11.9, SD=1.5$), year three ($M=11.4, SD=1.6$), and year four ($M=11.5, SD=1.6$), $p<.001$.

Conclusion: Interestingly, the empathy measures of the first year students were similar to the scores of typical university students. The higher scores observed in second, third, and fourth year students would suggest that the curriculum may foster empathy in its students. As students gain clinical exposure and risk loss of empathy it appears supports such as a reflective writing eportfolio program, diverse professionalism curriculum, wellness and faculty development that empathy competency may improve with training.

OC - 6 - 3

Improving undergraduate instruction in evidence based medicine (EBM): mapping the University of Alberta undergraduate EBM curriculum to national competencies as a tool to facilitate curriculum development.

Virginia Goetz University of Alberta, **Victor Do** University of Alberta, **Tracey Hillier** University of Alberta

Background/Purpose: A vital element of heath care practice is evidence-based medicine (EBM), the judicious use of best-available evidence in decisions about individualized patient care. Advances in research require physicians to regularly apply EBM, thus medical schools must ensure graduates are prepared to access, appraise, and utilize evidence. However, teaching EBM remains a challenging endeavour for medical educators and best practices for implementing effective EBM curriculum are not well established.

Summary of the Innovation: We completed a tagging and mapping project to identify how well existing EBM instruction (the EBM course and curriculum as a whole) met objectives at a level required by national competencies. The Royal College of Physicians CanMeds framework and the Licentiate of the Medical Council of Canada (LMCC) objectives were analyzed to identify 21 competencies relevant to EBM. The EBM course objectives and sessions were then tagged for content that addressed the 21 competencies. EBM in curriculum as whole was then mapped by a review of content (including lecture sessions, small group activities, assignments and assessments) for three student cohorts. The mapped EBM curriculum was then compared to the 21 competencies to elicit how well competencies were covered. The current EBM course (objectives and sessions) was supported in full by CanMeds and LMCC objectives. Curriculum covered on average 80% of the national competencies. Competencies related to understanding the importance of EBM, and the ability to identify, select and navigate appropriate resources were well covered. Competencies involving appraisal and integration of evidence had limited coverage, and competencies related to lay communication of evidence were not covered.

Conclusion: The tagging and mapping process revealed variation and deficiencies in how competencies are addressed. This knowledge provided necessary guidance to inform development of new learning objectives and sessions were added that will effectively operationalize competencies with limited coverage in curriculum. Importantly, new content related to lay communication of evidence will allow for better evidence informed and shared decision-making practice. Other institutions seeking to improve EBM instruction may use this data-driven process to focus their curriculum development.

OC - 6 - 4

An Innovative Scholar Competency Curriculum in Undergraduate Medical Education

Heather Murray Queen's University, **Kunal Jain** Queen's University, **Kevin Lee** Queen's University, **Melanie Walker** Queen's University

Background/Purpose: The Scholar competency is one of seven key physician roles in the CanMEDS framework for medical education. We describe the creation, implementation, and impact of an innovative Scholar competency curriculum in undergraduate medical education at a single academic institution.

Summary of the Innovation: Our undergraduate Scholar curriculum has three core components: a critical appraisal thread spanning four years; a research development course; and an annual student

research conference. Using a spiral structure, students are introduced to principles of clinical research study design, critical appraisal, and basic statistics, with a series of embedded critical appraisal assignments throughout all years. In second year, students develop a research project with one-on-one faculty guidance, culminating in a written research proposal. Finally, students attend a curriculum-integrated research conference and are encouraged to present work or provide structured, written feedback to presenters. The Canadian Graduating Questionnaire collects data from students nationally on perceived CanMEDS competencies, scored on a 5-point Likert Scale. After implementing this curriculum, students from our institution reported significantly greater confidence than students from all other Canadian medical schools with performing critical appraisal tasks (4.23 [4.06-4.40] vs 3.72 [3.68-3.76]) and undertaking research activities during residency (4.11 [3.93-4.29] vs 3.29 [3.24-3.34]).

Conclusion: A longitudinal curriculum encompassing the elements of the CanMEDS Scholar competency is effective at preparing students with fundamental skills essential for residency. Future plans include tracking research productivity in graduates following implementation of this innovation.

OC - 6 - 5

The Opioid Awareness & Support Team (OAST): A novel approach towards education and community engagement at MUN Medicine

Matthew Downer Memorial – University of Newfoundland, **Luke Duffley** Memorial – University of Newfoundland, **Phil Hillier** Memorial – University of Newfoundland, **Kieran Lacey** Memorial – University of Newfoundland, **Madison Lewis** Memorial – University of Newfoundland, **Josh Lehr** Memorial – University of Newfoundland, **Brooke Turner** Memorial – University of Newfoundland, **Dr. Jill Allison** Memorial – University of Newfoundland

Background/Purpose: The Opioid Awareness and Support Team (OAST) formed in 2017 by students with a desire to learn more about opioid-related issues in their communities. As a student interest group, OAST takes a multidisciplinary approach to learning and educating students and faculty about the opioid crisis in NL and Canada. OAST was founded on principles of social accountability and community-based knowledge exchange, partnering with expert faculty and community groups to provide unique service learning opportunities for students. Further, OAST aims to address time limitations in curriculum by providing students the opportunity for more in-depth discussion on a range of opioid related topics.

Summary of the Innovation: OAST has provided Opioid Overdose Training to all residence assistants at MUN, distributed over 3500 Opioid Overdose information pamphlets in the university community, volunteered in a community job fair at a local penitentiary, and held harm reduction workshops for medical students in conjunction with the local needle exchange program. OAST is also providing a full day workshop for medical students on opioid related issues in our province. Based on our commitment to increasing professional awareness of opioid issues, we are also planning an academic half day for physicians.

Conclusion: To date, OAST has started a larger conversation among students about opioid related issues in our medical school and university, and has provided students with community engagement opportunities. We will present key findings from all our OAST educational activities and the impact it has had on student awareness and interest in advocacy around opioid use.

OC - 6 - 6

Integration of Community-Based Indigenous Health Education into Pre-Clerkship Curriculum

Layla Amer Ali Western University, **Brenna Hansen** Western University, **Cassie Poole** Western University, **Erik Mandawe** Western University, **George Kim** Western University

Background/Purpose: Medical students have limited access to resources and opportunities to learn about Indigenous cultures, including the history of Indigenous relationships with the Canadian healthcare system. The Office of Distributed

Education at Schulich School of Medicine & Dentistry has developed the Indigenous MedLINCS summer elective, which provides pre-clerkship students with immersive learning experiences in rural Indigenous communities.

Summary of the Innovation: Over a 6-week placement in Neyaashiinigmiing, our student team assisted community health leaders in running programming designed to promote healthy lifestyle choices for all ages, including a 3-day youth camp and a community vitals clinic. The team also participated in traditional programming, such as music, dance and social events, as well as clinical experiences at the nearby Wiarton hospital. Through these activities we developed relationships with community members and healthcare workers both on and off-reserve and heard their stories about navigating institutional barriers surrounding Indigenous health and wellness. These experiences highlighted gaps in our knowledge of Indigenous health that will be crucial to our development as health care professionals.

Conclusion: Upon completion of the elective we felt the community had partnered with us in a long-term sustainable relationship. Our experience provided us with community-based learning, thus addressing an important gap in pre-clerkship medical education. We have therefore constructed methods to help current and future educators provide opportunities for students to learn about the health and cultures of Indigenous peoples. We will provide recommendations for the incorporation of community-based Indigenous health education as an accessible part of the core medical curriculum.

OC - 7 - 1

Near-Peer Interactions and the advice delivered before and after curriculum change.

Kelly Huang University of British Columbia, **David Mak** University of British Columbia, **Kevin Eva** University of British Columbia, **Fred Hafferty** Mayo Clinic

Background/Purpose: Peer-based interactions allow students to transfer knowledge to one another regarding how to succeed in training and beyond. The capacity to convey valued advice, however, may depend on the consistency of experiences between cohorts, creating a potential problem during curriculum renewal. With this study we examined the perspectives of medical students towards peer advice following a curriculum renewal.

Methods: We used a grounded theory methodology. 20 MD undergraduate students, 7 from the Class of 2019 (the first cohort after a curriculum change) and 13 from the Class of 2020 (the second cohort in the new curriculum), participated in semi-structured interviews. Transcripts were anonymized with themes generated until saturation.

Results:

1. The Class of 2019 reported fewer opportunities to seek peer advice, though this did not cause them concern

2. When available, students sought/received advice mostly in informal settings

3. Advice primarily focused on work-life balance rather than academics

4. Academic advice that was conveyed tended to focus on professional development and clinical competence, not particular examination/course content

5. Students in both classes welcomed advice but were wary of accepting it at face value

Conclusion: Following a curriculum change, near-peer interactions did not appear to be disrupted, but different cohorts following the curriculum change appear to have had different experiences. In either case, their variable experiences do not appear to fatally disrupt support networks. Participant statements suggest the reason lies in the focus of peer advice on work-life balance, rather than academics, and on the tendency of students to be wary of accepting advice in general.

OC - 7 - 2

Flexible Enhanced Learning: A Model for Student-Defined Undergraduate Medical Education at the University of British Columbia

Richard Lazenby University of British Columbia, **Alice Mui** University of British Columbia, **Dawn Cooper Elson S. Floyd** College of Medicine Washington State University

Background/Purpose: The University of British Columbia Undergraduate Medical Program introduced a new curriculum in September 2015. An innovative new course named FLEX (Flexible Enhanced Learning) was a significant part of this endeavor, promoting student engagement in scholarship activities. FLEX acknowledges that students learn effectually in diverse ways, and that this diversity of learning modes represents opportunities, not barriers, in the training of new physicians.

Summary of the Innovation: FLEX offers a unique opportunity for students to pursue self-defined learning opportunities and scholarly activities. In this presentation we describe the structure of the FLEX course, from Foundations of Scholarship to designated curricular time (a total of 576 hours across years 1, 2 and 4 in 2018-2019) enabling a variety of flexible learning activities. We also report the success

and challenges from our first three student cohorts (classes of 2019, 2020 and 2021).

Conclusion: There are numerous benefits for inclusion of flexible, self-directed learning and scholarship opportunities into a medical curriculum. Chief among these is the opportunity for medical students to invest themselves in a variety of educational scenarios, including basic foundational research, interprofessional education and community-service learning. Students have embraced these opportunities with enthusiasm. For example, in their second year alone the class of 2020 (67% responding) contributed 141 conference presentations, 187 manuscripts written/published, 71 workshops developed, and a variety of educational materials created (n=233). Ultimately, the FLEX course fosters innovation, creativity, and critical thought, and prepares graduates for roles as scholars, life-long learners, and leaders throughout their medical careers.

OC - 7 - 3

Shining a light into the black box of group learning

Charles Park University of British Columbia, **Claire Wu** University of British Columbia, **Glenn Regehr** University of British Columbia

Background/Purpose: Group work is seen as serving multiple positive purposes in the health professions education world such as mastering course content, transfer of knowledge into clinical practice and the development of collaborative/teamwork skills. However, there have been relatively few studies exploring students' experiences of the small group learning context or what they learn in and from that context.

Methods: Using grounded theory, semi-structured interviews were conducted with 9 students exploring their understanding of the skills they learnt with respect to group work and the value of the group as a mechanism for content learning.

Results: Students were able to express all the "right" goals for small group learning such as retaining course materials, mimicking future health care teams and creating a collaborative environment. However, when their experiences were further explored, students did not seem to experience the value of group learning as improving their own personal learning but rather a mechanism for reviewing their learning. Further, students frequently expressed the opinion that the tutor was the primary factor in the success of a group, and when group function was suboptimal, students described simply giving up on the group or relying on tutor to address the problem.

Conclusion: Small group learning, at least in the context of single-term groups, may not be accomplishing what educators might hope. Although students understand the intent of small group learning, we should not assume such groups are solving our teamwork problems in health professions education.

OC - 7 - 4

Evaluation of Feedback on Graded Team Assignments (GTAs) at Queen's University School of Medicine

Andrew Belyea Queen’s University, **Michelle Gibson** Queen’s University, **Eleni Katsoulas** Queen’s University

Background/Purpose: Graded team assignments (GTAs) were introduced at Queen's University Undergraduate Medical Education in 2010 to provide a unique mechanism for assessment in a team-based learning curriculum. The structure of GTAs brings small groups of students together to collaborate on a case-based assessment and submit it for marks.

Methods: With the goal of understanding what makes a GTA successful from student and faculty perspectives, this study sought to evaluate: a) the student feedback about GTAs, and b) what experiences and recommendations faculty had for GTA development. To evaluate this feedback, three sources of data were collected including student questionnaires, a student focus group, and faculty interviews. The focus group and faculty interviews were transcribed verbatim. All qualitative data were analyzed using an inductive approach.

Results: Students and faculty both provided suggestions of using realistic patient cases, having

clear objectives for each GTA, having inter-disciplinary input in developing GTAs, and including questions that necessitate higher-level thinking. For example, students identified that answering questions that were either "Google-able" or required significant editing (e.g., writing a referral letter) were not effective in GTAs. Meanwhile, the inclusion of clear instructions and concise, timely faculty feedback were highlighted by students as important for GTA success.

Conclusion: This research will be used to create local faculty development resources for GTAs. The findings add to the literature on team-based learning, and have implications for medical school faculty interested in implementing and improving case-based learning.

OC - 7 - 5

Fitting a square peg in a round hole: students as partners in educational governance

Philippe-Antoine Bilodeau McGill, **Xin Mei Liu** McGill, **Beth-Ann Cummings** McGill

Background/Purpose: Commonly, medical students are "consumers" of undergraduate medical education (UME). UME programs develop and implement curriculum, policies and procedures and student input is limited to feedback on their lived experiences. While student feedback is essential to program evaluation and can inform subsequent modifications to the program, the students-as-consumers model does not involve students proactively in the development and implementation of their educational program. To allow students to effectively inform program decisions, we propose moving towards a partnered educational governance (PEG) model, with both horizontal and vertical accountability of students and educators.

Summary of the Innovation: To enable a PEG model, the student voice must be unified and student leaders horizontally accountable to each other and vertically accountable to their constituents while UME programs must explicitly value student input as legitimate and actionable. The establishment of a student Medical Education Committee was undertaken to unify the student voice, increase student representative 'representativeness', facilitate interactions with UME, and facilitate interactions between student leadership and the student body.

Conclusion: The student Medical Education Committee, in parallel with changes in UME governance, potentiated a transition from a students-as-consumers framework to a students-as-partners framework with multidirectional accountability. Within the first year, meaningful changes associated with the PEG model included increased student engagement in key program decisions, such as the redesign of a research course and an update to the absences and leaves policy. The PEG model is characterized by unified student representation that is accountable, representative and impactful while maintaining UME responsibility for the curriculum and policies.

OC - 7 - 6

Evaluating the Impact of Reducing Clerkship Form Length and Nudging Face-to-Face Assessments on Validity

Vijay Daniels University of Alberta, **Hollis Lai** University of Alberta, **Karen Forbes** University of Alberta, **Tracey Hillier** University of Alberta

Background/Purpose: Obtaining timely and relevant feedback is a common and prevalent issue in clerkship assessments. Locally, this issue was compounded by long assessment forms with reliability coefficients as high as 0.95 suggesting raters are simply circling all 3s, 4s, or 5s and not reading the items.

Summary of the Innovation: Through iterative discussions with stakeholders, we implemented two innovations with our forms. First, we reduced the number of items from 16 to 8 items. To improve accuracy of each rating, the scale uses behavioural anchors to describe the expected level of performance according to their progression in clerkship. Second, students now had to initiate the forms to nudge preceptors to sit down with them and discuss performance, though an option to send forms electronically was still available.

Conclusion: The percent of final assessments submitted by the end of each clerkship have more than doubled, and the rate of unsubmitted final forms 30 days after a clerkship has decreased from 10% to 1%. G-studies revealed more reasonable intra-clerkship reliabilities (Phi 0.76-0.87) with more variability suggesting raters were actually reading the form. G-studies demonstrated that reliability across the Year 3 clerkship increased from Phi 0.42 to 0.60 indicating the new forms/process were measuring more generalizable constructs than previously. Finally, the nudging of face-to-face meetings led to an increase in comments documented with the character count doubling. Overall the new form and process has more validity evidence with increased evidence raters are using the form properly, more generalizability across clerkships, and improved amount and timeliness of feedback.

OC - 8 - 1

Preceptor Modelling of Wellness and Student Perceptions

Lauren Galbraith University of British Columbia, **Mackenzie Grisdale** McMaster University, **Carol Hutchison** University of Calgary, **Mike Paget** University of Calgary

Background/Purpose: Almost half of physicians (45.8%) self-report burnout (Shanafelt et al., 2012). It is an independent predictor of medical error (Shanafelt, 2018), and increases the risk of broken relationships, problematic substance use and suicidal ideation (Roger, 2017). Prevalence among trainees is staggering. The onset of residency causes a 15.8% absolute increase in depressive symptoms (Mata et al., 2015), and the prevalence of depression (27%), burnout (50%) and suicidal ideation (11%) is increasing among medical students (Rotenstein et al., 2016). The Canadian Medical Association Policy on Physician Health recommends a multilevel approach to addressing physician burnout including self-awareness and management of personal well-being. We describe a physician-targeted intervention aimed at increasing self-reflection of wellness and role-modelling for medical students.

Methods: A single non-mandatory question prompting physician preceptors to reflect on whether they modelled or discussed wellness with their medical students was added to end-of-rotation student evaluations. Medical students were surveyed longitudinally to determine student perception of preceptor modelling of wellness. Descriptive statistics and chi-square were used to compare participant characteristics.

Results: Preceptor response rate was 70.9% (N=1951), of which 45.1% of preceptors self-reported modelling wellness with medical students (p=0.12). Most medical students (66.0%, p<0.0001) reported experiencing preceptor modelling of wellness, however, they indicated that an overall minority of preceptors participate in role-modelling (68.8% vs 14.1%; p<0.0001). A higher proportion of students could foresee attending to their wellness as staff versus during residency (75.5% vs 41.4%; p<0.0001). There was no difference in the proportion of medical students who self-reported improving their own wellness based on the preceptor role-modelling (20.6% vs 20.6%; p=1.0).

Conclusion: Integration of a preceptor prompt question into student evaluations is a feasible, low resource method to promote physician role-modelling of wellness. Further research is required to increase the proportion of preceptors who model wellness and to encourage trainees to follow suit in attending to their own wellness.

OC - 8 - 2

Acting on What we Already Know: Supporting Resiliency Among Resident Physicians in Canada

Amanda Ritsma McMaster University, **Aarun Leekha** Memorial – University of Newfoundland

Background/Purpose: The prevalence of burnout, a work-related syndrome due to chronic exposure to occupational stress, is staggeringly high among resident physicians. Resident Doctors of Canada (RDoC) has developed a skills-based Resiliency Curriculum to help mitigate the negative effects of stress during residency. Many residents who participate in this resiliency training have highlighted the significance of the organizational and systemic barriers to seeking care for their mental well-being. RDoC set out to further explore these barriers and related solutions.

Methods: This was a cross-sectional qualitative and quantitative study, which consisted of three focus groups with resident participants from across Canada and quantitative survey data from RDoC's national resident survey. Qualitative data was analyzed using thematic analysis, and quantitative data using descriptive and frequency distribution.

Results: Focus group participants perceived the following themes as barriers to resident physician wellness: culture of medicine (the "hidden curriculum"); lack of control; and minimal access to confidential resources. These were consistent with quantitative data.

Conclusion: The results demonstrate the need for advocacy with key medical education stakeholders to reduce these barriers in order to increase residents' autonomy over their health and well-being. RDoC is developing resources and toolkits to address these barriers as a community. Targeted advocacy and programs are needed to lower burnout rates among resident physicians, which will ultimately improve patient care.

OC - 8 - 3

Performing Under Pressure: Stress in Surgical Practice

Sydney McQueen University of Toronto, **Melanie Hammond** Mobilio University of Toronto, **Adam Shehata** University of Toronto, **Carol-Anne Moulton** University of Toronto

Background/Purpose: Stress has traditionally been viewed as a physiologic entity, but attempts to understand stress among surgeons using physiologic parameters alone have been underwhelming. The purpose of this study was to explore the phenomenon of stress in surgical performance, and to develop a theoretical framework to help understand the relationship between surgeons and stress.

Methods: Using a constructivist grounded theory methodology, semi-structured interviews were conducted with 22 staff surgeons at the University of Toronto, purposively sampled for different experience levels and surgical practices. Data were coded and analyzed iteratively by three researchers until theoretical saturation was achieved.

Results: In addition to physiologic responses to stress, three key dimensions of stress and surgical performance were identified: 1. Cognitive: Similar to what is known from the literature, surgeons reported that while some levels of stress enhanced attention and improved performance, high levels impeded surgeons' abilities to focus and make sound decisions; 2. Emotionality: Surgeons described how different emotions associated with stress, such as guilt, fear, frustration, and grief, could impact their ability to perform and in some cases, inhibited them from practicing altogether; 3. Sociocultural: Participants illustrated how performing in a surgical culture which has traditionally silenced stress actually contributes to stress, and leaves the onus on individuals to negotiate these experiences.

Conclusion: Stress is both a contributor to, and product of surgical performance. To better understand the role of stress in surgical performance, we must consider the physiological, cognitive, emotional, and sociocultural position of the surgeons experiencing the stress.

OC - 8 - 4

Proposed National Standards for Resident Call Rooms

Avery Wynick University of Alberta, **Kevin Zuo** University of Toronto, **Blair Bigham** McMaster University, **Justyne Morrow** University of Calgary, **Melody Ong** University of Manitoba

Background/Purpose: 19.7% of respondents felt that work-related fatigue led to medical errors impacting patients. That was a key finding of the Resident Doctors of Canada (RDoC) 2018 Resident National Survey. Provincial Health Organizations (PHO) call-rooms guidelines vary widely between regions, and the actual state of call rooms is highly variable between hospitals. The RDoC Wellness Committee intends to mitigate the risk of fatigue and associated medical error by making recommendations for call-room national standards.

Methods: We completed an enviroscan of the "current state of call rooms" and compiled regional requirements for call rooms as they are found in PHO residency contracts. We also surveyed and collected sleep accommodation guidelines from other professions where employees are expected to work and sleep in-house, including the aviation, trucking, and oil and gas industries.

Results: We have defined the purpose of a call room as both a private working space and sleeping quarters. We found significant variation in PHO

guidelines for call rooms and no current system of enforcement among hospitals. Based on the aggregated call-room guidelines of PHOs across the country and those of other industries, we drafted minimum standards in the categories of safety and accessibility, comfort and rest, bathrooms, productivity and work facilitation, and hygiene and cleanliness.

Conclusion: While it is not the jurisdiction of PHOs to enforce individual hospital call room requirements, these guidelines can assist PHOs, residents, postgraduate medical education offices, and hospitals to improve the working conditions of on-call residents for both resident physician and patient safety and well-being across Canada.

OC - 8 - 5

The stressed heart: using simulation to assess mobile measures of heart rate variability

Vicki LeBlanc University of Ottawa, **George Mastoras** University of Ottawa, **Christopher Hicks** University of Toronto, **Philip Aucoin** University of Ottawa, **Connor O'Rielly** University of Calgary

Background/Purpose: Educators concerned with mental health are increasingly interested in accessible mobile technology ("wearables") to track "in the moment" stress levels during learning and clinical duties. The global market for medical wearables is soon projected to be in the billions. This is especially true for heart rate variability (HRV) measures, which indicate the balance between sympathetic vs. parasympathetic activity. However, little is known regarding the ability of various HRV measures to detect short-term psychological stress. We used simulation modalities to create known stressful situations, to assess various HRV measures for their sensitivity in detecting acute stress.

Methods: Ten Emergency residents participated in 2 known stressful scenarios and 2 rest periods. We measured their subjective stress (State-Trait Anxiety Inventory [STAI]), physiological stress (salivary cortisol levels), time-based HRV (rMSSD- root mean square of successive differences; SDNN- standard deviation of NN intervals; pNN50 - proportion of NN intervals that differ > 50ms) and frequency-based HRV (Low Frequency/High Frequency [LF/HF] ratio).

Results: Results of a MANOVA show that the STAI, cortisol and time domain HRV measures (RMSSD, SDNN, pNN50) differentiated between rest and stress sessions (all p .75). Measures of different modalities showed moderate correlations (r values: .50 to .60). The LF/HF ratio showed only moderate correlations with time-domain HRV variables, and weak correlations with STAI and cortisol.

Conclusion: Time-based HRV measures are sensitive to increased stress levels during known stressors; the frequency-based HRV measure is not. Assessments of HRV in education or clinical settings should thus target time-based measures. Furthermore, all variables appear to measure interrelated, but different, aspects of stress responses. Educators and researchers looking at stress should incorporate measures of different systems (e.g. subjective & physiological) into their designs.

OC - 8 - 6

Choosing wisely: An autoethnographic exploration of self-preservation in clerkship

Alon Coret University of Toronto, **Andrew Perrella** University of Toronto, University of Toronto, **Glenn Regehr** University of British Columbia, **Laura Farrell** University of British Columbia

Background/Purpose: For most medical students, clerkship represents a critical transitional phase into the 'real world' of medicine. This transition is often accompanied by significant mental stressors, burnout, and empathy decline, leading many educators to develop wellness and resilience curricula. The following project seeks to provide an insider view of these issues from the frontline experiences of clinical clerks.

Methods: Using an analytic autoethnographic approach, two medical students documented 86 'transformative moments' on their emerging professional identity over their 48 weeks of core clerkship. A narrative analysis was conducted iteratively in partnership with a staff internist and a medical education researcher, allowing for robust multi-perspective input. Reflections were analyzed

and coded thematically; disagreements were resolved by consensus discussion.

Results: A key theme of the reflections was self-preservation, conceptualized within three contexts: (i) Clerk-patient relationships, wherein clerks found themselves in emotionally difficult situations; (ii) Clerk-preceptor relationships, in which self-preservation manifested through mechanisms of self-defense; and (iii) Personal life, wherein self-preservation served as a survival strategy against burnout.

Conclusion: The practice of self-preservation is conceptualized as a conscious act of boundary-setting and psychological defense in situations that pose a real (or perceived) threat to the clerk's wellbeing. At best, self-preservation serves as a temporizing measure - rather than a real solution - to the stressors and burnout of clerkship. Left unchecked, however, acts of self-preservation may lead to selfishness and apathy - qualities that are in diametric opposition to those expected of future physicians.

OD - 1 - 1

Learning analytics play a role in competency-based CPD: The case of an ECG interpretation course participants' learning data

Chloe Burnett University of Calgary, **Sarah Weeks** University of Calgary, **Caitlin Ryan** University of Calgary, **Tendai Dongo** University of Calgary, **Kelly Burak** University of Calgary

Background/Purpose: Competency-based education models require a learner-centered approach based on learning goals mapped to learning activities and assessment. In support of e-learning activities, advancements in technology have allowed robust learning analytics delivering insights from learning data.

