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**Enseigner la promotion de la santé : de la prise en charge des patients à la protection de notre planète**

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## From caring for patients to protecting our planet: advocacy in residency education

## Enseigner la promotion de la santé : de la prise en charge des patients à la protection de notre planète

2023 International Conference on Residency Education - La Conférence internationale sur la formation des résidents 2023

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076. An innovative mentorship initiative to increase interest in and application to diagnostic radiology among female medical students fosters multiple CanMEDS competencies among participating medical student mentees and diagnostic radiology resident mentors

H. Bentley; A. Silver; K. Darras; T. Vertinsky

University of British Columbia, Vancouver, BC

**Introduction:** Application of female medical students to diagnostic radiology remains disproportionately low in Canada. Mentorship of medical students has been identified in the medical education literature as a potential initiative to increase interest in and application to various specialties, particularly among medical students who have been historically underrepresented. We developed an innovative mentorship initiative within

our large, academic diagnostic radiology department with a unique longitudinal mentorship structure, which fosters communicator and professional competencies among participating medical student mentees and leader, collaborator, communicator and professional competencies among participating diagnostic radiology resident mentors.

**Method:** MI-RADS, "Mentorship in Radiology", was founded with the objectives to promote diagnostic radiology among medical students, to increase interest in and application to diagnostic radiology among medical students with a particular emphasis on female medical students, and to foster a community of support among female medical students seeking to pursue a career in diagnostic radiology. This innovative mentorship initiative encompasses informational and networking events as well

as longitudinal mentorship. It is resident-led and faculty-supported. Longitudinal mentorship is facilitated through multiple mentorship pods, which are comprised of 2 radiology residents mentors, 1 radiology staff physician, and 4 to 6 medical student mentees. Mentorship pods meet iteratively throughout the academic year to facilitate achievement of the objectives of the mentorship initiative.

**Conclusion:** MI-RADS launched in 2022 with nearly 40 medical student mentees participating from all 4 distributed sites of the institution. Initial qualitative feedback suggests that the mentorship initiative has been positively received. MI-RADS may serve as a framework for the development of mentorship initiatives in diagnostic radiology nationally and in other specialties. The unique longitudinal mentorship structure utilized by MI-RADS fosters multiple CanMEDS competencies among participating medical student mentees and diagnostic radiology resident mentors. Ongoing assessment of this innovative mentorship initiative is required.

#### 077 Redesigning introductory diagnostic radiology post-graduate medical education upon the transition to Competence by Design

H. Bentley; K. Darras; E. Venalainen; A. Sedlic; C. Hague

University of British Columbia, Vancouver, BC

**Introduction:** Data suggests that performance of junior diagnostic radiology residents on standardized examinations and learner satisfaction with introductory diagnostic radiology post-graduate medical education (PGME) may be improved. The transition to Competence by Design (CBD) affords the opportunity to reconceptualize introductory diagnostic radiology PGME. We developed a new evidence-informed structure of introductory diagnostic radiology PGME curriculum delivery during the Transition to Discipline stage of training which has not been previously deployed in diagnostic radiology PGME in Canada.

**Method:** At our large, academic diagnostic radiology PGME program residents will work to complete the radiology-specific Entrustable Professional Activities (EPAs) of the Transition to Discipline stage of training during 3 blocks of dedicated radiology training at the end of the first post-graduate year. These 3 blocks will include both didactic teaching as well as clinical experiences throughout the radiology department which shall be structured to emphasize learning objectives associated with required EPAs. One week of didactic teaching

followed by 1 week of clinical experience will be designated to each of chest, abdominal, neuro, and musculoskeletal radiology while 1 day of didactic teaching followed by 4 days of clinical experience will be designated to each of breast, pediatric, and interventional radiology as well as ultrasound.

**Conclusion:** This new evidence-informed structure of introductory diagnostic radiology PGME curriculum delivery harnesses key benefits of a spiral structure of curriculum delivery, including subject content being taught in successive levels of difficulty and iteratively revisited both within the Transition to Discipline and subsequently within the Foundations of Discipline stages of training to attain progressive gains in and greater levels of competence. It may also serve as a framework for the deployment of similar structures of curriculum delivery in introductory diagnostic radiology PGME nationally. Ongoing assessment of this new evidence-informed structure of introductory diagnostic radiology PGME curriculum delivery shall be required.

#### 078 Development of competencies, entrustable professional activities, and the aligned assessment tools and guides for competency-based emergency medicine residency programs in South Korea

K. Song<sup>1</sup>; S. Chung<sup>2</sup>; C. Kim<sup>3</sup>; K. Park<sup>4</sup>; C. Han<sup>5</sup>; Y. Lee<sup>6</sup>; T. Kim<sup>1</sup>; G. Park<sup>8</sup>; Y. Kim<sup>9</sup>

<sup>1</sup>Seoul National University Boramae Medical Center, Seoul, Republic of Korea; <sup>2</sup>Yonsei University, Seoul, Republic of Korea; <sup>3</sup>Chung-Ang University College of Medicine, Republic of Korea; <sup>4</sup>Yonsei University Wonju College of Medicine, Wonju, Republic of Korea; <sup>5</sup>Ewha Womans University College of Medicine, Seoul, Republic of Korea; <sup>6</sup>In Ha University College of Medicine, Incheon, Republic of Korea; <sup>8</sup>Chungbuk National University College of Medicine, Cheongju, Republic of Korea; <sup>9</sup>The Catholic University of Korea, Seoul, Republic of Korea

**Introduction:** Professional society-led, competency-based medical education (CBME) residency program models have been designed and implemented in South Korea since 2017. Misconceptions about core components of CBME, entrustable professional activities (EPA), and the misalignment of EPAs and assessments were common problems in the early developed models. A CBME working group of the Korean Society of Emergency Medicine (KSEM) was organized and developed an EPA-based CBME model in 2021. The working group referenced a recently developed competency framework, an up-to-date EPA guide, and published workplace-based assessment tools to overcome the problems. This study aimed to report on

the first-year development process, products, and following plans.

**Methods:** The working group developed six competency domains, 16 core competencies, and 47 sub-competencies for Korean emergency physicians based on updated Korean doctors' competency framework and 10 EPAs through webinar conference calls, two hybrid workshops, and two-round Delphi surveys with related KSEM committee members. Each EPA was fully described according to the AMEE guide recommendation. A mapping matrix of the competencies and EPAs was also developed. We also developed 24 assessment tools for the 10 EPAs and a comprehensive competency achievement summary form. Each EPA assessment tool included core components such as a checklist, a 5-level entrustment decision-making scale, an evidence summary, a narrative feedback description, and an assessment guide. The consensus processes were two hybrid workshops with working group members, board meetings, and a consensus symposium for program directors and faculty at the KSEM conference.

**Conclusion:** This set of competencies, EPAs, and the aligned assessment tools and guides will be used to implement competency-based EM residency programs in South Korea. For the next plan, we will develop an e-portfolio platform including personalized assessment dashboards and an entrustment decision-making process and perform a pilot implementation of the model and rapid evaluation.

#### 079 Development and evaluation of an oral presentation skills module

D. Manos<sup>1</sup>; D. Bowes<sup>1</sup>; M. Macleod<sup>1</sup>; L. Stiles-Clarke<sup>2</sup>; J. Chisholm<sup>1</sup>; E. Wiley<sup>1</sup>

<sup>1</sup>Dalhousie University, Halifax, NS; <sup>2</sup>St. Francis Xavier University, Halifax, NS

**Introduction:** Presenting scholarly work and teaching others are identified by residency training accreditation bodies as essential activities of residency training, including, for many specialties, as entrustable professional activities by the RCPSC. Residents are usually given opportunities to deliver oral presentations but are often not provided with formal instruction or feedback specific to presentation skills. For image-rich disciplines, key oral presentation best practices include image manipulation and privacy considerations, in addition to general concepts of slide design and public speaking.

**Methods:** Best practices for oral presentation were gathered from peer-reviewed literature, other published guidelines and from experienced faculty. This information was summarised in a module specifically designed for medical imaging presentations. Additional special topics included timed presentations, research presentations, virtual presentations, pre-recorded presentations, and presentations to patients/public. Based on the module, we designed a rubric for feedback, separate from content feedback, focusing on the relevant CanMEDS roles.

Prior to release of the module, 14 residents delivering a formal oral presentation, such as grand rounds, were invited to participate in a survey regarding the quality of feedback they received on their presentation (either prior to formal delivery, such as from a supervisor, or post delivery).

10 residents were then provided with the module in advance of a scheduled formal oral presentation. The oral presentation was then assessed live using our rubric and residents were provided with this feedback. The post-intervention survey demonstrated increase in quality and quantity of feedback to residents, improved resident understanding of oral presentation best practices and improved resident confidence. Feedback on the module itself was used to further refine the module.

**Conclusions:** Residents receive little training in oral presentation skills and their formal oral presentations are rarely assessed beyond content. Instruction in formal oral presentation skills may help resident mastery of scholar and communicator competencies.

#### 080 Resident Support Network: A supportive approach to learner wellness

N. Mazze; S. Pavalagantharajah; C. Kwan; C. Young; J. Humphreys

McMaster University, Hamilton, ON

The Resident Support Network (RSN) is a learner wellness initiative in the pediatric residency program at McMaster University. The program was modeled on the Resident Support Network at the Northern Ontario School of Medicine. RSN was piloted at McMaster pediatrics in 2019 based on a needs assessment of resident wellness. The objective of RSN is to support residents through an identifiable network of individuals with the knowledge, expertise, attributes and dedication to resident well-being.

The RSN includes a network of trained volunteer resident peers, faculty, administrative staff, the departmental Ombudsman and members of the postgraduate medical education Resident Affairs office. The network is led by the resident and faculty wellness representatives and recruits new members each year. Annual training includes didactic and interactive components focused on knowledge and skills to help support residents.

RSN members are contacted directly by residents in need of support. RSN members provide confidential peer support with the role of active listening and directing residents to available resources. Limitations to confidentiality include safety concerns and when the network member needs additional help to support the resident. A guidance document about confidentiality is provided to RSN members, which includes when to notify the faculty representative, program directors or other key supporters.

A program evaluation was sent to RSN members in 2022 with a response rate of 18/38 members. 27.8% of respondents indicated that they were contacted by residents within the past year for reasons including: debriefing patient encounters, conflicts, clinical rotations and feedback, academic performance and examinations, health concerns, workplace accommodations, and general residency questions. Ongoing evaluation of the network will assess resident experiences and themes encountered by network members to further develop resources and training. The network can be adopted by other programs to provide a supportive approach to learner wellness.

### 081 Immersive virtual reality vs. bench top trainer in novice arthroscopic surgical skill acquisition: A randomized controlled trial

N. Wagner; [A. McGuire](#); D. Bardana; E. Knapp-Fisher

Queen's University, Kingston, ON

**Background:** Given the recent decline in operative exposure during residency programs, there is concern about whether trainees will be adequately prepared for practice. Novel immersive virtual reality (iVR) technology has been proposed as a solution to streamline education. This study explores whether immersive virtual reality (iVR) could be a viable alternative to traditional cadaveric dissection and benchtop simulators when learning knee arthroscopy.

**Methods:** 17 surgical novices were recruited. Participants were shown instructional videos on arthroscopic

technique, and performed a baseline cadaveric diagnostic knee arthroscopy. Performance was assessed using a global rating scale (GRS), and the associated entrustable professional activity (EPA). Participants were randomized into either the iVR group or the benchtop simulator group. All participants completed a second cadaveric diagnostic knee arthroscopy for post-test assessment. A repeated measures ANOVA compared procedure time and entrustment scores between the two groups.

**Results:** Both groups significantly improved their entrustment scores and surgical time from pre- to post-training. The iVR group performed significantly better on the "technical performance" and "visualization" milestones. Participants in both intervention groups reported that the training modalities were helpful for surgical skill acquisition.

**Conclusions:** While traditional cadaveric and benchtop trainers are effective, they are not always accessible for surgical residents. The results of this study suggest that an iVR module is equally, if not slightly more effective, at training novices in arthroscopic skills. As iVR technology is still developing, this work invites future research initiatives looking at how to incorporate iVR into the surgical curricula, and how this technology may complement the change to a competency based medical education model.

### 082 Resident nutritional assessment education supports socially accountable training and better outcomes for residents and patients

L. Graves; H. Neiman Hart; K. Watts; J. Mindes; [R. Wallace](#)

Western Michigan University, Kalamazoo, MI, United States of America

**Introduction:** In the CANMeds framework, the physician is medical expert, communicator, collaborator, health advocate, and more. Yet nutritional status, a universal aspect of health, is neglected for most patients. Most residents do not obtain a 24-hour food recall or test for micronutrient deficiencies, which in some populations, underlie chronic disease. Residents lack tools to understand individual patient ecology, effect optimal interventions and miss opportunities to educate about improving nutrition and may fail to mitigate illness optimally, contributing to lessened self-efficacy and burnout. Patients may not feel well understood, lose opportunities for habit change, and their health may not improve. Finally, potential healthcare cost savings are lost.

**Method:** Residents in an established functional medicine track at a US Federally Qualified Health Center (FQHC) will receive nutritional assessment training, as socially accountable medicine. A prospective, naturalistic mixed-methods design will measure resident academic and clinical performance; evaluate didactic nutrition content; and assess clinical and behavioral significance of nutrition interventions for patients. Pre/Post questionnaires will assess physician agency and physician video interview transcript content will be reviewed. Residents will contribute to an existing database documenting nutritional deficiencies in the FQHC population. Patients will be assessed via brief Pre/Post questionnaire for the nutritional intervention impact for them, attitudes toward providers, eating habits, and health improvements. Quantitative data will be analyzed using t-tests and qualitative data for frequency of positive/negative categorical responses. Early project data suggests positive results for both patients and residents.

**Conclusion:** Functional medicine intervention to improve patient nutrition and treat chronic disease is an innovation. Residents will perceive nutrition training as relevant, practical content improving their clinical agency and patient outcomes, in a positive feedback loop. If successful, this training could be widely adopted.

### 083 Development and implementation of a “Health Equity Rounds” curriculum for a military internal medicine residency program

V. Wright<sup>1</sup>; E. Walker<sup>2</sup>; W. Hirschfeld<sup>2</sup>; K. White<sup>3</sup>

<sup>1</sup>US Army, Rockville, MD, United States of America; <sup>2</sup>Walter Reed National Military Medical Center, Bethesda, MD, United States of America; <sup>4</sup>US Navy, Camp Lejeune, United States of America

**Introduction:** DEI-related curricula in GME often have learning objectives of improving awareness of healthcare disparities and theories on bias through traditional lectures and workshops. However, few curricula focus on developing skills in identifying and mitigating provider bias through longitudinal experiences that allow trainees to gain proficiency in these skills. Therefore, our primary objective was to create a case-based curriculum in which residents gain proficiency in analyzing real clinical cases for provider bias and discussing bias mitigation strategies.

**Method:** The Kern Approach was used to develop a curriculum where residents retrospectively examine recent clinical cases for provider bias using small-group learning, roleplay, reflection, and large-group discussion as educational strategies. This occurs through a case

conference during which a recent clinical case is presented, and the following questions are explored in small groups: (1) What types of biases are present? (2) How did bias impact clinical outcomes?, and (3) What bias mitigation strategies can be used to avoid this in the future? Pre- and post-surveys with Likert scale responses will be used to analyze changes in confidence levels in the following skills: bias analysis, bias mitigation, participation in group discussions about bias, and leading group discussions about bias. We plan to use paired t-test for data analysis.

**Conclusion/Implications:** Informal feedback from attendees has been very favorable regarding the formatting of sessions, educational strategies used, and selection of clinical cases. Currently, only pre-survey data has been collected from 20 residents (27% response rate) and 2/6 cases have been presented. Post-survey data will be collected in June 2023, allowing for data analysis to determine any change in confidence levels of the targeted skills with participation in this curriculum.

### 084 Addressing microaggressions with simulation: A novel educational intervention

K. Caners; E. Duchesne; L. Rang; D. Dagnone

Queen’s University, Kingston, ON

**Introduction:** Microaggressions are daily commonplace, subtle behaviors and attitudes toward others that contribute to persistent disparities faced by many health care professionals in accessing power and opportunity. [1] Gender-related disparities for Emergency Medicine (EM) residents have been noted in multiple studies. A 2020 paper highlighted EM staff physicians providing lower evaluations of resident milestone attainment in female residents resulting in a gender gap surrounding evaluations and progression [2]. While gender-related microaggressions are a common occurrence, there are few educational opportunities for residents to recognize, discuss and address these incidents. Few studies detail how to prepare learners to address microaggressions from their patients while continuing to provide medical care. Combating microaggressions fosters an environment where residents can flourish as leaders, health advocates and professionals. To address this, a novel session combining high-fidelity simulation followed by an interactive teaching session was created with the purpose of fostering allyship and practicing anti-microaggression tools.

**Method:** Gendered microaggressions were embedded in a simulation case [3] written for this session. Following this, instructors debriefed using evidence-based tools to foster reflection related to Equity, Diversity and Inclusion (EDI) [4], and to address microaggressions using specific toolkits such as O3 [5], Open The Front Door [6], the 5 D's [7] or Call In/Call Out [8]. Anonymous surveys related to strengths and weaknesses were distributed. All the 10 residents who attended the session responded.

**Conclusion:** A novel simulation session was created to address gender-based microaggressions within residency training for EM residents. Limitations of this study include a small resident group and limited qualitative measures of the initiative's impact. Further roll-out should continue to involve a diverse panel of facilitators, including individuals with lived experience of microaggressions and with EDI expertise. Future sessions should examine simulation-based education surrounding microaggressions related to race, sexual orientation, gender identity and disability.