Summary of the Innovation: University of Calgary CME&PD and Cardiac Sciences offered an ECG Interpretation Course in June 2018, providing a review of basic 12-lead ECG interpretation skills for non cardiologists. It consists of pre-course self-learning activities - a series of podcasts with related online ECG interpretation exercises, followed by in-class activity - a full day learning event including short lectures and a rotation of small group, case-based discussions. From pre-course activities, 32 participants' engagement and completion on 50 ECG questions were measured. The data was distributed for planning committee review, informing the teaching at in-class activity and the planning of future course delivery. The learning analytics was made possible in a WordPress site with integration of LearnDash LMS and Tin Canny LearnDash Reporting plugins.

Conclusion: What we learned: 1) Learning analytics need to be planned simultaneously with designing of the learning activities. 2) Learning data requires interpretation before it becomes meaningful to inform teaching. 3) There is resource implications regarding the analyses. Learning analytics as a methodology for understanding and optimizing learning is particularly useful when we adopt new approaches in designing physician learning. Analytics facilitate how we understand the process of teaching, learning and assessment in competency-based CPD activities.

OD - 1 - 2

Understanding the relationship between data-informed learning and orientation to lifelong learning

Sanjeev Sockalingam University of Toronto, **David Wiljer** University of Toronto, **Dave Davis** Mohammed Bin Rashid University, **Meredith Giuliani** University of Toronto, **Allan Okrainec** University of Toronto, **Ivan Silver** University of Toronto, **Craig Campbell** The Royal College of Physicians and Surgeons, **Maria Mylopoulos** University of Toronto, **Walter Tavares** University of Toronto, **Rebecca Charow** University Health Network

Background/Purpose: Personalized information regarding clinical activities or performance data can support the structuring and/or selecting of educational strategies for maintenance of competence purposes. Yet, they are not widely used, even when available. The purpose of this study was to explore clinician engagement with practice data for continued professional development (CPD) purposes and what factors might serve as barriers and facilitators.

Methods: An iteratively developed and field-tested survey was distributed to General Surgeons (GS), Radiation Oncologists (RO), and Psychiatrists (Psy) through their respective association email lists and at annual conferences in 2017. The survey domains included physicians' practice context, orientation to CPD using the Jefferson Scale for Life Long Learning (JeffSPLL) and data use for learning.

Results: A total of 305 practicing physicians (n=49, 53 and 203 for GS, RO and Psy, respectively) participated in this study. The majority used data for practice improvement (n=177, 61.7%; GS=27, 9.4%; RO=35; 12.2%; Psy=115, 40.1%) and high orientation to life-long learning (JeffSPLL: GS=45.1; RO=43.5; Psy=47.4, out of 56). High data users, compared to low, score

higher on JeffSPLL ($p < 0.01$, Cohen's D= 0.34). Most respondents, across specialties, agreed that organizational policies make it difficult to access (n=164;61.7%) and use/interpret (n=142;53.8%) clinical data for learning.

Conclusion: Despite the value of performance data for structuring CPD, just over half of specialists make use of the data and this is inconsistent across specialties. There may be functional barriers that are impeding greater use of data. Our ongoing research is exploring in more detail organizational and systemic factors impacting data-informed CPD programs.

OD - 1 - 3

Role of Project ECHO in quality improvement: data from mental health and addictions

Sanjeev Sockalingam University of Toronto, **Anne Kirvan** Centre for Addiction and Mental Health, **Cheryl Pereira** Centre for Addiction and Mental Health, **Thiyake Rajaratnam** Centre for Addiction and Mental Health, **Yasmeenah El-Zein** Centre for Addiction and Mental Health, **Eva Serhal** Centre for Addiction and Mental Health, **Allison Crawford** University of Toronto

Background/Purpose: Project ECHO is a tele-mentoring model that uses a virtual community of practice to leverage scarce healthcare resources in remote communities, by connecting primary care providers (PCPs) with a specialist team as well as other providers practicing in similar settings. One key component of the ECHO model is case-based learning and its use of "learning loops" which extend beyond learning from specialist teams to also include PCP to PCP learning. This co-learning approach yields contextual and comprehensive treatment recommendations generated by all ECHO participants. We aim to understand how ECHO Ontario Mental Health (ECHO-ONMH) recommendations align with broader health care quality domains.

Methods: Recommendations generated from cycle two of ECHO-ONMH (n=416) were coded using the six quality of care domains: Safe, Effective, Patient-Centered, Timely, Efficient and Equitable. A standardized coding rubric was developed based on emerging key concepts and themes.

Results: The quality of care domain that emerged most frequently was Effective (73%), followed by Safe (12.1%), Patient-Centered (9%), Efficient (2.9%), Equitable (1.7%) and Timely (1.3%). Results were further stratified by pharmacologic and non-pharmacologic recommendations. The Effective domain had the highest proportion of pharmacologic recommendations (59.3%). The other quality of care domains were predominantly non-pharmacologic. Based on recommendation implementation feedback surveys sent to providers, 67.7% of recommendations were implemented.

Conclusion: Findings suggest that the co-created recommendations are evidence-informed (Effective), and tend to focus on the patient (Patient-centered) and their safety (Safe). More research is needed to examine the impact of ECHO on changes in practice and spread of quality improvement.

OD - 1 - 4

Specialist by day, Generalist by night - A needs assessment approach for Anesthesiology

Michael Brock Western University, **Valerie Schulz** Western University, **David Dixon** Western University

Background/Purpose: Appraisal of educational needs across a faculty with diverse professional responsibilities remains a difficult task. Anesthesia & Perioperative Medicine, Schulich School of Medicine & Dentistry, Western University required an approach to identify potential educational needs for their new strategic educational priorities. Faculty within this department are required to be specialists by day, but generalists by night. On-Call for anesthesiology results in a varied scope of clinical scenarios, and as such, requires a wide array of skills. In order to prioritize departmental education for residents and faculty members this project was undertaken by Continuing Professional Development (CPD), Schulich Medicine & Dentistry.

Summary of the Innovation: A multi-phase process incorporating expert panels, two separate survey

methodologies, and a process for personalized feedback was developed. Through expert panel discussions, 36 potential topics were developed. Expert faculty members rated these topics through a Delphi process (2 rounds) based on how skillful their peers ought to be. All 36 topics were subsequently sent faculty-wide to gather self-reported measures of ability, clinical encounter frequency, and benefit from additional educational opportunities. Lastly, participants receive personalized and confidential learning reports that highlight how they scored relative to expert opinion and peer comparisons.

Conclusion: A prioritized list of topics was generated to support Anesthesia & Perioperative Medicine's future educational strategies. Highly desired topics from prospective learners aligned well with simulation-based educational modalities (I.e. Emergency OR scenarios). Personalized reports from this process progresses toward individualized CPD, which has potential to improve educational initiatives and uptake.

OD - 1 - 5

Wound Care Continuing Professional Development and Bootcamps: Interprofessional before it was cool

Gary Sibbald University of Toronto, **Karen Smith** Queen's University, **Laura McDiarmid** Queen's University, **James Deacon** Queen's University, **Jolene Heil** Queen's University, **Cynthia Mangan** Queen's University, **Eleftherios Soleas** Queen's University

Background/Purpose: Caring for patients with wounds has increased in frequency and cost, resulting in a great economic and quality-of-life burden for our healthcare systems and patients (Sen et al., 2010). Wound care is a technical endeavour integrating internal medicine, nursing, dermatology, rehabilitation, and procedural interventions to remove damage and promote healing.

Summary of the Innovation: To develop better practical skills, in 2011 we created hands-on workshops/bootcamps with community patients. The workshops were interspersed with short didactic lectures and group discussions to broaden and reinforce the learning. The workshops involved interprofessional teams including physicians, nurses, nurse practitioners, and health partners in small group learning with volunteer patients suffering with chronic wounds as living case studies. The patients participated in the small group learning, allowing participants to interview them and exam their wounds. Workshop participants were engaged in the patients' treatment from the undressing to the redressing of their wounds. This interactive, interprofessional model provided a rich learning environment that introduced and developed the collaborative approach across professions necessary to provide quality wound care.

Conclusion: The 7 years of participant evaluation have been exceptionally positive with over 90% perfect scores and the remainder overwhelmingly positive, indicating universally positive reception. This program's success spurred additional workshops in dermatology and has encouraged our office to replicate its success elsewhere. The richness of the learning, the practicality of the topic, the quality healthcare facilitating wound healing, and the interprofessional nature of these workshops make them an exemplary model for other health education institutions to adopt.

OD - 2 - 1

Impact of a Student-Organized 12-Hour Indigenous Health Elective on Student Learning Outcomes

Kai Homer University of Alberta, **Michelle Lebreton** University of Alberta, **Shehzad Kassam** University of Alberta, **Julianna Deutscher** University of Alberta, **Jeremy Christensen** University of Alberta, **Adam Mildenberger** University of Alberta, **Nicole Mensik** University of Alberta, **Riley Davidson** University of Alberta, **Jill Konkin** University of Alberta

Background/Purpose: In recent years, incorporating specific learning objectives that deal with knowledge and skills unique to working with Indigenous populations has become a priority for Canadian medical schools. We sought to objectively evaluate the impact a medical student-run 12-hour extracurricular elective has on attainment of specified learning objectives pertaining to Indigenous Health.

Methods: After obtaining local ethics approval, survey respondents were asked to grade their familiarity with pre-determined learning objectives by using a five-point numeric scale (1 - 5). Kruskal-Wallis one-way analysis of variance test was used to compare respondent scores from identical surveys administered prior to and following the elective.

Results: 54 fully completed pre-elective surveys administered between 2016 and 2017 were compared with 19 post-elective surveys completed between 2016 and 2017. Of twenty-three learning objectives evaluated, fourteen were associated with a statistically significant increase in mean scale scores ($p<0.05$) (examples: understanding colonialism; understanding barriers to healthcare access), while nine objectives showed no significant difference (examples: history of local First Nations, resources in rural settings). The average increase in mean scale score for all twenty-three objectives was 0.62 ± 0.35 scale points.

Conclusion: Based on our pre and post-survey analysis, we conclude that extracurricular electives of short total duration (12-hours) are a viable means of achieving medical student-oriented learning objectives in Indigenous health. Survey analysis may allow organizers to gauge efficacy of content delivery and modify their elective curriculum accordingly.

OD - 2 - 2

Effect of Detailed OSCE Score Reporting on Student Learning

Silvia Ortiz University of Alberta, **Vijay Daniels** University of Alberta, **Hollis Lai** University of Alberta, **Minn Yoon** University of Alberta, **Okan Bulut** University of Alberta, **Tracey Hillier** University of Alberta

Background/Purpose: In a previous study, we developed an electronic OSCE system that reduced time to assessment results from weeks to hours; however, the amount of feedback provided remained limited to pass/fail. The purpose of this project was to evaluate a new score report that provided domain-specific feedback, both for individual and across stations.

Summary of the Innovation: The key steps were: 1) tagging OSCE station items and rating scales to competencies, 2) developing and implementing the report to highlight areas for improvement, and 3) evaluating the success of the report using surveys and group interviews. We implemented the OSCE score report to all second-year and fourth-year students. After viewing their score reports, students were asked to voluntarily rate their agreement to six Likert-scale statements regarding perceived accuracy of the report, how it stimulates future learning, and on seeking help from others.

Conclusion: Students felt the OSCE score report was accurate, identified relevant areas for improvement, and could guide future studying. Second-year students stated the report would prompt them to seek out help more than fourth-year students did; interview responses suggest fourth-year students

were concerned about seeming incompetent. Thematic analysis revealed students appreciated receiving feedback beyond pass/fail, as well as the immediacy of feedback. In contrast, students felt there were not enough comments; comments were too vague, or not linked to areas flagged as requiring improvement. Overall, students felt the new score report could support their learning, but more work is needed to improve the comments provided by examiners.

OD - 2 - 3

Following medical doodlers on Instagram: A good med student learning strategy?

Susan Cox University of British Columbia, **Carol Ann Courneya** University of British Columbia

Background/Purpose: Medical doodlers are students, who post on Instagram, original drawings inspired by their learning during medical training. Prolific medical doodlers have dedicated "Instagram followers" consisting largely of medical students in the global community. Together the top five "medical doodlers" have over 240,000 followers. We wondered how medical student followers used these doodles for learning.

Methods: This was a mixed methods study that utilized Instagram as a portal to survey medical student followers of the top five global medical doodlers. We incorporated binary Instagram swipe polls along with links on Instagram to an online survey made up of multiple choice and open-ended questions. Following grounded theory strategies for coding, we analyzed the narrative responses and generated themes related to the use of medical doodles for learning.

Results: Twenty-six hundred followers responded to a 24-hour binary poll, "I learn best with a) drawings or b) text", and 74% voted for "drawings". In a subsequent four-question, online survey posted on Instagram, followers were asked if they learned best with a) drawings, b) text or c) a combination of drawings and text; 180 followers responded and 87% identified the combination of drawings and text as most effective. Open-ended responses indicated that some followers used drawings, then supplemented their learning with text while others said they used text, then supplemented their learning with drawings. They reported that drawings provided "big picture" learning that allowed for deeper understanding and better retention. Followers also reported that medical doodles provided inspiration, motivation, and solidarity during a difficult learning journey. Doodles were also considered useful for teaching peers and junior colleagues, and for building a supportive, relatable community.

Conclusion: These findings support the growing popularity of medical doodles and point to the importance of recognizing the powerful impact that visual learning can have on medical student education and possibly medical student wellbeing.

OD - 2 - 4

The effectiveness of different models for observation-based learning

Portia Kalun McMaster University, **Portia Kalun** McMaster University, **Jennifer Zering** McMaster University, **John Cyfko** McMaster University, **Beth Sideris** McMaster University, **Ranil Sonnadara** McMaster University

Background/Purpose: Watching others perform complex tasks is fundamental to surgical training. The increased emphasis on observation and feedback in competency-based programs provides an opportunity to explore new ways of using observation for learning. There is conflicting evidence on the optimal model for observational learning, and the value of observing errors in performance. We explored the effectiveness of different models for observational learning.

Methods: Participants watched an expert build a LEGO structure and were asked to replicate the structure. Next, participants observed a video corresponding to their group and tried to build the structure again; this was repeated one final time. The videos for each group were of: the expert (E), the participant's most recent attempt (S), a novice making a few errors (NF), or a novice making many errors (NM). Data were analyzed using a repeated-measures ANOVA, with number of errors as the outcome variable.

Results: Our analysis revealed a main effect of attempt ($F(2,98)=17.59$, $p<0.01$), meaning that performance on the LEGO structure differed by attempt across all of the groups. Further analyses revealed that while the E and NF groups made significantly fewer errors over each attempt (i.e., improved over time), the S and NM groups did not.

Conclusion: Our results suggest that it is beneficial to watch either an expert or a novice who makes a few errors, rather than watching the performance of oneself or a novice who makes many errors. We propose that, when first learning a complex motor skill, residents watch experts (i.e., staff or fellows) and more experienced learners (i.e., senior residents). Future work will explore how feedback, another focus of competency-based curricula, influences how one learns from observing different models.

OD - 2 - 5

Liminality in co-produced health professions education: A phenomenological study

Csilla Kalocsai Centre for Addiction and Mental Health, **Sacha Agrawal** University of Toronto, **Csilla Kalocsai** Centre for Addiction and Mental Health, **Pat Capponi**, **Sean Kidd** University of Toronto, **David Wiljer** University of Toronto, **Charlotte Ringsted** Aarhus University, **Sophie Soklaridis** University of Toronto

Background/Purpose: Though rhetoric abounds about the importance of humanism in healthcare, little is known about how best to teach humanism. One promising and disruptive approach is to co-produce (i.e. design and deliver) education in collaboration with health service users. To this end, we co-produced a longitudinal course for psychiatry residents that paired people with lived experience of mental health challenges as advisors to fourth year psychiatry residents at the University of Toronto.

Methods: Residents and advisors met as pairs 6 times over 6 months to explore the experience of recovering from mental health challenges and receiving mental health services. Semi-structured interviews were conducted to investigate residents' and advisors' experience of the course.

Results: We completed 27 interviews. Four main themes emerged that could be interpreted through the concept of liminality: 1) residents and service user educators were confronted with one another in a betwixt and between space; 2) a shift occurred in the typical power relations between service users and psychiatrists-in-training; 3) learners critically reflected on their education, clinical practice and health services at large; and 4) transformational learning for both residents and advisors emerged. When residents rejected the betwixt and between space and/or the shift in power, they struggled to engage in the learning.

Conclusion: This study goes beyond existing studies of courses that involve service user educators by identifying potential mechanisms at play in co-produced pedagogy. The concept of liminality helps us understand what enables and hinders transformational learning in this context.

OD - 2 - 6

Creating an eLearning module for Faculty Development self-study.

Risa Bordman University of Toronto, **Linda Mayhew** McMaster University, **Aiman Shahid** McMaster University

Background/Purpose: Medical Educators have many demands on their time and attending Faculty Development (FD) sessions can be challenging. Technology offers a promising solution to engaging Faculty outside the traditional meeting format. The Foundation for Medical Practice Education has been supporting medical schools throughout Canada with evidence-based reviews of Family Medicine topics. The program is delivered in small groups led by trained Facilitators. Keeping the skills of over 700 Facilitators across Canada fresh requires a contemporary approach. We developed an online self-learning module for refresher training in small group facilitation.

Summary of the Innovation: Using a current needs assessment the curriculum was developed and entered into PowerPoint. A Learning Management System was chosen for its ease and diversity. Interactivity was introduced using quizzes, games,

short videos and open text to allow for feedback. The module was pilot tested thoroughly in an iterative fashion. Prior to releasing the module all Facilitators were surveyed about their proficiency with technology and their comfort with eLearning. They were then invited to view a 2-minute preview as an enticement before being shown the full online module. Participants and Nonparticipants were surveyed electronically about potential barriers and enablers to completing the module. A subset of each group was interviewed to investigate in more depth.

Conclusion: This session will review the steps needed to create an eLearning module for Faculty Development. Lessons learned such as choosing the right LMS, webhosting, enablers and barriers to engagement will be highlighted. Creating a winning eLearning module allows programs to disseminate important FD to a distributed and often hard to reach Faculty.

OD - 3 - 1

The Medicolegal Risks of Clinical Supervision: A 60-Year Review

Elisabeth Boileau Université de Sherbrooke, **Christina St-Onge** Université de Sherbrooke

Background/Purpose: Clinical teachers can be held liable for their learners' clinical interventions, as well as for their own negligence when supervising or delegating tasks to learners. Ignorance of medicolegal standards for clinical supervision can allow high-risk supervisory habits to set in or, at times, lead to defensive practices. To clarify these standards, we set to examine how the tasks of clinical teachers are being assessed by courts of law.

Methods: We conducted a systematic search and review of all Quebec legal cases which involved medical trainees or physicians in their role as supervisors. Twenty-one cases from 1957 to 2018 met all inclusion criteria. Cases were analyzed qualitatively to determine recurring themes. Evolution in the application of the relevant legal rules was also traced.

Results: An overwhelming majority (76%) of supervision contexts which led to court litigation involved procedural tasks, while clinical reasoning difficulties were involved in 19% of cases. In one case out of three (33%), the learner had been entrusted with a task which seemed inappropriate for his level of competence or training. In most cases (67%), clinical teachers were not physically present when the adverse event occurred. The clinical teacher was ultimately held responsible in almost half (48%) of all court cases.

Conclusion: Clinical teachers may find some guidance in this review of court assessments and application of legal criteria on the best practices to achieve a delicate balance between leaving learners with enough autonomy to evolve as clinicians while delegating responsibly to ensure patient safety.

OD - 3 - 2

Making sense of our own mistakes: a critical narrative analysis of experienced generalist physician stories of error

Sujane Kandasamy McMaster University, **Sandra Monteiro** McMaster University, **Meredith Vanstone** McMaster University, **Eamon Colvin** University of Ottawa, **Teresa Chan** McMaster University**, Jonathan Sherbino** McMaster University

Background/Purpose: Despite significant focus on patient safety and the reduction of medical errors, little attention has been given to the impact that errors have on practitioners. Emotional responses to medical errors can last from days to years. Such responses may include fear, guilt, embarrassment, anger, and humiliation. A comprehensive approach to managing errors and their consequences should include consideration of the 'second victim,' (the clinician). In this study, we aim to understand how experienced generalist physicians make meaning of and mature from their own medical errors and how this understanding can leverage an opportunity for tailored educational initiatives.

Methods: Using a critical narrative approach, we purposefully sampled and conducted in-depth individual interviews with 22 generalist (Emergency, Internal, Family) physicians who were willing to talk about memorable personal mistakes. Through the application of a narrative analysis ("re-storying" process), stories were gathered, analyzed for key components, rewritten within a chronological sequence, and developed within an emergent metaphor. Member-checking interviews were conducted to ensure rigour.

Results: Our analysis illustrates that generalist physicians make sense of their mistakes in a way that permits them to see a pathway towards maturation after the experience of a crisis, climax (error acknowledgement), and an emotional trough. The diverse approaches toward healthy maturation

include modifying their own personal practice, using components of the story as teaching points, sharing the emotions of the story with their trainees, supporting avenues to policy change, and contributing to a medical culture that is eager to empathize with medical error dialogues.

Conclusion: Understanding the socio-cultural components of meaning-making and maturing from medical mistakes can help support an environment where practitioners can learn and grow from their errors. This can help foster a renewed commitment to improving practice.

OD - 3 - 3

Medicolegal Education - Are Physicians Adequately Trained in Law?

Harpreet Pangli University of British Columbia, **Teresa Tai** University of British Columbia, **Gurdeep Parhar** University of British Columbia

Background/Purpose: Physicians regularly perform medicolegal activities, from completing medicolegal reports to testifying as expert witnesses. Yet medical students and residents often lack training on medicolegal issues and legal proceedings. Trainees can feel intimidated when writing reports and testifying, as they face unfamiliar legal nuances, often are unacquainted with courtroom etiquette, and may be questioned on their expertise.

Methods: Medical school curricula generally do not address medicolegal topics. This study evaluated adequacy of medicolegal education offered in medical school, residency, and post-residency. A five-part questionnaire was used to elicit information on physician training, confidence, challenges, and unmet needs regarding medicolegal education. Confidence was assessed on a five-level scale from "Not Confident" to "Highly Confident."

Results: The surveyed physicians (N = 201), included family physicians and specialists. More than 80% had received no medicolegal education or training in medical school or residency. Self-reported physician confidence about completing insurance, legal, and disability forms, writing medicolegal reports, and testifying was at best moderate. Regardless of their training, all respondents perceived multiple challenges. Approximately 85% expressed a need for more education and training on medicolegal issues. The most frequently preferred form of training and/or education was small group learning or workshops.

Conclusion: Despite the tremendous overlap of the medical and legal system, few studies in Canada have explored the current medicolegal training provided and its adequacy. This study shows a clear unmet need for further medicolegal education in Canadian medical schools and residency programs as well as after residency. Physicians generally lack confidence about medicolegal activities, and the current medicolegal education has not increased their confidence. Incorporating medicolegal workshops in the medical curriculum, residency programs, or continuing education may help increase physician confidence about medicolegal issues and solidify their role as medical experts in the legal system.

OD - 3 - 4

The civil legal experience of Canadian trainees

Allan McDougall Canadian Medical Protective Association, **Nassim Mojaverian** Canadian Medical Protective Association, **Anne Steen** Canadian Medical Protective Association, **Qian Yang** Canadian Medical Protective Association, **Janet Nuth** Canadian Medical Protective Association, **Ellen Tsai** Canadian Medical Protective Association, **Shirley Lee** Canadian Medical Protective Association, **Guylaine Lefebvre** Canadian Medical Protective Association, **Lisa Calder** Canadian Medical Protective Association

Background/Purpose: The Canadian Medical Protective Association's (CMPA) mission is to protect the professional integrity of physicians and promote safe medical care in Canada. While some published research exists on the medico-legal risk of postgraduate medical trainees in other countries, there is little data on the Canadian experience.

Methods: We conducted a mixed-methods analysis of closed civil-legal cases involving trainees from 2008-2017. We applied descriptive statistics to key demographics and trends, and content analysis, informed by grounded theory, for case-level

contributing factors. Notably, the CMPA membership does not include most of Quebec trainees.

Results: In 2017, trainees comprised 13% of CMPA membership (n=97,000). Between 2008-2017, cases involving trainees represented 11% of all CMPA legal actions. Of the 320 trainees named in a civil legal complaint, surgical specialties were most frequent (42%), followed by medical specialties (36%), obstetrics and gynecology (12%), and family medicine (6%). A majority of complaints involved hospital-based care (96%). Over half (58%) of civil legal cases lasted 3 or more years to resolution. Trainees were on-service 84% of the time during an alleged incident, and 50% were on-call. In 119 cases where residents were found accountable, 50% were allegations of diagnostic error.

Conclusion: This study provides insight into the medico-legal experience of trainee physicians. Medical educators can use these data to inform their teaching priorities, and tailor their learning plans to enable trainees to develop strategies to mitigate common medico-legal risks, and improve patient safety.

OD - 3 - 5

Epidemiology of competence: the theory and practice of risks and supports to competence

Susan Glover Takahashi University of Toronto, **Marla Nayer** University of Toronto

Background/Purpose: This research explores the application of the epidemiological model with blinded physical therapist (PT) registrant data from 2 jurisdictions in Canada for consistency in the reported risks and supports to competence. We identify, describe, and examine the risks and supports to PT competence as discussed in the literature using epidemiology as an analytical model. Risks to competence are not to be interpreted as indicators or predictors for any one individual, rather as a potential vulnerability that individuals and organizations need to be aware of and that needs to be reasonably managed, mitigated, and moderated. It is equally important to not view supports to competence as guarantees to ensure competence, but as factors that develop, maintain, or reinforce an individual's knowledge, skills, or abilities, and that an individual and/or organization can monitor and act on.

Methods: The registrant data for the 2 PT regulatory bodies (i.e. Alberta, Ontario) were separately analyzed then integrated. In all, 17 data bases, representing over 16,000 registrant records over 3 decades were analyzed. Following coding, data sets for each jurisdiction were combined into a single database and analyzed. Simple statistics were calculated when appropriate. Cross-tabulations and Chi-Squared statistics were generated to compare the percentages of different categories of registrants with respect to the different assessment tools. Pearson correlation coefficients were calculated to determine relationships between continuous risk factor variables (e.g. exam score and age).

Results: Risks to competence identified in this study are congruent with the literature on risks to competence found in other health professions, which is predominantly written about physicians. The risks to competence for registrants that stand out the most strongly are: being an internationally educated physical therapist, being male, increasing age, and working at a higher number of worksites over one's career. There were some geographical variations noted. There are correlations among the variables studied, which provide support for the conclusions presented. The current analysis does not suggest causation or offer specific solutions, though it does present the current understanding of the studied registrants.

Conclusion: Epidemiology is a useful to study risks to competence and supports to competence, and to focus the efforts of individuals, programs, and organizations. Regulatory and professional organizations would benefit from further work on risks to competence and supports to competence:

- Using common definitions for competence, risk, and supports in common with other health professional regulators and with others (e.g. PT regulators) that use risks-and-supports models.
- Gather data in a common and systematic way.
- Enhancing data collected to understand all known risks to PT competence (e.g. wellness).

• Exploring what supports mitigate or moderate risks to registrants' competence.

• Working with other health professional groups who are looking at risks and supports to competence, given the noted high degree of overlap in risks and supports found between the research that is dominated by physicians Individual practitioners would benefit from understanding their personal risks and what supports can moderate or mitigate their capacity for competent practice throughout their career.

Regulatory organization and continuing professional systems should partner to support competence using an epidemiological approach.

OD - 3 - 6

'What…you can't tell left from right? Medical students experiences in making laterality decisions

Gerry Gormley Queen's University Belfast, **Carl Brennan** Queen's University Belfast, **Martin Demspter** Queen's University Belfast

Background/Purpose: Wrong-sided procedures represent some of the most catastrophic errors in healthcare. Though multifaceted in origin, human error is often a root cause. A significant proportion of our population, including medical students, experience difficulty with left/right discrimination (LRD). Given that not all medical students have equal LRD skill ability, there have been calls to raise its awareness in medical education. It remains unknown what are the experiences of medical students, including those with this skill deficit. Gain deep insights into the lived experiences of medical students in LRD.

Methods: A qualitative study was conducted using Hermeneutic phenomenology. Medical students, with all abilities in LRD, were invited to participate and be interviewed. Interviews were transcribed and analysed using the Template Analysis approach to generate research themes. The research team were continually reflexive whilst remaining firmly rooted in the data and principles of the hermeneutic process.

Results: Analysis yielded four main themes 1) Discriminating right from left: An unconscious or conscious task? 2) 'What...you can't tell right from left?': an undesirable skill deficit 3) Concealment 4) 'But you're going to be a doctor!' Impact on professional identify formation.

Conclusion: This study challenges normative expectations that LRD is an effortless task for all. Individuals who are challenged with LRD, have to carry out a complex conscious process. In the context of being a doctor in training, can place extra demands and make such a process subject to risk and error. Medical education needs to respond by raising the profile of this challenge that faces many of our medical students, and extend support to assist them in the interests of safe patient care.

OD - 4 - 1

Task Demands in OSCEs Influence Learning Strategies and Diagnostic Reasoning

Alexandre Lafleur Université Laval, **Jonathan Laflamme** Université Laval, **Jimmie Leppink** Maastricht University, **Luc Côté** Université Laval

Background/Purpose: Little is known about which tasks in objective structured clinical examinations (OSCEs) improve students' cognitive and metacognitive processes. Research is needed to support OSCE designs that benefit students' metacognitive strategies when they are studying, reinforcing a hypothesis-driven approach. With that intent, hypothesis-driven physical examination (HDPE) assessments ask students to elicit and interpret findings of the physical exam to reach a diagnosis ("Examine this patient with a painful shoulder to reach a diagnosis").

Methods: In a mixed-methods study, 40 medical students were randomly paired and filmed while studying together for two hypothetical OSCE stations. Each 25-minutes study period began with video cues asking to study for either a part-task OSCE or a HDPE. In a crossover design, sequences were randomized for OSCEs and contents (shoulder or spine). Time-on-task for discussions or practice were categorized as 'hypothesis-driven' or 'sequence of signs and maneuvers'. Content analysis of focus group interviews summarized students' perception of learning resources, adjustment strategies and persistence with learning.

Results: When studying for HDPE, students allocate significantly more time for hypothesis-driven discussions and practice. Students use resources contrasting diagnoses and report persistence with learning. When studying for part-task OSCEs time-on-task is reversed, spent on rehearsing a sequence of signs and maneuvers.

Conclusion: OSCEs with similar contents but different task demands lead to opposite learning strategies regarding how students manage their study time. Measuring pre-assessment effects from a metacognitive perspective provides empirical evidence to redesign assessments for learning.

OD - 4 - 2

Unpicking the dominance of standardisation in OSCEs using Institutional Ethnography

Grainne P Kearney Queen's University, Belfast, **Jenny Johnston** Queen's University, Belfast, **Nigel D Hart** Queen's University, Belfast, **Gerry Gormley** Queen's University, Belfast

Background/Purpose: Objective Structured Clinical Examinations (OSCEs) have been dominant in health professional education over the last forty years, seeking to standardise assessment of and for practitioners. Whilst the abundance of OSCE related literature focuses mainly on fine-tuning psychometrics, critical research has expressed concern about some of the unintended but undesirable consequences. The General Medical Council (GMC), as the regulation body in the United Kingdom intend to introduce increased regulation for UK medical schools on conducting graduating OSCEs, to set a "common threshold for safe practice," bringing it closer to how competence is deemed in North America.

Methods: In the tradition of Institutional Ethnography (IE), this research used observation interviews and texts to explicate the work of those responsible for graduating OSCEs, on the ground, throughout the year. In tandem, we traced how and where this work is organised to happen as it does, in an iterative fashion. This research required a strong emphasis on reflexivity due to our competing insider positions within medical education.

Results: The dominance of the need to standardise was a visible thematic throughout this research. The marking scheme was activated as a textual representation of this standardisation, obscuring the

presence of any patient experience in the OSCE. The attendance to standardisation is brought about by this need to be accountable to and by the GMC.

Conclusion: Rather than encouraging people-centred practitioners, the supremacy of standardisation promotes accountability-centred care. The "common threshold" from the GMC promotes a standardised patient voice, as opposed to an authentic, experiential one.

OD - 4 - 3

Global rating of OSCE performance is a better predictor of entrustment ratings than checklist scores

Janeve Desy University of Calgary, **Sylvain Coderre** University of Calgary, **Irene Ma** University of Calgary, **Pamela Veale** University of Calgary, **Mike Paget** University of Calgary, **Kevin Busche** University of Calgary, **Kevin McLaughlin** University of Calgary

Background/Purpose: The transition towards competency-based undergraduate medical education will require us to collate and translate assessments into "entrustment" decisions that will determine if students are ready to progress from direct supervision in clerkship to indirect supervision in residency. Typically, in an OSCE, performance is rated using both a checklist and global rating scale (GRS), and the objective of this study was to compare checklist vs. GRS scores as predictors of entrustment ratings.

Methods: In this cross-sectional cohort study, our participants were 59 examiners and 155 clerks who completed the summative clerkship OSCE in 2017. Examiners rated performance of students for each OSCE station using a station-specific checklist where each item could be scored as 0 (did not perform), 1 (performed partially or with prompting), or 2 (performed without prompting) (our historical assessment process) and a five-point GRS (new comparator), before being asked "Based upon the observed performance, please make a recommendation on whether students should act with direct supervision vs. indirect supervision. We used receiver operator characteristic (ROC) analysis to compare the ability of checklist score vs. GRS score to predict these entrustment ratings.

Results: The C statistic (area under ROC curve) [95% confidence interval] for global ratings as a predictor of entrustment ratings was 0.78 [0.74, 0.81], which can be interpreted as a "fair" to "good" predictor. The C statistic for checklist score was 0.62 [0.58, 0.67], corresponding to a "fail" to "poor" predictor.

Conclusion: Our results suggest that global ratings are a better predictor of entrustment ratings and may, therefore, be the preferred method of rating performances that contribute to entrustment decisions.

OD - 4 - 4

OSCEs Unplugged: critical exploration of stakeholder perspectives

Helen Reid Queen's University, Belfast, **Jennifer Johnston** Queen's University, Belfast, **Gerard Gormley** Queen's University, Belfast, **Tim Dornan** Queen's University, Belfast, **Mairead Corrigan** Queen's University, Belfast, **Peter Cantillon** National University of Ireland, Galway

Background/Purpose: OSCEs are dominant in health professions education (HPE). Such hegemony comes with unintended consequences, which we addressed using critical discourse analysis (CDA) of stakeholder discussions during a workshop, "OSCEs Unplugged". Participants explored the nature of OSCEs in different settings, examining relationships and potentially conflicting motivations amongst stakeholders and members of wider OSCE communities. We aimed to contribute, critically and constructively, to conversations around assessment in HPE.

Methods: We used CDA to interrogate 'on the ground' OSCE practices. Analysing participants' discourse offered the opportunity to explore OSCEs' position within wider assessment landscapes. Data collection allowed ample opportunities for participants (n=33) to explore both challenges and unintended consequences of OSCEs and look to assessment's future. Conceptualising OSCEs as an activity system sensitised the methodological approach. A range of OSCE stakeholders (the 'community' in activity system terms) included

educators, simulated patients and students from ten different institutions across three different countries. Their experiences were captured during workshop tasks, transcribed and analysed using a critical approach to discourse analysis. We were attendant to both language in action and wider structural influences.

Results: Participants constructed OSCEs as objectifying, reducing, industrialising processes with a strong discourse of accountability. OSCEs remained highly dominant, despite significant negative consequences, because they met an accountability need.

Conclusion: Tensions around OSCEs (evident in both published literature and the voices of participants) could be explained by conflict around the point of paradigm shift towards a 'post-psychometric' era of assessment.

OD - 4 – 5

Insight into retake performances on 12 high-stake OSCE stations to help guide policy decisions

Karen Coetzee Touchstone Institute, **Sandra Monteiro** McMaster University

Background/Purpose: The lack of a "theory of resits" and transparent rationales1 has sparked the need for empirical retake policy investigations2. Such investigations help implement strategies specific to retaker behaviour3. This study aimed to investigate retake performances on two administrations of a 12-station high-stakes OSCE (N=22).

Methods: A Latent Profile Analysis was first performed to identify heterogenous sub-group performances on the two administrations. Latent profiles were used to model retakers' most likely first and second attempts on the stations overall and on repeat versus new stations. A Rasch analysis was also conducted to investigate individual level ability and station difficulty differences between these attempts.

Results: Retakers were found to most likely perform as described by two of three profiles in the first administration and one of three profiles in the second administration. A comparison of these profiles indicated that those performing as the mid-profile on their first attempt (M=2.95, S.D.=0.35) performed significantly higher on their second attempt (M=3.30, S.D.=0.30, t(11)=-4.92, p <0.001). While those performing as the top-profile on their first attempt (M=3.37, S.D=0.32), performed slightly lower on their second attempt (M=3.30, S.D.=0.30, n.s). The Rasch analysis results indicated 55% of retakers performed higher and 45% lower between attempts but with ability differences of less than 0.50 logits. Only two retakers positively impacted the overall test outcome. Retakers did not perform differently on repeat versus new stations between attempts, and compared to non-retakers.

Conclusion: Results have policy decision implications in terms of alternate test forms, the number of attempts permitted and waiting times between attempts.

OD - 4 - 6

Comment un ouvrage pédagogique médical écrit par et pour les étudiants a changé la manière de se préparer pour les ECOS

Élizabeth Richard Université Laval, **Vincent Ménard-Cholette** Université Laval, **Julie Thériault** Université Laval, **Emily Wang** Université Laval

Background/Purpose: L'Examen Clinique Objectif Structuré (ECOS) peut représenter une source importante de stress pour les étudiants en médecine. Particulièrement dans la phase pré-clinique du cursus, les étudiants cumulent une expérience clinique très limitée. Malgré l'engagement actif des facultés de médecine dans la formation médicale, un besoin généralisé de perfectionner les outils pédagogiques et de multiplier les occasions de pratique subsistent au sein de la communauté étudiante.

Summary of the Innovation: À l'Université Laval, un comité étudiant, le Groupe de perfectionnement des Habiletés Cliniques (GPHC), a été créé en 2010 dans ce but. La mission du GPHC repose sur un désir de renouveler les méthodes pédagogiques médicales par le biais de l'enseignement par les pairs. Pour ce faire, le GPHC offre des pratiques d'ECOS et une multitude d'ateliers sur la démarche clinique. De plus,

une toute nouvelle édition de son Petit Guide des Habiletés Cliniques (PGHC), rendue possible par la collaboration de plus de 500 étudiants et une quarantaine de médecins spécialistes, vient récemment d'être publiée. Cet ouvrage s'avère la première référence médicale rédigée en français par et pour les étudiants en médecine qui accompagne les étudiants dans leur étude pour les ECOS. Plusieurs innovations enrichissent son contenu dont des encadrés sur les éléments discriminants pour chaque pathologie et un chapitre dédié au raisonnement clinique. Ce livre permet aux étudiants de se sentir mieux préparé et est devenu un outil de révision grandement utilisé en vue de l'ECOS.

Conclusion: Les nombreux projets du GPHC sont la preuve d'un effort d'érudition collectif soutenu par la faculté. Depuis sa création, le GPHC a connu un succès retentissant en procurant aux étudiants en médecine des outils pédagogiques fiables et, surtout, avant-gardistes.

OD - 5 - 1

The flipped academic half day program in Physical Medicine and Rehabilitation: Residents' perceptions about what works

Sussan Askari Queen's University, **Nancy Dalgarno** Queen's University, **Fredrick Langshaw** Queen's University, **Izabelle Siqueira** Queen's University, **Rylan Egan** Queen's University, **Jessica Trier** Queen's University

Background/Purpose: Academic half days (AHDs) are educational events that deliver core information to medical residents. Flipped AHDs deliver content outside the classroom, with more engaging activities in class, yet little is known about their effectiveness. We determined Physical Medicine and Rehabilitation (PM&R) residents' perspectives on flipped AHDs, where online modules are completed prior to face-to-face (F2F) faculty-facilitated sessions.

Methods: Six faculty-facilitated flipped AHDs in two core areas were designed. Semi-structured interviews were conducted with 10 residents in the pre- and post- flipped AHDs (n=5; n=5). Qualitative data analysis adopted an iterative thematic design.

Results: Participants hoped the flipped AHDs would prepare them for their certification exam, improve clinical skills, facilitate knowledge acquisition, and facilitate collegial relationship-building. They believed the online module format assisted preparation for the F2F sessions and they valued the online quizzes and repetition. Residents found objectives more transparent and less time-consuming compared to the traditional resident-led presentations. Case-based learning was largely perceived as the most effective teaching strategy, although a few participants found the content either too superficial or narrow, making online modules time-consuming. Residents valued the self-paced nature, and preferred the teaching and learning methods offered by the flipped AHDs. Flipped AHDs were unanimously believed to improve the quality of information.

Conclusion: These findings substantiate that adopting a flipped classroom environment is perceived to improve the quality of learning over more traditional educational approaches. This has significant implications for future curricular designs in teaching and learning within a PM&R setting.

OD - 5 - 2

Modelling for Physician Planning in Ontario - Keeping it Simple and Making it Relevant. Part 1 (The Story of Supply and Activity)

Caroline Abrahams University of Toronto, **Glen Bandiera** University of Toronto, **Glenys Babcock** University of Toronto, **Natasha Shaikhlislamova** University of Toronto, **Michael Carter** University of Toronto, **Scott Strum** University of Toronto, **Blair Warren** University of Toronto

Background/Purpose: To date, physician forecasting models are complex and expensive systems which are difficult to update and of minimal use for annual planning. The purpose of this study was to develop a viable and sustainable needs-based model with readily available data. Part 1 of the project was to analyse supply by looking at activity trends.

Methods: Patterns of clinical activity by age and sex were reviewed using OHIP billing data from 2000 to 2016 accessed from the Institute for Clinical Evaluative Sciences (ICES). A clinical activity ratio was created using a calculation of FTE physicians (from billing data) and the headcount of practicing physicians. Benchmark values were used to estimate and analyze annual physician activity levels.

Results: In 2016, Obs/Gyn specialists aged 30-49 had a 10% lower activity ratio compared to same age group in 200 and 2008, while more senior physicians (age 65-74) had a 15% higher activity ratio than in 2008. Moreover, female Obs/Gyn specialists had lower activity levels in 2016 compared to their male counterparts in all age cohorts with the exception of the 70-74 cohort. 75% of Obs/Gyn specialists in

Ontario under age 50 are female. Younger urologists (age 30-39) had a 12% higher activity ratio in 2016 compared to 2008; while other age cohorts were stable.

Conclusion: Part 1 of the proposed model reveals important activity and workload considerations that could have profound effects on meeting future health needs. In particular, the next decade may yield a major loss of physician supply and activity as older, yet active, physicians retire.

OD - 5 - 3

Strengths and paradoxes in medical leadership education: can postgraduate programs meet contemporary demands for health systems leadership?

David Tannenbaum University of Toronto, **Betty Onyura** University of Toronto, **Risa Freeman** University of Toronto, **Sara Crann** University of Windsor, **Mary Kay Whittaker** University of Toronto, **Stuart Murdoch** University of Toronto

Background/Purpose: There is widespread acknowledgement that traditional residency training has not adequately prepared physicians for leadership and that physicians are not adequately engaged in health systems transformation. Consequently, there is pressure on educators to cultivate leadership capacity across the continuum of medical training. In this research, we engaged in knowledge mobilization efforts to inform leadership development programming for family medicine residents.

Methods: We conducted (i) a systematic review covering 30 residency leadership programs (2007-2017) and (ii) a formative evaluation study, interviewing 29 participants across 6 stakeholder groups. These formative data were analyzed data using framework and matrix analysis.

Results: Residency leadership interventions were often successful at developing discrete skills across multiple leadership domains. However, programs as a whole often neglected to address systems-level issues or employ leadership development strategies that are better suited to preparing leaders for systems leadership activity. Findings suggest that there may be a new wave of leadership programs that employ longitudinal, integrated curricula and embrace contemporary relational paradigms of leadership. Our formative evaluation data highlight the conceptual, practical, and socio-political underpinnings and tensions inherent in developing and implementing leadership curricula for family medicine residents.

Conclusion: Although extant leadership education may prepare physicians for clinical leader roles in acute care environments, residents may still not be adequately prepared to engage in systems leadership activity. A reframing of the nature of leadership and reorientation of educational priorities to inculcate contemporary paradigms of leadership may be required.

OD - 5 - 4

Effect of Resident Fatigue on Driving

Vincent Kent Le Northern Ontario School of Medicine, **Hillary Maxwell** Lakehead University, **Michel Bedard** Lakehead University, **Peter DeBakker** Northern Ontario School of Medicine, **Derrick Chan** University of British Columbia, **Bruce Weaver** Lakehead University

Background/Purpose: Residents often drive post-call when they are fatigued. This study compared their driving ability when they are post-call versus when they are well rested.

Methods: Six residents from an academic hospital were randomized to post-call first, and 5 were randomized to rested first. Sessions involved a simulated driving test using the STISIM simulator, reaction time test using the Centre for Research on Safe Driving Attention Network Test, Trail Making Tests A & B, and a self-reported fatigue questionnaire. Residents later repeated the testing under the other condition.

Results: Driving test results were not statistically different between fatigued and rested conditions (7 vs. 2 failures, $p = 0.063$). Post-call residents scored worse in reaction time (619 ms vs. 588 ms, $p = 0.037$) and Trail Making Tests A & B (88.2 s vs. 69.0 s, $p = 0.001$). Correlations between scores and self-rated

fatigue ranged from -0.39 to 0.40 and from -0.45 to 0.35 in the rested and post-call condition respectively, but none were statistically significant.

Conclusion: Post-call residents scored significantly worse on cognitive tasks measuring attention and reaction time. While there was no significant difference in the failure rate of the driving test (p = 0.063), the study was underpowered to detect a difference. The lack of correlation between self-reported fatigue and cognitive test scores could mean that residents are not aware of their decreased ability to drive safely when they are post-call. This study suggests possible detrimental effects of working periods of 24-hour call on residents' ability to drive safely.

OD - 5 - 5

Anticipation or Avoidance: Internal Medicine Resident Experiences Performing Invasive Bedside Procedures

Alyssa Louis University of Toronto, **Christie Lee** University of Toronto, **Shiphra Ginsburg** University of Toronto, **Andrea Page** University of Toronto

Background/Purpose: Internal Medicine (IM) residents are required to perform bedside procedures for diagnostic and therapeutic purposes. However, the bedside procedural experience of residents varies widely, for unclear reasons. We sought to explore reasons for this variation.

Methods: We conducted focus groups and individual interviews including 12 IM residents. We used constructivist grounded theory with an iterative, open-ended interview style aimed to elicit residents' experiences in performing common bedside procedures as well as barriers and facilitators to performing procedures. Interview transcripts were analyzed and coded by the co-investigators to identify common themes.

Results: Four themes were identified 1) Patient-specific factors such as body habitus, potential for complications, procedure urgency ability to communicate; 2) Systems factors such as time constraints, accessibility of materials and difficulties with sample processing; 3) Staff physician factors such as availability to supervise, staff's own expertise and comfort level, and preference to refer to interventional radiology and 4) Resident-specific factors including preparation, prior experiences performing procedures and resulting confidence or performance anxiety. An unexpected finding was that some residents experience significant procedure-related distress that they don't often disclose, particularly if their early procedure experiences were unsuccessful or resulted in a complication.

Conclusion: Several interventions may improve residents' experience performing bedside procedures, including at the systems-level (e.g. reducing the time required to gather materials and process samples.) Interventions should also specifically address procedure-related anxiety and distress that may not be apparent may help procedure-averse residents to gain confidence and motivation to seek out procedural experiences.

OD - 5 - 6

Implementing Competency Based Medical Education in PGME - A Three Year Longitudinal Study

Damon Dagnone Queen's University, **Denise Stockley** Queen's University, **Alicia Hussain** Queen's University, **Amber Hastings-Truelove** Queen's University

Background/Purpose: All 29 postgraduate specialty training programs at Queen's University (Canada) transitioned to CBME in July 2017 as an intuitional cohort. To capture the history of this change, we embarked on a longitudinal study in July 2015 to identify opportunities and barriers to widespread change. Research questions: 1) How do we prepare programs for the adoption of CBME? 2) Are we implementing CBME as intended? 3) What strategies are required to sustain the adoption of CBME across the institution? 4) How has (or is) CBME contributing to changes in behaviours across all levels of the institution?

Methods: Hall and Hord's Concerns-based Adoption Model - Levels of Use (LoU) interview protocol was used. Interviews were conducted in 2015-2016 (n=39), 2016-2017 (n=68), and 2017-2018 (n=68). Interviewees included CBME executive members,

program directors, CBME leads, educational consultants, staff, and residents.

Results: Year 1 data highlights participants' lowest level of use of CBME (i.e., Level III or less on LoU Chart), indicating the early stages of orienting themselves with CBME. Other concerns included need for protected time, money, and supports allotted to implement CBME, and a lack of overall buy-in. Year two and three data shifted with more faculty buy-in, collaboration, and supports but on-going concerns about insufficient time and resident buy-in.

Conclusion: Using the Concerns-based Adoption Model as one component of our institutional program evaluation allowed important themes and novel insights to emerge, and provide critical insights regarding the successes and challenges of operationalizing CBME at Queen's University.

OD - 6 - 1

Roadmap for Artificial Intelligence-enhanced Assessment in Competency-Based Medical Education

Alma Jurado-Nunez McMaster University, **Teresa Chan** McMaster University

Background/Purpose: The paradigm shift to competency-based medical education has raised a need to include more qualitative aspects into standardized summative methods. Narrative comments are essential components of medical trainees' workplace-based assessments (WBA). Electronic systems have partially solved the endeavour of collecting, centralizing and storing the data generated by assessments; however, new approaches are needed to take advantage of these narratives.

Methods: We conducted a literature search of PubMed, Ovid, Engineering Village, Web of Knowledge, ScienceDirect and SpringerLink. The search query included artificial intelligence (AI) applications (machine learning & natural language processing), medical education, and assessment as keywords. The study methods, AI applications, and performance reported in the literature were analyzed to identify opportunities to use AI applications in the assessment system.

Results: AI applications are able to extract features as line length, key phrases, syntactic structures and vocabulary to detect the polarity of narratives, sort them into categories, identify "hidden code" in the language, flag anomalies based on previous observations, and build profiles of trainees. Also, they can help educators to discover intrarater and interrater differences in the content of narratives and determine its relationship with scores. Trainee and faculty dashboards featuring qualitative and quantitative performance over time and peer comparison can be used to support competency committee decision making.

Conclusion: We created a roadmap that outlines data utilization in postgraduate medical training to demonstrate the opportunities for automation, standardization and optimization of the assessment system using AI applications. Further research is needed to implement the proposed approaches.

OD - 6 - 2

Using electronic health record data to assess emergency medicine trainees' independent and interdependent performance

Stefanie Sebok-Syer Stanford University, **Lisa Shepherd** Western University, **Adam Dukelow** Western University, **Rachel Pack** Western University, **Allison McConnell** Western University, **Robert Sedran** Western University, **Lorelei Lingard** Western University

Background/Purpose: Competency-based medical education (CBME) requires that trainees receive timely assessments and effective feedback about their clinical performance. To meet this goal, we investigated how data collected by the electronic health record (EHR) might be used to assess emergency medicine (EM) trainees' independent and interdependent clinical performance and how such information could be represented in an EM trainee report card.

Methods: Following constructivist grounded theory, individual semi-structured interviews were conducted with 10 EM faculty and 11 EM trainees across all postgraduate years. In addition to open questions, participants were presented with the current list of EM faculty performance indicators and asked to comment on how valuable each would be in assessing trainee performance, and the extent to which each indicator captured independent or interdependent performance. Data collection and analysis were iterative; analysis employed constant comparative inductive methods.

Results: Participants refined and eliminated faculty performance indicators and created new indicators specific to trainees. We present a catalogue of clinical performance indicators from the EHR database at the study site organized on a spectrum of independent and interdependent EM trainee performance. For instance, independent indicators include number of patients seen and interdependent indicators include length of stay.

Conclusion: Our findings document a process for developing EM trainee report cards that incorporate the perspectives of clinical faculty and trainees. We also present our prototype trainee report card. This work has important implications for capturing trainees' contributions to EM clinical performances, and distinguishing between independent and interdependent indicators in this collaborative work setting.

OD - 6 - 3

Validity as a social imperative: perceptions from individuals involved in assessment

Mélanie Marceau Université de Sherbrooke, **Christina St-Onge** Université de Sherbrooke, **Frances Gallagher** Université de Sherbrooke, **Meredith Young** McGill

Background/Purpose: Following a concept analysis describing validity as a social imperative in health professional education (HPE), we explored the perceived acceptability and feasibility of the concept by individuals involved in assessment.

Methods: We recruited faculty members from four different Canadian universities using purposeful sampling to participate in a qualitative interpretive description study. We collected data through focus groups (n=5) and semi-structured individual interviews (n=4), and analyzed the data using Miles, Huberman and Saldana's method. Two team members carried out the analysis for each transcript and all team members discussed the interpretation until a consensus was reached.

Results: We collected data from 23 participants from various disciplines (medicine, nursing, occupational therapy, and physiotherapy). Most participants had a positive perception (acceptability) of validity as a social imperative as it aligns with current educational changes in health professions programs (e.g. competence-by-design). Participants recognized that assessment, and its validation, have important consequences but could not identify on who the onus falls for appropriate validation practices. Participants also anticipated several potential barriers associated with the operationalization (feasibility) of this conceptualization of validity; such as time, limited resources, necessity of assessor training, and pressures from professional bodies.