#### 085 The UnWRaP Study: Understanding the Well-being of Residents and Partners

M. Boutros Salama; J. Halladay; H. Harlock; C. Munn; E. El Gouhary

McMaster University, Hamilton, ON

**Introduction:** Residency training has been shown to have a negative impact on trainees' well-being, mental health, and personal relationships.<sup>1</sup> Burnout is common and negatively affects trainees' well-being, performance, and patient care.<sup>2</sup> Social support and healthy relationships may protect against burnout and mental health problems.<sup>1</sup> However, little is known about the potential protective effects of relationships and social support on trainees and their partners, and interventions to bolster relationships.<sup>3</sup> The UnWRaP study aims to explore associations between trainee-partner relationships and well-being during residency. Our study invokes the CanMeds Professionalism key competency (4) — demonstrating a commitment to physician health and well-being to foster optimal patient care.

**Method:** 4. An online cross-sectional survey will be conducted at McMaster University in Hamilton, Ontario, between January-March 2023. The survey will be sent to all McMaster postgraduate medical trainees and their partners, if applicable. The primary and secondary outcomes are occupational burnout (Maslach Burnout Inventory) and mental health status (Mental Health Continuum Short Form), respectively. We will examine

associations between these outcomes and predictor variables including individual coping, dyadic coping, social support, dyadic support, work-life conflict, and work-life balance, measured in trainees and participating partners using psychometrically validated scales. The survey will also assess socio-demographic factors, relationship and family factors, occupational demands, and stressors (personal, interpersonal, and work-related). Further, participants will rank key stressors, potential interventions, and resources. Data analysis will include descriptive statistics and multilevel regression (accounting for dyads).

**Conclusion:** Our study will inform educational leaders of the potential protective effects of social support and positive partner relations on trainees' burnout and mental health. It will identify modifiable factors and priority interventions from the perspective of trainees and their partners. Such findings could enable future research to develop effective programming to prevent burnout and foster a culture of well-being during training.

#### 086 A novel case-based ethics morning report for teaching residents clinical ethics

H. Kaplan; J. Lim; A. Kahl

Baylor College of Medicine, Houston, TX, United States of America

Ethics training in graduate medical education is often experiential or limited (Lehmann 2004). Indeed, the Accreditation Council for Graduate Medical Education included "Ethical Principles" in the Internal Medicine (IM) Milestones 2.0. Thus, we implemented monthly ethics case conferences in our IM residency program and evaluated their efficacy as a teaching tool.

Case-based learning applies elements of cognitive apprenticeship, the theoretical framework that grounded our intervention. Key elements we identified included creating a safe learning environment, articulating critical thinking related to ethical principles, coaching by a facilitator, and role modeling of learners at various stages (Stalmeijer 2013).

Resident case presentations were mentored and facilitated by a clinical ethics-trained faculty member. Attendees completed a post-conference survey assessing their comfort level with common ethics-oriented scenarios and the efficacy of the conference as a teaching tool. We modified survey questions and objectives from existing clinical ethics education objectives (Carrese

2015), used survey design best practices, and engaged in iterative review of the survey tool by faculty and trainees.

In July through December 2022, we facilitated eight case conferences. A total of 54 trainees completed the post-conference survey – 78% PGY-1s, 11% PGY-2s, and 11% PGY-3s. Overall, 30% to 52% of respondents were “very uncomfortable” to “neutral” about assessing a patient's decision-making capacity, determining appropriate surrogates, and leading discussions about withdrawal of life-sustaining treatment. About 85% of respondents felt that the case conference “moderately” to “extremely” improved their ability to recognize, articulate, and manage issues in clinical ethics.

Over one-third of surveyed residents in our IM residency program were uncomfortable with routine ethics-related clinical tasks. The large majority of residents perceived an ethics case conference to be helpful in ameliorating this discomfort. Thus, we demonstrate both a need for ethics education in IM residency programs and an intervention viewed to be effective by participants.

### 087 Informing, integrating, and evaluating a Professional Identity Formation curriculum for competency-based postgraduate programs

N. Khursigara Slattery<sup>1</sup>; R. Sternszus<sup>2</sup>; Y. Steinert<sup>2</sup>; M. O'Connor<sup>1</sup>; A. Merrigan<sup>1</sup>

<sup>1</sup>University of Limerick, Limerick, Ireland; <sup>2</sup>McGill University, Montreal, QC

**Introduction:** The 2010 Carnegie Report explicitly identified professional identity formation (PIF) as a key goal in medical education. To date, PIF has not been formally addressed nor assessed during Irish residency. Likewise, how best to integrate PIF within postgraduate curricula globally, has yet to be explored. Current competency-based programs implementing entrustable professional activities address *what doctors do* but there are noticeable ‘gaps’ for the more nuanced aspects of professionalism not well captured by competency-based frameworks. We propose that explicitly embedding PIF into competency-based curricula may help address these ‘gaps.’ This study explores how the explicit integration of a PIF curriculum supports residents in navigating the more individualized and contextualized elements of *being* and *becoming* a physician, by the addressing of *who doctors are*.

**Methods:** We used a multi-phased interventional approach. Needs assessment and curriculum

development were informed by survey questionnaire, existing literature, and resident focus groups to identify baseline PIF knowledge, common perceptions of professionalism, salient formative experiences, and tensions when navigating personal values with stated norms of the profession, during year one of residency. Descriptive analysis of the data informed the envisioned curriculum - a workshop series comprising of didactic sessions, small and large group discussions, and reflective practices. An explanatory sequential mixed method design will measure PIF knowledge, relevancy of content, and applicability with thematic analysis of semi-structured interviews and e-surveys further informing implementation and evaluation of the curriculum.

**Conclusion:** Initial findings indicate a positive reception to the pilot PIF workshops. Post-curriculum feedback will explore content relevance, knowledge of PIF, and awareness of, and confidence in the formation of residents’ own professional identity and will provide additional data to inform future iterations of the curriculum both in Ireland and in other jurisdictions.

### 088 A framework to disseminate a clinical leadership curriculum across specialties and institutions

H. Yeluru<sup>1</sup>; H. Newton<sup>1</sup>; R. Kapoor<sup>1</sup>; J. Keltz<sup>2</sup>; A. Cipi<sup>3</sup>; M. Acevedo-Alvarez<sup>4</sup>

<sup>1</sup>Eastern Virginia Medical School, Norfolk, VA, United States of America;

<sup>2</sup>Westchester Medical Center, Valhalla, NY, United States of America;

<sup>3</sup>Eastern Virginia Medical School, Norfolk, VA, United States of America;

<sup>4</sup>Loyola Medicine and Hines VA, Maywood, VA, United States of America

**Background:** Clinical leadership allows physicians to effectively lead teams, strengthen communication, protect against burnout, increase physician engagement, and improve patient safety and outcomes. Standardized residency curricula, competency based assessments and curricular implementation are in their infancy in many countries. Unlike CanMEDS, leadership is not a stand alone core competency in the Accreditation Council for Graduate Medical Education. Our objective was to design and pilot a framework for a Clinical leadership curriculum (CLC) to be systematically implemented across different specialties and other institutions.

**Methods:** We used Kern’s 6 steps in curriculum development to create a longitudinal, skills-based clinical leadership curriculum for senior pediatric residents at our institution via an interactive, facilitated session. After an overwhelming positive response, we created a facilitator guide (with colorful infographics introducing the topic,



sample questions to guide discussion, and pearls) and a facilitator training where faculty played the role of participants to allow them to experience a session. The Graduate Medical Education Council helped to introduce the CLC to other specialties and department leadership. We utilized Zoom for the facilitator training with outside institutions that were interested in the program. Several requirements had to be met to adopt the curriculum: committing faculty facilitators to attend the 90 minute facilitator training, scheduling monthly sessions during protected educational time, and holding a year end focus group to evaluate successes and barriers of the CLC implementation.

**Conclusions:** The current leadership curriculum has been implemented within and outside our institution across specialties. Early feedback suggests the dissemination framework with facilitator guide, training, and requirements for participation is successful and being received well by both faculty and residents. Moving forward, we plan to implement minor changes to remove barriers identified from the first focus group and administer pre and post surveys with residents to evaluate its effectiveness in other specialties.

#### 089 Assessment of diagnostic reasoning during virtual deliberate practice using an illness script-based simulator M. O'Rourke<sup>1</sup>; J. Drazen<sup>2</sup>; R. Abdunour<sup>3</sup>

<sup>1</sup>NEJM Group, Waltham, MA, United States of America; <sup>2</sup>Harvard Medical School, Boston, MA, United States of America; <sup>3</sup>Harvard Medical School, Brookline, MA, United States of America

**Background:** Workplace-based deliberate practice in medical cases is the cornerstone of clinical reasoning development. Still, it is resource-intensive, and residents may not encounter the appropriate corpus of illnesses essential for clinical competency. NEJM Healer is a virtual patient simulator based on illness script theory. Learners apply clinical reasoning and obtain explicit feedback. This study examined whether NEJM Healer performance correlated with learner training level.

**Methods:** Performance data were obtained from pre-clerkship medical student (PC), clerkship medical student (C), and second-year internal medicine resident (R) virtual patient encounters (N = 46, 1225, and 73 encounters respectively) with typical presentations of common diseases across 17 participating institutions. During an encounter, learners wrote problem representations (PR), and developed a differential diagnosis at four data stages (triage, history, physical examination, and pre-existing

diagnostic tests). Upon completing each case, learners performed informed self-assessments of their PRs upon seeing PRs written by experts. Lead diagnostic accuracy and differential diagnostic accuracy were calculated based on comparison with expert consensus sourced from experienced clinicians, including generalists and subspecialists in their respective content areas. Results are expressed as the mean and standard error of the mean. Comparisons between groups were performed using one-way ANOVA and Tukey's multiple comparisons tests.

**Results:** Residents had higher differential diagnostic accuracy and informed self-assessment of PRs (66.7%±2.0 and 61.6%±3.4) relative to clerkship students (51.9%±3.5 and 47.7%±1.0) and pre-clerkship students (40.1%±3.5 and 25.5%±5.5). These results were statistically significant (p<0.001) using one-way ANOVA and multiple comparisons. Lead diagnostic accuracy was similar between the three groups in these introductory cases (PC = 76.1%±5.9, C = 75.4±1.2, R = 82.2±3.9, p=0.4).

**Conclusions:** Differential diagnostic accuracy throughout an encounter and problem representation self-assessment in NEJM Healer correlated with clinical experience level, allowing identification of growth opportunities for residents in specific reasoning skills.

#### 090 Assessment co-creation: Engaging stakeholders through a change laboratory intervention R. Al-Bualy<sup>1</sup>; M. Govaerts<sup>2</sup>; S. Heeneman<sup>2</sup>; M. Skipper<sup>3</sup>

<sup>1</sup>Oman Medical Specialty Board, Muscat, Oman; <sup>2</sup>Maastricht University, Maastricht, Netherlands; <sup>3</sup>Aarhus University, Aarhus, Denmark

**Introduction:** Workplace-based assessments (WBA) are negatively perceived and poorly implemented. Educational design, including assessment design, usually excludes its stakeholders in the process and follows a top-down approach. Stakeholders are expected to implement innovations in their complex workplaces which may lead to poor implementation and disengagement with the educational process. Thus, we involved stakeholders (residents, faculty and educationalists) in the educational design process to co-create their WBA in an effort to improve their implementation, and participants' sense of autonomy, competence and relatedness to the tools.

**Method:** The change laboratory (CL) intervention was used to explore the impact of co-creation on the redesign and implementation of WBA and on stakeholders. The ultimate goal was to support participants in redesigning their work resulting in an expansive learning cycle

grounded in cultural historical activity theory (CHAT). The CL was conducted with stakeholders from one of the postgraduate residency programs in Oman. Tensions and contradictions in their assessment activity system were identified. Stakeholders then redesigned their WBA to make it more relevant to their context. This was accomplished through mapping to curriculum objectives and utilizing stakeholder feedback to co-create the tools. Post-intervention interviews were conducted with participants to explore their perception of participation in the CL.

**Conclusion:** Effects of the assessment redesign extended beyond the individuals involved to the larger residency community. Shifts in stakeholder engagement extended from individuals to collective agency. Feedback from users was positive and indicated satisfaction with the newly co-created tools. Further analysis of the long-term effects of this co-creation effort is required. Educational redesign and implementation may benefit from co-creation initiatives involving stakeholders in interventions such as the change laboratory.

#### 091 Resident education committee: A novel approach to co-creation in residency training

J. Trier<sup>1</sup>; A. Banwell<sup>1</sup>; D. Dagnone<sup>1</sup>; J. Hall<sup>2</sup>; R. Curtis<sup>1</sup>

<sup>1</sup>Queen's University, Kingston, ON; <sup>2</sup>University of Calgary, Calgary, AB

**Introduction:** During the introduction of competency-based medical education (CBME) at Queen's University, there was a clear need for a forum where residents could advocate for issues impacting the learning environment. The CBME Resident Subcommittee was established, initially as a subcommittee of the CBME Executive Committee. This allowed for timely resident input during the transition to CBME. Following the transition to CBME, the committee evolved into the Queen's Resident Medical Education Committee (QRMEC), a subcommittee of the Postgraduate Medical Education Committee (PGMEC). QRMEC's mandate is to represent the interests of the greater resident body through prioritization of excellence in resident education.

**Method:** QRMEC consists of two co-chairs (one resident and one faculty), resident representatives from each postgraduate program, one PARO representative, and 2-3 faculty advisors. Resident representatives generally have an interest in medical education, leadership, and interdisciplinary collaboration. The committee frequently collaborates with important stakeholders in residency education, including the PGME Associate Dean and

representatives from the learning management system. Examples of QRMEC initiatives include guiding documents for resident education during the COVID-19 pandemic, issues with EPA completion, and program-level wellness activities. QRMEC fosters collaboration between disciplines, supports residents in medical education scholarship, facilitates sharing of resources, and advocates on behalf of residents on shared issues such as wellness and burnout, at a local/institutional level.

**Conclusion:** A committee of resident representatives from all postgraduate programs promotes a rich environment for information sharing and collaboration. Most importantly, QRMEC has facilitated timely input of the resident perspective into the design and evaluation of resident education, assessment, and wellness. Support from faculty and PGMEC leadership has allowed QRMEC to grow into a valuable committee that provides a collaborative resident voice and unique local perspective on issues that arise in postgraduate medical education.

#### 092 Leadership program for chief residents: Advocacy to promote a safe learning environment

M. A. Cordero Diaz; C. Felix Arce; A. Davila Rivas

Tecnologico de Monterrey, Monterrey Nuevo León, Mexico

**Introduction:** To promote competencies related to CanMEDS roles of leader, scholar and professional a leadership program for chief residents of the Multicentric Program of Medical Residencies of the Tecnológico de Monterrey was designed and implemented in 2022.

**Method:** In March 2022, 27 chief residents and co-chiefs from 17 programs were invited to participate in a 1-year leadership program. The program was designed considering the feedback from 3 previous workshops and the results of a preliminary survey applied in February 2022 that showed the topics of greatest interest: leadership styles (n=17, 63%), effective communication skills and feedback styles (n=17, 63%), conflict resolution (n=17, 63%), group management (n=16, 59%), role of chief residents (n=15, 55%), and leadership for the improvement of health care systems (n=15, 55%).

Monthly sessions were held virtually through Zoom platform to promote attendance by residents in different training centers. Faculty participated as facilitators of the program main sections: a) workshops for leadership topics, b) follow-up of the annual work plan (activities and deadlines), and c) a section called "From leader to leader: opportunities and challenges in academic medicine" with

a brief message from a guest speaker. The methodology was plenary presentation, individual work, group discussion and small group discussion. The main topics were: styles of leadership, role of chief residents, group management, negotiation, feedback, annual work plan, leaders for change, well-being, mental health and suicide prevention, mentoring and support services. Residents provided feedback for each session.

**Conclusion:** A program to promote competencies related to the CanMEDS roles of leader, scholar and professional in Chief Residents is essential to develop a responsible and comprehensive leadership role during their training, to enable them to contribute to the development of the program, to support the performance of their peers, and to advocate and promote a safe learning environment.

### 093 Wellbeing, self-care and mental health: Advocacy for medical residents health

M. A. Cordero Diaz; C. Felix Arce; A. Davila Rivas; A. Lopez Salinas; C. Arnaud Gil; D. Saucedo Martínez; G. Chapa Trevino; M. Cardona Huerta

Tecnologico de Monterrey, Monterrey Nuevo León, Mexico

**Introduction:** CanMEDS roles underscore a commitment to physician health and well-being to foster optimal patient care. Academic health centers should advocate to foster an environment that promotes wellbeing and mental health of trainees.

**Method:** In 2022, residents from 17 medical specialties in a multicentric program in northern Mexico participated in a Wellbeing Program. The activities conducted virtually and face-to-face were: 1) wellbeing workshops, 2) mental health screening, 3) remediation, and 4) chief residents leadership program.

Residents were invited to participate in virtual Wellbeing Workshops addressing different topics: professionalism and self-care, mindfulness, burnout prevention, and promoting a safe learning environment. Most of first year residents and chief residents from all programs attended at least three workshops during an academic protected time, while participation from residents of other years was low.

Two mental health screenings tools were implemented online in collaboration with: a) the psychiatry department, and b) the university's office of students affairs and wellbeing. Participation was voluntary and confidential. For the first screening tool, Chief residents participated and shared with their fellow residents through digital

media the invitation; respondents received results per email with recommendations and a directory of support services and mental health professionals. For the second screening tool, all residents were invited to participate and, if required by the results, the main campus counseling office contacted individually the resident to offer support services.

A remediation plan for residents in difficulty was provided to medical residents struggling with their academic performance, professionalism lapses and/or mental health issues.

Chief residents participated virtually in a 1-year leadership program, topics addressed included: annual work plan, leadership styles, communication skills, crisis and conflict resolution, safe learning environment, wellbeing, mental health, and suicide prevention.

**Conclusion:** Academic health centers should implement educational and remediation strategies during residency to advocate and promote wellbeing, self-care and mental health.

### 095 JEDI with Jasmine: Assessing a GME curriculum on justice, equity, diversity, and inclusion

J. Marcelin; D. Wekesa; N. Tahmo; P. Davis; S. Ebers

University of Nebraska Medical Center, Omaha, NE, United States of America

**Introduction:** The AAMC published diversity, equity, and inclusion competencies applicable across the learning continuum in 2022. However, residency training has competing clinical and educational needs/interests, and squeezing in infrequent lectures about justice, equity, diversity, and inclusion (JEDI) without concurrent discussion allowing trainees to contextualize the information with their clinical work is inadequate. GME programs need regular JEDI curricula that complement clinical and educational missions.

**Methods:** We developed and enhanced a monthly resident JEDI curriculum with clinical cases, discussion, & resource review in the Internal Medicine Residency, called JEDI with Jasmine. The series provides a safe space for exploration and discussion of experiences residents have had or witnessed where applying JEDI principles would have made a difference and provide IM residents/faculty with the tools needed to be active upstanders and healthcare justice advocates. The original version of the series was topic-based, but new enhancements provided a more structured experience with increased time for

breakout discussion, and incorporation of an interdisciplinary approach by focusing each session on experiences shared by a different the internal medicine wards team. We conducted an initial pre-enhancement assessment with standardized measure of intercultural competency using the Miville-Guzman Universality-Diversity Scale-Short Form (MGUDSS). Pre & post quizzes assessed specific session content. For 47 respondents, baseline MGUDSS scores: Total  $74 \pm 7.5$ , Relativistic Appreciation  $25 \pm 3.0$ , Sense of Connection  $26 \pm 3.1$ , Diversity of Contact  $22 \pm 3.8$ . 18/47 pre-assessment respondents confident in ability to address structural determinants of health (SDOH), 15/47 comfortable addressing discrimination or bias at bedside. Trainees reported knowledge increase of interpreter resources and outcomes of patients with limited English proficiency.

**Conclusion:** We established baseline resident attitudes to diversity, increased knowledge of resources to reduce inequities with a structured JEDI session. Planned longitudinal curriculum and monthly session quizzes will improve future sessions and assess resident knowledge, skills, and attitudes related to health inequities.

#### 096 AFMC Opioid Response: Designing a self-assessment tool as a driver of learning

E. K. Soleas<sup>1</sup>; L. Graves<sup>2</sup>; R. Van Hoorn<sup>3</sup>; L. Stephens<sup>1</sup>; J. Mulder<sup>1</sup>; R. Hodge<sup>1</sup>; R. van Wylick<sup>1</sup>

<sup>1</sup>Queen's University, Kingston, ON; <sup>2</sup>Western Michigan University, Kalamazoo, MI, United States of America; <sup>3</sup> The Association of Faculties of Medicine of Canada, Ottawa, ON

**Introduction:** The Future of Medical Education in Canada MD, PG, and CPD Reports emphasize self-directed learning as a key part of learning in the data age. This makes self-assessment, the first step in self-directed learning, all the more important. As a key part of the AFMC's Response to Opioid Crisis Curriculum, the self-assessment tool provides resident and continuing professional development learners the chance to explore their own perceived and unperceived needs through a curiosity- and challenge-based experience inspired by the CanMEDS professional and scholar roles.

**Method:** The self-assessment tool was built in Qualtrics using a combination of Boolean Logic and adaptive mastery, reviewed by the content experts who wrote content for the modules of the project, and then piloted with 91 residents and independently practicing physicians. Participants completed the tool as well as an embedded evaluation survey that featured both open and closed-

ended items. The items pertained to learning experience, identifying strengths and weaknesses, as well as learning preferences in a format akin to a developmental evaluation.

**Conclusion:** Supported by the feedback and requested revisions of pilot participants, we position this initiative as among the latest in learning programs that not only provide learners with information, but also actively help them explore their own limits, needs, and curiosities through the medium of self-assessment. The flexibility of the tool to aid learners in exploring one or both of their perceived and unperceived needs, sets a precedent for the creation of tools to help learners build on their experiences. It sits opposed to the dangerous making of assumptions and imposition of priorities inherent in past CPD and residency education efforts.

#### 097 Clinical learning environments in Mexico: A new classification proposal

F. Martinez Mendoza; K. Jimenez Becerril; D. Romero Caballero; L. Zeron Gutierrez; E. Jean Silver

Instituto Tecnológico Y De Estudios Superiores De Monterrey (ITESM), CDMX, Mexico

**Introduction:** Clinical learning environments (CLE) are complex scenarios made up of diverse characters, constructing various environments and generating contrasting teaching and learning processes. The quality of CLE determines the teaching and learning process, allowing them to be categorized. In this study we propose a new instrument to evaluate and classify clinical learning environments and their impact on undergraduate medical interns in public and private Mexican health institutions.

**Methods:** This is a descriptive, observational cross-sectional, prospective study which was further divided into two phases: the first one, being a qualitative phase and the second one, being a quantitative phase. Firstly, a bibliographical search and analysis was performed to develop the prototype for the CLE categorization instrument which consists in a 23-item survey that identifies factors involved in the teaching-learning process in each CLE. Then, this instrument was applied to 56 undergraduate clinical sciences students. Each item is structured using a 5-level Likert-type scale, ranging answers from 1 (strongly disagree) to 5 (strongly agree). For the second phase, we analyzed the reliability and internal consistency of the instrument using Cronbach's alpha and ANOVA test.

**Results:** Cronbach's alpha was 0.9252. Most of the students (n=29) performed their clinical rotation in a private institution, while the rest (n=27) in a public one. A mean score of 4 was obtained in most items. Based on these results, we propose a new classification for CLE in which, based in their evaluated teaching-learning factors, they are classifiable into four different categories: functional healthy, non-functional healthy, dysfunctional healthy and dysfunctional unhealthy.

**Conclusion.** This pilot study proposes an instrument which allows us to generate a matrix that helps categorize CLE in Mexican healthcare institutions and medical services by functionality and healthiness. This information serves as the basis for the next phase of the study.

#### 098 "To whom it may concern": A review of Canadian Resident Matching Service (CaRMS) personal letter requirements at Dalhousie University

A. Riopel; D. Bowes

Dalhousie University, Halifax, NS

**Introduction:** The personal letter is a required component of the Canadian Resident Matching Service (CaRMS) application in almost all programs. There is no literature on how personal letters are being used in the CaRMS selection process. In addition, there is a lack of evidence correlating the personal letter with performance, and evaluation of letters may be challenged by diversity in writing styles and the fact that the content is often similar from letter to letter. This review explored the requirements for personal letters in the selection process at Dalhousie University with a goal to better characterize residency program requirements.

**Methods:** The CaRMS Program Description website for Dalhousie University programs participating in the 2023 R-1 match was reviewed. Key words for each personal letter requirements of the 22 residency programs were placed in a database and analyzed to determine the common themes and requirements.

**Results:** It was found most programs ask for the applicant's interest in the discipline (95.5%), followed by the interest in Dalhousie University or the location (68.2%), if the applicant is suitable for the discipline (45.5%), personal history (45.5%), gaps in the curriculum vitae (CV) (36.4%), communication skills (31.8%), career interest (27.3%), motivations (22.7%), personal growth (22.7%) and many other keywords. The maximal word

count median is 750 words, ranging from 250 to 1300 words.

**Conclusion:** The results demonstrate a wide heterogeneity amongst programs within a single institution regarding the personal letter requirements. Most programs at Dalhousie University are interested in learning about the candidate's motivation for choosing the discipline and location in addition to their personal history, specific attributes for the discipline and gaps in their CV. This will contribute to a better understanding for those educating students on career planning and for programs who are reviewing their selection process.

099 This session has been withdrawn.

#### 100 Transitioning medical residency programs from traditional to competency based medical education: Viewpoints of the potential beneficiaries at Imam Abdulrahman bin Faisal University

A. Al-Ali<sup>1</sup>; N. Maghraby<sup>1</sup>; A. Saxena<sup>2</sup>; K. Al Ghamdi<sup>3</sup>

<sup>1</sup>Imam Abdulrahman bin Faisal University, Dammam, Saudi Arabia;

<sup>2</sup>University of Saskatchewan, Saskatoon, SK

**Introduction:** Medical residency programs at Imam Abdulrahman bin Faisal University (IAU) in Saudi Arabia are transitioning to Competency based medical education (CBME). This transition requires engagement of all potential beneficiaries as early as possible. At IAU, four residency programs are transitioning to CBME: Neurology, psychiatry, internal medicine, and paediatrics, with neurology accepting their first CBME cohort this academic year. The purpose of this study was to explore the viewpoints and perception of some of the potential beneficiaries regarding the opportunities and challenges of implementing CBME.

**Methods:** An anonymous online survey was administered to IAU college of medicine faculty members and administrative staff who are transitioning to CBME: (26 respondents) including (a) programs leaders (program directors, competence committee chairs and CBME lead), (b) program committee- and competence committee-members, (c) program administrative assistants. Their responses were analysed using descriptive and inferential statistical techniques.

**Results:** Based on mean scores, it was found that faculty (3.96± 0.17), residents (3.63±0.23), and technology (3.59±0.24) related challenges were more prevalent in CBME implementation. However, 39.1% of respondents

were satisfied with the resources available to conduct simulation activities. Also, more than half of the respondents were satisfied with educational leadership and program administrative assistance. Regarding the work culture, defined as collection of values, expectations, and practices that guide and inform the actions of all team members, it was suggested that the work values may be retained as pre-CBME, whereas the potential beneficiaries' expectations and practices may change during CBME implementation. Most of the potential beneficiaries (70.83%) agreed that implementation of CBME will improve patient care compared to pre-CBME.

**Conclusion:** This study concluded that despite the anticipated challenges related to lack of familiarity of CBME, potential beneficiaries were favourable for the transition to CBME and believed that it is an opportunity for change towards excellence in patients' healthcare

#### 101 An institutional multi-program exploration of CBME implementation: Finding the forest for the trees

H. Braund<sup>1</sup>; D. Dagnone<sup>2</sup>; A. Hall<sup>3</sup>; N. Dalgarno<sup>4</sup>; L. McEwen<sup>5</sup>; K. Schultz<sup>6</sup>; A. Szulewski<sup>7</sup>

<sup>1</sup>Queen's University, Kingston, ON; <sup>2</sup>Queen's University, Kingston, ON;

<sup>3</sup>University of Ottawa, Ottawa, ON; <sup>4</sup>Queen's University, Kingston, ON;

<sup>5</sup>Queen's University, Kingston, ON; <sup>6</sup>Queen's University, Kingston, ON;

<sup>7</sup>Queen's University, Kingston, ON

**Introduction:** As an early adopter of CBME across all programs at a single institution, our postgraduate institution was uniquely positioned to analyze implementation experience data across programs, while keeping postgraduate and institutional factors constant. We sought describe the experiences of invested partners across programs related to CBME implementation derived from early program evaluation efforts within our setting.

**Methods:** This evaluation was conducted at a medium-sized academic institution in Canada and focused on eight residency programs. Participants included program leaders, faculty, and residents. Using Rapid Evaluation methodology, the study consisted of 3 phases within each program: (1) describing intended implementation ; (2) measuring enacted implementation; and (3) comparing intended with enacted implementation to inform adaptations. Each program's findings were summarized in individual technical reports which were then analyzed together using an abductive approach. Cross program data were subsequently organized by themes.

**Results:** The program evaluation work revealed six themes related to the early implementation of CBME at

our institution: CBME as educational approach, facilitators of CBME, CBME-associated-barriers, assessment processes, competence committee processes, and academic advisor utility. All groups emphasized the need for ongoing refinement of CBME resulting from shared tensions. On the other hand, there were some disparate CBME-related experiences between programs such as experiences with EPAs, the interpretation of retrospective entrustment anchors, and quality of feedback from faculty.

**Conclusion:** Through comparing planned with enacted implementation of CBME, and measuring the experience of trainees, faculty, and program leaders, we detected several cross-program successes and challenges related CBME at our institution. Our experience can inform other institutions and programs engaging in large-scale implantation and evaluation of CBME.

#### 102 Developing priority indicators of CBD implementation using a group consensus approach

H. Braund<sup>1</sup>; A. Tomiak<sup>1</sup>; N. Hammad<sup>1</sup>; N. Dalgarno<sup>1</sup>; S. Alsaaed<sup>2</sup>; S. Basi<sup>3</sup>; F. De Angelis<sup>4</sup>; J. Dionne<sup>5</sup>; T. Hsu<sup>6</sup>; A. Jeyakumar<sup>7</sup>; H. Lim<sup>8</sup>; S. Mukherjee<sup>9</sup>; X. Song<sup>10</sup>; P. Tang<sup>11</sup>

<sup>1</sup>Queen's University, Kingston, ON; <sup>2</sup>Memorial University, St John's, NL;

<sup>3</sup>University of Alberta, Edmonton, AB; <sup>4</sup>Universite de Sherbrooke,

Sherbrooke, QC; <sup>5</sup>University de Montreal, Montreal, QC; <sup>6</sup>University of

Ottawa, Ottawa, ON; <sup>7</sup>Dalhousie University, Halifax, NS; <sup>8</sup>University of

British Columbia, Vancouver, BC; <sup>9</sup>McMaster University, Hamilton, ON;

<sup>10</sup>University of Ottawa, Ottawa, ON; <sup>11</sup>University of Calgary, Calgary, AB

**Introduction:** As medical education shifts towards a Competence by Design (CBD) model in residency programs, methods for measuring and evaluating progress towards intended implementation are crucial. This study identified key CBD priority qualities, diagnostic metric indicators, and data sources that could be used in evaluating CBD implementation, based on feedback and interviews of medical educators in Canadian Medical Oncology programs.

**Methods:** A group consensus method collected opinions of Medical Oncology educators in 14 Canadian residency programs. The Core Components Framework for evaluating implementation was used to identify CBD qualities that reflect a high degree of CBD implementation if present in a program ("key priority qualities"). Indicators that could be measured to identify the extent to which a particular quality was being implemented on the ground were then identified ("diagnostic metric indicators"). Lastly, the sources required to provide evidence of implementation were described ("data sources").

**Results:** Twelve meetings (between 2019-2021) were required to reach group consensus. Seven CBD priority qualities from 3 core components (tailored experiences, competency focused education, programmatic assessment) were identified as transformative and challenging to implement. These were specific to direct observation, individualized learning, coaching, and programmatic assessment. The presentation will detail the qualities, indicators, and data sources that Canadian Medical Oncology educators consider important in progressing towards intended implementation.

**Conclusion:** This approach is valuable for identifying priority qualities, diagnostic metric indicators, and data sources for measuring and evaluating progress towards CBD implementation. Future directions include piloting indicators and data sources in training programs to determine feasibility of measuring CBD intended implementation.

103 Exploring self-regulation among obstetrics and gynecology residents during the period of Competency-based medical education curricular implementation  
S. Chamberlain; S. Chahine; J. Pyper; M. Horniachek

Queen's University, Kingston, ON

**Introduction:** With the introduction of CBME it is imperative to examine how the advantages are being realized. The lived experiences of residents is a particular area that is understudied in the research on CBME. This study uses the theoretical framework of self-regulated learning (SRL) to better understand the nature of self-regulation for residents in OB/GYN during the period of CBME implementation.

**Methods:** Qualitative case study design was used. Nine residents in OB/GYN were recruited. Focus groups were conducted with two residents who trained in the traditional residency curriculum and six residents who trained in the CBME curriculum. Subsequently three CBME residents participated in individual interviews. Verbatim transcripts were analysed through a general inductive approach starting with open coding and constant comparison analytic strategy to identify key themes.

**Results:** Residents in both curriculums demonstrated aspects of SRL. The traditional curriculum residents described how constructive feedback with an overt personalized nature was most helpful for learning, but this quality feedback from staff was rarely received. The CBME residents identified that although there were aspects of

CBME which promote SRL, such as providing a guidepost to self-assessment, the increase in self-efficacy was not consistently an outcome of CBME. The ability of CBME to optimize SRL was limited by the perception that CBME prioritized performance over learning and that many facets of CBME feedback were incongruent or not inter-related.

**Conclusion:** This study demonstrated that the theoretical underpinnings and proposed benefits of CBME align with resident reported preferences for an education system which would aid in SRL. However, in this study the practical implementation of CBME has not consistently demonstrated these benefits. SRL provides insight into this discrepancy between proposed and actual practice. Educators must find ways to provide feedback which does not detract from SRL, such as incongruent feedback, while meeting learners needs.

104 Do EPAs provide opportunity to capture social pediatric competencies? An assessment of feedback provided to pediatric residents

A. Ens<sup>1</sup>; C. Lin<sup>2</sup>; B. Chen<sup>1</sup>; J. Ogilvie<sup>1</sup>; J. Sangha<sup>1</sup>

<sup>1</sup>London Health Sciences Centre, London, ON; <sup>2</sup>Western University, Toronto, ON

**Background:** Social determinants of health account for 50% of health outcomes. Despite its importance, there is limited literature on the education and evaluation of social pediatric competencies. The aim of this project was to assess whether residents receive feedback on pediatric Entrustable Professional Activities (EPAs) related to social pediatrics.

**Methods:** The 32 pediatric EPAs outlined by the Royal College of Physicians and Surgeons of Canada were reviewed to determine opportunity to assess social pediatric competencies defined by our longitudinal social pediatric curriculum's objectives. Subsequently, thematic analysis of narrative feedback provided on EPAs for PGY1s over a 6-month period was completed to determine frequency and types of feedback.

**Results:** Twelve out of 16 social pediatric learning objectives had potential to be assessed via existing EPAs. Of the 603 EPAs triggered, 60% presented opportunity for feedback related to social pediatric competencies; however, only 10.5% had such feedback. Common feedback themes included providing patient centred communication and increasing awareness of community resources. The most common encounter type where

social pediatric feedback was documented related to identifying and reporting suspected child maltreatment. Other situations included navigating gender health, language barriers and mental health.