Conclusion: Participants were open to this emerging conceptualization of validity although they perceived some potential challenges to its implementation. Operationalization of the concept is necessary in order to render it accessible to potential users, and research is required to document its implementation and subsequent refinement.

OD - 6 - 4

Assessment of Collaborator Competencies: Understanding the Landscape in Undergraduate Medicine

Christie Newton University of British Columbia, **Sylvia Langlois** University of Toronto

Background/Purpose: The aim of this study was to understand the current use of assessments that measure collaborator competencies in Canadian undergraduate medical education (UGME). As health systems move towards collaborative patient-centred models of care, health profession education programs have responded by creating interprofessional education learning opportunities designed to address the development of relevant competencies. Both profession-based and national collaborative competency frameworks as well as the principles of competency-based education often guide these learning activities. While the importance of understanding the nature and progression of collaborative competency development is growing, educators remain uncertain of best practices regarding assessment.

Methods: The Association of Faculties of Medicine of Canada Interprofessional Education Network undertook an environmental scan of assessment

practices for the Collaborator Role from each of the 17 Canadian medical schools. Questions included what the best assessments are, when they should occur (level of learner), who should be administering them, what the best contexts are, and how feedback is provided to learners and programs. . Interviews were recorded, transcribed and reviewed for emergent themes.

Results: The environmental scan revealed that assessment of collaborator competencies continues to pose significant challenges in UGME A more detailed synthesis of the scan results will be presented and opportunities to address identified assessment challenges will be discussed.

Conclusion: This environmental scan provides relevant foundational information on what is currently in place and its value, permitting broader recommendations for professional education.

OD - 6 - 5

Learner and Clinician Interpretation of Collaboration in Interprofessional Competency Assessment

Sylvia Langlois University of Toronto, **Amanda Brijmohan** University of Toronto, **Graham Vardy** University of Toronto, **Ashley Stirling** University of Toronto, **Sharona Kanofsky** University of Toronto, **Tracy Paulenko** University Health Network, **Annie Lee** University of Toronto

Background/Purpose: The aim of this study was to understand the differences in learner and clinician perspectives regarding interprofessional collaboration. With the proliferation of interprofessional education curricula comes the need to objectively assess whether students are individually developing the necessary collaborative competencies. Yet, assessment results require careful consideration given challenges in varying interpretation. The Interprofessional Competence Assessment (IPCA) was developed and validated as a 360° assessment to measure collaborative competency development of senior health profession students while on practicum.

Methods: As part of the development process, vignettes of four health professionals working within an interprofessional context were created for cognitive interviews. Senior students and clinicians with expertise in collaborative practice were invited to listen to the vignettes, rate collaborative behaviours and provide a rationale for their rating. Explanations were recorded and transcribed; transcripts were thematically analyzed to explore what factors became salient while ratings.

Results: The thematic analysis revealed differences in learner and clinician perspectives. For example, they differed in their interpretation of certain collaborative behaviours and did not discuss power and hierarchy in the same way.

Conclusion: In pursuit of objective assessment for helping health professions students develop interprofessional collaborative competencies, researchers found that differences in learner and clinician perspectives on professional roles affect the ways in which collaboration is evaluated. This work highlights the importance of acknowledging how these differences may affect behavioural expectations and assessment of collaborative competencies of health professions students.

OD - 6 - 6

Borderline group standard setting: Four approaches for small scale OSCEs

Karen Coetzee Touchstone Institute, **Sydney Smee**, **Ilona Bartman** Medical Council of Canada, **Stefanie Sebok-Syer** Stanford University, **Marguerite Roy** Medical Council of Canada, **Sandra Monteiro** McMaster University

Background/Purpose: When the purpose of an examination is to discriminate between examinees who are sufficiently competent to practice in the health professions and those examinees who are not, criterion-referenced methods are strongly preferred for defensible decisions (De Champlain, 2004; Norcini, 2003). While there are many criterion-based options, few are feasible and validated for Objective Structured Clinical Examinations (OSCEs), which is especially true for smaller scale OSCEs.

Methods: This study evaluated four different methods for use with smaller scale OSCEs where there are often limited resources for standard setting: 1) borderline group, 2) borderline regression, 3) objective borderline group method, and 4) Rasch-based borderline group method. Data were from a 12-station OSCE designed to assess 112 internationally trained nurses for entry to practice in a Canadian context.

Results: The resulting cut scores (64%-68%) from the four standard setting methods all met acceptable standards of accuracy and consistency. Differences between the four methods existed more in the effort and technical resources required for each than in their outcomes.

Conclusion: Findings from this study could be used to support design decisions and the interpretation of results for the standard setting method employed with small scale OSCEs.

OD - 7 - 1

Evaluation of Curricular Segment Contribution to Educational Efficacy: Development of a Program Efficacy Review Process

Krista Trinder University of Saskatchewan, **Regina Taylor-Gjevre** University of Saskatchewan

Background/Purpose: The College of Medicine at University of Saskatchewan has a long-established framework for program evaluation. However, sources of data have historically been reported separately and were not linked together to adjudicate efficacy in relation to the College's Program Learning Objectives (PLOs). To help improve evaluation of the undergraduate program as a whole, the Program Efficacy Review process was developed in 2017.

Summary of the Innovation: Internal and external sources of data were identified for each PLO. These included student assessments (e.g. individual items on measures of performance), internal student surveys, AFMC GQ data, and MCCQE I and II results for the past three academic years. This allowed for review of specific student performance toward individual objectives. During the review, leaders in undergraduate education undertook the efficacy review during an annual retreat forum. In groups, participants reviewed all data linked to an objective and indicated whether they felt the objective was being adequately met within each curricular segment, and for the program as a whole. An online scoring tool was employed. Participants also provided feedback on the clarity and sufficiency of the process and data made available, as well as suggestions for improvement. Following the review, a report is generated where scores and feedback are used to classify each PLO as being fully met, partially met, or not met. Feedback from participants indicate they find the review beneficial and recognize the importance for fully evaluating the program.

Conclusion: The Program Efficacy Review is a useful process that provides a more complete picture of how well the College's PLOs are being met, within both segments of the curriculum and the program as a whole.

OD - 7 - 2

Medical Histology without Live Lectures: A Pilot Study of Online Learning

Helen Nichol University of Saskatchewan, **Susan Gilmer** University of Saskatchewan, **Krista Trinder** University of Saskatchewan

Background/Purpose: The students in Medical-Dental Program at the University of Saskatchewan, surveyed in 2017, suggested that fewer classroom hours would better enable them to schedule clinical activities. Histology was judged to be the curriculum element most easily moved to a fully online format because its learning objectives did not change and the histology laboratory was already online.

Summary of the Innovation: A pilot study was undertaken in April 2018. Live lectures on gastrointestinal histology were replaced with online modules each containing narrated Powerpoint lectures, narrated virtual microscopy of selected digitized slides recorded in Panopto and an online discussion forum of clinical issues. Students were examined on lecture content in May. Evaluation methods: Students (N = 23) completed an online survey about their perceptions of virtual microscopy. This included question on various aspects of the online lectures, how online lectures compared to live lectures, suggestions for improvement and other comments. Performance on identical histology examination questions was compared for 2017 and 2018 on the entire class using an independent-samples t-test.

Conclusion: Students found the online segments useful and preferred the online format to live lectures and lecture capture of live lectures and appreciated the flexibility it afforded. Students found narrated virtual microscopy very valuable. There was very little

participation in the Discussion forum and that was deemed to be unsuccessful. No statistically significant differences between the two years were found on exam question performance. The online format will continue this academic year and further evaluations will be conducted to measure effectiveness.

OD - 7 - 3

The Role of the Health Professional Educator in Undergraduate Medical Student Education: A Formal Curriculum

Sherylan Young University of Toronto, **Andrea Goncz** University of Toronto, **Evan Chong** University of Toronto

Background/Purpose: It is important that learners graduate with the understanding of the roles of all health care team members to enable effective collaborative practice and improve health outcomes. Medical students are learning in environments that include interprofessional health providers (IHPs) but are not being formally taught by IHPs as health professional educators (HPEs) while participating in direct patient care. Also, no formal curriculum exists to facilitate this learning.

Summary of the Innovation: Collaboratively with HPEs, HPE learning experiences were itemized and mapped to CanMEDS competencies. Learning objectives were developed. During their clerkship family medicine core rotation, students were assigned to clinical sessions with HPEs. To formalize the experience, students met with the HPE for an "orientation huddle" to review learning objectives prior to a clinical learning session and after a session for a "post-encounter huddle" to debrief and review the clinical experience. The impact of the formal HPE learning sessions was evaluated through focused interviews exploring: 1) students' clinical learning experience from an educational perspective; 2) students' views of the formal learning experience; and 3) how the experience affected understanding of IHP collaboration in comprehensive care.

Conclusion: Our results indicate that the students have a better understanding and appreciation of IHPs. They feel that IHPs play an important role in their medical education, formal clinical education sessions with HPEs are valuable, and formalizing clinical learning experience has increased their respect of HPEs as teachers. Furthermore, students indicate that they feel more prepared to work effectively with IHPs to provide high-quality, patient-centred care because they had a chance to see interprofessional collaboration in action.

OD - 7 - 4

Curricular and extracurricular interprofessional learning opportunities for medical students: an evaluation

Stephanie Cheon Queen's University, **Darsan Sadacharam** Queen's University, **Lindsay Davidson** Queen's University

Background/Purpose: At our institution, preclerkship medical students can learn about interprofessional (IP) roles through the new curricular multi-profession IP shadowing experience, or Outreach, Service Learning, Education, and Relationship-Building (OSLER), an extracurricular, student-run program. We aimed to compare the impact of these two types of experiences on student understanding and awareness of IP roles.

Methods: Grounded theoretical methods were used to analyze shadowing participants' field notes and narrative survey responses as well as OSLER focus group transcripts. Four themes were identified: a) non-physician healthcare providers (HCPs) observed; b) knowledge of HCPs gained; c) impact on attitudes towards HCPs; and d) impact on future practice.

Results: Shadowing participants observed a greater number and diversity of professions than OSLER participants. Both experiences promoted a richer understanding of IP team dynamics and clinical collaboration; however, OSLER participants gained limited insight into individual HCPs' professions. Both programs strengthened positive attitudes towards HCPs, their roles on teams, and IP teams as a healthcare delivery model. Shadowing participants became motivated to seek career opportunities involving IP teams, while OSLER participants felt encouraged to apply a community-centred approach to future patient care.

Conclusion: The curricular program that we evaluated, designed with collaboration-focused objectives, was more effective in helping students develop knowledge of individual HCPs and IP teams than a less structured extracurricular program. However, the student-run extracurricular program promoted a broad appreciation for interprofessionalism as well as a community-centred approach which may influence future practice.

OD - 7 - 5

Promoting medical student career decisions: The Pre-clerkship Residency Exploration Program (PREP), a structured elective program

Todd Dow Dalhousie University, **Sebastian Haupt** Dalhousie University, **Mike Smyth** Dalhousie University, **J Thomas Toguri** Dalhousie University, **Kavita Raju** Dalhousie University, **Alysha Roberts** Dalhousie University, **Anna MacLeod** Dalhousie University

Background/Purpose: Exposure to specialities is a major influence of medical student career decisions; however, many students feel they are not adequately introduced to particular specialties until the end of their undergraduate training, if at all. Therefore, the Pre-clerkship Residency Exploration Program (PREP) was established. PREP was designed to reduce concerns regarding career decisions, while increasing exposure to specialties that traditionally receive less exposure in medical school curricula.

Summary of the Innovation: PREP is a two-week elective available to second year medical students (n = 40) which consists of five components: clinical electives, panel discussions, procedural skills circuits, simulations, and specialty-specific workshops. During the program participants rotate through ten electives and engaged in panel discussions focused on career decisions. Skills circuits and simulations introduce students to procedures and scenarios they could encounter during PREP elective rotations. Lastly, specialty-specific workshops are held by several departments to build interest and introduce students to under-represented specialties.

Conclusion: PREP was assessed using the Kirkpatrick model. PREP significantly increased students comfort to make career decisions, while reducing specific concerns related to lack of exposure to various specialities ($p < 0.0001$) and the time restraint to determine career options ($p < 0.0001$). Furthermore, PREP directly impacted career aspirations with 80.6% of participants changing their top-three career choices following completion of the program. PREP is a valuable addition to medical school education and offers a novel approach to improve students career decisions as well as increase their exposure to specialties which are under-represented in medical school curricula.

OD - 7 - 6

Medical students' perspectives of the impact of pimping on their learning experience using a self-determination theory framework

Ashley Palmer University of Saskatchewan, **Greg Malin** University of Saskatchewan

Background/Purpose: Physician preceptors ask questions of learners to gauge knowledge and stimulate learning. "Pimping" is frequently used to describe this questioning process, and the impact on learners is viewed positively or negatively depending on the learner. Using self-determination theory as our framework, we explored medical students' experiences of pimping and its impact on their learning experience from a motivational perspective.

Methods: Medical students from the University of Saskatchewan were invited to engage in individual, semi-structured interviews that explored their experiences of pimping. Data were transcribed verbatim and analyzed using Nvivo software. Themes were generated using content analysis.

Results: Nine 1st year students, two 2nd year students and one 3rd year student participated. The majority of participants perceived pimping as a negative experience, describing incidents of condescension, singling out, and intimidation, resulting in lower confidence, embarrassment, and feelings of inadequacy. Two participants felt it was effective and stimulating. Regardless of perception of

experience, participants expressed motivation to learn driven by a sense of guilt, shame, desire to impress the preceptor or avoid future embarrassment. Many normalized the experience as "something they need to cope with." Students provided insights into more effective approaches.

Conclusion: Pimping is a common experience for all students. They view it as normal part of the preceptor-student interaction. Pimping either hindered motivation or produced an externally regulated form of motivation, based on avoidance, shame, or performance, rather than goal mastery. Students desire to be challenged but suggest a more respectful approach to support engagement and learning.

OD - 8 - 1

Exploring physicians' resistance to resilience training

Kori LaDonna University of Ottawa, **Lindsay Cowley** University of Ottawa, **Claire Touchie** University of Ottawa, **Vicki LeBlanc** University of Ottawa, Philip Wells University of Ottawa, **Edward Spilg** University of Ottawa

Background/Purpose: Physicians should be patient-centered, compassionate care providers. Compassion relies on empathy, but empathy-coupled with the systemic and institutional challenges inherent in modern practice-can contribute to burnout. Despite being an antidote, many physicians resist interventions aimed at buoying their resilience. By understanding why, we can refine wellness strategies to better align with physicians' needs.

Methods: Constructivist grounded theory informed the iterative data collection and analysis process. During semi-structured interviews, we asked 22 attending physicians to discuss both the factors that impact their wellness, and their perceptions about resilience-building interventions. We identified themes through constant comparative analysis.

Results: Participants suggested that the values of compassion and empathy espoused by institutions do not extend to physicians, and they described feeling dehumanized by expectations that they be both "superhuman" and "perform like a machine." Additionally, they perceived that meeting institutional values impedes work-life balance, hinders personal and professional fulfillment, and discourages disclosing difficulties. In turn, some participants seemed to rebel against resilience-building interventions focused on equipping individuals to rebound from broken systems, and they perceived that efforts aimed at boosting resilience are futile without sustained institutional support.

Conclusion: Our findings suggest that institutional expectations trigger feelings of dehumanization for some physicians. These feelings likely exacerbate burnout, and may partly explain physicians' resistance to resilience-building strategies. Mitigating burnout, and developing and sustaining a resilient physician workforce will require both personal responsibility for wellness, and an institutional commitment to creating a culture of compassion for both patients and physicians.

OD - 8 - 2

'Resilience' in its many forms: who is responsible for medical trainees wellness?

Taaha Muhammad University of Toronto, **Rabia Khan** University of Toronto, **Maria Athina (Tina) Martimianakis** University of Toronto, **Robert Paul** University of Toronto

Background/Purpose: The term 'resilience' is commonly advocated in medical schools as a strategy to combat trainee burnout. Little is understood about how this term might be taken up or understood by students, caregivers and educators in medical education. This study explores how the term "resilience" and its various meanings affect medical trainees and their perceptions of wellness.

Methods: Critical discourse analysis was used to identify various meanings of "resilience" through an archive created by a literature search using Medline (1946 to present) and PsychINFO (1806 to present) using terms including resiliency/resilience and empath*/compassion/care or wellness/wellbeing /coping and medical trainee/resident/medical student. Exclusion criteria included non-clinicians or resilience out of context (patient or material resilience, etc.).

Results: Four discourses of "resilience" were identified; three of which linked 'resilience' to burnout: (1) Resilience-as-self-care, constructed resilience as an individual attribute, where the individual is seen as responsible for their own care; (2) Resilience-as-prevention, constructed resilience as a buffer against the supposedly inevitable stresses

inherent to medical training; (3) Resilience-as-competency, constructed resilience as a necessary trait to be exemplified by good physicians. These three discourses normalize medical training as challenging and assert that resilience is necessity in training. In contrast, the fourth discourse of resilience-as-cultural norm had the effect of shifting responsibility from the individual to a broader cultural practice, one that promoted a unified community approach to wellness in response to medical culture.

Conclusion: Trainee perceptions of responsibility and responsive to the stress of medical training varies depending on how resiliency is defined.

OD - 8 - 3

Evaluating Student Perceptions of the Resilience Curriculum at the MD Program at the University of Toronto

Arshia Javidan University of Toronto, **Samantha Yang** University of Toronto, **Travis Sutherland** University of Toronto, **Yujin Li** University of Toronto, **Joanne Leo** University of Toronto, **Shayna Kulman-Lipsey** University of Toronto, **Nellie Perret** University of Toronto, **Christopher Trevelyan** University of Toronto, **Leslie Nickell** University of Toronto, **David Rojas** University of Toronto

Background/Purpose: Students face unique challenges as they transition into the field of medicine. To cultivate resilience in medical students, the University of Toronto's Office of Health Professions Student Affairs launched the Resilience Curriculum (RC) in 2016, consisting of two workshops and modules delivered in each pre-clinical year. Thus far, there has not been a formal evaluation of the RC or of similar initiatives at other Canadian medical schools.

Methods: Workshop evaluations containing short-answer and 5-point Likert scale questions were distributed to all pre-clinical students at the University of Toronto (n = 518). Two focus groups (FG) (n = 12) were conducted, recorded, and transcribed. Workshop evaluations and FG transcripts were qualitatively analyzed using the constructivist framework method.

Results: Likert scales demonstrated student satisfaction with the workshops. Qualitative analysis demonstrated heterogeneity in student perceptions of the RC modules and workshop activities. Students' personal experiences and backgrounds affected their perceptions of the RC. Facilitators played a key role in helping students benefit from RC workshops. Students acknowledged that resilience is difficult to teach, but vocalized appreciation of the RC. Feedback was provided on specific techniques for developing resilience, logistics of delivering the RC, and suggestion of initiatives that may further cultivate resilience in medical students.

Conclusion: Despite heterogeneity in student perceptions of the RC, students appreciated the RC's existence and made recommendations to improve its delivery. Future work should study the RC's significance among other university mental health services and identify barriers and facilitators for implementing RCs at other institutions.

OD - 8 - 4

Motivation in Medical School: A Quantitative Report on How the Learning Environment Influences Student Well-being and Resilience

Adam Neufeld University of Saskatchewan, **Greg Malin** University of Saskatchewan, **Shari McKay** University of Saskatchewan

Background/Purpose: The journey to becoming a doctor takes considerable motivation and perseverance. Unfortunately, this pursuit can negatively impact student health and well-being. Self-Determination Theory (SDT) predicts that supporting the basic psychological needs of autonomy, competence, and relatedness improves intrinsic motivation and well-being. This has implications in creating learning environments that align with the needs of medical students. This has scarcely been explored in medical education. Our purpose was to explore the relationship between student self-determination, resilience, and psychological well-being.

Methods: We invited all medical students from our institution to complete questionnaires related to SDT.

After data cleaning, the response rate at the University of Saskatchewan was 40% (160/400), including 67 males (42%) and 93 females (58%). We measured student need satisfaction/frustration, resilience, and psychological well-being. Basic demographic information was collected for comparison (age, sex, year). Structural equation modelling (SEM) was performed to test a hypothesized model in which support of student psychological needs would positively relate to resilience and well-being.

Results: As predicted, a well-fitting model was confirmed to fit the data, Chi-square p = 0.369, CFI = 0.999, RMSEA = 0.018, and seems valid in medical education. We found that satisfaction of autonomy and relatedness directly related to better well-being. Competence satisfaction did so indirectly through its effect on resilience. Sex differences were found in the strengths of the relationships for our variables, but not by age or year.

Summary/Results: We invited all medical students from our institution to complete questionnaires related to SDT. We measured student need satisfaction/frustration, resilience, and well-being. Basic demographic information was collected for comparison (age, sex, year). Structural equation modelling (SEM) was performed to test a hypothesized model in which support of student psychological needs would positively relate to resilience and well-being. 160 students participated. As expected, a well-fitting model was confirmed to fit the data, Chi-square p = 0.369, CFI = 0.999, RMSEA = 0.018, and seems valid in medical education. We found students' perceptions of autonomy and relatedness, when satisfied, directly related to better well-being. Competence satisfaction related to better well-being indirectly through its effect on resilience. Sex differences were found in the strengths of the relationships for our variables, but not by age or year.

Conclusion: Our findings confirm that learning environments in medical education that support student psychological needs support their self-determination, and subsequently, their resilience and well-being.

OD - 8 - 5

Understanding medical student perspectives of fatigue and fatigue risk management.

Alex Raynard Western University, **Taryn Taylor** Western University, **Lorelei Lingard** Western University

Background/Purpose: Fatigue risk management (FRM) strategies assume a shared perception of fatigue as a threat. Despite the growing body of evidence suggesting that fatigue leads to burnout and medical errors, residents perceive fatigue as a personal, surmountable burden rather than an occupational hazard. It is unclear when and how such problematic notions of fatigue are adopted by medical trainees. This research describes how third-year medical students perceive fatigue experienced during their first year of clinical rotations.

Methods: From June-August 2018, 21 third-year medical students participated in semi-structured interviews exploring their perspectives of workplace fatigue. Data collection and analysis occurred iteratively in keeping with constructivist grounded theory methodology and was informed by theoretical sampling to sufficiency.

Results: Implicit and explicit messages embedded within the clinical learning environment reinforce participants' perceptions of fatigue. Trainees predominantly described their workplace fatigue in three ways: (1) as a personal health risk, (2) irrelevant to patient safety, since they perceived minimal impact of their contribution on patient care, and (3) a more significant, yet unsolved problem for their future selves as residents.

Conclusion: Our study expands upon how perceptions of fatigue are constructed and reinforced by the clinical training environment. Though many participants anticipate that fatigue during residency will pose a legitimate risk to patients, prior research suggests that residents are less likely to see fatigue as a patient safety threat. Thus, current FRM efforts may be better directed toward transitioning medical students, who may be more receptive to, and more likely to employ, such strategies in their future practice.

OD - 8 - 6

Harassment and Bullying: Deleterious Impacts on Resident Wellness, Training and Performance

Julie Maggi University of Toronto, **Glenys Babcock** University of Toronto, **Heather Flett** University of Toronto, **Mariela Ruetalo** University of Toronto, **Anita Balakrishna** University of Toronto, **Lisa Robinson** University of Toronto, **Glen Bandiera** University of Toronto

Background/Purpose: The University of Toronto's Office of Resident Wellness regularly talks with residents who are experiencing distress as a result of discrimination, harassment or bullying. This study sought to quantify the relationship between such negative residency experiences and overall health.

Methods: From March 31 to May 8, 2017, we conducted an online survey of all residents and received a 53% response rate (n=1080). The questionnaire included sections on well-being, discrimination, harassment, and bullying.

Results: Among all residents, 44% describe their overall health as excellent (11%) or very good (33%), with large minorities having experienced discrimination (29%), harassment (28%) and/or bullying (30%) in the past academic year. Among residents who were discriminated against, 36% describe their overall health as excellent or very good, compared to 48% of residents who were not. There are similar health disparities between residents who were harassed and those who were not (32% vs. 48%), and between residents who were bullied and those who were not (30% vs. 47%). Further, those who experienced discrimination, harassment and/or bullying were more likely than others to say they had experienced stress in the past academic year that negatively impacted their academic performance. When asked what could be done to reduce discrimination, harassment and bullying, the strongest response was consequences for the perpetrators.

Conclusion: Our findings reveal substantial negative relationships between discrimination / harassment / bullying and resident health and academic performance. Based on these findings, further research and analysis will be undertaken to create a model of causality, including mitigating and exacerbating factors.

OE - 1 - 1

Some run to them, others run away: how residents navigate learning of invasive procedures in the ICU setting

Ryan Brydges University of Toronto, **Judy Tran** University of Toronto, **Christie Lee** University of Toronto, **Alberto Goffi** University of Toronto, **Maria Mylopoulos** University of Toronto

Background/Purpose: Workplace-based learning research shows residents report common challenges including infrequent opportunities to perform invasive procedures, and uncertainty when facing novel clinical scenarios. Presently, simulation-based training focused on technical skills is often offered as preparatory training before ICU rotations. To better inform preparatory training design and improve our understanding of self-regulated learning, we asked: How do residents navigate their exposure to and experience performing invasive procedures in the ICU?

Methods: In two academic hospitals, we conducted post-call debriefs with residents coming off shift and sought their more elaborated perspectives via semi-structured interviews. We used a constant comparative methodology to analyze the data, iteratively refine data collection, and inform abductive coding of the data.

Results: We completed 29 post-call debriefs and 9 interviews. Participants described processes they invoked to identify, create, avoid, miss, compete for, and negotiate opportunities to perform invasive procedures. To navigate these distinct possible ways of performing procedures, participants reported needing to be attuned to workplace factors (e.g., time of day), patient factors (e.g., acuity), available resources (e.g., ultrasound machines, procedural kits), supervisor characteristics (e.g., preferences), and themselves as learners (e.g., intended future specialties).

Conclusion: Our findings show residents might feel safer and supported to perform procedures, and more adaptive in those performances, if orientations and ongoing workplace-based teaching addresses the many ways of interacting with procedures, and elaborates upon key factors trainees must attend to, beyond simply how to technically perform them.

OE - 1 - 2

Conversion to a customized learning platform enables active, formative learning in large size classrooms: student perceptions of the impact of online assessment using their own devices

Debra Sibbald University of Toronto

Background/Purpose: The prevalence of personal mobile devices (phones, tablets, laptops) in health professional classes provides an opportunity for formative learning. Exploration of students' attitudes to a new environment for comprehensive digital pedagogy for teaching should be explored.