**Conclusion:** Existing EPAs provide an avenue for assessing many social pediatric objectives, yet most encounters do not comment on social pediatric competencies. Further exploration into the barriers to providing such feedback will help in the development of a multi-faceted approach to assessing resident's learning around social pediatrics.

### 105 Assessing paediatric trainees' confidence in providing culturally responsive care to patients

A. Chan<sup>1</sup>; A. Hossain<sup>1</sup>; C. Niles<sup>1</sup>; A. Atkinson<sup>1</sup>; I. Narang<sup>1</sup>; Z. Blatman<sup>2</sup>; A. Chen<sup>2</sup>

<sup>1</sup>SickKids, Toronto, ON; <sup>2</sup>University of Toronto, Toronto, ON

**Introduction:** Extensive data consistently demonstrate inequities in access and delivery of healthcare for patients from historically marginalized populations, resulting in poorer health outcomes. To address the systemic oppression in healthcare, it is necessary to embed principles of equity, diversity, and inclusion (EDI) within medical education. The purpose of this study was to assess paediatric trainees' confidence in applying EDI knowledge to provide culturally responsive care.

**Methods:** An anonymous online survey was distributed to paediatric trainees at the University of Toronto during the 2021-2022 academic year. Closed-ended questions used a Likert scale to assess respondents' confidence and interest in providing culturally responsive care to patients. Open-ended questions explored trainees' perceptions of effective EDI learning modalities. Quantitative data was summarized using descriptive statistics. Descriptive content analysis was used to highlight themes within qualitative data.

**Results:** 116 paediatric trainees completed the survey, of which 72/116 (62%) were subspecialty residents/fellows and 44/116 (38%) were core residents. Nearly all respondents indicated importance (mean 97%) and interest (mean 95%) in learning about providing culturally responsive care to patients from historically marginalized communities; however, many trainees lacked confidence in their knowledge of providing culturally responsive care (mean 51%) and applying their knowledge in clinical practice (mean 53%). Respondents identified direct clinical exposure through rotations, immersive experiences, and continuity clinics as effective EDI

teaching modalities. Identified barriers included time constraints in the clinical environment, burnout, and lack of exposure to diverse patient populations.

**Conclusion:** Most paediatric trainees want to provide culturally responsive care to patients from historically marginalized communities, but do not feel confident in their knowledge to do so. These study findings will be utilized to develop and implement an enhanced EDI education curriculum for both core trainees, as well as subspecialty residents and fellows, across the Department of Paediatrics.

### 106 Improving gender balance in academic medicine: What works? A systematic review

M. Godson-Treacy<sup>1</sup>; C. Kavanagh<sup>1</sup>; D. Mockler<sup>1</sup>; N. Slattery<sup>2</sup>; M. Hennessy<sup>1</sup>; E. Burke<sup>1</sup>

<sup>1</sup>Trinity College Dublin, Dublin, Ireland; <sup>2</sup>University of Limerick, Limerick, Ireland

**Background:** Women are under-represented at the highest levels in academia across all specialties. Forty-eight per cent of medical school graduates are female, yet women make up only 25% of full professors and 18% of Department Chairs. Measures recommended to enhance gender balance include monitoring of organisational structures and processes, accountability, and gender bias training. However, these recommendations are not specific to academic medicine, and little is yet known about how successful their implementation is in this field. Further, some measures such as gender-concordant mentoring, have been found to have no supporting evidence, and disparity in the allocation of this kind of academic labour can paradoxically impact women's career progression. Recommendations to support women in academic medicine require a strong evidence base. The purpose of this review is to explore, analyse and synthesize the evidence considering initiatives to promote gender equality in academic medicine.

**Methods:** A review group has been convened and we have searched 5 databases using terms including gender, bias, and career advancement. So far, 621 studies have been identified with 162 papers selected for full text analysis. Inclusion criteria: papers evaluating a new intervention to promote gender equality in academic medicine; focussing on women only; outcomes reported; published in last 15 years; qualitative or quantitative. Exclusion: review papers; undergraduate. Exclusion and inclusion criteria continue to be refined. The review is conducted in keeping with PRISMA guidelines.



**Results:** Work on this review is ongoing. Findings from this study will inform policy-makers, assist institutions in applying for or retaining awards such as Athena SWAN, and may ultimately enhance gender equality in academic medicine.

**Conclusion:** Implementing recommendations based on best evidence will ensure only initiatives with the greatest potential for success will be implemented.

### 107 Minority resident physicians' perspectives on the role of race/ethnicity, culture, and gender in their surgical training experiences

H. Koech<sup>1</sup>; D. Saeks<sup>1</sup>; J. Albanese<sup>2</sup>; K. Habashi<sup>1</sup>; P. Strawser<sup>1</sup>; M. Hall.<sup>1</sup>; S. Maitra<sup>1</sup>

<sup>1</sup>Kirk Kerkorian School of Medicine, Las Vegas, NV, United States of America; <sup>2</sup>Duke University School of Medicine, Durham, NC, United States of America

**Introduction:** Surgical subspecialties have struggled with inclusion of underrepresented minorities (URM) and women. Those that have matriculated into residency programs face higher attrition rates, lower academic performance, and lower psychological well-being, which suggests a discrepant training experience. Therefore we aim to characterize how race/ethnicity, cultural background, and gender affect the training experience of minority surgical residents.

**Methods:** Semi-structured interviews of URM surgical trainees were performed. Interviews were recorded and transcribed, transcriptions were analyzed using Dedoose qualitative analysis software to identify common themes.

**Results:** Twenty-three surgical trainees who self-identified as an URM, women, or both were interviewed. Analysis of their responses revealed common themes in four areas: positive experiences, problems related to minority status, coping strategies, and proposed interventions. Positives included pride in trailblazing and better rapport with patients. Problems included microaggressions and additional pressures, which negatively impacted their training. Most respondents didn't feel there were dedicated resources to help alleviate these burdens. Most respondents did not feel there were dedicated resources to help alleviate these additional burdens, so some sought help outside of their training programs while others tried to assimilate, and others felt isolated.

**Conclusions:** The consistency of the interviewees' experiences, despite training at different programs,

suggests an unequal training experience. Recommended changes towards creating a more equitable training environment include providing individualized mentorship, validating the URM experience, and providing education/training. Validation can be achieved through acknowledging the challenges residents face and seeking feedback from both past and current residents. Education can be done either formally, through means such as implicit bias training, or informally, such as senior team-members taking time to address microaggressions. Having URM faculty remains critical towards creating opportunities for mentorship and ultimately creating a cultural change.

108 This session has been withdrawn.

### 109 Current experiences, expectations, and future roles of faculty development

E. Bilgic; S. van Mil; E. Bassilious

McMaster University, Hamilton, ON

**Introduction:** There is complexity to the success of faculty development (FD) programs at the departmental level, and many of the contributing factors can range from the individual to systems levels. The purpose of this study is to explore faculty perception of what FD encompasses, as well as their past/current experiences with FD, and perceptions regarding the importance, barriers and facilitators to participating in FD.

**Methods:** This is a single center, qualitative descriptive study guided through a social constructionist perspective. Faculty from a pediatrics department were asked to participate in one hour focus group interviews of 4-5 faculty per group. All sessions were done virtually and audio-recorded for transcription. Inductive reflexive thematic analysis was performed on the transcribed data.

**Results:** Overall, 5 major themes were identified: (1) Purpose/Meaning of FD for faculty, (2) Perceptions of faculty regarding FD, (3) Challenges that faculty encounter with faculty development, (4) Designing and delivering FD to faculty, and (5) Comparing FD and Continuing Professional Development (CPD). Some of the main findings included (a) creating flexible and personalized AD curricula, (b) department focusing on bringing the faculty together as a community, and (c) department developing a broader definition of FD that could be used as a reference point in the whole department.

**Conclusion:** Our findings suggest that barriers and challenges for accessing and making the most of FD opportunities still persist. Going forward, departments interested in improving their FD initiatives should focus on individualized, flexible, and technology enhanced FD approaches that motivate participation.

#### 110 CBD faculty development update: Supporting the transition to a competency-based curriculum

N. Singhal; C. Ho; I. Gafni; S. Darani

University of Toronto, Toronto, ON

Competence by Design (CBD) has now been fully integrated into the Department of Psychiatry at the University of Toronto. This novel approach to medical education focuses on outcomes and emphasizes demonstration of competence in key areas deemed essential for future practice. Within the CBD framework, training is divided into stages with residents being directly observed, assessed, and provided with feedback in a more timely, frequent, and constructive manner. This shift has necessitated adjustments by both faculty and residents, with many finding it challenging to adapt and stay apprised of best practices. In light of this significant change to the residency training program, the Department of Psychiatry's Faculty Development Committee designed a series of interactive sessions to provide faculty and residents with information to support them in navigating a CBD-based curriculum. A preliminary needs assessment was administered in 2021 to determine experiences with previously offered CBD training and solicit specific topics of interest. The initial "CBD Faculty Development Update" series comprised three virtual workshops held in 2021 ("CBD and Assessment," "Coaching 101," and "A Competency-Based Approach to Cultivating Professionalism"). Based on feedback from these sessions and a subsequent needs assessment conducted in 2022, an "Advanced Coaching Skills" workshop was developed and delivered in October 2022. The 2021 series was well-attended and feedback received on all three sessions was highly positive, with the majority of those who completed evaluations describing the workshops as relevant to their needs, interesting/engaging, and encouraging them to consider changes to current practices. The 2022 "Advanced Coaching Skills" workshop was similarly positively evaluated.

#### 111 Practice changes, barriers, and facilitators to change in psychiatry teaching and learning after a faculty development workshop series

W. Wei; E. Ma; L. Rivera; P. Paunic; C. Ho; S. Darani; L. Baker; L. Nirula; S. Sockalingam

University of Toronto, Toronto, ON

**Introduction:** The evolving landscape of healthcare calls for effective faculty development programs to prepare clinical teachers and educators. Starting in November 2021, our Department of Psychiatry partnered with our Faculty's Centre for Faculty Development (CFD) to offer 6 workshops tailored to psychiatry education, with the goal of supporting senior residents and faculty interested in developing their careers in teaching and education. Our study aims to identify participants' practice changes after attending the CFD workshops, and barriers and facilitators to change.

**Methods:** To date, all workshops have taken place. We retrospectively surveyed the participants of 4 of the 6 workshops 3 to 6 months after the workshops, with the retrospective surveys for the remaining 2 workshops scheduled for dissemination in January and April 2023. The surveys prompted the attendees' perceived changes in knowledge and confidence in workshop topics, their perceived changes in their clinical teaching and/or education practice, and the facilitators and barriers to change. Surveys were disseminated via emails, and responses collected on REDCap. Quantitative data were analyzed using descriptive statistics, and qualitative responses by thematic analysis.

**Results:** The number of workshop attendees ranged from 16 to 38 with survey response rates ranging from 24% to 50%. The majority of attendees were clinical supervisors or education leaders. Significant increases in knowledge and confidence in workshop topics were reported after each workshop compared to before. Facilitators included provision of resources, supportive colleagues, and receptive learners, while the lack of opportunities or time to implement changes were perceived as barriers.

**Conclusion:** We identified positive change results and insights from the workshop attendees. The responses highlight the importance of workplace factors, such as teacher-learner contact time and clinical workload, in influencing the implementation of intended changes. The results will be informative towards improving and tailoring future faculty development events at our Department.

### 112 Augmenting a 1:1 mentorship model for faculty with mentorship groups/communities of practice to support academic roles and social identity

C. Ho<sup>1</sup>; S. Darani<sup>2</sup>; J. Teshima<sup>3</sup>; N. Kozloff<sup>2</sup>; K. Lanctot<sup>3</sup>; J. Wong<sup>4</sup>; D. Kwong<sup>1</sup>; M. Esplen<sup>1</sup>

<sup>1</sup>University of Toronto, Toronto, ON; <sup>2</sup>Centre for Addiction and Mental Health, Toronto, ON; <sup>3</sup>Sunnybrook Health Sciences Centre, Toronto, ON; <sup>4</sup>de Souza Institute, Toronto, ON

**Introduction:** Balancing clinical, educational, and research responsibilities is challenging for academic faculty. Mentorship is an important element of faculty development for helping faculty members navigate their academic and clinical careers with confidence and resilience. The Department of Psychiatry Mentorship Program was launched in 2021 and incorporated a traditional 1:1 mentor/mentee model, with academic and wellness goals. The Mentorship Program is aimed to facilitate sharing of expertise, self-reflection, and career growth among faculty members. The presentation will focus on the mentorship groups or communities of practice (CoPs), which support specific academic roles and needs of underrepresented and equity-deserving faculty.

**Methods:** Seven mentorship groups were launched with open invitation to all faculty members. To support specific academic roles, three mentorship groups were offered: i) Clinician Scientists and Investigators; ii) Clinician Teachers; and iii) PhD faculty (Status-Only Faculty). Other CoPs support social identity: International Medical Graduates; LGBTQ2S+; and "Uplifting Women and Underrepresented Genders in Academia", which also has a subgroup, "Racialized Women's Mentorship Group". Each group is led by two facilitators (mid-career/senior and junior faculty). Each group determined its aims/goals and meeting format with group-solicited input.

**Results:** Mentorship groups have met 2-4 times, with different number of participants, (range of 8-24 attendees per meeting). An evaluation plan is underway to collect feedback on group/CoP experiences that will explore how they augment the 1:1 traditional mentoring model. User experience is collected annually with surveys and/or interviews/focus group to support continuous quality improvement of the Mentorship Program.

**Conclusion:** We reported on mentorship groups or CoPs to provide additional peer and professional development support beyond the traditional 1:1 mentorship model and in consideration of equity, diversity, and inclusion.

### 113 Building a structured route and analysis of counseling strategies

W. Hung; C. Kuo; C. Lin; Y. Yang

Taichung Veterans General Hospital, Taichung, Taiwan

**Background:** Mentors play important roles in academic guidance, regarding both psychological and professional help. In the Taichung Veterans General hospital, we arrange a mentor for each post-graduate year (PGY) trainee. Our research uses a questionnaire to survey the trainee's satisfaction level and factors of satisfaction with the performance of the mentors.

**Method:** From January 2020 to July 2022, electronic questionnaires were sent to qualified PGY. The questionnaire, composed of 22 items, are measured by Likert 11-point scale (0- strongly disagree, 10- strongly agree) or composed of multiple choices. We calculate the mean of the trainees' satisfaction score. Categorical variables are presented in percentages and absolute numbers. Mann-Whitney test, Chi-Square test and Fisher's Exact test was used to calculate the difference between higher (9-10 points) and lower satisfaction (0-8 points) groups regarding detailed aspects of the mentors' performances. Regression analysis is used to explore the higher satisfaction factors.

**Result:** Fifty-five out of 130 PGY trainees returned our questionnaires; response rate is 43.8%. In terms of the different aspects of effective mentor guidance, "my mentor encourages and supports me" (Mean±SD, 9.27±1.37) scored the highest. Comparing the higher and lower satisfaction group, there was significant differences in their responses to all aspects of mentoring performance. In the regression analysis, "my mentor is an active listener" and "my mentor can provide guidance and help on professional issues" were best correlated with students' satisfaction with their mentor. During the epidemic, mentors interacted with the trainees using face-to-face talks (90.91%) and telephone talks (47.27%), and 80% of mentees consider "face-to-face talks" are more helpful.

**Conclusion:** The mentor's guidance can help students with professional issues. Active listening is the most helpful mentoring method for students during the interaction between mentors and mentees. Both suggestions can establish a good mentoring relationship and allow students to benefit from mentoring.

#### 114 Trainee perceptions of clinical educator milestones and coaching video review within a clinical educator track

D. Hershberger; M. Howell; C. Rohlfen

University of Nebraska Medical Center, Omaha, NE, United States of America

**Introduction:** Clinical educator milestones were published in 2022 but how to apply them within a competency-based curricular framework remains unclear. Additionally, coaching video review to foster the development of future academicians has not yet been studied within graduate medical education (GME). We introduced both novel curricular components into a clinical educator track that featured longitudinal mentorship, monthly seminars, directly observed teaching opportunities, and self-reflective writing assignments. We assessed the perceived value of the innovative components relative to the more traditional curricular components.

**Methods:** Fourteen graduate medical trainees assessed themselves at least twice throughout the year using a printed version of a milestone self-assessment rubric. Trainees also submitted a recorded video of a teaching opportunity which they reviewed amongst a small group of peers and coaches. We assessed their perceptions of these innovative components using a grounded theory, mixed methods approach. Nine of the fourteen participants attended the program evaluation focus group, completed the feedback survey, and ranked the curricular components in order of perceived value (3 highest versus 3 lowest ratings assigned). After tallying the collective quantitative results, each of the sixteen curricular components were discussed from top to bottom and themes emerged.

**Results:** Trainees perceived the coaching video review session as the highest in value relative to all other curricular components. The milestone self-assessment rubric was perceived as lowest in value. Several tensions in self-assessment became apparent that limited the utility of the milestone rubric. Trainees felt the overall experience improved their wellness, reflective capacity, and confidence in teaching.

**Conclusion:** Clinical educator tracks should include video and coaching during formative years of trainee development. Teaching milestones may not be useful for trainees until barriers in self-assessment are further explored and mitigated.

#### 115 Harnessing “Big Data” in residency education: Variation in case-mix exposure in an Internal Medicine residency program

B. Tang<sup>1</sup>; A. Lam<sup>1</sup>; C. Liu<sup>2</sup>; S. Roberts<sup>2</sup>; M. Ismail<sup>2</sup>; A. Lalwani<sup>2</sup>; D. Schumacher<sup>3</sup>; B. Kinnear<sup>3</sup>; A. Verma<sup>2</sup>; F. Razak<sup>2</sup>; S. Ginsburg<sup>4</sup>; B. Wong<sup>5</sup>

<sup>1</sup>University of Toronto, Toronto, ON; <sup>2</sup>Unity Health Network, Toronto, ON; <sup>3</sup>University of Cincinnati, Cincinnati, OH, United States of America; <sup>4</sup>Mount Sinai Hospital, Toronto, ON; <sup>5</sup>Sunnybrook Health Sciences Centre, Toronto, ON

**Background:** Current assessments in postgraduate education infrequently incorporate patient data, despite emerging evidence that physician-level variation in patient outcomes is influenced by training environment. Residency represents a critical period when data-driven feedback could improve both educational and patient outcomes. This proof-of-concept study aimed to retrospectively characterize variation in resident case-mix and volumes in a residency program using electronic medical record (EMR) data.

**Methods:** The General Medicine Inpatient Initiative Medical Education Database (GEMINI MedED) is a retrospective cohort study of senior residents (postgraduate years 2/3) enrolled in the University of Toronto Internal Medicine program between 2010–2020. Clinical data was derived from GEMINI, an established research database that includes administrative/clinical data. Call schedules were collected from four participating hospitals and linked senior residents to patients they cared for on overnight shifts. Case-mix was defined by five domains: 1) volumes, 2) patient clinico-demographics, 3) presentation breadth, 4) acuity, 5) complexity. Each domain was characterized by clinical measures (e.g., critical care transfers post-admission) and calculated measures (e.g., Laboratory-based Acute Physiology Score (LAPS)). Case-mix was reported with descriptive statistics. Variation between residents, sites, and over time was determined through maximum standardized difference.

**Results:** This study included 48,467 unique admissions and 906 individual residents, with a median of 14 admissions/shift [IQR=7]. The most encountered presentations were pneumonia (n=2516; 5.2%), heart failure (n=2443; 5.0%), and chronic obstructive pulmonary disease (n=1937; 4.0%). For acuity, 3.8% of admissions (n=1837) resulted in critical care transfers within 48-hours post-admission. For complexity, the median LAPS was 13 across all admissions; this equates to a 1.5% risk of in-

hospital mortality. Significant variation in case-mix and volumes was demonstrated between residents, sites, and over time.

**Conclusion:** GEMINI MedED demonstrates that EMR “Big Data” can characterize resident case-mix and volumes; this data may be used to guide trainee learning and program development.

#### 116 A qualitative study of workplace gossip in the residency learning environment

M. Chaikof<sup>1</sup>; M. Farrugia<sup>1</sup>; J. Bodley<sup>1</sup>; E. Tannenbaum<sup>1</sup>; B. White<sup>2</sup>

<sup>1</sup>University of Toronto, Toronto, ON; <sup>2</sup>MGH Institute of Health Professions, Boston, MA, United States of America

**Introduction:** Gossip is a ubiquitous sociocultural phenomenon that serves many functions in human interactions, including in the workplace and academic settings. The purpose of this study was to understand the function and impact of workplace gossip in the medical learning environment from the perspective of medical trainees.

**Methods:** This study was an exploratory phenomenological study. Data was collected from trainees in the Obstetrics and Gynecology and Psychiatry programs at a large academic institution via semi-structured interviews. Interview transcripts were analyzed using inductive coding and themes were identified.

**Results:** Seven (7) trainees were interviewed before saturation was reached. Thematic analysis revealed positive and negative impacts of gossip. Positive impacts include: Affirmation (when gossip is used to affirm common experiences and emotions) and Roadmapping (when gossip is used to help trainees plan their academic careers by seeking out or avoiding certain experiences). Negative impacts include: Anxiety/Fear (when trainees fear becoming the subject of workplace gossip) and the role of gossip in reinforcing the hierarchy within the learning environment. Other themes, which have both positive and negative impacts, include the role of gossip in learning and in establishing group status (when gossip can reinforce cohesion among members of an in-group and also further exclude individuals who do not have that status.) The identity of the gossip, audience and subject of gossip also impact its effects. Gossip between trainees about faculty members often serves a roadmapping or affirming role whereas gossip between faculty members or between faculty members and trainees creates anxiety and reinforces negative aspects of the hierarchy.

**Conclusions:** Workplace gossip serves both positive and negative roles within the medical learning environment. It can function as informal debriefing and can also threaten psychological safety. Its impact on trainees is affected by the identities of the gossip, subject and audience.

#### 117 Analysis of needs and expectations of incoming PGY-1 residents starting a family medicine program: A point for a wellness strategy

L. McDiarmid; M. Fonkwe

Queen's University, Kingston, ON

**Introduction:** Resident wellness during postgraduate medical training plays an important role in their ability to flourish (i.e., global well-being) and the quality of patient care. This study aimed to identify and understand the needs and expectations of postgraduate year 1 (PGY-1) residents in the family medicine residency program at Queen's University through the lens of wellness, as a multi-dimensional construct.

**Methods:** This study used survey data collected as part of the orientation packets e-mailed to all incoming residents from the classes of 2022, 2023 and 2024 (n=262). Inductive thematic analysis was conducted to identify their needs and expectations, and the wellness constructs present in 220 responses of two open-ended questions: (1) “Can you think of anything we could do to help ease the transition to residency” and (2) “In the next two years, I am most looking forward to...”. The two sets of responses were coded separately. Then, the codes were considered as a whole and categorized using the eight dimensions of wellness (i.e., emotional, physical, spiritual, social, intellectual, financial, environmental, and occupational).

**Results:** Data analysis resulted in six themes regarding incoming residents' needs and expectations: (1) building competence and confidence, (2) effective supervision and mentorship, (3) building relationships and networking, (4) socializing with peers and within the community, (5) personal and professional growth, and (6) child care. These themes were characterized under four dimensions of wellness, in the order of frequency: intellectual, social, environmental, and occupational. The prioritization of these wellness domains could inform activities and interventions to support flourishing in residents, fostering their contributions at their fullest ability to patient care throughout their progress through the residency.

**Conclusions:** The demanding conditions inherent to postgraduate medical training is known to be an intrinsic barrier to trainees' wellness. Trainee-driven efforts can help enhance their residency experiences.

### 118 The odd couple: Combining high fidelity simulation with Quality Improvement teaching in residency

M. Dhanoa; M. Sheridan; S. Trivedi

University of Saskatchewan, Saskatoon, SK

Quality improvement and Patient Safety (QIPS) has emerged as a key focus in residency education following the development of the CanMEDS 2015 framework. As residency programs have sought to include QIPS teaching into their curricula through modules, didactic lectures, or self-guided projects, residents have globally described challenges in linking QIPS teaching to their clinical work. To address the gap between clinical and classroom learning environments, we piloted a high-fidelity simulation experience as an immersive QIPS teaching session for first-year surgical residents (n=15). Residents were required to take part in simulation scenarios involving patient safety issues stemming from systemic, human, and environmental factors. Using these scenarios, residents were tasked to develop a QIPS focused solution. Surveys framed upon the Kirkpatrick model were used to garner information regarding resident perspectives towards QIPS following the simulation experience. Resident QIPS knowledge outcomes were evaluated using the Quality Improvement Knowledge Application Tool (QI-KAT). Overall, a Kirkpatrick level 1 analysis demonstrated that 70% residents agreed that the QIPS simulation was a valuable learning experience in understanding basic applications of QIPS in a clinical environment. Kirkpatrick levels 2 and 3 analyses revealed that while 60% of residents agreed they could perform basic QI methodology after the simulation teaching session, overall perspectives on the utility of QIPS to contribute to patient care did not improve. On average, residents scored higher on their QI-KAT evaluations post-simulation, demonstrating an improvement in key knowledge. Collectively, these findings demonstrate a role for high-fidelity simulation in QIPS teaching in the postgraduate setting. While residents positively view QIPS teaching in a simulation-based environment, resident interest in pursuing QIPS does not appear to be improved. Future work should evaluate factors involved in resident QIPS engagement, as well as a comparison of the efficacy of simulation-based QIPS teaching with commonly used teaching methods.

### 119 Development, implementation and evaluation of a novel Quality Improvement and Patient Safety curriculum in an Emergency Medicine residency training program

S. Trivedi; R. Woods; Q. Paterson; K. Peterson

University of Saskatchewan, Saskatoon, SK

**Introduction:** Quality improvement and Patient Safety (QIPS) methodologies have been identified as part of the standards of residency training in the Royal College of Physicians and Surgeons Canadian Medical Education Directives for Specialists (CanMEDS). Program directors and residents alike have indicated a desire for formal QIPS training programs but there are no firm recommendations on how to best achieve the requisite competencies. We sought to develop, implement and subsequently evaluate a QIPS curriculum in an Emergency Medicine (EM) residency training program.

**Methods:** Kern's model of curriculum development was used to create an educational experience in QIPS methodologies for EM Transition to Practice (TTP) residents and faculty members within the University of Saskatchewan's Department of EM. Objectives of training, literature review and focus groups with stakeholders informed the 10-hour longitudinal curriculum. It consisted of lectures, small group discussion and practical assignments. Participants completed pre- and post-curriculum surveys and the Quality Improvement Knowledge Assessment Tool- Revised (QIKAT-R). A third survey will be sent to participants one year from curriculum completion to assess for knowledge retention and behavior change with respect to participation in QIPS activities in their clinical practice.

**Results:** Four TTP residents and two faculty participated in the curriculum and completed the surveys. All participants felt their knowledge of QIPS methodologies had improved and that they had developed the necessary skills to participate in QIPS work. This was further demonstrated as all participants rated their knowledge on individual QIPS competencies as higher after the curriculum than before it. 83.3% of participants indicated a desire to participate in QIPS activities in the future. QIKAT-R scores similarly improved after the curriculum demonstrating objective evidence of knowledge acquisition.

**Conclusion:** Using Kern's model, we successfully implemented a QIPS curriculum within an EM residency training program which resulted in positive outcomes for resident and faculty learners.

## 120 Virtual simulation game training program for Healthcare Providers to optimize vaccine communication

E. Doucette<sup>1</sup>; M. Pateman<sup>1</sup>; M. Fullerton<sup>1</sup>; S. Davidson<sup>1</sup>; C. Constantinescu<sup>2</sup>

<sup>1</sup>University of Calgary, Calgary, AB; <sup>2</sup>Alberta Health Services, Calgary, AB

**Introduction:** The COVID-19 pandemic demonstrated the need to better support healthcare providers (HCP's) engaging in conversations with vaccine hesitant patients. The main objective of this project was to develop eLearning modules to increase HCP trainee's self-perceived confidence and competence for future roles in vaccine advocacy and promotion.

**Methods:** A needs assessment was conducted to determine the current state around vaccine communication education and identify relevant gaps. With a multidisciplinary focus, we developed a discipline and knowledge agnostic eLearning module with content experts, consisting of 3 Virtual Simulation Games (VSGs) and pre-post self-assessments. VSG content included: hesitancy around boosters, advising patients who minimize disease risk, fostering HCP resilience and preventing burnout when dealing with vaccine refusal. We aimed to recruit 90 Canadian HCP trainees (30 medical residents, 30 nursing students, 30 pharmacy students) to participate in a mixed-methods pre-post study to evaluate the effectiveness of the intervention through self-assessments, surveys, and focus groups (FG's). Program evaluation was completed through self-assessment rubrics to quantify self-perceived confidence and competence (paired t-test ( $\alpha=0.05$ )); process evaluation was conducted through descriptive statistics and focus groups with one third of participants (analyzed using inductive thematic analysis).

**Results:** Eighty-four participants enrolled (23 medical residents, 26 nursing students, 35 pharmacy students). Our needs assessment supported the initial self-assessment results highlighting gaps in trainee knowledge regarding vaccine communication and the need for accessible and comprehensive educational interventions. The FG's identified intervention strengths: Need for HCP resilience and coping strategies; Supplementing prior knowledge about vaccines (eg. side effects); Transferability of the learnings to other challenging patient encounters. Further analysis is pending and will be available in the next 3 months.

**Conclusion:** Preliminary findings suggest participation in this simulation intervention successfully improved

participants' confidence holding challenging vaccine conversations. Future directions include accreditation to facilitate widespread dissemination to all Canadian HCP trainees.

## 121 Learning to tie surgical knots remotely: Who should learners observe?

P. Kalun; R. Sonnadara

<sup>1</sup>McMaster University, Hamilton, ON

**Introduction:** There are limited opportunities for trainees to learn all of the skills required for independent clinical practice. The pandemic has further limited clinical exposure for many trainees. There is, therefore, a need to explore more versatile ways to approach clinical training, such as through remote learning. Observing others perform a task can help learners improve their own performance on that task, and this does not always require being in-person. We explored the effectiveness of a remote learning opportunity for improving knot tying performance, including whether it is more helpful for learners to observe someone who is experienced or inexperienced to improve their own performance.

**Methods:** The experiment was conducted via Zoom and used household supplies (tape, floss, pen/pencil). Undergraduate students (n=100) first observed an experienced demonstrator (surgical trainee) tying a surgical knot slowly, and then practiced the knot tie themselves. Participants then observed the experienced demonstrator or an inexperienced demonstrator (non-clinician researcher) tie knots at normal speed, and then practiced knot tying again. Participants observed the same demonstrator and practiced the task six more times. We assessed participant's knot tying performance using a modified OSATS each time they practiced the task. We conducted an ANOVA to determine the influence of practice and the type of demonstrator on performance.

**Results:** Participants' knot tying performance improved significantly over the eight practice trials ( $F[7,679]=46.45$ ,  $p<.001$ ). Observing the experienced demonstrator seemed to lead to better performance than observing the inexperienced demonstrator, though we did not find a significant difference ( $F[1,97]=3.05$ ,  $p=.084$ ).

**Conclusion:** Remote learning methods can be effective in improving knot tying performance in novice learners. An experienced demonstrator may be more effective in improving performance than an inexperienced demonstrator. Surgical trainees may benefit most from

observing performances of fully competent performers, rather than fellow learners, to guide their own learning of tasks.

## 122 The Influence of Team Familiarity and Team Experience on Surgical Procedure Time

B. Zheng; Y. Zhang, [A. White](#)

<sup>1</sup>University of Alberta, Edmonton, AB

**Introduction:** Surgeries are usually completed by teams of medical experts. However, limited attention has been given to the influence of team-related factors on surgical outcomes. Some possible influencing factors include the familiarity among surgical team members and the experience level of participating surgeons. We investigated the influence of team familiarity and team experience on surgical performance measured by procedure time, with other clinical variables.

**Method:** We collected detailed surgical team formation data and patient surgery data from 923 surgical cases. With surgical team data, we calculated the Team Familiarity Score (TFS) and the Team Experience Score (TES). From patient surgery data, we computed the Index of Difficulty of Surgery (IDS) and the procedure time (PT). Linear regressions and random forest regressions were performed to analyze the contribution of team variables to the procedure time.

**Results:** The linear regression revealed that TFS and TES both had a significant influence on PT ( $p < 0.01$ ). However, positive coefficients (0.1 and 0.28, respectively) were against our hypothesis that increased familiarity and experience would shorten the procedure time. The random forest regression model was able to explain 56% of the variability when using TFS, TES, Team Size, Patient Age, Patient Weight, and IDS as independent variables. The variable importance analysis shows that IDS is the most influential variable, having an importance of 0.66, while TFS has 0.08 and TES has 0.04.

**Conclusion:** Same members repeatedly formed surgical teams in our dataset, leading to a constantly increasing TFS. Procedure time may not decrease proportionally when surgical teams perform relatively simple operations. We are planning to further classify our dataset by surgical procedures to see if TFS is a valid measure on easier instead of harder procedures. We hope to determine an optimal measure for surgical team performance with our research.

## 123 The impact of the COVID-19 pandemic on the professional identity formation of postgraduate residents

L. Diamond; K. Kulasegaram; T. Martimianakis; M. Forte; [N. Cupido](#)

University of Toronto, Toronto, ON

**Introduction:** The COVID-19 pandemic has resulted in numerous disruptions to health professions education training programs. Much attention has been given to the impact of these disruptions on formal learning opportunities in training; however, less attention has been given to the impact on the professional socialization and professional identity formation (PIF) of trainees. This study explored the impact of the pandemic and resultant formal and informal curricular changes on the professional identity of postgraduate residents.

**Methods:** 23 family medicine residents at the University of Toronto were interviewed between October 2020 and October 2022. Using symbolic interactionism as a theoretical framework, thematic analysis explored the meanings residents attributed to both experiences that were disrupted due to the pandemic, and new experiences that resulted from these disruptions.

**Results:** Participant responses reflected that disruptions in training did not always align with their expectations for family medicine and plans for future practice; however, these new experiences also reinforced their understanding of what it means to be a family physician. Although participants felt the pandemic represented a loss of agency and negatively impacted relationships with peers and colleagues, it also provided a sense of belonging and membership in their profession. Finally, these new experiences continually blurred the line between professional and personal identities through the impact of the pandemic on participants' sense of well-being and safety.

**Conclusions:** Participant responses reflect the collective influence of the formal, informal, and hidden curriculum on the professional socialization and PIF of postgraduate residents. These experiences have important implications for the future practice of residents who completed their training during the pandemic. Professional identity is identified in the CanMEDS framework as a key competency under the Professional role, and disruptions to different curricular influences that resulted from the pandemic highlight the role of training programs in supporting the PIF of students.



## 124 Understanding the competencies required to provide an effective clinical consultation

V. David<sup>1</sup>; S. Mithoowani<sup>2</sup>; J. Britto<sup>2</sup>; T. Chan<sup>2</sup>; T. Ungaretti<sup>3</sup>

<sup>1</sup>McMaster University, Hamilton, ON; <sup>2</sup>Department of Medicine, McMaster University, Hamilton, ON; <sup>3</sup>Johns Hopkins University, Baltimore, MD, United States of America

**Introduction:** Providing an effective consultation is a core task for medical specialists, yet there are no well-developed frameworks to help teach this skill. Our study aimed to identify the critical competencies required to provide a consultation in order to develop a framework on how to perform this task.