Summary of the Innovation: The University of Toronto launched Quercus as a new web-based learning platform in 2018 to enhance teaching and foster interactivity with students. A pilot study in a therapeutics course of 242 pharmacy students was conducted to evaluate the effectiveness of teaching via digital pedagogy using students' live access to personal devices. Random polling tests were conducted throughout each session to evaluate prior or formative learning, assess understanding and give feedback.100% of responses were recorded. Perceptions were elicited from web-based surveys, interviews, focus groups and observations. Students reported that Quercus provided a 'safe' space for active, stimulating participation and they were able to maintain their concentration during the teaching sessions. It is an effective, supportive pedagogy which helps them better understand subject matter, allowing instant feedback on knowledge gaps as the facilitator was able to summarize important issues. No resistance or hurdles were encountered.

Conclusion: Polling with personal devices on a comprehensive learning platform is recommended by

students as facilitating pedagogy. Students feel comfortable to participate actively in a large size environment and appreciate instant feedback on their understanding. An effective all-inclusive learning space includes online polling without cost or participant restrictions of commercial digital or hand-held response systems.

OE - 1 - 3

Square Pegs in Round Holes: Implementing Independent Learning in Structured Curricula

Christen Rachul University of Manitoba, **Benjamin Collins** University of Manitoba, **Mariam Ahmed** University of Manitoba, **George Cai** University of Manitoba

Background/Purpose: Independent learning (IL) provides medical learners with the opportunity to develop learning strategies and take responsibility for their own learning. Yet, IL in undergraduate medical education (UGME) can be challenging because of highly structured curricula and few guidelines for developing effective IL opportunities in this context. The purpose of our study was to identify factors that contribute to effective IL activities in a structured curriculum in order to develop guidelines for instructors.

Methods: We conducted a qualitative study in two stages. First, we conducted interviews with UGME students and a textual analysis of the IL resources from 4 UGME courses at the University of Manitoba. Second, based on findings from the first stage of the study we developed guidelines for developing IL activities and conducted a focus group with students to elicit their perspectives on the guidelines. The guidelines were then revised based on findings from the focus group and comparisons with student-produced recommendations for improvements to IL activities.

Results: The theme of prior knowledge emerged from the analysis of interviews and IL resources as a thread that runs throughout the other four themes: providing context, active learning, flexibility, and facilitating learning. The resulting guidelines consider learners' prior knowledge and experience to guide choices in content, format, and structure for IL activities in UGME at the University of Manitoba.

Conclusion: Our findings suggest that effective IL activities are highly dependent on learners' prior knowledge and experience. In addition, even within highly structured curricula, it is possible to provide IL opportunities that shift responsibility for learning to the learners.

OE - 1 - 4

Converting the Academic Half Day to a Flipped Classroom Format - A Pilot Study of its Impact on Learner Behavioural Engagement

Natasha Nathoo McGill, **Carlos Gomez-Garibello** McGill, **Ning-Zi** Sun McGill

Background/Purpose: Academic half-days (AHDs) have been increasingly used during clerkship and residency training to deliver Medical Expert content to complement workplace learning and to meet accreditation standards. Most AHDs are composed of didactic lectures, which are associated with poor learner motivation and engagement. The goal of this pilot study was to examine if changing the delivery of the AHD to a flipped classroom (FC) format would affect learner behavioural engagement, which is defined as in-class concentration and participation, time on task, attendance, and completion of homework.

Methods: Convenience sampling was used to recruit all eligible internal medicine residents at one university during the 2017-2018 academic year. Three lecture-based and four FC AHDs were included. Data were collected anonymously through direct observation of learners' in-class behaviour by three research assistants using the previously validated BERI protocol, which generates an engagement score (out of 10) for every observation cycle of five minutes. Results were analyzed using descriptive statistics (given the anonymous nature of the data).

Results: The mean (SD) engagement score for the FC AHDs was 8.3 (1.5) compared to 6.93 (2.6) for the lecture-based AHDs.

Conclusion: According to his pilot study, FC format may be more effective at stimulating learner behavioural engagement compared to a lecture-based format. Given these results, a larger study will be pursued with collection of additional observation data and data related to the other aspects of behavioral engagement (such as pre-AHD studying behavior).

OE - 1 - 5

PlayMed: A randomised controlled trial for serious gaming in medical education

Janaya E. Perron University of New South Wales, **Penelope Uther** University of New South Wales, **Michael J. Coffey** University of New South Wales, **Andrew Lovell-Simons** University of New South Wales, **Adam Bartlett** University of New South Wales, **Ashlene M. McKay** University of New South Wales, **Silas Taylor** University of New South Wales, **Millie Garg** University of New South Wales, **Sarah Lucas** University of New South Wales, **Jane Cichero** University of New South Wales, **Sean Kennedy** University of New South Wales, **Chee Y. Ooi** University of New South Wales

Background/Purpose: There is a lack of evidence for serious games in paediatric medical education. We developed a highly immersive serious game, PlayMed, teaching paediatric clinical management in a virtual hospital. We evaluated the educational efficacy of PlayMed (PM) against two controls, (i) an online learning package (OP) and (ii) paper-based clinical guidelines (GL).

Methods: We performed an investigator-blinded randomised controlled trial on senior University of New South Wales medical students at Sydney Children's Hospital, Australia. Participants were block randomised and given 8 weeks access to one educational intervention focused on asthma and seizure management (PM, OP or GL). Clinical performance was evaluated through two objective structured clinical examinations (OSCE) with high-fidelity mannequins (15 marks each). A student t-test assessed differences between PM and OP or GL scores (p0.05 considered significant). Participants also completed a questionnaire with Likert-scale questions.

Results: Ninety-six students were assessed (36 PM, 31 OP and 29 GL) and demographics were similar between groups (overall age 23 years (22-24), 55% female). The mean (SD) asthma OSCE scores for PM, OP and GL were 10.0 (1.7), 9.3 (2.0) and 9.3 (2.3) respectively, with no significant differences between groups. The mean (SD) seizure OSCE scores for PM, OP and GL were 10.8 (2.3), 10.5 (2.3) and 9.3 (2.4) respectively, with PM significantly higher than GL (p=0.02). Participants 'strongly agreed' or 'agreed' that PM, OP and GL prepares them for real-life clinical scenarios (83.3%, 73.3% and 72.4%, respectively).

Conclusion: Our findings demonstrate the validity of and positive attitude towards PlayMed in clinical medical education.

OE - 1 - 6

Implementation of Native Apps for Logging Patient Encounters and Facilitating and Tracking Direct Observation and Feedback in Clerkship

Anthony Levinson McMaster University, **Jill Rudkowski** McMaster University, **Natasja Menezes** McMaster University, **Judy Baird** McMaster University, **Rob Whyte** McMaster University

Background/Purpose: It can be a challenge to document what patient encounters clinical clerks have experienced, and that they have been directly observed in clinical settings. We set out to build native apps for iOS and Android smartphones to improve the tracking of student patient encounters, as well as their direct observation and feedback during the clerkship.

Summary of the Innovation: Needs analysis was used to outline the current challenges and the requirements for each core rotation. We standardized the data collection across the different clinical rotations. We focused on tools for formative feedback only. Two apps were built. The first tracks Essential Clinical Experiences (ECE). For each rotation, students log required encounters that include clinical conditions or procedures. Students are required to

log 267 ECE's throughout their clerkship. The second app records direct observation and feedback. Students initiate the logging of the observation using the app on their mobile device, then hand the device to the observer to note formative feedback. After returning the device to the learner, a learning plan is also documented prior to submission. A 'receipt' is sent to the learner and observer. To date, using the MacDOT app, over 12000 direct observations have been logged, with over 2000 observers. For 92% of the logged observations, students found the feedback they received helpful to their learning.

Conclusion: These apps have improved the systematic approach to tracking medical student clinical encounters, as well as direct observation and feedback during the clinical clerkship. Ongoing enhancements are in progress.

OE - 2 - 1

Motivation to Access Laparoscopic Skills Training by Obstetrics and Gynaecology Residents: A Novel Tool to Characterize Motivation

Jocelyn Stairs Dalhousie University, **Bradley W Bergey** Queen's College, City University of New York, **Stephanie Scott** Dalhousie University

Background/Purpose: Competency based medical education (CBME) requires novel approaches to surgical education. Significant investment has been made in laparoscopic simulation, which has been shown to foster skill development prior to patient encounters. However, research suggests variable voluntary use of these resources by residents, and little is known about the motivational factors that influence their utilization. Our primary objective was to characterize factors that motivate residents to seek laparoscopic simulation experience outside of the formal curriculum.

Methods: In this prospective cohort study of 44 Canadian obstetrics and gynaecology residents, we administered a validated questionnaire grounded in Expectancy Value Theory of motivation to understand what shapes voluntary laparoscopic simulation use. We conducted content analysis of open-ended responses about barriers, identified motivational correlates of simulation use and surgical experience, and conducted ANOVAs to assess differences in motivations between junior (PGY2-3) and senior (PGY4-5) residents.

Results: Residents identified barriers including lack of time, access, and supervision, and some expressed doubt about the transferability of laparoscopic simulation to the operating room. Compared to junior residents, senior residents reported greater enjoyment of laparoscopic surgery, less emotional costs, and higher self-efficacy for learning laparoscopy. While self-efficacy beliefs were robustly correlated with residents' surgical experience, only competing responsibilities was a significant negative correlate of simulation use.

Conclusion: Residents' motivation for developing laparoscopic skills increase during residency, yet perception of utility and barriers, especially competing responsibilities, impede voluntary simulation use. As programs undertake curricula redevelopment for CBME, mitigating barriers and improving perceived utility of laparoscopic simulation could optimize use and enhance skill development.

OE - 2 - 2

Improving Integrated Mental Health Care Rotations for Psychiatry Residents: Showing Incremental Evaluation and Change Works

Natasha Snelgrove University of Toronto, **Andrea Levinson** University of Toronto, **Nadiya Sunderji** University of Toronto

Background/Purpose: Integrated mental health care (IMHC) training is mandatory for psychiatric residents across Canada, but residency programs have struggled to implement this new requirement. In IMHC, specialists are integrated into primary care and community settings to improve access to and quality of mental health care.

Summary of the Innovation: In 2016, we launched a revised PGY-5 training experience, with a year long, weekly clinical placement, flipped classroom curriculum, and written assignment. We evaluated the implementation of the training experience with resident and faculty surveys over years 1 and 2 (response rates 39-63%). Residents enjoyed working with disadvantaged populations and interacting with team members, but struggled to find time for curriculum homework and perceived the assignment had low utility. Faculty enjoyed the opportunity to teach in this unique approach to psychiatric care provision but felt disconnected from the central curriculum and unable to integrate it into their

supervision. In years 2 and 3, reductions in homework and communication of central curriculum to faculty improved rotation feedback.

Conclusion: This model of training demonstrates that IMHC is a valued rotation that can be conducted as a longitudinal placement. Caution must be taken in using a flipped classroom model in postgraduate training. Given the community-based nature of this training, curriculum dissonance was an unexpected challenge, where experiences of residents in the classroom did not always mirror what was taught on placement by supervisors. To reduce this experience of dissonance and improve curricular uptake, we are creating a faculty development strategy and continuing to reduce resident workload associated with IMHC.

OE - 2 - 3

An examination of trends in patient-centered care, specific to the treatment of substance misuse and mental health conditions, using data from a family medicine residency program

Emily Chapman University of Alberta, **Deena Hamza** University of Alberta, **Shelley Ross** University of Alberta

Background/Purpose: Patient-centered care (PCC) is essential for delivery of appropriate and effective healthcare. Although PCC is taught comprehensively, the Patient Centered Medical Home (PCMH) model has focused on "in house" management of 5 chronic diseases: asthma, diabetes, heart disease, and cancer. Evidence suggests barriers to providing PCC when treating substance misuse and/or mental illness. As such, a comparison of evidence of PCC with patients by residents in 2010 (introduction of PCMH) and in 2018 (8 years after introduction of PCMH) was undertaken.

Methods: Secondary data analysis. Setting: Canadian family medicine residency program. Data source: Archived de-identified resident low-stakes assessments (FieldNotes). Main outcomes: Comments reflecting patient-centered care on FieldNotes. Numbers of FieldNotes by Picker's Eight Principles of Patient-Centered Care. Analyses: Contemporary and summative content analysis.

Results: A statistically significant increase in training was observed for: incorporating patient context ($p = 0.004$); coordination of clinical care ($p<0.001$). Changes in providing physical comfort, emotional comfort, and including family/friends in the decision-making process were not statistically significant.

Conclusion: Results indicate a statistically significant increase in training provided to family medicine residents in the provision of patient-centered care specific to individuals seeking treatment for substance misuse and/or mental illness. These results support the inclusion of substance misuse and mental illness as an additional and distinct pillar in the PCMH model of chronic disease management with "in-house" continuity of care.

OE - 2 - 4

Medical student perspectives on the impact of resident-as-teacher training: A realist review

Nathan Zondervan University of Calgary, **Kevin McLaughlin** University of Calgary

Background/Purpose: Residents are fundamental to the education of medical students and their constant proximity in the clinical environment creates a unique educational opportunity that is often unstructured. Clerkship rotations rely heavily on old apprenticeship models and an informal curriculum that is delivered largely by residents on the hospital wards. The closer age and experience level of residents creates a safe learning environment where medical students can ask basic questions and present their own ideas. The resident's effectiveness as a teacher rises because their knowledge base is more similar to the learner's. Clinical clerks estimate that residents provide 66% of clinical teaching during a rotation and provide 33% of their knowledge base. Many report that residents play a greater role in their education than the faculty surgeon. Resident teaching ability is also one of the strongest predictors of a positive clerkship experiences. Residents frequently teach without training and few feel confident in their teaching ability. Resident-as-teacher training has become

nearly universal across North America. There is strong evidence indicating that these interventions improve the teaching skills of residents. However, few have examined the effect on student learning outcomes. Patient care and existing educational requirements frequently limit clinical teaching. Therefore, residents must be utilized in ways that meaningfully influence medical student education. Given the financial and opportunity costs of these efforts, we must deepen our understanding of the impact teacher training has on the knowledge, attitudes and skills of the medical students these residents ultimately teach.

Methods: This realist review identifies original studies published in English within the Medline, EMBASE, Scopus, ERIC and Education Research Complete databases. Our population of interest was medical students and the intervention was exposure to residents who have completed resident as teacher training. Selected studies must have medical student specific outcomes and we included all study designs. Abstracts meeting the search criteria underwent a paired two-person review to identify articles for inclusion. Data extraction focused on the mechanisms and contextual factors of resident as teacher training that led to any observed changes in the knowledge, attitudes and skills of medical students.

Results: Positive changes in the reactions of medical students to resident led teaching were more commonly associated with a number of contextual and mechanistic factors. Of positive studies: 63% required mandatory attendance, compared to 0% of neutral studies; 78% had a duration of training greater than 4 hours, compared to 33% of neutral studies; mean duration of training was 9.9 hours for positive studies and 3.7 hours for negative studies; 40% trained more than 60 residents, compared to 0% of neutral studies; mean number of residents entered into a positive study was 52, compared to 42 for negative studies; 43% had low resident ratings before the intervention, compared to 0% of neutral studies; mean initial ratings were 3.5 for positive studies, compared to 4.1 for negative studies; 60% dispersed the implementation of the intervention, compared to 33% of neutral studies; 78% evaluated the intervention after three or more months, compared to 33% of neutral studies; mean duration of evaluation was 4.3 months for positive studies and 1.2 months for negative; 60% used a lower quality study design, compared to 33% of neutral studies; 10% performed the highest quality design, compared to 67% of neutral studies. Mechanisms that contributed to positive outcomes were also identified. It was important that the sessions were highly rated by the residents, improved the self-confidence of residents as teachers and increased the self-ratings of resident teaching effectiveness. 70% of positive studies assessed resident's reaction to resident teacher training in one of these ways and all seven reported positive reactions. One neutral study reported improved self-confidence and two described improved self-ratings of teaching effectiveness. Therefore, a positive reaction from residents may not be sufficient to generate improved reactions from medical students.

Conclusion: Resident-as-teacher training can be effective in improving medical student reactions to resident led teaching. Educators must ensure that these interventions target a large number of residents and provide adequate time for training sessions. These interventions must be mandatory and should target residents with low ratings of teaching effectiveness. The these programs must inspire residents and improve their confidence in their role as teachers in the clinical environment. Resident-as-teacher training has not yet been shown to affect the knowledge and skills of medical students. This leaves a clear area for further research and future studies must focus on higher levels of evaluation to ensure that resident-as-teacher training programs are effective. New challenges, including new models of residency training, must also be monitored to determine their effect on resident led teaching of medical students.

OE - 2 - 5

Uncovering the beginnings of Canadian anesthesiology to inform current residency training

Richa Sharma University of Toronto, **Cynthia Whitehead** University of Toronto, **Ayelet Kuper** University of Toronto

Background/Purpose: Understanding the historical development of a medical discipline allows us to identify taken-for-granted assumptions about residency training. In this research project, we applied a critical historical lens to anesthesia training and practice in Canada.

Methods: Textual critical historical analysis was used to track changes in how 'anesthesia' was framed in Canadian medical journals between the initial use of ether in 1846 and the last reported surgical procedure without anesthesia in Toronto in 1868.

Results: In 1846, the novel concept of 'anesthesia' and the associated dentist-provider was met with skepticism. The dominant voice shifts from anecdotes of dentists to positivist truths about physicians. By 1868, only physicians feature in publications, and ideas shift from skepticism to 'saving suffering humanity'. Anesthesia for pregnant patients brought early patient-centred and feminist discourses to the language of surgery. Biblical interpretations of labour analgesia described in medical journals were used to legitimize pain management. The earliest anesthesia training involved physicians experimenting on themselves to understand the effects of the agents used. The focus of early 'anesthesiologists' was optimization of surgical conditions. As evidenced by a shift in language, this progressed quickly to reducing pain and suffering.

Conclusion: Critical historical analysis highlights the intersection of social, economic and political factors in the emergence of the specialty and has implications for the training of contemporary competent anesthesiologists. Identifying early discourses of scientific innovation, patient experience, patient-centredness and feminism as central to the identity of anesthesiologists helps us design training programs that encompass these facets of our work.

OE - 2 - 6

The Impact of Rural Rotations on Urban Based Postgraduate Learners

Jodie Ornstein University of Calgary, **Rebecca Malhi** University of Calgary, **Douglas Myhre** University of Calgary

Background/Purpose: The chronic shortage of physicians working in rural areas is a global problem. A common strategy by medical educational institutions to address this issue is the rural rotation. Canadian rural based family medicine programs include a minimum 6 months of postgraduate rural exposure, with urban based residency programs recommended to provide at least 8 weeks of rural training. Despite these strategies, there has been little improvement in the distribution of rural physicians. This review assesses the published evidence for the impact of rural rotations on urban based postgraduate learners.

Methods: OVID Medline was searched for eligible articles published in peer-reviewed academic journals between 1980 and 2017. Data were extracted and analyzed to draw inferences about the impact of rural rotations on urban based postgraduate learners. The methodological quality of articles was assessed with the Medical Education Research Study Quality Instrument (MERSQI).

Results: The initial search identified 301 articles. Nineteen quantitative studies were included in the review with a mean MERSQI score of 11.95. Of the reported rural rotation characteristics, duration was most consistently associated with eventual rural practice. No consensus of impact was found for other characteristics. Overall, our review provided indications of the cumulative effect of the postgraduate rural rotation, rural origin, and rural intent in facilitating the decision to practice rurally.

Conclusion: Our review reinforces the importance of rural rotations during postgraduate training to the outcome of physicians establishing a rural practice. However, the reliance of medical educational systems on the rural rotation, and specifically on duration, does not accurately reflect the complexity of the choice to practice in a rural community.

OE - 3 - 1

Faculty Development in Competency-Based Medical Education: A Scoping Review of the Literature

Giovanna Sirianni University of Toronto, **Susan Glover-Takahashi** University of Toronto, **Jeffrey Myers** University of Toronto

Background/Purpose: Medical training programs are undergoing transformational change with the advent of competency-based medical education (CBME); however, faculty feel ill prepared to carry out the teaching and assessment tasks required. Faculty development (FD) is proposed as a key factor in CBME's successful implementation. The primary objective of this project was to conduct a scoping review of the literature.

Methods: Four databases searched using relevant keywords. Titles and abstracts generated by the literature search manually reviewed for relevance. Articles flagged for full review: 1) Relevant to FD for undergraduate or postgraduate medical education 2) Descriptive articles on program experience with FD in CBME 3) Studies looking at best practices in FD in CBME 4) Consensus statements and frameworks 4) Exclusion: Validation studies of assessment tools; studies which did not specifically mention CBME. Themes mentioned in more than one article aggregated.

Results: Total of 709 citations and abstracts manually reviewed for relevance with 20 flagged for full review. Main results: 1) All studies published after 2009 2) 8/20 articles relevant to Postgraduate Medical Education 3) Most studies from Canada, USA and Europe 4) 4/20 articles with an experimental design 5) 10 relevant themes identified

Conclusion: There is a paucity of literature overall in FD for CBME. This is a relatively new body of literature with experimental design or program evaluation studies lacking. Most articles were descriptive, expert opinion or position statements. Many studies suggest what should happen in CBME FD, but not the best practices or practical approaches to achieving this.

OE - 3 - 2

Learner handover: does providing assessors with information about learners' weaknesses influence assessment scores?

Valérie Dory Université catholique de Louvain, **Meredith Young** McGill, **Deborah Danoff** McGill, **Laurie Plotnick** McGill, **Nicole Pal** McGill, **Stephanie Gumuchian** McGill, **Valerie Dory** McGill, **Beth-Ann Cummings** McGill, **Carlos Gomez-Garibello** McGill

Background/Purpose: Learner handover is intended to provide educational continuity between rotations in competency-based medical education (CBME) programs. Concerns have been voiced that learner handover, whether formal or informal, could bias subsequent assessment. This study examined the impact of learner handover reports on subsequent rater-based assessment scores.

Methods: Physicians from the departments of Medicine, Family Medicine, Emergency Medicine, Pediatrics and Surgery were invited to participate in an online study, in which they viewed videos of two simulated resident-patient encounters and provided assessments using a shortened, five-item, mini-CEX form. Participants were randomized into three groups: no learner handover report, a report indicating weaknesses in medical expertise, and a report indicating weaknesses in communication. For each video, we analyzed scores using a repeated-measures ANOVA. An a priori power calculation indicated that a sample size of 63 would enable the detection of a moderate to large effect size of 0.35, with an alpha level of 0.05, and power of 0.8, assuming correlations between measures of 0.7.

Results: Seventy-two physicians participated. Although scores varied by mini-CEX item (video 1: $F(df\ 4, 276)\ 39.05$, $p<0.001$; video 2 $F(df\ 4, 276)\ 18.84$, $p<0.001$), there was no effect of handover report on

assessment scores (video 1 F(df 2, 69) 0.77, p=0.47; video 2 F(df 2, 69) 0.19, p=0.83).

Conclusion: This experimental study provides empirical data about the impact of implementing learner handover on assessment scores. We found no impact on rater-based assessment scores based on direct observation. Further studies are required to confirm the limited risks, and to examine potential benefits of learner handover in the context of CBME.

OE - 3 - 3

Challenges and Solutions to the Implementation of CBME at Queens University

Amar Chakraborty Queen's University, **Julia Tai** Queen's University

Background/Purpose: CBME aims to create more capable physicians by ensuring the fixed outcome of competence within a variable amount of time, in contrast to the traditional model, which assumes that competency is achieved within a fixed time. In 2017, Queen's University was the first Canadian institution to transition all its programs to CBME. This was met with several challenges: 1) building an online interface, 2) facilitating faculty engagement, and 3) developing infrastructure.

Summary of the Innovation: Clinical stakeholders deconstructed each specialty into its core competencies. IT developers then created an online interface where these could be evaluated. This necessitated an active dialogue between both parties to complete and refine the interface in an iterative process. In order to facilitate faculty engagement, staff first needed to buy into the philosophy of CBME. Secondly, faculty were educated on how to provide high-quality feedback to residents and to use MEdTech to deliver this feedback. Lastly, the increased administrative burden was mitigated by providing multiple options in which faculty could evaluate residents. The success of CBME relied heavily on the accessibility of MEdTech through hospital infrastructure. The lack of Internet availability was resolved by working with hospital administration to improve wifi connectivity. Scarcity of communal computers prevented users from accessing MEdTech; providing residents with personal tablets and developing a mobile platform helped mitigate this.

Conclusion: Successful implementation of CBME depends on a smoothly functioning online interface, faculty that are engaged and capable of using that online interface, and infrastructure that supports the access to it.

OE - 3 - 5

The role of context in competence committee decision making

Anita Acai McMaster University, **Ranil R. Sonnadara** McMaster University

Background/Purpose: Competence committees (CCs) are tasked with making decisions about residents' readiness for promotion to the next stage of training and responsibility (Hauer et al., 2015). Despite being mandated in Canada, little is known about how CCs make decisions in practice. In this study, we investigated CC decision making using a set of simulated resident files administered to novice raters.

Methods: Fifty-nine undergraduate participants (50 females; 9 males) completed the study. Participants did not have any prior experience making promotion decisions but were given a short introduction to CCs and asked to simulate this context to the best of their abilities. Individually, each participant was administered 42 simulated resident files containing either performance data only (control), or performance data in combination with information about the raters (hawks or doves), the resident's professionalism, the resident's personal circumstances, or the participant's prior experiences with the resident. For each case, participants determined whether or not they would promote the resident in question and stated their level of confidence in this decision.

Results: Compared with the control cases, contextual information that was inconsistent with resident performance resulted in participants becoming either significantly more stringent or more lenient depending on the information provided. For example, learning that a resident had been unprofessional

despite meeting or exceeding the formal requirements for promotion based on their performance resulted in promotion only 54% of the time, compared with 88% of the time in the control condition. Or, being told about a prior positive experience with a resident who did not meet the formal requirements for a promotion resulted in promotion 13% of the time, compared with only 2% of the time in the control condition.

Conclusion: Contextual information about a resident or rater appears to influence decision making among novice raters simulating a CC. These findings set the stage for continued work on how CCs make decisions in practice.

OE - 3 - 6

The effect of audio monitoring of oncology clinic medical students on the quality of consultants' written feedback

Michael Sanatani Western University, **Kylea Potvin** Western University, **Henry Conter** Western University, **Kimberly Trudgeon** Western University

Background/Purpose: New and practical ways to facilitate observation must be found to support competency based education. Lack of direct observation is likely a factor impeding high-quality feedback given by faculty. The purpose of our study was to examine the effect of consultants using a portable audio receiver to monitor patient-trainee encounters on the quality of written feedback.

Methods: After a 2-week oncology rotation, participating clerks received written feedback per usual practice from non-monitoring faculty. Monitoring faculty also gave unmonitored feedback after week 1 as internal control. Monitoring faculty used a wireless audio receiver during the 2nd week to listen to encounters at their discretion during week 2 before writing feedback. Feedback was de-identified and rated as strong/medium/weak according to consensus of 2/3 blinded rating investigators, using a predefined rubric.