**Method:** Independent dyads of resident physicians (PGY-3 or higher) and faculty members from McMaster University's Department of Medicine participated in a simulation session of a thrombosis medicine consultation followed by separate semi-structured interviews. Our purpose was to situate participants in a clinical consultation and then explore their perceptions on the most important principles of consultation. This was a qualitative study, using a framework analysis. Interview data was analyzed iteratively using a constant comparative method and an inductive approach. Interviews were conducted until theoretical saturation.

**Results:** Eight resident physicians and eight faculty members (total of 16) participated. Theoretical saturation was reached following 15 interviews. Participants emphasized the importance of medical expertise, communication, teaching, triaging, and interpersonal skills to provide an effective consultation. Communication focused on the importance of understanding the reason for referral. Participants highlighted the importance of teaching the physician requesting the consultation. Interpersonal skills focused on the importance of being empathetic and supportive, recognizing that collegiality was key to being an effective consultant. Consultants operate on a continuum with respect to their involvement in direct patient care; their level of involvement influences the relative importance of each competency.

**Conclusion:** Critical competencies to provide an effective consultation included medical expertise, communication, teaching, triaging, and interpersonal skills, the relative importance of which depended on the consultant's level of involvement in direct patient care. This information will be used to develop a framework to teach trainees on providing a consultation. A limitation of our study is that only physicians within medical specialties were included.

## 125 Assessment of incoming paediatrics residents' knowledge, attitudes, and skills in social paediatrics

J. Ogilvie<sup>1</sup>; J. Sangha<sup>2</sup>; D. Kekulawala<sup>1</sup>; B. Chen<sup>1</sup>; A. Ens<sup>1</sup>

<sup>1</sup>Western University, London, ON; <sup>2</sup>Children's Hospital of Western Ontario, London, ON

**Introduction:** Despite increasing recognition of the importance of Social Determinants of Health (SDH), medical curricula have rarely moved beyond didactic-style teaching of these concepts. This has resulted in medical trainees lacking confidence in their knowledge and training in health advocacy and social accountability. Our study aimed to delineate incoming paediatric residents' baseline knowledge, skills, and attitudes related to social paediatrics.

**Methods:** All incoming paediatric residents from 2019 to 2021 at Western University were invited to complete a questionnaire created by an interdisciplinary team of medical education specialists, social workers, and paediatricians. The questionnaire contained knowledge questions and scales developed to assess participant attitudes and frequency of skill use.

**Results:** A total of 21/30 questionnaires were completed. Incoming residents demonstrated adequate knowledge base of SDH (average score 75.9% on knowledge questions). There was a high level of agreement with social paediatrics concepts, specifically regarding learning from patients and families, and empathy and humanism. While residents endorsed frequently applying patient-centred communication skills, there was greater variability in reported frequency of employing advocacy skills. Several gaps existed between knowledge and application of skills related to social paediatrics in clinical practice.

**Conclusion:** Our findings demonstrate that residents highly value social paediatrics concepts, but feel less prepared to act on them. With this understanding, we should shift our curriculum development to creating opportunities for residents to develop the necessary skills to practice paediatrics in a way that fulfills a professional mandate towards social justice and social accountability.

## 126 Improving Physical Medicine & Rehabilitation (PM&R) awareness in Postgraduate Medical Education: Results of a cross-sectional survey of postgraduate medical learners

R. Kelly; G. Ghanem; R. Neferu; J. Murphy; C. Lin

McMaster University, Hamilton, ON

**Introduction:** There is poor awareness of PM&R among physicians and medical trainees impacting patient access to services. Much of the data available regarding PM&R awareness and educational intervention are in undergraduate medical education. There is a paucity of data for the postgraduate population. Identifying gaps in PM&R awareness, and subsequently providing education to fill these gaps could help increase integration of PM&R specialists, thereby improving patient care. This study aimed to explore postgraduate learners' understanding of PM&R's scope of practice.

**Methods:** Postgraduate medical learners at an Ontario institution were invited, via email, to participate. The online survey collected data on trainee understanding and awareness of the specialty of PM&R, their referral patterns to PM&R, along with their interest in learning more about the specialty. The survey was adapted from that of a similar study at the same institution that surveyed medical students' knowledge regarding interventional radiology. Counts and percentages, using Excel, were used to summarize results.

**Results:** Eighty-one trainees responded, most were junior (69.1%), in Family (28%) or Internal Medicine (19%) and learned about PM&R in pre-clerkship (42%). Participants had a good to reasonable understanding of the scope of PM&R. Stroke (67%), chronic pain (49%), MSK inpatient (48%), and ABI inpatient (44%) were the most well-known services; however, the majority of trainees did not regularly refer to PM&R (61%). Presentations, clinical days and accessible information (online and offline) were suggested.

**Conclusion:** This is the first study of the authors' knowledge that explores resident learners' understanding of PM&R in the intended local and regional context. The results from this study will act as a foundation to guide future research and quality improvement interventions to increase awareness and subsequent referrals to PM&R.

## 127 A spiral integrated concussion curriculum for primary care residents: A 6-month impact study

A. Kam<sup>1</sup>; D. Richardson<sup>2</sup>; A. Husain<sup>1</sup>; G. Zhao<sup>1</sup>; J. Nyhof-Young<sup>1</sup>

<sup>1</sup>University of Toronto, Toronto, ON; <sup>2</sup>Queen's University, Kingston, ON

**Background:** Resident-focused concussion curricula measuring learner behaviours are currently unavailable. We sought to fill this gap by developing and evaluating a Spiral Integrated Concussion Curriculum (SICC).

**Methods:** This curriculum followed Kern's (2016) and piloted iteratively by delivering academic half-days (AHDs) to first and second-year family medicine residents in 7 residency sites. AHDs was evaluated with pre- and immediate-post-knowledge tests.

A SICC, consisting of a 2-hour academic half-day (AHD) and three half-day clinical rotations for first and second-year residents, was iteratively implemented in two family medicine residency sites. This SICC employed a mixed-method evaluation with pre-/post- test design and interviews. Before and after surveys were used to measure knowledge and confidence in competency pre-AHD and 6-month post AHD. Interviews at 6 months qualitatively measured behaviour change and competency perception.

**Results:** Residents at the first site (n=5) had a knowledge decrease of 3.33% ( $p>0.05$ ). Residents at the second site (n=7) had a knowledge increase of 11.58% ( $p>0.05$ ). Residents at both sites had an increase in confidence in competency (1st site: 30% ( $p=0.025$ ); 2nd site: 62.79% ( $p=0.0014$ )). Residents (5 out of 6) reported positive behavioural changes at six months. Valued programme elements included concussion diagnosis and management, Curriculum Guide as a resource, and an organized curricular structure.

**Conclusion:** SICC enriches resident learning and fosters sustained knowledge improvement and behavioural change six months post-intervention. This SICC may provide a workable strategy to address the concussion education gap in residency.

## 128 Social Accountability training in post graduate education: Internal Medicine faculty and residents' perception of health advocacy

K. Mallery; M. Seal; N. Fairbridge

Memorial University, St John's, NL

**Background:** Health advocacy is a well-established CanMEDS role establishing physicians' responsibility to respond to the needs of their communities. As such, training socially accountable physicians should be a goal of residency programs. However, literature on methods for incorporating Social Accountability (SA) into medical education is inconsistent, and often lacks specifics. In this study, we aim to evaluate exposure to and perception of Social Accountability during post-graduate training.

**Method:** A multiple methods design was used. Using grounded theory and a framework approach, an environmental scan was conducted to assess formal curriculum in the Internal Medicine Training Program at Memorial University. Ethics approval and patient. Qualitative Interviews with 13 internal medicine faculty physicians were conducted to determine exposure in clinical rotations. An evidence-based workshop was delivered to PGY1-PGY3 internal medicine residents with a pre and post workshop survey to assess efficacy. Thematic analysis of qualitative data was conducted by the research team. Ethics approval was obtained prior to commencement of the study.

**Results:** On environmental scan, no formal teaching sessions focused on Social Accountability. 9 out of 13 faculty participated in the interviews. All faculty felt "somewhat prepared" acknowledging health inequity but often had difficulty describing the framework. Faculty and residents alike focused on the medical expert role rather than health advocacy when describing SA in their practice. 18 and 15 residents participated in the pre and post workshop surveys, respectively. 50% strongly agreed and 50% somewhat agreed that the workshop increased knowledge on Social Accountability.

**Conclusion:** Exposure to Social Accountability training is currently gained passively through clinical work rather than being integrated into formalized training. A single workshop was helpful however residents felt they needed more training to identify opportunities for Social Accountability. Further faculty development, research, and resident focused training on health advocacy is needed during residency training.

## 129 Getting a grip on creating effective educational games for health care professionals

S. El Bialy; I. Mohammad

University of Ottawa, Ottawa, ON

**Introduction:** The advent of technologies and the global drive to implement educational games in healthcare education have transformed the world of medicine. Serious games are games that have an explicit educational purpose and are not intended to be played primarily for amusement. Using serious games for self-regulated learning enhances active student participation, with an overall positive effect on knowledge acquisition and skills development. Although game developers positively appreciated their games as pedagogical tools, they pay little attention to the pedagogical perspectives of serious games and their validation.

**Objectives:** This article aims to share tips, based on review of the available literature that may help educators effectively implement games in healthcare education to avoid "black ice" pitfalls that educators may encounter.

**Methods:** PubMed, Embase, Cochrane were searched using predefined inclusion criteria for relevant articles between 2000 and 2022. Studies including the use and effectiveness of serious games in medical education were considered eligible.

**Results:** Our search identified 650 articles, of which 31 met the inclusion criteria based on full-text screening. Peer reviewed articles on the effectiveness of serious games in healthcare education were included. All included articles confirmed the effectiveness of serious games in healthcare education; however, there were two common areas of deficit:

A lack of standardized design for educational games. 2. A lack of standardized assessment methods of serious games in medical education.

**Conclusion:** Careful planning prior to, during and post implementation of games in healthcare education will help learners benefit the most. Involvement of key stakeholders, such as educators, learners, program administrators, and games developers prior to and throughout the process is critical. Careful and selective choice of key design elements including Entrustable Professional Activities, and rigorous assessments will ensure better learning and better healthcare outcomes.

### 130 Exploring the perspectives of Internal Medicine residents on the role of senior residents acting as coaches for junior learners

B. Perija<sup>1</sup>; O. Hoxha<sup>1</sup>; B. Lee<sup>1</sup>; J. Whittingham<sup>2</sup>; H. Roebertsen<sup>2</sup>

<sup>1</sup>The University of Manitoba, Winnipeg, MB; <sup>2</sup>Maastricht University, Maastricht, Netherlands

**Introduction:** The role of coaching in medical education continues to evolve. While residents play an important role in the education of junior learners, their role as coaches has not yet been fully explored. The purpose of this study was to explore the perceptions of Internal Medicine residents on their experience acting as coach to junior learners during senior resident rotations on Internal Medicine Clinical Teaching Units.

**Methods:** This qualitative study used individual, semi-structured interviews with second and third postgraduate year (PGY2 and PGY3) Internal Medicine residents at the University of Manitoba. A total of 9 residents volunteered to be interviewed for the study. Interviews were conducted over Zoom and then transcribed. Interviews were coded iteratively within a constructivist grounded theory approach.

**Results:** There was overlap between the residents' perception of the role of teacher and coach in the setting of the Internal Medicine CTU. Coaching occurred around a variety of workplace related tasks. Participants' descriptions of coaching in the workplace demonstrated their use of known process-oriented coaching strategies. Participants utilize strategies to build rapport and create a supportive learning environment. Their coaching relationship with junior learners likely benefits from social congruence. Senior resident participants perceive both benefits and challenges with the coaching role.

**Conclusion:** Our study highlights the vital role that residents can play in coaching of junior learners, and adds to our understanding of the role of coaching in the clinical environment. More work will need to be done on how to better define the coaching role for senior residents and to develop coaching skills specifically for the resident coach.

### 131 "Someone to Talk to": What experience do oncology trainees have of mentorship in situations inducing moral distress?

S. Wood<sup>1</sup>; B. Preti<sup>2</sup>

<sup>1</sup>University of Dundee, Dundee, United Kingdom; <sup>2</sup>Western University, London, ON

**Introduction:** This educational research investigates the impact of moral distress on trainee physicians in oncology and explores the role of a mentor in navigating this distress.

Oncology is an emotionally-charged field where moral conflict is a persistent phenomenon. Definitions of moral distress vary, but usually include a psychological reaction from a conflict between or inability to follow moral values. This may have potential implications on productivity, burnout, and mental health.

Mentorship is widely acknowledged as a mutually-beneficial relationship allowing for personal and professional growth. Available evidence suggests mentorship can assist in the navigation of moral distress; however, most literature focuses on non-oncology/non-physician/non-trainee populations. This gap in the literature is significant because oncology is a key area of susceptibility to moral distress.

Consequently, we examined the experience oncology trainees have of mentorship during and after situations inducing moral distress. The goal was to raise awareness in educators as to how to better support trainees through these encounters. Secondary research objectives included examining the experience of moral distress and characteristics of helpful/unhelpful mentorship relationships.

**Methods:** We conducted a qualitative study via a hermeneutic phenomenological approach. Six senior oncology trainees were interviewed in a semi-structured format. Thematic analysis was then conducted, and data analysed through the hermeneutic phenomenological interpretive profiles method. Member checking and an audit trail increased the study's rigour.

**Results:** Four research questions were explored. Key findings include the commonplaceness of moral distress for oncology trainees and key triggers, including consultant-trainee disagreement, patient-trainee disagreement, and systemic/resource constraints. Mentorship was largely viewed as helpful but difficult to engage in, and trainees reported hesitation opening up to

mentors given fears of repercussion for honesty regarding struggles. Characteristics of valuable mentors/mentorship relationships included accessibility, trust, empathy/understanding, and respect.

**Conclusion:** We present a qualitative study examining oncology trainees' experience of moral distress and consequent mentorship.

### 132 Exploring teaching strategies for the Internal Medicine ambulatory care setting: A qualitative study J. Rassos; D. Frost; D. Panisko; L. Branfield Day

<sup>1</sup>University of Toronto, Toronto, ON

**Introduction:** Ambulatory care education is a key educational priority in internal medicine (IM) residency training programs. However, multiple barriers exist to providing effective clinical teaching and there is a need to identify teaching techniques that meet learners' needs and adapt to the complexities of new ambulatory IM models of care (e.g., rapid referral clinics, virtual care). We sought to conduct an in-depth qualitative exploration of perceived innovative and effective techniques for teaching learners in IM ambulatory care settings.

**Methods:** We purposively sampled and interviewed 14 physicians from 9 Canadian universities who regularly supervise trainees in ambulatory IM settings. Transcripts were analyzed using principles of constructivist grounded theory.

**Results:** Participants identified process and knowledge gaps in trainees which they attributed to limited exposure to ambulatory medicine in IM training. An overarching goal was therefore to foster comfort and approaches to care in these settings fraught with trainee uncertainty. Other goals centered around a) content knowledge, b) oral and written communication, c) triage, d) managerial skills, and e) resource and practice management, with greater focus on the latter skills as learners advanced in training. Participants described multiple teaching strategies to achieve these aims, such as ways of providing graded responsibility, role-modeling, teaching during case-review, and direct observation and feedback. Organizational strategies were also felt to be essential to optimizing teaching in IM clinics. These strategies included ensuring administrative support, prioritizing clinic flow, deliberately selecting patients for learners, and designating time for timely case review and dictation review.

**Conclusion:** We identified potential best practices for teaching and supervising learners in IM ambulatory settings that adapt to the challenges and complexities of these environments in a multi-faceted approach. These clinical teaching techniques require further exploration but have the potential to optimize ambulatory education in IM training programs.

### 133 The national landscape of pediatric residency coaching programs in the United States

T. Hill<sup>1</sup>; A. Walz<sup>2</sup>; M. Thomas<sup>1</sup>; C. Rassbach<sup>3</sup>; R. Blankenburg<sup>3</sup>; M. Naifeh<sup>4</sup>

<sup>1</sup>Johns Hopkins All Children's Hospital, St. Petersburg, FL, United States of America; <sup>2</sup>Medical University of South Carolina, Charleston, SC, United States of America; <sup>3</sup>Stanford School of Medicine, Palo Alto, CA, United States of America; <sup>4</sup>University of Oklahoma Health Sciences Center, Oklahoma City, OK, United States of America

**Introduction:** Coaching is an emerging approach for clinical and professional development in post-graduate medical education, but there remains variation in the specific aims and implementation of coaching programs. This study aimed to describe the current landscape of coaching programs in pediatric residency programs in the US, as well as identify barriers and facilitators to coaching program implementation.

**Methods:** In September-October 2022, we conducted an IRB-approved, de-identified cross-sectional survey of pediatric residency coaching program directors among Association of Pediatric Program Director-member programs. Data were analyzed using descriptive statistics and content analysis.

**Results:** 46% (84/183) of programs responded. 40.5% reported a current program and 27.4% reported considering development of a future program. First-year residents are most commonly coached; most programs coach learners at multiple training levels. In most programs (79%), attending physicians serve as coaches, while 41% utilize learners and non-physicians as coaches. Top goals of coaching programs include professionalism (73.5%), communication skills (67.6%), and clinical skill development (64.7%), whereas only 58.8% had the goal of promoting wellbeing and 50% remediation. 52.9% directly observe encounters in the outpatient clinic or inpatient wards. Active coaching programs perceive benefits including enhancement of learner performance, early support for learners, community-building between faculty and learners, and promotion of growth mindset. Primary challenges facing both established and developing coaching programs included time available to

coaches, funding for faculty support, availability of professional development activities, and faculty burnout. Among programs without plans to develop a future program, barriers to program development included lack of sufficient faculty and lack of faculty time.

**Conclusion:** Coaching is a growing approach in pediatric residency education, with at least 30% of programs with established or developing programs in the US. Participation may improve skill development, sense of community, and engagement for learners and faculty.