Results: 101 written evaluations were completed by 7 monitoring & 19 non-monitoring faculty. 96% (22/23) of feedback after monitoring was rated high quality, compared to 26% (20/78) without monitoring ($p<0.001$). Monitoring faculty indicated that audio monitoring made the feedback process easier & increased confidence in 95% of encounters. Students felt monitoring contributed positively to their learning experience in 95% (19) of the monitored encounters, neutral in 1, & detrimental in 1 case.

Conclusion: Using a pocket audio receiver to monitor clerks was associated with higher quality of written feedback by faculty compared to usual practice. Monitoring was favourably viewed by both faculty & students and represents a convenient way to include direct observation in a busy outpatient practice.

OE - 4 – 1

Gendered Discourses about Parenthood in Canadian Medical Associations' Tax Advocacy

Alice Cavanagh McMaster University

Background/Purpose: In the course of their advocacy against federal tax reforms announced in July 2017, medical associations across Canada mobilized discourses about medical learners and the medical workforce to defend tax advantages associated with professional incorporation. In particular, female medical students and physicians, under the age of 35 emerged as central symbols in these campaigns, portrayed as groups who would be significantly disadvantaged by the proposed reforms. Understanding gendered ideas embedded within this advocacy affords valuable insight into how "gendered relations of power get (re)produced, negotiated, and contested" through professional advocacy and institutional policies in health professions education (Lazar, 2007, p. 150).

Methods: Critical feminist discourse analysis was used to parse publicly available submissions that six national and provincial/territorial medical associations made to the Federal Department of Finance's public consultation.

Results: Three gendered discourses were mobilized by professional medical associations, in their advocacy. The reforms were critiqued for forcing female physicians to choose between family and their careers, invoking second-wave feminist arguments about women in the workplace. The changes were also portrayed as devaluing traditionally feminized, family labour performed to support physicians. Finally, the reforms were critiqued for decreasing resources available to clinicians to hire staff working in traditionally feminized roles.

Conclusion: This period of advocacy is a compelling example of gendered discourses' persuasive power in health policy advocacy. Moreover, it gestures towards important, as-yet-unresolved questions over the policies necessary to support physicians of all genders, in parenthood.

OE - 4 - 2

Realist Synthesis of Educational Interventions Regarding Paediatric Pain

Javeed Sukhera Western University, **Kyna Patterson** Western University, **Kaitlyn Bertram** Western University

Background/Purpose: Pain is a common problem in children and youth, leading to considerable impairment. Despite advanced training and knowledge translation initiatives for health professionals, paediatric pain management practices remain inadequate and inconsistent across a variety of contexts and settings. We sought to explore the literature on paediatric pain education by taking a theory-oriented approach through realist synthesis. The objective of our review was to explore how, for whom, why and in what circumstances educational interventions concerning paediatric pain for health professionals are effective.

Methods: Using realist synthesis principles, existing literature was reviewed through an iterative process of consultation with our research team. Search terms were applied in 6 databases and subjected to two-stage review by 3 independent reviewers. Of 6606 initial articles, 55 were selected for extraction and analysis based on our inclusion and exclusion criteria. Context-mechanism-outcome configuration patterns were analyzed to modify, elaborate and revise understanding of our initial model.

Results: Regardless of context, multiple mechanisms achieved commonly measured learning outcomes related to knowledge and practice change. Similar outcomes were achieved regardless of whether education was didactic or experiential. Multi-modal knowledge translation initiatives with leadership support and commensurate organizational policy changes appeared to influence patient outcomes. Few studies explored sustained, patient-centered

outcomes, changes within organizational culture, or emotional aspects of pain education.

Conclusion: Paediatric pain education programs produce similar learning outcomes regardless of context and whether interventions are brief, comprehensive or multi-modal. Future research must explore sustainable outcomes at the patient level. Areas of emerging research include simulation, self-directed learning, coaching and education concerning emotional aspects of pain.

OE - 4 - 3

Why You Should Mini-Med School: Mini Med School as an Intervention to Increase Health Literacy

Samuel Harder University of British Columbia, **Sergiy Shatenko** University of British Columbia, **Jane Gair** University of British Columbia, **Samuel Harder** University of British Columbia

Background/Purpose: Health literacy has become an increasingly important topic for healthcare professionals and systems given that low health literacy has been shown to be widely prevalent and linked to poorer health outcomes and higher healthcare costs. We sought to determine if a mini med school delivered by medical students to the local community could prove to be an effective intervention to improve health literacy.

Methods: This study took place at the Island Medical Program, a distributed site of the University of British Columbia's Medical Undergraduate Program, in Victoria, BC. The mini med school intervention consisted of a six part, weekly lecture series on various topics in medicine as an intervention to increase health literacy in 24 voluntary participants from the University of Victoria Retirees Association. It was developed and delivered by two 2nd year Island Medical Program students as part of a course research project. This was a cross sectional study comparing health literacy pre- and post-intervention using the validated Health Literacy Questionnaire.

Results: There was a statistically significant improvement in 7 of the 9 scales of health literacy when participants repeated the Health Literacy Questionnaire 6 weeks post-intervention as well as positive qualitative outcomes from both a student learning and community outreach perspective.

Conclusion: This study demonstrates that a mini med school program is a potentially effective way to increase health literacy, adds to the limited research surrounding mini med schools and provides a framework for other medical faculties to follow with regards to leadership in promoting health literacy.

OE - 4 - 4

A unifying Faculty-wide vision for education: Innovation through stakeholder engagement

Annette Majnemer McGill, **Aliki Thomas** McGill, **Farhan Bhanji** McGill, **Jessica Emed** McGill, **Adam Finkelstein** McGill, **Terence Hébert** McGill, **Demetra Kafantaris** McGill, **Kevin Lachapelle** McGill, **Saleem Razack** McGill, **Yvonne Steinert** McGill, **Meredith Young** McGill

Background/Purpose: Educational excellence is a central tenet of any Faculty of Medicine/Health Sciences. To leverage existing strengths and capitalize on new opportunities, we were mandated to develop a Faculty-wide comprehensive Education Strategic Plan (ESP). The strategic directions sought to generate novel approaches in teaching and learning that resonated with the health professions and biomedical science programs.

Summary of the Innovation: We report a case study of developing an ESP for an entire Faculty. The participatory and evidence-informed process employed various methods including: SWOT analysis, surveys, focus groups, and written feedback to elicit input from over 1000 stakeholders (students, faculty, clinician-educators and researchers). A Steering committee was responsible for collecting and integrating data, defining the scope of the education agenda, and ensuring that engagement with stakeholders was equitable, dynamic and transparent. Three cross-cutting strategic priorities were identified: student-centred approaches and student engagement; interprofessional and interdisciplinary education; and education research, scholarship and innovation. An implementation plan

was articulated and a performance measurement framework was developed to optimize accountability and measure impact.

Conclusion: Our ESP aims to cultivate skills, spaces, and attitudes by: 1) amplifying connections between students, faculty, and community members to achieve common goals, and 2) purposefully synergizing educational research with teaching and learning practices. Wide-ranging, responsive and iterative stakeholder engagement broadened the tent of influencers. This faculty-wide plan will enable our Faculty's education enterprise to pursue innovative directions while nurturing a thriving learning community.

OE - 4 - 5

Students' Perception on use of Smartphones in Histology Teaching

Safaa El Bialy University of Ottawa, **ALexander Lian** Pearson University of Ottawa, **Alexander Pearson** University of Ottawa

Rationale/Background: Currently, histology is taught to University of Ottawa medical students using images acquired with digital microscopes, which can be expensive, time consuming and cumbersome to use. An alternative is acquiring images using smartphone cameras through the eyepieces of a microscope. The study's purpose is to find out how do smartphone-acquired images compare to digital microscope-acquired images for histology teaching purposes.

Instructional Methods: Participants were 84 second-year medical students from the University of Ottawa. Following lectures on gastrointestinal system histology, students were asked to identify histology images taken by both a Zeiss Axio imager A1 LED/DL microscope and an iPhone 6. Tissues included: esophagus, stomach, duodenum, jejunum, colon, anorectal junction, liver, portal triad, pancreas, gallbladder. Students were then asked about the quality of both sets of images, whether either was superior, and whether they were both satisfactory for teaching histology.

Summary/Results: Chi-square tests were used to compare the proportion of medical students able to correctly identify microscope versus iPhone-acquired images, and no significant differences were found (significance set at $p < 0.05$). 66.7% of participants agreed that both sets of images were adequate for teaching histology, and only 7.85% disagreed. Furthermore, both microscope and iPhone-acquired images were equally preferred (40.3% of students preferred microscope; 37.9% preferred iPhone; 21.7% were indifferent). Interestingly, iPhone-acquired images were preferred for some tissues (esophagus, duodenum, anorectal junction, pancreas, gallbladder).

Conclusion: Using smartphone cameras to take histology images is a simple and inexpensive procedure, and produces images that are as reliable as digital microscope-acquired images for histology teaching purposes.

Overview: Over the past years, there has been a dramatic increase in the use of computer-aided instruction in the histology laboratory. Surprisingly, the large increase in the number of schools using computer-aided instruction has not been accompanied by an equivalent decrease in the number of schools that utilize microscopes and glass slides. At many universities, the trend has been toward a blending of the new computer-based instructional technologies with the long-standing use of microscopes and glass slides

OE - 5 - 1

Immersion, isolation, and enculturation in clinical training: An autoethnographic lens

Andrew Perrella University of Toronto**, Alon Coret** University of Toronto, **Glenn Regehr** University of British Columbia, **Laura Farrell** University of British Columbia

Background/Purpose: Clinical clerks are introduced to the 'real world' of medicine and its well-established communities of practice. The literature has hypothesized how undefined roles, unclear expectations, haphazard learning, and covert hierarchy risk isolating the learner. The following project seeks to provide an insider view of these issues from the frontline experiences of clinical clerks.

Methods: This study employed collaborative autoethnography to explore the experiences of two medical students during clinical clerkship as they developed an emerging physician identity. Data included 86 written narrative reflections on clerkship experiences over 48 weeks, and examination of literature around various aspects of clerkship. Thematic and narrative analyses were conducted iteratively in collaboration with both an expert in the field of medical education and an academic general internist.

Results: Clerkship necessitates close interactions with patients, preceptors, other healthcare professionals, and fellow learners. Despite this immersion, the clerks often felt isolated and struggled to find ways to meaningfully contribute to the healthcare team. Heavy workloads and shifting identities compounded the clerks' sense of isolation, and fueled feelings of dissociation from their world outside of medicine.

Conclusion: Clinical clerks face the challenge of perpetual adaptation to distinct (and often tacit) expectations of longstanding communities of clinical practice, along with the emotional and psychological challenges associated with medical training. Without instilling a sense of purpose, contribution, and integration into the broader healthcare team, trainees remain isolated both professionally and socially during this critical period of enculturation in their medical journey.

OE - 5 - 3

Resident perceptions of professional identity formation in a competency-based medical education framework

Nathan Cupido McMaster University, **Cindy KN Tran** McMaster University, **Jennifer Zering** McMaster University, **Ranil R. Sonnadara** McMaster University

Background/Purpose: Professional identity is defined as the internalized values of a profession as a representation of the self, and is formed through a process of socialization. As postgraduate surgical training programs transition to competency-based medical education (CBME) it is important to understand how the new curriculum might impact residents' understanding of what it means to be a medical professional.

Methods: 24 surgical residents were interviewed at the start of their postgraduate training. Questions explored how residents have come to understand what it means to be a medical professional through their training programs. Thematic analysis was used to identify emergent themes in residents' responses, and to interpret how the transition to CBME may influence residents' perceptions.

Results: Residents believe their professional role covers multiple domains -- encompassing all seven roles of the CanMEDS framework -- and is rooted in privilege and public obligation. Residents attribute this understanding to implicit experiential learning, rather than explicit focus in training programs' curricula, citing the influence of staff and peers in creating this perception. There are expectations that features of CBME, such as frequent assessment and feedback, will be essential to their progression as professionals.

Conclusion: Results indicate resident perceptions of professional identity can be linked to specific experiences within their training programs. Future studies will explore CBME's impact on experiential learning, residents' relationships with staff and peers, and professional identity formation in general. It will be increasingly important to understand the overarching implications of CBME towards the development of medical professionals as programs continue to adopt this framework.

OE - 5 - 4

Identity formation processes of Healthcare Students and Clinicians with Disabilities in their Educational Journeys

Yael Mayer University of British Columbia, **Jarus Tal** University of British Columbia, **Michal Shalev** University of British Columbia, **Alfiya Battalova** University of British Columbia, **Laura Yvonne Bulk** University of British Columbia, **Parhar Gurdeep** University of British Columbia, **Michael Lee** University of British Columbia, **Laura Nimmon** University of British Columbia

Background/Purpose: People with disabilities are underrepresented in the healthcare professions, potentially due to inequitable systems. Students with disabilities are struggling when developing their professional identity, alongside their disability identity. OBJECTIVE: To explore identity construction processes of healthcare students and clinicians with disabilities.

Methods: 27 students and 31 clinicians with disabilities from 5 healthcare professions medicine, nursing, occupational therapy, physiotherapy, and social work), in 3 Canadian universities (UBCV, UBCO and Queens University) were interviewed. The data analysis was informed by Grounded Theory.

Results: Participants encounter these tensions while constructing their professional identities: consequences of disclosure versus the need for accommodations; a sense of agency versus a sense of weakness; hindering versus empowering experiences; external and internal stigma.

Conclusion: Addressing those sources of tension within the healthcare education programs will support students with disabilities in their identity construction and transition to a workforce.

OE - 5 - 5

Lessons learned from a small group, inter-generational, narrative medicine program

Meghan Matos University of British Columbia, **Jaeyun Yoo** University of British Columbia, **Melissa Bota** University of British Columbia, **Karen Shklanka** University of British Columbia, **Brett Schrewe** University of British Columbia, **Linlea Armstrong** University of British Columbia

Background/Purpose: A growing number of longitudinal "social support networking" interventions have been developed to support healthcare provider wellness. However, such initiatives tend to be offered within the silos of students, residents, or physicians in practice. Recognizing learner-faculty relations as key to wellness, we launched a longitudinal "inter-generational" social support program with the intention that participants from every generation obtain the benefits of that collective support.

Summary of the Innovation: We developed and advertised a narrative medicine program consisting of four 90-minute sessions which were co-facilitated by a faculty member and a resident. Six groups were formed with diverse participants from across the learning-practice trajectory. During each session, participants read and discussed selections of literature. They shared their own reflections, addressing themes such as challenging clinical encounters, communication and collegiality, and personal and professional identity.

Conclusion: Sessions suspended the traditional learner-faculty hierarchies, allowing for vulnerability and deep, shared discussion. This facilitated recognition that, despite a shared commitment to patient care, those at different points of training and practice may be thinking about and experiencing care delivery differently. Attendings gained understanding how navigating medical education is different today, while learners developed awareness of the pressures

balanced by senior colleagues (e.g., patients, learners with increasingly diverse needs, paperwork, co-workers, administration, family, and self-care). As a result, developing a more robust understanding of others' perspectives seemed to create empathy and provided context for clinical performance and behaviour, minimizing unintentional misattributions between generations that lead to unnecessary conflict and stress.

OE - 5 - 6

Remediating failure in medical students - using discourse analysis to understand the impacts on professional identity.

James Read University of Plymouth

Background/Purpose: Medical students are the doctors of tomorrow, and as such it is vital that they are trained and assessed in a way that ensures that they are fit to practice safely. In this group of highly performing individuals, failure has rarely been experienced before and as such, this can have significant impacts on students and their evolving professional identities. This research project examined the impact that current approaches to remediation in two UK medical schools has on the professional identity formation of medical students.

Methods: Twenty medical students from the Universities of Plymouth and Exeter in the United Kingdom were interviewed. These interviews were transcribed and analysed using a post-structuralist discourse analysis, particularly focusing on the way organisations approach remediation and the subsequent impact on the professional identity development of students. Subsequently, a conceptual framework has been developed that seeks to explain how students are impacted upon by remediation and how this alters their identities.

Results: A detailed conceptual framework will be presented. However, in summary, in this study the institutional approaches to remediation had significant impacts on medical students, this was especially true when there were conflicting discourses as to the purpose, implications and significance of remediation. The way that students described these discourses, and the relation to the institutions from which these arose, had a significant impact on the way students described their identity development, and may impact on their future practice and wellbeing, as well as their fitness to practice.

Conclusion: Organisations need to understand in greater detail how their approaches to remediation impact on identity development. This conceptual framework provides guidance as to some of the key issues that should be considered.

OE - 6 - 1

Professionalism remediation: the relationship between severity of offence and quality of student insight as a function of the type of offence in McMaster's Undergraduate MD Program

Margo Mountjoy McMaster University, **Raquel C. Burgess** McMaster University, **Meredith Vanstone** McMaster University, **Lawrence E. M. Grierson** McMaster University, **Raquel C. Burgess** McMaster University

Background/Purpose: Through review of medical learner remediation files, we examined the relationship between severity of offence and demonstration of insight by students receiving disciplinary action for professionalism and academic offences.

Methods: Ten faculty members reviewed and rated 75 disciplinary files. Each file was rated by 3 individuals. Raters categorized offenses as Academic or Professionalism, and levied ratings on Severity of Offence and Quality of Insight by way of independent 7-point, anchored Likert scales; these measures have demonstrated high inter-rater reliability. Independent Samples T-Tests were conducted for the severity and insight measures as a function of the offence type. Pearson-Product Moment Correlations were conducted to assess the relationship between severity and insight as a function of the offence type.

Results: Mean ratings of severity are significantly higher for professionalism (4.33 ± 1.31) than academic offenses (2.85 ± 1.26), $t(73) = -5.00$, $p < .000$, whilst the opposite is true for ratings of student insight (3.18 ± 1.39 for professionalism and 4.51 ± 1.04 for academic, $t(73) = 4.75$, $p < .000$). Ratings of severity and insight are not significantly correlated for professionalism offenses ($r = -.171$, $p = .320$, $n = 36$), but are moderately negatively correlated for academic offenses ($r = -.627$, $p < .000$, $n = 39$).

Conclusion: Professionalism offenses are perceived as more severe and associated with lower student insight than academic offences. The lack of systemic relation between these constructs for professionalism offences is surprising as it challenges the focus on development of insight in remediation theory and practice (e.g. through reflection).

OE - 6 - 2

Conceptualizations of Professionalism: Investigating professionalism feedback in pre-clerkship medical education at the University of Toronto

Erika Abner University of Toronto, **David Rojas** University of Toronto, **Paul Tonin** University of Toronto, **Joyce Nyhof-Young** University of Toronto

Background/Purpose: In order to overcome limitations of traditional lapse-based processes to assess professionalism, the University of Toronto MD Program developed and implemented a new competence-based, standardized professionalism assessment form. This form offers all tutors the opportunity to identify and evaluate positive and negative behaviours in their classrooms and clinics using narrative and scale-based feedback. While much research and commentary are available on positive professional behaviours in practice, limited research exists on assessing professional classroom behaviours.

Methods: To better understand tutors' conceptualizations of professionalism, we qualitatively analyzed the narratives of tutors assessing Foundations (Preclerkship) students' professionalism behaviours. Narrative comments from all 2017-18 courses were anonymized, descriptively coded, and themes produced.

Results: 2314 comments were collected and analyzed. Tutors conceptualize professionalism variably depending on context (e.g., classroom or clinic). They described empathy for others and being

responsive to feedback as positive behaviours across all contexts. Professionalism as showing support within learning groups and student engagement with learning were prominent themes. Tutors identified different aspects of professionalism as valued in each course e.g., reflective capacity in the portfolio course and patient-centred care (empathy, rapport, concern) in a 2nd year, 6 week clinical course.

Conclusion: This study enhances our understanding of professionalism in classroom and clinical settings. It richly describes personal and interpersonal dimensions of professionalism. It supports development of a shared mental model that should in turn lead to greater consistency in observing, describing, and supporting positive behaviours.

OE - 6 - 3

Development of 'patient ownership' during clerkship

Andréanne Leblanc McGill, **Linda Snell** McGill, **Ning-Zi Sun** McGill

Background/Purpose: Patient ownership (PO) is often seen as a manifestation of professionalism involving a feeling of strong commitment and responsibility towards patient care. Little is known about how the embodiment of this concept develops in the earliest stages of clinical training. The goal of this qualitative study is to explore the development of PO through clerkship.

Methods: Twelve one-on-one in-depth (~1h long) semi-structured interviews were conducted with final-year medical students at one university between December 2017 and April 2018. Each participant was asked to describe their understanding and beliefs with regards PO and discuss how they acquired these mental models during clerkship, with emphasis on facilitating and deterring factors. Data were inductively analyzed for common themes using qualitative descriptive methodology.

Results: Students described PO as patient-centered patient-physician relationship focused on understanding patients' needs and values, engaging patients in their care, and maintaining a strong sense of accountability for patients' outcome. Factors influencing early development of PO include those intrinsic to students' growth as professionals, those related to the learning environment, and those related to curriculum design. External validation from patient/family and team members helped students to internalize PO models that result from the interplay of the factors listed above.

Conclusion: An understanding of how PO develops in early medical training and the factors that influence it can inform strategies aimed at optimizing this process, such as designing curricula with more opportunities for longitudinal patient contact and fostering supportive learning environment with positive role modelling and clear attribution of responsibilities.

OE - 6 - 4

Exploring student perceptions when learning about patient partnerships with patient educators

Sylvia Langlois University of Toronto, **Kamna Mehra** Centre for Addiction and Mental Health

Background/Purpose: The aim of this study was to explore what health profession student were learning when engaging with patient educators. Educators still have much to learn about how to best engage patient educators to promote health profession student appreciation of partnerships with patients with the healthcare team. Although there is general agreement on the value of adding the patient voice to facilitate collaborative competency development, an appreciation of the nature of student learning is still advancing.

Methods: In an interprofessional learning activity, Understanding Patient Partnerships in a Team Context, approximately 1000 health profession students considered the nature of partnerships by hearing of the patient educators' personal experiences and engaging with a Reader`s Theatre script addressing the topic as a small group. Following completion of the learning activity, students submitted written reflections exploring their learning and responses. This presentation will report on the results of an inductive thematic analysis of the written reflections

Results: Key themes from the analysis addressed: 1) Ensuring that patients are adequately informed to participate in shared decision-making; 2) Approaching patient management in a holistic manner is essential; 3) Considering challenges in the nature of partnerships that include the patient on a team; 4) Exploring the value of sharing in the lived experience of patient educators to learn about partnerships. In pursuit of objective assessment for helping health professions students develop interprofessional collaborative competencies, researchers found that differences in learner and clinician perspectives on professional roles affect the ways in which collaboration is evaluated. This work highlights the importance of acknowledging how these differences may affect behavioural expectations and assessment of collaborative competencies of health professions students.

Summary/Results: The thematic analysis revealed differences in learner and clinician perspectives. For example, they differed in their interpretation of certain collaborative behaviours and did not discuss power and hierarchy in the same way.

Conclusion: Results from this analysis contributes to our understanding of student learning from interacting with the patient, and will guide educators in their efforts to extend understanding of the interprofessional team to one that includes the patient.

OE - 6 - 5

Examining how professional boundaries are shaped, perceived and maintained among family medicine residents and physicians

Fiona Bergin Dalhousie University, **Peggy Alexiadis Brown** Dalhousie University, **Darrell Kyte** Dalhousie University

Background/Purpose: Formal teaching on professional and personal boundaries in educational settings is minimal and yet the same issues of vulnerability and unequal power exist in the clinical preceptor-learner relationship as in the physician-patient relationship (Recupero, 2005). Physicians working in small rural communities may experience more boundary challenges than those working in larger urban centres. This can impact the learning environment for family medicine preceptors and residents. This study explores residents' and preceptors' perceptions and challenges associated with maintaining professional and personal boundaries and how they can affect the learning environment and patient care.

Methods: Semi structured interviews were conducted with 16 Family medicine residents and 13 faculty from both urban and rural training sites. An iterative process was used to develop codes and transcripts were analysed by at least 2 members of the research team.

Results: Participants struggled with articulating what constituted a personal relationship or boundary crossing. Professional boundaries were deemed necessary for a safe and fair learning environment. Most participants expressed a desire to have personal interactions with others with whom they shared similar characteristics and because it "felt good", enhanced resident learning, and improved the learning environment. Few respondents felt patient care was impacted.

Conclusion: Both professional and personal relationships can enhance the learning experience. However, residents must use behavioural and environmental cues to "figure out" what is acceptable. It would serve preceptors and residents well to have explicit teaching on professional boundaries and explicit conversations about their relationships.

OE - 6 - 6

Are we trying to teach the unteachable? Beliefs held by clinical supervisors towards professional attributes

Nicole Pal McGill, **Dr. Meredith Young** McGill, **Dr. Laurie Plotnick** McGill, **Dr. Deborah Danoff** McGill, **Dr. Beth-Ann Cummings** McGill, **Dr. Carlos Gomez-Garibello** McGill, **Dr. Valérie Dory** McGill

Background/Purpose: Attitudes such as empathy or compassion, may be more challenging to teach than knowledge and skills - and some have even argued they cannot be formally taught. Educators' beliefs

(implicit theories) about the fixed versus learnable nature of professional attributes may influence their teaching and assessment practices. We examined clinical supervisors' implicit theories of two attitudinal attributes (moral character and empathy) and two cognitive attributes (intelligence and clinical reasoning).

Methods: Physicians across three departments completed an online survey measuring implicit theories using two existing instruments for intelligence and moral character, and 18 new items for clinical reasoning and empathy. We administered the survey twice for test-retest reliability. We examined the psychometric properties of the new items and selected the best performing six items.

Results: A total of 40 participants completed the survey at the first administration, of which 25 completed both administrations. New scales had excellent internal consistency (0.94-0.95) and acceptable test-retest reliability (0.63-0.75). Only 7% of participants saw clinical reasoning as fixed while many more saw empathy (45%), intelligence (53%), and moral character (53%) as fixed.

Conclusion: Clinical supervisors are divided in their beliefs about attitudinal attributes. Fixed implicit theories may contribute to the documented reluctance to provide negative feedback and could limit supervisors' ability to detect progress on morality and empathy. Future studies could examine the relationships between implicit theories and assessment/feedback, and the effects of faculty development aimed at changing supervisors' implicit theories.

OF - 1 - 1

Using learning curves to identify and explain growth patterns of learners in bronchoscopy simulation: a mixed method study

Briseida Mema University of Toronto, **Maria Mylopoulos** University of Toronto, **Yoon Soo Park** University of Illinois

Background/Purpose: Learning curves show how trainees acquire a skill and what the path to competence looks like. The aim of this study was to describe and explain the growth trajectories of novice trainees while practicing on a Bronchoscopy Virtual Reality (VR) simulator.

Methods: This was a sequential explanatory mixed methods design. In 2018, 20 Pediatric Subspeciality trainees and eight faculty practiced with the VR simulator. We looked at relationship between number of repetitions and VR outcomes and patterns of growth using a growth mixture modeling. Using a qualitative instrumental case study method we collected field notes and conducted semi-structured interviews with trainees and simulation instructor to explain the patterns of growth. We used a constant comparative approach to identify themes iteratively. Team analysis continued until a stable thematic structure was developed and applied to the entire data.