### 134 Improving genetics and metabolics education in the pediatrics residency curriculum

S. Abdullah; L. Russell

<sup>1</sup>McGill University, Montreal, QC

**Introduction:** Knowledge of genetic and metabolic conditions is essential for effective clinical diagnosis and management in pediatrics, and is a key competency of pediatrics training per the Royal College. However, research shows that pediatrics residents have a limited understanding of and exposure to genetics, and there is currently no literature on pediatrics residents' knowledge of metabolic conditions. The goal of this research was to identify whether there is a need to improve pediatrics residents' training in genetics and metabolic, and whether resident-led lectures on genetics and metabolics can help address this need. The hypothesis was that pediatrics residents have limited knowledge of genetics and metabolics, and that the lectures will improve this knowledge.

**Methods:** Two 90-minute lectures, one on genetics and one on metabolics, were given to pediatrics residents at McGill University by a medical genetics resident. Multiple choice tests were given to the residents before and after each lecture. Scores on these pre- and post-tests were compared using a paired t-test.

**Results:** 17 pediatrics residents participated in the genetics lecture and 10 participated in the metabolics lecture. The average pre-test score for genetics was 40.0% (standard deviation 24.5%) and the post-test score was 37.3% higher (95% confidence interval 18.9-55.7). For metabolics, the average pre-test score was 66.7% (standard deviation 26.1%) and the post-test score was 28.2% higher (95% confidence interval 8.0-48.4).

**Conclusion:** Pediatrics residents' knowledge of genetics was limited, but improved significantly after the genetics lecture. This study is the first to assess pediatrics

residents' knowledge of metabolics, which was better at baseline than their knowledge of genetics, and also showed some improvement after the metabolics lecture. It is important to assess genetics and metabolics education in pediatrics residencies across Canada, and to improve pediatrics curricula with simple and effective tools such as the lectures in this study.

135 This session has been withdrawn.

### 136 Shifting paradigms in medical education: Online examination in the context of COVID-19

S. Freeman; J. O'Farrell; M. Horgan; C. Small; A. Smith

Royal College of Physicians of Ireland, Dublin, Ireland

**Introduction:** On the 1st March 2020, 16 non-clinical post-graduate medical examinations, with an estimated 2,600 candidates, were due to be held by RCPI. In response to the COVID-19 pandemic, all examinations were postponed. A new paradigm and swift response were required to ensure that examinations could continue to take place (1). This presented a range of challenges to be addressed (2) through agility and innovation, leading the move in graduate medical education to online examination.

**Methods:** A pilot of two remote invigilation examinations in Stroke Medicine and Occupational Medicine was undertaken. Candidates sat examinations in their own home/office, while software download and system checks were required 1-2 weeks prior to examinations. A remote invigilator performed security checks on candidates and remained online throughout the examination, monitoring candidates for any suspicious behaviour. TestReach examination software was utilised to deliver examinations. Based on this pilot, all written examinations were resumed by July 2020 via remote invigilation, with 1,600 candidates examined in 2020. Retrospectively, the PRISM model (3) was used to analyse RCPI's response, with an emphasis on contextual aspects such as the focus on engagement with exam boards and stakeholders, along with review of feedback surveys from examination candidates. This analysis provides an insight into the effectiveness of implementing this change in the context of graduate medical education and quickly shifting paradigms.

**Conclusions:** Feedback from candidates was positive, with 80% of respondents rating user experience as positive, while 90% recommended remote invigilation. Three-quarters reported preferring remote invigilation to taking

an exam in a test centre, with benefits reported including time and financial savings, lower stress, and easier for parents. Additionally, international colleges implemented remote invigilation based on the initial RCPI experience successfully. Retrospective analysis will impact the approach undertaken in future medical educational change currently in planning.

### 137 Investigating the quality and quantity of verbal feedback for procedural EPAs in surgery and anesthesia training at Queen's University

R. Allen; T. Murray; I. de Vries; S. Mann; P. Szasz; G. Mizubuti; N. Wagner; B. Zevin

Queen's University, Kingston, ON

**Introduction:** Verbal feedback is critical for residents' progression through Competency-Based Medical Education (CBME) training [1,2,3]. It is unknown what verbal feedback is provided to residents in the operating room (OR) and the quality of that verbal feedback. Our objectives were to (1) investigate the quantity and quality of verbal feedback provided by faculty to residents in surgery and anesthesia in the OR and (2) to examine associations between the level of entrustment assigned to the resident in the OR and the quality of verbal feedback they receive.

**Method:** We used a convergent parallel mixed methods study design. We recorded participating faculty-resident dyads the OR in one academic hospital in Ontario between July 25 and August 26, 2022. Recordings were transcribed using Otter.ai. Transcripts were coded by two independent researchers and analyzed inductively using conventional content analysis. Residents completed surveys to collect their perceptions about the quality of the verbal feedback they received.

We analyzed the quantity of verbal feedback by conducting a word count, and the quality of verbal feedback using the Feedback Quality Instrument (FQI) [5]. We explored the relationship between quality of verbal feedback and entrustment scores on EPAs using Pearson correlation. We also correlated residents' ratings of the feedback received to quality of verbal feedback based on FQI scores.

**Results:** Verbal feedback for faculty-resident dyads was recorded for 30 general surgery, 17 anesthesia, and 6 orthopedic surgery cases totaling 125 hours of audiotape. Data analysis is ongoing and will be completed prior to presentation at ICRE.

**Conclusion:** The results of this study will improve our understanding of the quality of verbal feedback provided in the OR by faculty to residents. In future studies, emerging technology can be explored in future studies as a means of facilitating documentation and analysis of verbal feedback within the CBME framework.

### 138 The application of microlearning modules in surgical education: Enhancement of Competence by Design fidelity of implementation

Z. Tsang<sup>1</sup>; A. Noorani<sup>2</sup>; S. Noorani<sup>3</sup>; M. Mak<sup>1</sup>; G. Ibrahim<sup>4</sup>; M. Hodaie<sup>2</sup>; B. AlTinawi<sup>1</sup>

<sup>1</sup>University Health Network, Toronto, ON; <sup>2</sup>University of Toronto, Toronto, ON; <sup>3</sup>Elmspace, Toronto, ON

**Background:** Coaching in-the-moment and individualized reinforcement are integral concepts in Competence By Design (CBD); however, to date there has been limited integration and implementation of CBD, with programs frequently having to remind residents to keep up their minimal CBD completion requirements. We posit that the addition of microlearning to surgical education will aid a more cohesive CBD based education. MLMs consist of a novel eLearning technology that to date has not been adapted to surgical education. MLMs are mobile-first, bite-sized, procedural modules constructed based on CBD entrusted professional activities (EPA). Additionally, MLMs are complemented with features that ease the CBD experience for learners. These consist in a brief reflection piece for each CBD (How did the case go?), which permits the learner to self-document their experience, serving as a counterbalance with faculty assessment. Additionally, a surgical log permits recording of each case and matching it with generated EPAs. The Department of Surgery at University of Toronto has embarked on a pilot project implementing MLM in surgical education.

**Methods:** Our platform consists of an Artificial Intelligence (AI)-powered mobile-based app (ELMSpace). Each module is based on specific EPAs, with the following components: i) knowledge primer and assessment; ii) procedural primer, consisting of video based segments emphasizing key technical aspects of a procedure; iii) reflection, where learners write personal feedback on their performance. The AI engine augments the individualized learning journey by tracking the learner's performance, identifying knowledge gaps and gauging progress towards competence and mastery.

**Conclusion:** MLMs complement coaching in-the-moment and individualized learning, thus enhancing the fidelity of

implementation of CBD and improve resident's participation in CBD.

### 139 Keeping surgical patients safe with non-technical skills (NTS): A workshop for junior residents

F. Balaa<sup>1</sup>; M. Boersma Robertson<sup>2</sup>; T. Gondocz<sup>1</sup>; J. Yee<sup>1</sup>; R. Mimeault,<sup>1</sup> K. Larivière<sup>1</sup>

<sup>1</sup>Canadian Medical Protective Association, Ottawa, ON; <sup>2</sup>University of Ottawa, Ottawa, ON

**Background:** Research shows that failures in non-technical skills (NTS) such as communication and decision-making contribute to a substantial proportion of surgical adverse events (Gawande 2003). Yet despite their important role in mitigating error, the prevalence of NTS in surgical training appears inconsistent (Lee 2021). The Canadian Medical Protective Association (CMPA) has developed standardized, evidence-based NTS training for junior residents in order to address this gap and highlight NTS as a critical component of surgical education.

**Method:** Surgical Foundations “boot camps” present an opportunity to teach NTS early in residency. The CMPA created a 90-minute interactive workshop designed to develop awareness and appreciation for NTS among junior surgical residents. Learning is structured around case scenarios, with a focus on how the Non-Technical Skills for Surgeons (NOTSS) framework supports safer surgical care. CMPA staff delivered a prototype of this workshop to a small group of second- and third-year surgical residents and one faculty member. The session was followed by a 30-minute focus group to collect feedback about its suitability for junior residents and its overall effectiveness.

**Conclusion:** Participants acknowledged the importance and relevance of NTS training, noting that it is a concept that many take for granted or lack the language to describe. They appreciated the session's interactivity and that the presenter was a known surgeon at their institution. The faculty member in attendance connected aspects of the NOTSS framework to many of their specific experiences in the OR, further highlighting its relevance. Participants recommended simplifying the case scenario to a more appropriate level for PGY-1s, proposing a staged approach starting with the boot camp. This initial response is encouraging and suggests that partnering with local faculty to deliver the training is an effective way to introduce NTS early in residency, building foundational skills that contribute to safer surgical care.

### 140 Trainee-led Research and Audit for Sustainability in Healthcare Canada (TRASH-CAN)

G. Best; O. Cheng-Boivin; M. Hanna; H. Moloo; H. Vigil; S. Ahn; L. Zhang; M. Simard; N. Prince

University of Ottawa, Ottawa, ON

**Introduction:** With the current climate crisis, we need to educate residents and implement ideas that will reduce the environmental impact of the healthcare system. There are limited opportunities to be educated and engaged in Planetary Health work during residency, and the breadth of the subject can make starting projects daunting.

To address this, Trainee-led Research and Audit for Sustainability in Healthcare Canada (TRASH-CAN) is a new resident-driven initiative at The University of Ottawa with the goal of reducing the environmental impact and carbon footprint of healthcare through the utilization of a Quality Improvement ‘triple bottom line’ approach.

**Method:** Our approach has four pillars:

1. Quality Improvement: We are launching projects using QI methodology (root cause analysis, system change with Plan-Do-Study-Act, change implementation) that focus on reducing waste.
2. Education: This involves a curriculum administered throughout the year, including a grand rounds presentation, and a multidisciplinary journal club.
3. Knowledge Translation: We will promote and support trainees as they review literature and evidence pertaining to planetary health so that best practices can be implemented all while delivering the highest standard of patient care.
4. Leadership: We will promote trainees being leaders in the field of planetary health. This includes opportunities to collaborate with other institutions.

We have already initiated projects such as patients bringing their own re-usable bags/cups to hospital, doing research to stop the use of sterile water for colonoscopy, and reducing inpatient bloodwork on postoperative patients.

**Conclusion:** TRASH-CAN is a resident-led initiative based on QI that in a short period of time has residents involved from the Departments of Surgery, Anesthesia, and Medicine with multiple projects initiated. As we open this up to more departments/centers, we anticipate rapid growth. We hope to pair this with a scalable resident-led



curriculum that can be replicated at various institutions across Canada.

#### 141 Challenges in a changing medical education environment: International workshop for academic leaders

M. A. Cordero Diaz; A. Davila Rivas; M. Perez Jimenez; J. Martinez Trevino; O. Valencia; S. Olivares Olivares

Tecnologico de Monterrey, Monterrey Nuevo León, Mexico

**Introduction:** A main role of academic leaders is to contribute to the improvement of health care education, organizations, and systems in a changing environment. International collaboration should be explored to address the challenges in medical and residency education.

**Method:** In March 2022, a leadership workshop was held in northern Mexico with the participation of 28 medical academic leaders from 18 Brazilian universities. The main topic was challenges for leaders of healthcare education. For the discussion of the theme assuming leadership in the face of changes, a small group discussion and plenary were held addressing the issue of challenges of leadership related to the experience from the COVID 19 pandemic in the academic health centers.

Six discussion tables with 4-5 international participants and 1 local faculty as facilitator addressed the following discussion points: a) the future of education in health education institutions and b) reimagining medical education in a pandemic era. An electronic online form was used to document each table main points of discussion.

Participants in each discussion table choose 3 words to form a word cloud to describe the challenge, the learning, and the future of education in health education institutions, the most repeated words were: transformation, collaboration, adaptation, innovation, hybrid, and technology.

After a small group reading of an article of reference related to the topic and a discussion to identify the main changes to occur within medical education for its transformation, participants selected the following as the most relevant: promote cultural and institutional changes, foster agents of change, collaboration, teamwork, communication, diversity and inclusion, technological tools, networking, internationalization. A plenary discussion was held to share each discussion table results and conclusions.

**Conclusion:** International collaboration between medical education leaders may provide a deliberative environment to identify and address the challenges in education and main points for its transformation.

#### 142 A novel simulation exercise to teach residents how to provide an effective clinical consultation

V. David<sup>1</sup>; T. Ungaretti<sup>2</sup>; J. Britto<sup>1</sup>; T. Chan<sup>1</sup>; S. Mithoowani<sup>1</sup>

<sup>1</sup>McMaster University, Hamilton, ON; <sup>2</sup>Johns Hopkins University, Baltimore, MD, United States of America

**Background:** Providing an effective clinical consultation is an essential skill for medical specialists, however teaching, direct observation, and feedback to residents on their consultancy skills is lacking in the workplace. There is little empirical work examining the role of simulation to teach trainees how to be effective consultants. We created a novel virtual simulation exercise to teach senior medical residents how to provide an effective consultation.

**Results:** Independent dyads of trainees (PGY-3 or higher) and faculty members from McMaster University's Department of Medicine participated in virtual simulated cases designed to assess medical consultation. We used the context of Thrombosis Medicine for the simulation cases, which included: an urgent clinical scenario, a stable hospitalized patient, and a telephone consultation. The purpose of developing multiple cases was to sample a diversity of clinical contexts. Each simulation case was reviewed and revised by a panel of Thrombosis Medicine experts. The cases were then piloted with consultants whose feedback was used to finalize the cases.

Eight simulation sessions were conducted with a total of 16 participants (8 trainees and 8 faculty members). In each simulation, the trainee acted as the consultant while the faculty member observed. Following the simulation case, the faculty member debriefed with the trainee and provided feedback, focusing specifically on consultative skills.

**Conclusion:** Exit interviews were conducted with participants, who were supportive of simulation as an educational strategy to help trainees learn how to provide an effective consultation. We propose that a simulation curriculum could be a promising modality to teach residents how to provide an effective consultation, as it would provide an opportunity for direct observation and feedback of consultation skills outside of the clinical setting. This innovation looked at providing medicine consultations but could be adapted to apply to surgical specialties.

### 143 Qualitative study on the factors leading to variation of experiences of early postgraduate medical trainees attending virtual reality simulation sessions

K. Denediou Derrer

Hertfordshire Partnership University, Hatfield, United Kingdom

**Introduction:** Early postgraduate medical trainees in the East of England (EoE) have access to Virtual Reality Simulation (VRSim) scenarios. VRSim tends to be an individual activity, placing the emphasis on autonomous, blended learning. VRSim is delivered and debriefed differently across different trusts in EoE. This research looked at what attributes of VRSim contribute to the learning experience; it aimed to define the factors that led to the variation of experience and evaluated the process of VRSim in two different hospitals. The educational theories on which this research was based were Miller's pyramid of clinical competence, Active learning in Constructivist theory, Kahnemann's Type I and Type II thinking, Schon's theory of reflection, Cognitive theory of multi-media learning, Gamification theory and Ryan and Deci's Self-determination theory.

**Method:** Ethical approval was sought from Anglia Ruskin university and the research committees at both hospitals. The sampling was explorative and purposive. Two focus groups took place face to face; ten FY2 doctors participated, and they were given pseudonyms. The focus groups were audio recorded and transcribed and the transcripts were analysed with thematic analysis.

Preliminary themes and subthemes:

1. Realism of VRSim- timings, urgency, teamwork, predictability, suitability of scenarios, impact on competence
2. Variation of delivery of VRSim sessions across different hospitals and within hospitals- duration, number of participants, number of scenarios, presence or absence of facilitator, presence or absence of debrief
3. Learning experience of VRSim compared to high fidelity sim- enjoyable, low cognitive load, teaches quick thinking (type I)
4. Technology- getting to know the platform, accessibility, significance of feedback/score
5. Booking issues- study leave allocation, hiring a locum to cover shift.

**Conclusions:** There were significant difficulties in getting study leave and variation in debrief within trusts and across trusts. There was agreement on best timing of VRSim. These findings are transferable to other regions.

### 144 Examining the impact of a new PGME curriculum for pain management and substance use disorder in Canada

L. Graves<sup>1</sup>; N. Cofie<sup>2</sup>; N. Dalgarno<sup>2</sup>; R. Van Hoorn<sup>3</sup>; J. Mulder<sup>2</sup>; R. van Wylick<sup>2</sup>

<sup>1</sup>Western Michigan University, Kalamazoo, MI, United States of America;

<sup>2</sup>Queen's University, Kingston, ON; <sup>3</sup>Association of Faculties of Medicine of Canada, Ottawa, ON

**Introduction:** Residency education in pain management and substance use disorder in Canada is rarely delivered as a formal course unit. Often, it appears in fragments across multiple sessions, rotations, and specialties. The lack of a standardized training and the challenge of the opioid crisis have led to the development and implementation of a new competency-based pain management and substance use disorder curriculum by the Association of Faculties of Medicine of Canada (AFMC). This study presents findings from a pilot evaluation study that examined the impact of the new curriculum on PGME residents' knowledge of and ability to manage the various aspects of pain and substance use disorder.

**Methods:** We conducted pre-and post- evaluation surveys ( $n = 38$ ) with PGME residents across multiple number of residencies who participated in a six module-based online training program in pain management and substance use disorder between March and July 2022. Descriptive and inferential statistical techniques (t-tests, Cohen's D) were used to assess the impact of the training and the extent of improvement.

**Results:** Overall, participants demonstrated significant improvement in their perceived ability to identify, describe, explain, discuss, and manage all the learning outcomes assessed in the curriculum. Notably, participants' ability to manage patients with substance use disorder increased by 45% ( $t = - 5.09$ ,  $p < 0.05$ ). Participants' ability to apply planned, evidence-based, and responsive opioid tapering discussions increased by 57% ( $t = - 7.18$ ,  $p < 0.05$ ) while their ability to safely deprescribe opioids as safely as possible increased by 50% ( $t = - 6.35$ ,  $p < 0.05$ ).

**Conclusion:** The new curriculum impacted residents in this pilot positively. It has the potential to bridge the

knowledge gap in pain management and substance use disorder in residency training across Canada.

145 This session has been withdrawn.

#### 146 Inquiry and innovation: Training education scholars in family medicine

L. Herzog; K. Kulasegaram; R. Freeman; C. Whitehead; G. Sirianni

University of Toronto, Toronto, ON

**Introduction:** There is a growing need to support education scholarship in family medicine to allow for curriculum to be *centered* in family medicine, and to be rigorously designed, evaluated, and disseminated. In addition, family physicians are increasingly being called upon to provide a “lens of generalism” in undergraduate and postgraduate medical education to address the growing complexity of patient care and the simultaneous reduced number of medical trainees pursuing comprehensive family medicine. It is therefore critical that a culture of scholarly inquiry is fostered in family medicine, and that trainees have pathways to become the next generation of family physician educators and leaders.

**Method:** An innovative Education Scholar Enhanced Skills Program was established in 2018 at the University of Toronto Department of Family & Community Medicine. The program is designed to build education scholarship capacity among comprehensive family medicine graduates, equipping them with the knowledge and skills to develop and lead education research that is underpinned by best principles and practices. Mentored by education scientists and family physicians, resident participants develop the skills of education scholarship through a variety of activities, including relevant graduate-level courses, leading and collaborating on education projects, participating in journal clubs, seminars and workshops, and continuing to hone their clinical skills as family physicians. Since its inception, four residents have graduated from the program, all of whom have gone on to work in academic family medicine teaching units and hold senior leadership and scholarly roles.

**Conclusions:** To our knowledge, this is the first program of its kind in Canada. Though in its infancy, the preliminary success is promising for the future of family medicine education scholarship. Further scholarly inquiry and national collaboration is needed to evaluate its outcomes and allow for its evolution, in response to the changing landscape of primary care and medical education.

#### 147 Assuring medical humanities considerations while moving towards Competence by Design in forensic psychiatry training

C. Ho<sup>1</sup>; L. Eid<sup>2</sup>; S. Caswell<sup>1</sup>; S. Chatterjee<sup>2</sup>

<sup>1</sup>University of Toronto, Toronto, ON; <sup>2</sup>Centre for Addiction and Mental Health, Toronto, ON

**Introduction:** We intend to train our forensic psychiatry residents to be leaders in the community, who will be breaking down barriers to care, reducing stigma, and advocating for change. Competence By Design (CBD) is the Royal College of Physicians and Surgeons of Canada’s major change initiative to reform training of medical specialists in Canada. However, there is lack of shared learning in the literature regarding implications and challenges for implementing CBD in forensic psychiatry subspecialty programs. Our project is aimed to assure that our residents are taking into consideration medical humanities, and are well prepared to educate general psychiatrists, community agencies, correctional officers, and the courts, ultimately improving quality of life of patients and the society as a whole.

**Method:** We will perform a qualitative evaluation related to postgraduate medical education (PGME) outcomes and CanMEDS roles by engaging graduating forensic psychiatry residents in 2020 and 2021 (pre-CBD cohort) and in 2022 and 2023 (post-CBD cohort). Data will be collected through written reflections and semi-structured interviews, which will be transcribed and, together with the written reflections, will be subject to thematic analysis.

**Conclusion:** Since CBD implementation in forensic psychiatry in July 2021, we have been committed to perform routine evaluation using faculty and resident self-assessments, including a recent exit survey to our 2022 graduates (with 100% response rate) to ensure they feel well prepared and supported throughout the CBD-based curriculum. Our project findings pertaining to residents’ PGME learning outcomes and CanMEDS competencies will facilitate future development of forensic-psychiatry-trained leaders and advocates in medical humanities.

### 148 Multidisciplinary collaboration for a first-of-its-kind POCUS fellowship

C. Bell<sup>1</sup>; S. Montague<sup>2</sup>; J. Newbigging<sup>2</sup>; S. Maxwell<sup>2</sup>; H. Hobbs<sup>2</sup>

<sup>1</sup>University of Calgary, Calgary, AB; <sup>2</sup>Queen's University, Kingston, ON

**Introduction:** Point-of-care Ultrasound is a core competency of acute care medicine training programs. Unfortunately, there is a paucity of POCUS educators and fellowship programs in Canada. This lack of training remains a substantial barrier to acute care POCUS integration and leadership.

**Method:** Faculty with POCUS training from Emergency medicine, Anesthesia, Internal Medicine, and Critical Care collaborated to develop and deliver a fellowship highlighting the breadth of POCUS applications within each discipline. Trainees are immersed in each of the participating subspecialties and perform POCUS within each clinical area. The multidisciplinary nature of this fellowship make it unique amongst training programs and the first known POCUS fellowship of its kind.

Trainees have backgrounds in emergency medicine, anesthesia, and critical care medicine. Three trainees have completed the program, and three are currently enrolled. Graduates have passed the national board of echocardiography advanced critical care echocardiography examination, and all have secured academic appointments where they actively engage in POCUS education, research, administration, or quality improvement.

There have been challenges while implementing this fellowship. Navigating where administrative support and finances should be located between siloed disciplines took time and creativity. Secondly, arranging experiences with uncommon POCUS applications such as rare nerve blocks required continuous quality improvement on the part of the program to identify topics and create new learning opportunities. Thirdly, juggling the schedules of trainees and faculty from varied disciplines requires flexibility. Lastly, departmental support to secure faculty resources and attributions for research and education has been variable. Despite the challenges, the program is thriving. Furthermore, the increased POCUS teaching, and presence of fellows has increased the amount of POCUS education within all contributing subspecialties, including for junior trainees.

**Conclusion:** A collaborative approach to POCUS education among specialties is feasible and exposes trainees to application of POCUS where they may otherwise have limited exposure

### 149 The pebble in the shoe: Residency wellness deterrents and residency wellness initiatives

P. Kakodkar; H. Pan; D. Markewich; R. Kanthan

University of Saskatchewan, Saskatoon, SK

**Introduction:** Recognition of resident wellness during training and beyond is vital for their sustained well-being across the continuum of medical training. Establishing a framework and wellness curriculum can improve trainee work engagement and well-being. As a wellness gap was identified in our program, a dedicated explicit focus of weaving in the tenets of wellness into the fabric of our residency-training program was undertaken

**Methods:** Value added extrinsic measures included a wellness budget with allocation of \$200-250/month for resident dedicated non-academic monthly activities. In addition, a dedicated resident retreat was budgeted and negotiated successfully through "COVID" restrictions. Explicit measures to promote a value added culture of wellness included adding wellness as a standing item at the monthly Residency-program meetings. A rotating 6-month term self-nominated wellness coordinator was appointed to generate the resident wellness report for the monthly meetings.

The crucial hidden curriculum included locating the "pebble in the shoe" for each individual resident. A few examples are shared – be it welcoming a new baby necessitating childcare and adjustments at the program level with delayed start time of slide rounds; time accommodations for sickness deaths/funerals; identifying stress induced health issues with prompt medical attention and readjustment of rotation schedules; overcoming last minute unavailability for national presentations [co-resident stepped up] ; –building overall resilience in the program; dedicating attention to emotional fragility of settling into a second best choice of residency....We believe the key to the success of resident wellness is identifying and removing the pebble in each resident's shoe

**Conclusion:** A year into these wellness initiatives, we believe there is greater resiliency amongst our residents. A satisfaction survey will be collected and shared. Recognized limitations are trust building with maintaining

of emotional safety of each resident. Future directions include formalized assessments including focused group interviews with robust data for generalization.

### 150 Investigator and research skill development among residents: Using a hands-on approach to facilitate clinical audit readiness

H. Curtis; J. Clarke; M. Garnier-Liot; M. MacLeod; D. Manos; J. Payne; A. Kinsman

Dalhousie University, Halifax, NS

**Introduction:** Participation in research and quality improvement projects are important components of the medical expert, leader, health advocate and scholar CanMEDS competencies. During their training, residents typically receive didactic training in research methods and are often required to complete a research project or scholarly work. To introduce and strengthen skills in support of a life-long commitment to scholarly activity, we designed an investigator program for first-year residents using a facilitative, rather than didactic, approach.

**Methods:** A needs assessment was performed, both at our own institution and in other jurisdictions, to understand scholarly residency training requirements, and to review best practices and resources. This assessment informed the design of a 16-hour curriculum centered around the completion and formal presentation of a clinical audit. Four first-year Diagnostic Radiology residents completed and formally presented their audit. Residents worked in pairs and were supported by departmental research leadership and faculty mentors. In the process, residents learned about key principles including proposal development, privacy, data management, data analysis, and oral presentation and dissemination (these principles are revisited while completing a required scholarly project later in residency).

After the first cohort, the program was assessed by stakeholders, including trainees and departmental research and education leaders. Likert assessment by cohort participants and stakeholders revealed completion of curriculum outcomes. Qualitative evaluation of the program demonstrated some suggestions for improvement and resulted in minor revisions to the program.

**Conclusion:** Performing a clinical audit with supervision allows experiential learning of the principles of scholarly investigation and dissemination. The small scale and discipline-specific environment allows trainees to learn

important investigator skills in an active learning context, rather than as abstract concepts, and within a relatively short period of time. This curriculum can be used in any discipline when conducted in conjunction with research and clinical-expert faculty mentors.

### 151 Impact of residents on medical student training

M. Law<sup>1</sup>; G. Sivaratnam<sup>2</sup>; H. Chung<sup>2</sup>; E. Bilgic<sup>2</sup>

<sup>1</sup>Brock University, St. Catharine's, ON; <sup>2</sup>McMaster University, Toronto, ON

**Introduction:** Studies detail a generally positive impact of residents on medical students; however, it is unknown how, and to what extent, residents influence medical student experiences. Therefore, the purpose of our study is to investigate the impact of resident presence on medical students': (a) education, (b) satisfaction, (c) specialty choice and (d) preparedness for residency. Our study describes a method by which we may assess residents as CanMED Scholars, by evaluating their impact on medical student educational experiences.

**Method:** The McMaster Undergraduate Medical Program has one main campus (Hamilton) and two regional campuses (Waterloo, Niagara), with relatively fewer residents. Data will be collected from the classes of 2017-2020, for an estimated total of 800 graduates. A convergent parallel mixed methods research design will be used.

In the quantitative strand, education will be assessed using examination scores relating to general medical knowledge, clinical skills, decision making, and specialty-specific knowledge. Satisfaction will be assessed through end of rotation evaluations. Specialty choice will be assessed by residency match rates. Residency preparedness will be assessed using a graduate questionnaire. Quantitative analysis with ANOVA will compare scores between campuses.

The qualitative strand will use semi-structured interviews of graduates. Questions will probe medical school experience and day-to-day life, with respect to medical school, campus location, and resident impact on education, specialty choice, student satisfaction, and residency preparedness. Interview transcripts will be coded. Constant comparison data analysis will extract key themes, which will be compared across campuses.

The strands will be equally weighted during integration, with overarching dimensions of education, satisfaction, preparedness, specialty choice.

**Conclusion:** Study results are pending. However, we hypothesize that resident presence will positively impact medical student education, satisfaction, specialty choice, and preparedness for residency. This research can enhance medical education – particularly, with increased advocacy for resident presence at regional campuses.

## 152 Developing a shared mental model of resident development in Physical Medicine and Rehabilitation T. Hanmore; J. Trier; D. Richardson; S. Askari

Queen's University, Kingston, ON

**Introduction:** Transformational curricular change in residency programs can create confusion by merely the number of individuals involved in such change. Therefore, transitioning from a time-based system, measured by years in postgraduate training to an outcomes-based approach, founded on stages of training as in Competence by Design (CBD) requires widely disseminated, clear expectations for each stage. Without a common understanding, accurate identification of resident development may be in jeopardy. Thus, to promote aligned comprehension and minimize confusion, the Queen's University Physical Medicine and Rehabilitation (PM&R) Residency program sought to develop a shared mental model for all CBD stages of training.

**Method:** As part of the Department of PM&R education retreat in October 2021, participants including seven faculty members and seven residents were split into 4 small groups. The activity was moderated by an educational consultant. Groups were provided Royal College CBD Stage descriptions, EPAs, and stage-specific required training experiences. Using a carousel exercise, small groups rotated through four stations, one for each CBD stage of training. At each station, groups discussed, debated, and recorded what they thought residents should be able to do at the end of each stage of training, and indicators signalling a resident is not progressing as expected. As groups rotated, they could agree or disagree with what the previous group(s) recorded. Following the workshop, program leaders (program director, CBME lead, and educational consultant) collated the results to synthesize a shared mental model for resident development by stage and solicited feedback from workshop participants.

**Conclusion:** This workshop led to the development of a program-level shared mental model of resident development in PM&R. For stakeholders' reference, this information is readily available on the program's

webpage. Next steps include an evaluation of the impact of this shared mental model locally, and surveying Canadian PM&R programs to establish national consensus.

## 153 Improving the efficiency of entrusted professional activities completion in surgical education using integrated microlearning and surgical logs

B. AlTinawi<sup>1</sup>; M. Mak<sup>1</sup>; A. Noorani<sup>2</sup>; G. Ibrahim<sup>3</sup>; M. Hodaie<sup>1</sup>; S. Noorani<sup>4</sup>; Z. Tsang<sup>1</sup>; T. Latypov<sup>2</sup>; P. Srisaikaew<sup>1</sup>

<sup>1</sup>University Health Network, Toronto, ON; <sup>2</sup>University of Toronto, Toronto, ON; <sup>3</sup>The Hospital for Sick Children (SickKids), Toronto, ON; <sup>4</sup>Elmspace, Toronto, ON

**Introduction:** The 2022 Resident Pulse Check Report published by the Royal College indicates that the recent transition to Competence by Design (CBD) has led to a negative impact on health and wellness in 73% of residents surveyed across Canada. This negative impact has been attributed to seven themes, including administrative burden and concerns with achieving entrusted professional activities (EPA) requirements. To address these themes, we have developed a mobile-based education platform called 'ELMspace' that aims to alleviate the stress and workload associated with CBD implementation. This online platform integrates microlearning modules (MLM) and surgical logs to prepare surgical residents for EPA-specific procedures and to assist residents in tracking their EPA progress throughout their journey to certification. Our objective is to cultivate a self-regulated learning environment that complements the CBD curricula and promotes the progressive development of surgical competence.

**Method:** A cohort of surgical residents from the Temerty Faculty of Medicine at the University of Toronto across five specialties were enrolled. All residents self-navigated through MLMs implemented with AI-based knowledge checks (e.g., performance and duration), which were specifically designed to help them meet their EPA requirements. Module-related surgical logs could be uploaded to their personal repository to record specific EPAs completed and allowed them to reflect upon their experiences based on quantitative and qualitative metrics. MLM performance, surgical logging compliance, and learners' wellness metrics will be evaluated, and data patterns will be analyzed.

**Conclusion:** The integration of microlearning and surgical logging into a unified platform allows us to enhance the surgical education experience by promoting active

knowledge acquisition and reinforcement in a time-efficient manner. Our platform can improve surgical residents' health and wellness by alleviating their administrative burden and cognitive load of EPA completion.

#### 154 Identifying and addressing gaps in EPA completion in Geriatric Medicine training during off-service rotations

M. Sun; [M. von Maltzahn](#)

<sup>1</sup>Dalhousie University, Halifax, NS

**Introduction:** Competence by Design (CBD) was introduced in Geriatric Medicine residency programs in July 2019. A brief local survey completed in May 2022 by Geriatric Medicine trainees and teaching faculty noted that, since the transition to CBD, gaps in EPA completion have been found during non-Geriatric Medicine rotations. This research aimed to (i) identify contributing factors to gaps in EPA completion during off-service rotations, and (ii) address these factors. The goals of the research were to (1) improve learning experiences of Geriatric Medicine trainees within the CBD paradigm, and (2) ensure off-service clinical experiences are effectively captured.

**Methods:** To understand factors leading to lower than expected EPA completion during off-service rotations an Ishikawa diagram was designed. Contributing factors were identified at subspecialty, system, faculty, and trainee levels.

To address faculty and trainee level factors, an intervention was developed via comprehensive review of (a) the EPA map and (b) historic EPA completion rates on off-service rotations. Relevant EPAs for each off-service rotation were identified, and a process map for implementing the intervention was developed.

Using the process map, a communication tool was developed for five off-service rotations. The tool highlights key EPAs for that rotation, and was designed for trainee-faculty review at rotation orientation. Implementation began in September 2022.

EPA completion rates will be compared with a Mann-Whitney U test, along with graphical summaries incorporating the effect of time. Qualitative data will be obtained from trainees and faculty using a structured qualitative survey.

**Results:** Effective CBD requires mutual understanding of the curriculum, and that has proven difficult in off-service rotations. We have developed a tool to facilitate EPA achievement on off-service rotations. We identified a feasible process and intervention other medical residency programs can implement.

155. This session has been withdrawn.

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