Results: Using a growth mixture modeling we statistically identified and then explained two patterns of growth. A slower growth included learners that had: inherent difficulty with the skill, did not integrate the knowledge of anatomy in simulation practice and used the simulator for simple repetitive practice with no strategy for improvement in between trials. The faster growth included learners that used an adaptive expertise approach: integrating knowledge of anatomy, finding flexible solutions and created a deeper conceptual understanding.

Conclusion: We provide validity evidence for use of growth models in education and explain patterns of growth such as a "slow growth" with a mechanistic repetitive practice and a "fast growth" with adaptive expertise.

OF - 1 - 2

Enhancing medical learners' knowledge of, comfort and confidence in holding Goals-of-Care Conversations: an adaptation of the Serious Illness Care Program

Vivian Tam University of Toronto, **John You** McMaster University

Background/Purpose: Having discussions with seriously ill patients about their priorities and values at the end-of-life improves patient peace of mind and family outcomes during bereavement; however, physicians and medical students report feeling undertrained to hold such Goals of Care (GoC) conversations. We adapted the Serious Illness Care Program's (SICP) clinician training on the Serious Illness Conversation Guide (SICG) and evaluated its impact on medical learners' knowledge of, comfort and confidence in holding GoC conversations.

Methods: Eligible learners were penultimate or final year medical students, or first-year residents of generalist programs (Family Medicine, Internal Medicine). Learners participated in a 2.5-hour workshop involving reflection on GoC discussions, live demonstration of the SICG, then role-play with standardized patients, expert observation and feedback. Participants completed pre- and post-intervention questionnaires with Likert-scale and open-ended questions, which were analyzed using paired t-tests and qualitative content analysis

Results: The intervention was associated with increased knowledge ($p < 0.001$). All learners (n=25) gained skills not previously covered in medical training, including a framework for structuring GoC conversations (n=14). Ninety-six percent of participants stated the workshops would improve their comfort in holding GoC conversations; ninety-

two percent believed it would be valuable to integrate the workshops into medical curricula.

Conclusion: Training to use the SICG is novel for medical students and first-year residents and associated with improved knowledge of and perceived capacity to hold GoC conversations. This study supports the integration of SICG training in the medical curricula. Further research could evaluate the impact of training at the point of patient care.

OF - 1 - 3

The impact of clinical environments on trust-building between medical student clerks and their teachers

Emily Block McMaster University, **Amanda Bell** McMaster University, **Allyn Walsh** McMaster University, **Karl Stobbe** McMaster University, **Meredith Vanstone** McMaster University

Background/Purpose: This research examines how features of the clinical learning environment influence the ways in which medical clerks and their clinical teachers form and maintain relationships. We rely on an understanding of relationship-building as the outcome of interpersonal interaction as shaped by social structures.

Methods: Using constructivist grounded theory, we conducted interviews with 12 medical clerks and 9 clinical educators affiliated with a single institution. Participants were purposively sampled to include those who work in diverse clinical environments, including both academic and community settings. We asked participants to tell us about experiences with both positive and challenging relationships forged in diverse clinical environments. We conducted a constant comparative analysis to highlight how elements of the environment shape the teacher-learner relationship.

Results: Our analysis reveals that hierarchy is one of the most influential features of the social environment. We describe features of highly hierarchical environments, leading to the identification of how these hierarchical environments shape interaction, and how that interaction shapes relationships. Finally, we discuss the importance of trust in forming and maintaining positive relationships and describe strategies for building trusting relationships in clinical environments with high and low levels of hierarchy.

Conclusion: This data highlights how building trust between teachers and learners can be challenged by pressure and hierarchy in the clinical environment. Understanding teaching and learning in highly structured, hierarchical, quickly changing environments can help improve the educational experience for teachers and learners.

OF - 1 - 4

Evaluating the impact of the Annual Refresher Courses for Family Physicians on reported practice outcomes

Dr. Francesca Luconi McGill, **Dr. Ivan Rohan** McGill, **Ms. Meron Teferra** McGill, **Ms. Inas Malaty** McGill

Background/Purpose: Despite its limited impact on practice, live conferences are still physicians' preferred format for continuing medical education (CME). Follow-up activities might increase the conference's impact by reinforcing acquired knowledge and enhancing knowledge translation. This study evaluates the effectiveness of the Annual Refresher Course for Family Physicians (ARCFP) in terms of reported performance for the 2013-2017 cohorts.

Methods: This outcome-based program evaluation study included an online and a 3-month follow-up commitment to change (CTC) survey. The mixed method analysis included triangulation of measures, descriptive statistics and thematic analysis.

Results: A total of 856 participants consisting of family physicians (81%), general practitioners (11%), specialists (4%) and nurses (2%) attended the ARCFP. Participants completed the survey between 2013-2017 and of those, 49% completed the follow-up CTC 3-months post. Most participants (88%) estimated that the conference would have medium to high impact on their therapeutic and diagnostic approaches, while satisfaction with the conference's relevance was high. The most accessed resources by physicians following the workshop included the

literature, consultation with peers and attending conferences. Three months following the workshop, knowledge and competence gained were the most relevant enablers to implementing change, while barriers included limited resources and lack of a specific type of patient. Levels of implementation varied from fully to not implemented, with over half (55%) reporting partially implementing both goals.

Conclusion: The ARCFP was effective in supporting reported performance outcomes. Combining the survey with the CTC increased the opportunities for reinforcement of reflection, knowledge and reported change in practice.

OF - 1 - 5

Probeficiency: an innovative peer-led model for providing weekly free and open-access Point of Care Ultrasound (PoCUS) education

Xin Mei Liu University of Ottawa, **Brian Tran** McGill, **Natasha Caminsky** McGill

Background/Purpose: Point of Care Ultrasound (PoCUS) has become increasingly prevalent in both undergraduate and postgraduate curricula in recent years. While medical trainees are introduced to PoCUS, few programs allow for sufficient hours of hands-on teaching, making application very challenging. We aimed to create a model for PoCUS education with the following characteristics: accessible, free of charge, and sustainable.

Summary of the Innovation: Access to 6 ultrasound machines was achieved on a weekly basis at the Royal Victoria Hospital. Instructors included students and residents who had previous ultrasound teaching experience, overseen by medical students with certification from the Canadian PoCUS Society. Models for scanning consisted of the session participants. Sessions were held every 10 days. The learner to instructor ratio was 3:1 or less. Information on session scheduling and sign-up was disseminated via a listserv and on www.probeficiency.com. Results: Sixty-two (62) two-hour-long peer-run workshops were held between November 30 and June 17 2018 on 24 different dates. All EDE 1 and some EDE 2 topics were covered. Participants consisted of 82 medical students and 3 residents across two Montreal universities, for a total 288 learner-hours.

Conclusion: Probeficiency is an educational service that has successfully provided quality PoCUS teaching via peer-led sessions held at an accessible location and time, free-of-charge. Our model allows for increased comfort with PoCUS, including knowledge consolidation, by leveraging peer-to-peer teaching as a key vector for learning and empowerment. Probeficiency addresses some major barriers to PoCUS teaching including equipment access, model mobilization, and PoCUS-trained faculty involvement in teaching.

OF - 1 - 6

What makes surgical boot camps effective? New insights using a mixed methods approach

Natalie Wagner McMaster University, **Nalin Amin** McMaster University, **Stephen Kelly** McMaster University, **Ranil Sonnadara** McMaster University

Background/Purpose: Many training programs are now implementing a boot camp (BC) style course at the onset of residency (Blackmore et al., 2014). Quantitative measures suggest these BCs can improve some technical skills (Sonnadara et al., 2012), however those skills tend to vary between studies, and there is little information on why. This study integrated qualitative and quantitative data to examine the efficacy of a 2-week surgical BC, and uncover the factors driving effectiveness.

Methods: A two-way repeated measures ANOVA evaluated OSCE performance between residents who completed a BC at the onset of residency, and residents that did not, at one- and two-years into training. Participants completed surveys; focus groups and interviews were also conducted with a variety of stakeholders to explore the perceived utility of BCs. Qualitative data was analyzed for themes.

Results: Residents reported the BC was extremely useful; however, results from the ANOVA found a significant group by station interaction at both one ($F = 2.63$, $p = 0.02$) and two years ($F = 10.34$, $p<0.01$) into

training, with the BC cohort scoring significantly higher on 3 of the 11 skills (suturing, breaking bad news, and operating room conduct). Qualitative data suggest that skills in which no differences were observed may just "take time to grow experience". Additionally, some participants felt that the OSCE might not be an optimal performance measure for capturing BC effectiveness, as some skills "feel contrived" in the simulated environment, and there are a variety of benefits from a boot camp that are not captured by an OSCE, but are critical to success (e.g. understanding hospital logistics).

Conclusion: Including qualitative data and using a mixed methods approach offered new insights into the effectiveness of BC training courses, and highlighted several contextual factors that contribute to that effectiveness. These findings will provide educators with valuable information on how to create a successful program, and ensure that time spent away from the clinical environment is being used as efficiently as possible.

OF - 2 - 1

How residents manage dual expectations to care and cure

Rigya Arya Western University, **Jenny Thain** Western University, **Laura Diachun** Western University, **Sayra Cristancho** Western University

Background/Purpose: A need for the coexistence of caring and curing in medicine has been established in papers across fields in nursing, health care management, and philosophy. Additionally, learning to care within a clinical context has been identified as critical in professional identity formation as a physician. However, the terms caring and curing have been variably defined, and it is unclear how their value is understood by physicians in training. This study explored how residents manage expectations to provide both disease cure and holistic patient care.

Methods: In depth, semi-structured interviews with 22 upper year residents were conducted utilizing graphic elicitation technique. Interview transcripts were analyzed using constructivist grounded theory methodology to determine emergent themes.

Results: Residents understood caring as a means to achieve patient-centered goals, and curing as an action focused on resolving acute doctor-perceived medical problems. Residents agreed that their role extends past acute medical management; however, the extent to which they feel responsible, value, and want to care for other aspects of patient management varied. System factors and institutional culture were reported to restrict holistic patient care. Additionally, residents uniformly conveyed feeling less equipped to coordinate chronic and social aspects of patient care compared to physical aspects of health from their medical education.

Conclusion: Thus, concepts of caring and curing in medicine may be challenging for trainees to reconcile, despite an established expectation to incorporate both into patient management. Identifying factors which influence how residents navigate goals of care and cure can provide insight into how medical systems may better support residents to provide more holistic patient care.

OF - 2 - 2

How do my elective choices relate to CaRMS Match success?

Robert Lee CaRMS, **Glen Bandiera** University of Toronto, **Michel Ouellette** CaRMS, **John Gallinger** CaRMS

Background/Purpose: Students in Canadian medical schools apply for postgraduate residency positions through the Canadian Residency Matching System (CaRMS), a national standardized computerized process. Undergraduate programs provide elective opportunities for students, which are often used for career exploration. Electives are relevant for the CaRMS process in that elective choices can be seen as demonstration of interest in certain fields, provide an opportunity for students to become acquainted with programs and vice versa, and provide an opportunity for students to secure reference letters from supervisors. The role of electives in selection is the subject of much discussion, opinion and debate. Certainly, some elective choices made with the intent of maximizing success in the match rather than fulfilling educational needs create financial, emotional and logistical stresses on students.

Methods: This is the first study that has taken a comprehensive look at the relation between elective choices and match results in Canada. CaRMS maintains a database of application materials including self-reported electives as well as detailed match results. A five year retrospective query was done looking at electives done based on specialty and location, and these are reported in a descriptive manner related to eventual match results, again broken down by specialty and school.

Results: As expected, there is marked variation in the degree of association between electives done in a specialty or school and success at being ranked and

subsequently matched to that specialty and/or school.

Summary/Results: This study will help to both dispel some myths perpetuated within the system and provide key direction to future efforts to prepare students and improve the matching process.

Conclusion: Many insights will be noted from this research including information for learners as well as faculty advisors.

OF - 2 - 3

Getting to capability: how trainees adjust to new clinical workplace contexts

Christopher Watling Western University, **James Tessaro** University of British Columbia, **Kathy Myers** Western University, **Joanna Bates** University of British Columbia, **Maureen Topps** University of Calgary, **Pim Teunissen** University of Maastricht, **Rachel Ellaway** University of Calgary, **Sevinj Asgarova** University of British Columbia

Background/Purpose: Physicians face multiple transitions into new clinical workplace contexts during training and beyond: the ability to adapt to new practice contexts is a key part of becoming a doctor. This study examines and describes what individual trainees do to adapt to unfamiliar settings.

Methods: We used constructivist grounded theory and interviews with residents, fellows, and recent graduates from General Internal Medicine (GIM) training programs from three Canadian programs. Participants described how new training sites differed from those they had experienced, and how they noticed and adjusted their practice to those differences. Data collection and analysis was iterative. Analysis was grounded in constant comparison and informed by sensitizing concepts drawn from current notions of context.

Results: Our 29 participants described having had little formal preparation for adjusting to a new setting prior to their move. Enabled by previous experience, information, motivation, and agency, residents prepared for and then gained awareness of differences in practice context. They adjusted their practice according to their awareness of the roles and scopes of practice of GIM specialists and others within the local health care setting, the patients and problems seen, and the availability of health care resources. Adjusting to one new context enabled them to more effectively adjust to another.

Conclusion: Trainees adjust their practice according to the context that surrounds them. Understanding trainees' processes of adaption to contextual change can help postgraduate programs and trainees to better consider and support the development of skills, activities and attributes that contribute to capability, the ability to deal with unpredictable and complex environments.

OF - 2 - 4

Assessment of implementing practice-based small group learning as part of academic half-days.

Heather Armson University of Calgary, **Keith Wycliffe-Jones** University of Calgary, **Mone Palacios** University of Calgary, **Stefanie Roder** The Foundation for Medical Practice Education

Background/Purpose: Medical educators have expressed interest in using more interactive formats for academic half-days (AHDs) in postgraduate residency training. This study assessed the feasibility of implementing a practice-based small-group learning (PBSGL) approach as part of AHDs.

Methods: PBSGL was introduced to the family medicine residency AHDs at the University of Calgary. Residents were assigned to on-going small groups (14-16 members) to discuss clinical cases in evidence-based educational modules (n=12) and reflect on clinical experiences under guidance of a trained peer-facilitator and faculty preceptor. Using a mixed methods approach, evaluation data came from questionnaires, practice reflection tools (PRTs) and individual interviews.

Results: Of 148 residents, 139 (93%) participated in this study. The majority of participants (70%) agreed that ongoing small-group interactions were helpful in meeting learning needs, provided opportunities to share clinical experiences in a safe environment and residents' group facilitations were effective. PRTs

provided evidence that majority of participants planned changes related to patient care (89%) and some (33%) reported actual changes in patient management. Thematic analysis of interviews (n=19) indicated that the level of participation and time to pre-read modules were factors contributing to successful PBSGL. Educational modules were effective as they provided sample cases mimicking patient encounters in practice. Although participants intended to apply their learning to practice, follow through was hindered by lack of patient encounters.

Conclusion: Facilitated ongoing small-group learning coupled with educational materials was a successful approach to AHDs and could result in changes to patient management.

OF - 2 - 5

"Shaking-Up" our Multidisciplinary Healthcare Learning and Working Environments - Resident Doctors of Canada's Toolkit for Positive Change

Anees Bahji Queen's University, **Aditi Amin** University of Alberta, **Alyssa Lip** University of Calgary, **Tehmina Ahmad** University of Toronto

Background/Purpose: It is generally accepted that healthy working environments, and by extrapolation, learning environments, are those which strive to attract, retain, and engage the workforce. Furthermore, healthy learning and working environments (LWEs) combine occupational health and safety, organizational health and health promotion. Several factors have been shown to enhance positive LWEs, including high-levels of social support from colleagues, workplace justice, and workplace cultural readiness. Implementing interventions and strategies at the organizational level has the potential to yield improved interprofessional teamwork, which is a critical component to establishing ideal LWEs.

Summary of the Innovation: Recently, members of RDoC's Wellness Committee organized and participated in a multidisciplinary stakeholder meeting where 12 barriers to positive healthcare LWEs were identified. For four of these, RDoC developed educational toolkits to address these barriers and facilitate change. Toolkit materials have been framed within CanMEDS 2015 with particular attention to the roles of Communicator, Collaborator, Leader, Scholar, and Professional. The toolkits were piloted at the recent ICRE 2018 Conference in Halifax.

Conclusion: Widespread implementation of these toolkits is essential to their utility. By presenting this innovation at CCME, our goal is to facilitate awareness, garner feedback from medical education experts, and further the uptake of these toolkits to medical education and healthcare LWEs across Canada.

OF - 2 - 6

Fundamental trends within falling match rates: novel insights from 10 years of CaRMS data

Andy Zeng University of Toronto, **Connor Brenna** University of Toronto, **Silvio Ndoja** Western University

Background/Purpose: The number of unmatched Canadian Medical Graduates (CMGs) has increased at an alarming rate, and is projected to exceed 100 people by 2020. This points to an urgent need to understand the factors that contribute to the declining match rates so that appropriate policies can be designed to address it.

Methods: We analyzed publicly available CaRMS data from 2009 to 2018. We employed R to assess the relationship between competitiveness, rate of parallel planning, and proportion of unmatched applicants at a discipline-specific level. We used Circos to visualize the trends of CMG migration from school of graduation to school of residency.

Results: We found that surgical disciplines cluster together in having higher levels of competition, lower rates of parallel planning, and higher proportions of applicants going unmatched compared to other disciplines. We observed that highly competitive disciplines drew consistent interest from CMGs yet faced declining quotas over time, which was associated with greater competitiveness and increasing proportions of applicants going unmatched. We identified a net efflux of CMGs out of

Quebec and showed that, although nearly all graduates from francophone medical schools stayed in Quebec for residency, there is a net flow of CMGs from francophone schools to McGill and from McGill to schools in other provinces. This imbalanced flow of CMGs aligns with data on vacant residency seats at francophone schools after each match cycle.

Conclusion: This analysis advances our understanding of the drivers behind the increasing number of unmatched graduates. Our findings will inform ongoing policy discussions surrounding the clerkship electives cap, seat-to-applicant ratios, and inter-province collaboration towards resolving this match crisis.

OF - 3 - 1

Remediation of Struggling Physicians

Heather Armson University of Calgary, **Lara Cooke** University of Calgary, **Kelly Burak** University of Calgary, **Monica Wickland-Weller** Monica.Wickland-Weller@cpsa.ab.ca

Background/Purpose: Regulatory agencies are identifying dyscompetent physicians utilizing a variety of strategies that have increasingly been studied. Remediation of those physicians once identified has been examined much less frequently.

Summary of the Innovation: The Alberta Physician Assessment and Support (APASS) program at the Office of Continuing Medical Education and Professional Development at the University of Calgary was developed to provide assessment and remedial education to physicians referred through the College of Physicians and Surgeons of Alberta (CPSA). An educational specialist at APASS develops tailored personalized learning plans, based on documentation from the CPSA, framed within the CanMEDS competencies including the provision of detailed suggestions for remediation, including resources to address the deficits. Directly observed learning experiences in the clinical setting with experienced clinical preceptors and assessors are organized with ongoing support from the APASS program. Referred physicians are expected to populate a portfolio to track their progress.

Conclusion: The APASS program has overseen a number of successful remediations. Several aspects of the program have proven to be very time intensive including: development of a learning plan that is specific enough to meet the needs of preceptors/assessors, recruitment of exemplary preceptors/assessors, acquiring privileges for the referred physicians and regular meetings with both the referred physician and preceptor. The ongoing preceptor support during remediation, the detailed learning plan and the portfolio documents have all been identified as crucial by participants.

OF - 3 - 2

Remediating doctors' performance to restore patient safety: A realist review

Tristan Price University of Plymouth, **Julian Archer** University of Plymouth, **Jennifer Cleland** University of Aberdeen, **Linda Prescott-Clements** Royal College of Veterinary Surgeons, **Amanda Wanner** University of Plymouth, **Lyndsey Withers** University of Plymouth, **Geoff Wong** University of Oxford, **Nicola Brennan** University of Plymouth

Background/Purpose: Underperformance by doctors poses a risk to patient safety. Remediation is an intervention designed to remedy underperformance and return a doctor to safe practice. Remediation is widely used across healthcare systems globally, and has clear implications for patient safety and doctor retention. Yet there is a poor evidence base to inform remediation programmes. We report on the findings from the first large-scale realist review that identifies why, how, in what contexts, for whom and to what extent remediation programmes for practising doctors work to support patient safety.

Methods: A programme theory of remediation was created by convening a stakeholder group and undertaking a systematic search of the literature on remediation, including database and grey literature searching, citation searching, and contacting authors. Supplementary searches provided literature on theories identified in the programme theory. Relevant sections of texts relating to the programme theory were extracted from included articles, coded in NVivo, and synthesised using a realist logic of analysis.

Results: Doctor underperformance is a multifactorial issue. Alignment has emerged as a useful concept in explaining how remediation programmes can trigger the mechanisms that lead to sustained behavioural change in practitioners. Remediation programmes work when the underlying causes of the performance problem, the doctors own understanding of these

problems, and the goals of the remediation programme, are in alignment.

Conclusion: This review makes a significant contribution to our understanding of remediation by identifying how the remediation of doctors produces its effects.

OF - 3 - 3

Improving Self-Regulation of Learning Amongst Underperforming Medical Students: An Embedded Mixed Methods Study

Janeve Desy University of Calgary, **Kevin McLaughlin** University of Calgary, **Sylvain Coderre** University of Calgary, **Camille Bryant** Johns Hopkins University, **Pamela Veale** University of Calgary, **Kevin Busche** University of Calgary, **Rahim Kachra** University of Calgary, **Adam Bass** University of Calgary, **Shannon Ruzycki** University of Calgary, **Luke Ranelli** University of Calgary, **Mike Paget** University of Calgary, **Mateusz Sobczak** University of Calgary

Background/Purpose: Remediation in medical education has largely focused on improving proximal outcomes. A more important remediation goal is to help learners become self-regulated so they can improve on more distal outcomes.

Methods: We introduced a longitudinal mentorship based remediation program for undergraduate medical students deemed high risk for failing the national licensing examination based on pre-clerkship grade point average. The goals were to help students learn metacognition and become self-regulated learners based on a model of scaffolded self-regulated learning. Using an embedded mixed methods design we compared licensing examination performance between 2 intervention groups and 2 matched historical control groups and performed in depth interviews with mentors to assess reactions to the program.

Results: We found a decrease in the RR of failure of the licensing examination for participants (RR of failure for participants in 2017 was 2.92 (95% CI [0.49, 17.26], p = 0.3 RR and could not be computed in 2018 due to a zero failure rate amongst enrolled students), compared to 4.31 [1.15, 16.08] (p = 0.03) and 4.71 [2.34, 9.45] (p < 0.001)) for the two previous years). Although mentors felt that participants exhibited improved self-regulation, they also had mixed reactions to the program, and perceived mixed reactions from the students.

Conclustion: A mentorship based remediation program built around scaffolded self-regulated learning demonstrated positive learning outcomes, but mixed reactions amongst mentors and participants. These findings support the idea that remediation focused on teaching students how to learn as opposed to how to pass a repeat examination can be successful, but that the journey is emotionally charged and demanding for students and faculty alike.

OF - 3 - 4

An Environmental Scan of Canadian Physician Re-Entry, Remediation, & Re-Training Programs

Lisa Fleet Memorial – University of Newfoundland, **Vernon Curran** Memorial – University of Newfoundland

Background/Purpose: Newfoundland and Labrador has not historically had a program to assess physicians who have been out of practice for a defined length of time and who wish to return to active practice. An environmental scan conducted in 2017 explored how other North American jurisdictions support physicians who require re-entry, remediation, and/or re-training to return to practice.

Methods: Mixed methods: literature review; online survey-questionnaire; website reviews.

Results: Peer-reviewed studies focus on existing programs and some guiding principles for establishing programs. Eight (N=8) of 12 provincial and territorial medical regulatory authorities and N=6 of 16 continuing professional development (CPD) offices responded to the survey. The majority of regulatory authorities report three years as the threshold for inactivity before an assessment is required. The majority of respondents do not have formalized programs. Assessment is tailored to physicians'

needs, with reasons for absence and CPD considered as part of process. Two (N=2) CPD offices report involvement in re-entry, remediation, and re-training. Best practices reported by all respondents include ongoing collaboration amongst provincial stakeholders and the ability to develop individualized approaches. Challenges include a lack of standardized tools and processes, as well as a lack of human resources to assess and/or supervise physicians in need.

Conclusion: It is suggested that the need for programs which support a physician's return to practice is going to increase for various reasons, including physician shortages. As a province with an ongoing physician shortage, NL would greatly benefit from a formalized and standardized process to facilitate a physician's timely return to practice.

OF - 3 - 5

Community-based rotations and professional identity development

Christopher Watling Western University, **Joanna Bates** University of British Columbia, **Pim Teunissen** University of Maastricht, **Maureen Topps** University of Calgary, **Rachel Ellaway** University of Calgary, **Kathy Myers** Western University, **James Tessaro** University of British Columbia, **Sevinj Asgarova** University of British Columbia

Background/Purpose: The development of professional identity is tied not only to the choice of discipline but also to the ways in which that discipline is enacted in the clinical workplace training context. General Internal Medicine (GIM) trainees in Canada move between university teaching hospital and community-based settings during their training. We asked: how do these diverse contexts contribute to the development of professional identity?

Methods: We used constructivist grounded theory based on interviews with residents, fellows, and recent graduates from GIM training programs from three programs in Canada. Data collection and analysis was iterative. Analysis was grounded in constant comparison and informed by sensitizing concepts drawn from identity formation. We used constructivist grounded theory based on interviews with residents, fellows, and recent graduates from GIM training programs from three programs in Canada. Data collection and analysis was iterative. Analysis was grounded in constant comparison and informed by sensitizing concepts drawn from identity formation.

Results: 29 participants described experiences that differed greatly from their experiences in university-affiliated tertiary care hospitals. Differences in the organization of the local health system and the scopes of practice of GIMs, family physicians and allied health professionals in the community left them uncertain of their role. This uncertainty disrupted their developing professional identity and led them to new conceptualizations of their discipline and identity.

Conclusion: Trainees who participate in community-based training may expand the concept of their discipline and adjust their professional identity. Furthermore, their flexibility, resilience and plans for future practice are altered by their community-based rotations.

OF - 4 - 1

Research and Reconciliation: Exploring the approaches of non-Indigenous researchers to Indigenous research

Alexandra Kilian University of Toronto, **Ayelet Kuper** University of Toronto, **Cynthia Whitehead** University of Toronto, **Lisa Richardson** University of Toronto, **Ryan Giroux** University of Toronto, **Tyee Fellows** University of Toronto, **Jason Pennington** University of Toronto

Background/Purpose: Given the history of unethical research in Indigenous communities, there is often apprehension among Indigenous communities towards research carried out by non-Indigenous researchers. We examined the approaches, experiences, motivations, and levels of relevant knowledge among non-Indigenous researchers at one research-intensive Canadian university conducting research with Indigenous communities to identify facilitators and barriers to ethical research with Indigenous peoples.

Methods: We conducted, transcribed, and thematically analysed eight semi-structured interviews using an iterative process within a critical constructivist framework informed by Indigenous research methodologies.

Results: We identified four primary themes related to non-Indigenous researchers conducting Indigenous research: 1) relationships with communities are foundational to the research process; 2) non-Indigenous researchers experience a personal journey grounded in reconciliation, allyship, and privilege; 3) accepted knowledge frameworks in Indigenous research are familiar to most, but inconsistently applied; and 4) institutions act as barriers to and facilitators of ethical conduct of Indigenous research. Four core principles - relationships, trust, humility, and accountability - unified the main themes.

Conclusion: Our data demonstrates that current approaches to Indigenous research at this university have elements that are congruent and incongruent with accepted policies, such as the Tri-Council Policy Statement 2 (TCPS2). Congruently, non-Indigenous researchers value relationships and research is informed by Indigenous knowledges. Incongruently, some non-Indigenous researchers often felt that the TCPS2 lacks applicability to secondary data analysis. Additionally, there are institutional barriers implementing accepted processes, such as partnership agreements. We identify strengths and areas for improvement of current policies and practices in Indigenous health research.

OF - 4 - 2

Curriculum mapping, Systems Engineering, and Program Evaluation: Determining the impact of the MD program curriculum at the University of Toronto.

David Rojas University of Toronto

Background/Purpose: Determining the true effectiveness and value of curricular reforms in health professions education (HPE) have been a challenging process due to the myriad of factors that influence curriculum in general. Traditional curriculum evaluation approaches focus on outcomes such as nationally standardized exams. However, HPE literature shows that most of the curricular outcomes differences are attributed to the individual, suggesting little to no effect of the curriculum.

Summary of the Innovation: The University of Toronto MD program implemented a new, theory-informed, integrated preclinical curriculum in 2016. A new evaluation approach was proposed to change the outcome focus from curricular evaluation to a more systemic one. This work combined system engineering principles, curriculum mapping processes, and program evaluation approaches to account for the intrinsic complexity of the new curriculum while determining its impact. A new program evaluation framework was developed to

determine the impact of the new curriculum. This framework conceptualizes evaluations initiatives as resources and uses systems engineering means-end principles to identify the type of information offered by each resource, and situate it within the curriculum. Thereafter, using curriculum mapping process, resources are then organized and structured based on their relationship to achieving the overarching goals of the MD program.

Conclusion: The new evaluation framework implemented at the MD program at the University of Toronto offers a logical structure to help understand how the multiple evaluation initiatives in the program could offer a cohesive message regarding the program's impact, providing evidence-based data for future refinements.

OF - 4 - 3

Utilizing student assessment data analytics for post-renewal analysis and future planning in the University of Toronto MD Program

Frazer Howard University of Toronto, **Richard Pittini** University of Toronto, **Glendon Tait** University of Toronto, **Kulamakan Kulasegaram** University of Toronto, **Tamica Charles** University of Toronto, **Pauline Pan** University of Toronto, **David Rojas** University of Toronto

Background/Purpose: The University of Toronto MD Program undertook a significant renewal of the first 2 years of the curriculum, implementing programmatic assessment as part of the competency based medical education movement with constructive alignment of teaching and assessment as a core principle. A number of technological systems were implemented to support student assessment as well as feedback linked to learning objectives. Learning objectives were linked to CanMEDS competencies as part of the Program's enabling competencies.

Summary of the Innovation: To visualize assessment of competencies within the new curriculum, assessment items (MCQ, OSCE, assessment forms, written reflections) and student outcomes were extracted with associated CanMEDS roles. Employing data visualization techniques such as heat maps, frequency, modality and student performance of assessments of each competency were compared with intended curriculum goals and with the recommended assessment modalities for each competency as identified in the CanMEDS 2015 framework. Existing clerkship assessment data was extracted and mapped in a comparable manner to provide a capacity for identifying potential gaps and opportunities for alignment with the renewed Foundations curriculum.

Conclusion: Utilizing data from multiple student assessment systems linked with a curriculum map along with visualization tools provides a comprehensive method of analysing the topography of competency assessment. While helpful in identifying gaps in assessment and for aligning assessment with best practices, it is reliant on extremely granular assessment data and the ability to link it systematically with CanMEDS roles as afforded by implementing programmatic assessment. Making use of this in ad hoc assessment arrangements may be more challenging.

OF - 4 - 4

Continuing professional development and organizational logics: Participating in the governing of health care professionals in workplaces

Paula Rowland University of Toronto, **Victoria Boyd** University of Toronto, **Joanne Goldman** University of Toronto, **Dean Lising** University of Toronto, **Stella Ng** University of Toronto, **Cynthia Whitehead** University of Toronto

Background/Purpose: In this study, we sought to explore how logics of continuing professional development (CPD) programs may intersect and/or interfere with one another and to what potential effect on professional learning and identity. Here, "logics" refer to institutionalized practices that shape the learning environment.

Methods: Using Foucault's concept of governmentality, we conducted a discourse analysis of two CPD programs delivered within a single hospital network: (1) an interprofessional education (IPE) program related to collaborative practice and (2)

a patient safety education program embedded as part of a large organizational change initiative. Curricular material analyzed included slide-decks, facilitator notes, and organizational documents.

Results: Despite shared goals related to improving patient care, the two programs made use of different organizational logics or "modes of ordering". The IPE program deployed logics that imply concepts of innovation and transformation, while the hospital-based CPD program used logics emphasizing consistent, reproducible behaviours. Thus, these programs aligned in terms of their declared aims, but required different conceptions of learning - and different professional identity performances - from participants. This analysis points to the intersections between different ways of attempting to govern health professionals in workplaces and how CPD participates in that governing.

Conclusion: This analysis is important for educators, as it demonstrates that shared aims for learning do not necessarily translate into shared logics of learning. This tension provides explanatory power for why some programs - particularly those working at the intersections between CPD, IPE, and patient safety - may falter when different logics compete for resources, credibility, and influence on professional identities.

OF - 4 - 5

Exploring the ethics of authorship in academic medicine

Lindsay R. Baker University of Toronto, **Farah Friesen** University of Toronto, **Stella L. Ng** University of Toronto, **Mark Camp** SickKids, **Michael Szego** St. Michael's Hospital

Background/Purpose: Academic medicine socializes its members into a culture that values scholarly productivity. Promotion depends, in part, on achievements like grant capture and peer-reviewed publications. This emphasis on scholarly productivity and associated prestige accorded to scholars who can achieve it contributes to pressure to publish at a rate that exceeds capacity. Recent research revealing the prevalence of ethical misconduct related to authorship is unsurprising. In addition, academic medicine as a field brings together multiple disciplines and scholarly cultures, each with their own authorship expectations and norms. In order to better support individuals in navigating authorship in academic medicine, we must first explore how they understand, experience, and negotiate authorship practices.

Methods: Using a constructivist grounded theory approach we interviewed 21 individuals across profession, discipline, role, research area, and career stage.

Results: Our findings highlight complex, varied ways in which scholars continually navigate a web of disciplinary cultures when making authorship decisions. This complexity has repercussions for what scholars identify as ethical tensions in authorship decision-making and how they respond to ethically-important moments in practice. The ways individuals mitigate these ethical tensions align with theories of practical ethics (deontology, consequentialism, and virtue ethics).

Conclusion: Education efforts to foster ethical scholarly practice need to acknowledge and understand the complex web of disciplinary cultures at play within academic medicine and focus both on principles and practical processes required to navigate this web. Understanding and teaching about complex social processes involved in ethical authorship may contribute to high quality, responsible scholarship in academic medicine.

OF - 4 - 6

Identifying and communicating actual value of our work via a Theory of Impact: Stories from the field of education scholarship

Kathryn Parker University of Toronto, **Carrie Cartmill** University of Toronto, **Abbas Ghavam-Rassoul** University of Toronto, **Melissa Nutik** University of Toronto, **David Tannenbaum** University of Toronto, **Sarah Wright** University of Toronto, **Nicole Woods** University of Toronto, **Risa Freeman** University of Toronto

Background/Purpose: Evaluating the impact of education efforts often focus on the measurement of

planned outcomes (a la Kirkpatrick). Within complex systems, the true value of our work is often a composite of what we plan to achieve and how our work brings value to individuals in ways that could not have been predetermined. Yet, our methods of evaluating typically do not capture both planned and emergent outcomes. Furthermore, we have an opportunity to leverage evaluation practice to better understand how our interventions work within certain contexts to achieve both planned and emergent outcomes.

Summary of the Innovation: The Office of Education Scholarship (OES) nurtures faculty to engage and lead education scholarship within the Department of Family and Community Medicine at the University of Toronto. We engaged in an evaluation strategy that asked two questions; 1) what was the most significant change as a result of engaging with the OES? and 2) how did working with the OES enable these changes to occur? We answered these two questions and generated a Theory of Impact (Chen and Rossi) for the OES.

Conclusion: This oral presentation will illustrate the value and utility of articulating a Theory of Impact. We will provide an overview of the theory-building process and discuss how storyboarding is a promising new approach to communicate the Theory of Impact of the OES to multiple stakeholder groups.

OF - 5 - 1

The Role of Simulation-Based Education in Teaching Outside of Operating Room Difficult Airway Management

James Beecroft Niagara Health, **John Chirico** Niagara Health, **N. Shira Brown** Niagara Health

Background/Purpose: Emergency room (ER) and intensive care unit (ICU) patients are more likely to have difficult airway (DA) complications. Simulation-based training has been shown to increase knowledge, ability, and skills. A simulation-based education program was implemented to aid physicians in safely managing a DA in a non-operative setting within Niagara Health.

Summary of the Innovation: This teaching program aimed to train staff in an evidence-based DA Pathway to reduce critical events. Stakeholders responsible for DA management from all sites were invited to participate in curriculum design and education. This encompassed multidisciplinary team members including critical care Respiratory Therapists (RTs), physicians, and nurses. The DA Education Program is comprised of an online video module series, a pre/post learning test, and a three-hour simulation. The simulation program is comprised of two components: task-trainers and theatre-based simulation. Task-trainers were utilized to teach skill-specific components including front of neck access, jet ventilation, and bronchoscopy. Theatre-based simulation, using real-life cases, was implemented to build interdisciplinary communication skills and use of the DA Pathway. Stakeholder engagement with our Program is high. Twelve months after program launch, 57.0% (53/93) of ER physician staff, 56.3% (9/16) of Critical Care Physicians and 78.6% (22/28) of RTs had attended simulation training. Education sessions are ongoing.

Conclusion: An annual review of reported critical incidents showed that incidents where airways was the primary factor decreased after implementation. Preliminary evaluation suggests the strategy reduces morbidity and mortality of DA incidents outside the operating room.

OF - 5 - 2

Learning after the simulation is done: The role of simulation in supporting ongoing self-regulated learning

Farhana Shariff University of British Columbia, **Glenn Regehr** University of British Columbia, **Rose Hatala** University of British Columbia

Background/Purpose: Ongoing learning in complex and dynamic clinical environments requires health professionals to assess their own performance, manage their learning, and modify their practices based on self-monitored progress. Self-regulated learning theory suggests that while learners may be capable of such learning, they often need guidance to enact it effectively. Debriefings in simulation may be an ideal time to prepare learners for self-regulated learning in practice, but may not be optimally fostering these practices.

Methods: A critical review of the simulation literature was performed. We included studies assessing simulation effectiveness (examining authors' choice outcome measures) and papers describing debriefing strategies (examining key steps of the debriefing process). Analysis was targeted at exploring the underlying conceptual frameworks and models of learning in simulation as currently implied in the literature.

Results: Measures of successful learning in simulation research seem to emphasize learning in the moment of the simulation rather than assessing ongoing improvement once learners have returned to clinical practice. Consistent with these outcome studies, we found no debriefing models designed to explicitly support learning after the simulation experience in the spirit of ongoing self-regulated learning. While debriefing strategies synthesize take-home messages for participants, none seem to address how learners

might self-monitor and further modify behaviours once back in the clinical setting.

Conclusion: Current debriefing strategies may not be taking full advantage of the opportunity to encourage and foster self-regulated learning activities in practice after the simulation is over. Strategies that include proper preparation for self-regulated learning after the simulation should be considered.

OF - 5 - 3

Identifying Resuscitation Expertise Using Cognitive Load: Evidence from a Pulmonary Embolism Simulation Exercise

Eric Bruder Queen's University, **Nancy Dalgarno** Queen's University, **Nicholas Cofie** Queen's University, **Andrew Belyea** Queen's University

Background/Purpose: As physicians gain expertise, they handle progressively more information as a schema. Experts retain more working memory capacity to process information during medical emergencies. Using galvanic skin response (GSR) as a surrogate measure of total cognitive load, we assess whether cognitive load differs significantly between novice and expert physicians in a simulation exercise.

Methods: We analyzed GSR data (n = 29) from a 10-minute simulated pulmonary embolism exercise among 14 faculty physicians and 15 junior residents. K-Means cluster analysis was used to identify experts and novices in resuscitation, and discriminant function analysis was used to confirm the classification of participants as experts and novices. We then estimated a multivariate regression model and assessed the effect of resuscitation expertise on cognitive load while controlling for relevant covariates.

Results: We identified and reliably classified 62.1% of participants as experts and 37.9% as novices (Wilks' Lambda = 0.24, $\chi 2$ = 38.01, p = 0.000). Average GSR for experts ($\bar{x}$ = 1.01 µS, SD = 0.51) was significantly (t = 9.29, p = 0.000) lower than the average GSR for novices ($\bar{x}$ = 2.85 µS, SD = 0.47). Compared to novices, experts were significantly 85% less likely (exp(β) = 0.15, p = 0.000) to have higher cognitive load. Being older (exp(β) = 0.94, p = 0.034) significantly reduced average cognitive load by 6%.

Conclusion: GSR measures of cognitive load can identify differences between experts and novices in simulation based medical education, and may assist educators in identifying resuscitation expertise.

OF - 5 - 4

A qualitative study of epistemologies in a simulation-based medical education context

Stella Ng University of Toronto, **Ryan Brydges** University of Toronto, **Emilia Kangasjarvi** St. Michael's Hospital, **Gianni Lorello** University of Toronto, **Lori Nemoy** St. Michael's Hospital

Background/Purpose: Medical education embraces simulation-based education (SBE); but medicine and SBE may differ in their epistemic cultures. Epistemic cultures are groups with shared epistemological beliefs about what knowledge is, and how it is generated, judged, and gained. Two key signifiers of SBE's epistemological beliefs - learning safety and experiential learning - may not easily align with the utilitarian, hierarchical culture of medicine and the related epistemological beliefs. This potential clash of epistemic cultures may present challenges for educators and learners engaging in SBE experiences.

Methods: To determine what epistemological conceptions (beliefs about knowledge and how it can and should be gained) were operating within an SBE experience of pre-clerkship medical students, we conducted a constructivist grounded theory analysis of 24 interviews with medical students learning cardiac auscultation skills in an SBE context. To inform our analysis, we built from and upon Hofer and Pintrich's four dimensions of epistemology.

Results: Participants described knowledge as certain, concrete facts, deriving from external sources, with experts as the ultimate knowledge validators. Some faculty countered the pressures learners described - to convey certainty and maintain an image of confidence - by demonstrating positivity toward learning through trial and error.

Conclusion: SBE is situated as a setting for implementing proven approaches, like learning through difficulty and struggle; yet our research demonstrates the potential futility of designing instruction that prompts struggle within a culture requiring certainty and constant face saving. By becoming aware of and accounting for all active epistemic cultures, faculty may better uphold the SBE principles of safe, active, experiential learning.

OF - 5 - 5

"Limbs and things": A sociomaterial ethnography of undergraduate medical simulation using mannequins

Paula Cameron Dalhousie University, **Anna MacLeod** Dalhousie University, **Olga Kits** Dalhousie University, **Jonathan Tummons** Durham University, **Martha Cleveland-Innes** Athabasca University, **Rola Ajjawi** Deakin University

Background/Purpose: Simulation is increasingly used across all levels of medical education. Within undergraduate medical education, learners practice myriad skills on expensive, high-quality mannequins. However, existing research typically measures simulation tool effectiveness or learner outcomes, often assuming mannequins to be straightforward "high fidelity" tools. We require insight on how mannequin-based simulation (MBS) actually happens, with emphasis on mannequins as material tools that shape educational practice.

Methods: We conducted a sociomaterial ethnography of simulation based education in the undergraduate medical program at Dalhousie University, in Halifax, Nova Scotia, Canada. This included field notes based on 50 hours of video observations of simulation sessions and 185 photographs of simulation tools and spaces gathered between August 2017 and September 2018.

Results: Mannequins required medical learners and instructors to participate in procedural skills in particular ways. This included negotiating the mannequin's fidelity or "realness" and addressing the material specificity of mannequins versus the variability of human bodies. Simultaneously, mannequins worked to materialize certain bodies and patient-physician communication styles as the norm, while complicating issues of patient diversity, agency, and consent.

Conclusion: A sociomaterial approach to ethnography draws attention to the negotiations and accommodations mannequins require of humans performing MBS. These findings call for a re-examination of our assumptions regarding the role material tools like mannequins play in simulation based medical education.

OF - 5 - 6

Multi-Patient Simulation with Standardized Patients in Undergraduate Medical Education

Anthony Seto University of Calgary, **Sean Crooks** University of Calgary, **Lucas Streith** University of Calgary

Background/Purpose: University of Calgary medical school simulations are traditionally run with one plastic manikin for groups of 4-6 students. Cases are often emergency or resuscitation cases to highlight teamwork skills. Limitations of this simulation style include limits on patient realism, low student-to-patient ratio, and less emphasis on lower acuity cases. In July 2018, the first University of Calgary medical school multi-patient simulation, using standardized patients, was launched for second-years to provide an alternative approach to simulation training.

Summary of the Innovation: Groups of 4-6 students participated in a 15-minute, 3-actor simulation, followed by a 15-minute debrief, in their "Intro to Clinical Practice" course. The scenario was a mass gathering event where students worked inside a medical tent. Patient A had anaphylaxis, Patient B sustained an ankle injury, while Patient C was dehydrated and anxious. Students practiced prioritization and teamwork skills. Students also practiced handover to each other and to EMS (one of the facilitators). Two facilitators observed and debriefed the simulation. Post-course evaluations revealed that students enjoyed the multi-patient simulation, commenting on its ability to challenge and advance their skills, along with the benefit of improved student-to-patient ratio.

Conclusion: This educational strategy of a multi-patient simulation with actors can improve patient realism, increase individual hands-on time, and give educators the ability to insert multiple lower acuity cases within the same simulation. As well, students can learn from several cases rather than one. Finally, multi-patient simulations can help teach medical students concepts in disaster medicine and mass-gathering medicine, where ad-hoc teams must utilize teamwork and triaging skills.

OF - 6 - 1

Modeling Ethics and Empathy in Medical Education

Elyse Platt McMaster University, **Alyson Holland** McMaster University

Background/Purpose: A growing criticism of medical learners is the perceived loss of humanism that occurs through medical training programs that encourage a focus on biology rather than on the patient as an individual. The purpose of this project was to explore medical learners understanding of the role of ethics and empathy in their medical education, with a goal to help identify places at which additional education or interventions could be placed for future medical learners.

Methods: Individual semi-structured interviews were conducted with 25 participants representing all years of medical school at McMaster University. Participants were asked questions relating to the ethics education they had received in medical school and how it related to their classroom and clinical experiences. All interviews were transcribed and thematic content analysis was performed with the resultant themes integrated with relevant literature on the education of ethics.

Results: Students identified a lack of ethical role models, instead identifying contradictions between what they were taught in the classroom and what they saw practiced in the clinical setting. Most students felt that a person is or is not ethical and did not feel that their medical training made them more ethical or empathetic.

Conlusion: A disconnect between how ethics was taught and enacted exists in medical education, where students are exposed to ethical ideas through the classroom, but these ideas are not reinforced in practice, which is where students model most of their learning. Therefore, an area of intervention in medical education is to improve and increase role models of ethical behaviors and habituate students into ethical practice.

OF - 6 - 3

Gender effects in assessment of clinical teaching: Does concordance matter?

Lynfa Stroud University of Toronto, **Risa Freeman** University of Toronto, **Mahan Kulasegaram** University of Toronto, Tulin Cil University of Toronto, **Shiphra Ginsburg** University of Toronto

Background/Purpose: Gender bias has been observed in the assessment of clinical teachers, yet the extent of such bias in different specialties is not well-documented. We aimed to determine whether gender bias exists in residents' assessments of faculty teaching in three departments and whether gender concordance or discordance has an effect.

Methods: Residents' ratings of teachers in internal medicine [IM] (800 faculty, 8364 ratings), surgery (377, 2248), and family medicine [FM] (672, 3438) at the University of Toronto from 2016-17 were analyzed. We averaged ratings on a multi-item 5-point scale to create a teaching score. Faculty and resident gender were coded along with faculty academic rank. A mixed-effects linear regression analysis accounted for nesting of ratings within each faculty.

Results: Gender effects differed across departments. In IM (61.5% male faculty), no significant gender effects were detected. In both surgery (83.8% male) and FM (47% male) male faculty received significantly higher scores than female faculty (4.65 vs. 4.57 and 4.56 vs 4.38, respectively). In FM this was driven by male faculty receiving higher ratings regardless of resident gender ($B=0.02$, $t=3.21$, $p<0.001$, 95% CI: 0.009 - 0.03). In surgery this was driven by male trainees giving male faculty higher ratings ($B=0.049$, $t=5.85$, $p<.001$). Covariates had inconsistent effects on ratings

Conclusion: Existing effects were small and favoured male faculty; gender concordance only mattered for one department. However, even small differences may have an impact on financial rewards and promotion. Future studies should explore reasons for

gender effects in teaching assessments, and why differences may exist between specialties.

OF - 6 - 4

Teacher Self-Efficacy (TSE) of Recently Graduated Emergency Medicine Physicians and the Factors Influencing TSE

Aisha Al Khamisi McGill, **Chrisitine Meyers** McGill, **Andrew Petrosoniak** University of Toronto, **Jessica Ruglis** McGill

Background/Purpose: This study examines the Teaching Self-Efficacy (TSE) of Emergency Medicine (EM) physicians who graduated from the EM residency programs accredited by the Canadian Royal College of Physicians from 2008-2017, and evaluates the factors influencing these TSE beliefs

Methods: Eighty EM physicians participated in this study, providing data on their TSE beliefs using the Emergency Physician Teacher Self-Efficacy Scale (EP-TSES). Factors affecting TSE were assessed using the Influencing Factors of EM Physician TSE questionnaire. These factors include mastery experience, working experience, feedback on teaching performance, interpersonal support from colleague physicians, interpersonal support from department leadership, vicarious experiences, formal teaching training, and informal teaching training. The study also explores other possible factors, pertaining to the clinical environment, which could influence the TSE beliefs. Both instruments were validated before use in this study. Correlation analysis, and multiple regression analysis were conducted to answer the research questions.

Results: The results reveal that the mean EPTSES score of participating physicians is 35.1 out of 50. The correlation analysis shows the EPTSES score has a significant positive correlation with mastery experience, vicarious experience, informal teaching training, feedback on teaching performance, and more shifts with learners. The regression analysis reveals that mastery experience is the strongest predictor of TES of EM physicians, followed by vicarious experience, informal teaching training, and feedback on teaching performance.

Conclusion: This study suggests that stakeholders in training EM physicians should consider employing strategies that foster TSE, to improve teaching and learning outcomes, and, by extrapolation, to improve healthcare outcomes.

OF - 6 - 5

Conceptualizations, teaching practices and collaborations in the development of learners' EBP competencies: Faculty and clinical supervisors' perspectives on teaching EBP to rehabilitation students

Marie-Christine Hallé McGill, **Aliki Thomas** McGill, **André Bussières** McGill, **Liliane Asseraf-Pasin** McGill, **Susanne Mak** McGill, **Kelly Root** McGill, **Karsten Steinhauer** McGill, **Caroline Storr** McGill, **Sophie Vaillancourt** McGill

Background/Purpose: Despite 20 years of research on supporting scholarly practitioner competencies, no consensus exists on how best to promote sustained use of evidence-based practice (EBP) among future rehabilitation clinicians. Clinically integrated EBP teaching allows learners to solve real clinical problems and represents a strategy with the potential to achieve desired learning outcomes. Integrated approaches may involve a paradigm shift in current teaching practices and collaborations between the academic and clinical settings. Before implementing integrated approaches in rehabilitation programs, it is imperative to first understand faculty and preceptors' experiences with teaching EBP. The purpose of this study was to explore faculty and preceptors' experiences and perceptions of the challenges and affordances in teaching EBP in occupational therapy (OT), physical therapy (PT) and speech-language pathology (S-LP).

Methods: Qualitative descriptive study. Data from 24 faculty and 15 preceptors were collected via focus groups and analysed using an inductive thematic content analysis.

Results: Three overarching themes were identified. 1) "Differing perspectives on the meaning of EBP" denotes participants' lack of consensus regarding the definition of EBP; 2) "Complexity and reality of

teaching EBP" refers to EBP as a nuanced process involving high-level cognitive skills that results in challenges in teaching and learning; 3) "Connection and divide between research and practice" represents the means by which faculty and preceptors interact, the nature of the divide between them and the consequences of such connection/divide.

Conclusion: Increasing direct communication between faculty and clinical supervisors could be a first step towards more effective EBP training programs in OT, PT and S-LP.

OF - 6 - 6

Moving beyond training for process skills: Focusing in on what matters when exploring patient preferences around resuscitation

Rachelle Lassaline Western University, **Ravi Taneja** Western University, **Mark Goldszmidt** Western University, **Jacqueline Torti** Western University

Background/Purpose: When using current practices in teaching hospitals, a discordance is commonly found between the resuscitation status documented at admission and patient preferred status. While time constraints may play a role in these discrepancies, an over reliance on teaching process of communication but not content may also contribute. The purpose of this study was to explore the key content that needs to be explored when discussing patients' preferences around resuscitation.

Methods: Fifty-seven clinical notes were purposefully selected from an existing database of 368 resuscitation status discussions (with a discordance rate of 29%). These notes were qualitatively analyzed to identify content factors associated with patients' resuscitation preferences.

Results: Three key themes emerged as content areas that shaped patient preferences: (1) the ability to engage in meaningful activity- includes any mention of the patients' engagement, or lack thereof, in physical or social activity; (2) health trajectory- defined as any statement that reflects some sense of how the patient's health has changed from the past to present, or how the patient expects their health to change in the future; and (3) patient perceptions of death and dying- reflects patient and substitute decision-maker perceptions surrounding death and the dying process including patient fears about death and acceptance of death.

Conclusion: The insights gained from this study can inform key content areas to be focused on in the training of medical trainees and faculty around resuscitation conversations. It is imperative that we recognize the content that shapes resuscitation status decision making to gain insights necessary to guide patients appropriately.