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Posters
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138. Use of resident-sensitive quality measure data to making an entrustment decision in a pediatric residency

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Introduction: Recent assessment innovations have included the development of resident-sensitive quality measures (RSQMs), which are characterized by: 1) their importance to care quality, and 2) likelihood they are performed by residents. This study explored how clinical competency committee (CCC) members interpret, use, and prioritize RSQM data added to their usual review processes.

Methods: In this constructivist grounded theory study, 19 members of the Cincinnati Children's pediatric residency CCC were purposively and theoretically sampled. Participants were provided a resident assessment portfolio comprised of performance ratings and narrative comments for five rotations, along with RSQM data for one of these rotations. They were asked to make a decision about the resident's ability to care for patients presenting with common, acute problems (a general pediatric entrustable professional activity). Data collection consisted of: 1) observation and think aloud while participants reviewed performance data, and 2) semi-structured interviews to probe reviews.

Results: Five dimensions for how participants view and use RSQMs were identified: 1) Ability to orient to RSQMs: confusing to self-explanatory, 2) Propensity to use RSQMs: reluctant to enthusiastic, 3) RSQM interpretation: requires contextualization to self-evident, 4) RSQMs for assessment decisions: not sticky to sticky, and 5) Expectations for residents: potentially unfair to fair to use RSQMs. The interactions among dimensions generated three RSQM data user profiles, with the first two being

most common: eager incorporation, willing incorporation, and disinclined incorporation.

Conclusion: Most participants used RSQMs to varying extents, demonstrating willingness to include them as resident assessment data for CCC review.

139. Supporting the development of resident self-assessment skills with Competency-based Medical Education assessment data

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Context: Self-assessment is a key skill in a self-regulated profession. Competency-based medical education (CBME), with its frequent formative competency assessment, lends itself to building these skills. One strategy to develop self-assessment skills is to compare resident self-assessment with their preceptor's. Using CBME assessment strategies, this study identified how often resident and preceptor assessments of resident performance disagreed, and to what extent.

Method: Comparative analysis of performance assessment between preceptors and residents in the Queen's University Family Medicine Program from 2011-2019. This program uses field notes (FNs) for daily formative assessments with 4 levels of performance possible: flagged (concerning), close, minimal and supervision for refinement. Of the 58,740 FNs submitted between 2011-2019, 20% (11,639) were resident-initiated and of those, (72%) showed concordance between resident and preceptor assessments. Of the discordant 28%, 73% of the time preceptors assessed the resident higher than the resident. Of the 27% of the time that residents' assessed higher than their preceptor, 1% of those identified themselves as ready for independence when their preceptors chose flagged or close supervision. Of the 30 residents who overcalled their performance, 26 did this only once or twice, 4 did this >5 times.

Conclusion: Most residents self-assess their performance accurately. When there is disagreement most residents underrate their performance (concerning for the consequences of underconfidence). A minority overcall their performance with a small subset who do so repeatedly, (concerning for patient safety). Programs can use CBME-based assessment systems to identify and support residents who need to hone their self-assessment skills.

140. Low cost simulation in the high-fidelity era: The pediatric residency OSCKE experience

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Background: Military Pediatric Residency Programs' primary goal is to prepare graduates for resource-limited bases. Military medical centers may lack exposure to more rare conditions seen at referral centers. Simulation is one tool that can be used to bridge curriculum gaps but may be costly and time consuming. An alternate method to prepare our residents for the high-yield, low volume patient in a remote setting is the OSCKE (Objective Structured Medical Knowledge Evaluation).

Methods: The OSCKE is an 11 station case-vignette based, face-to-face examination given annually [15 points/station; total possible=165 points]. Vignettes are delivered by faculty (no simulated patients) and highlight a high yield, low-volume scenario. Following the examination residents are debriefed in a group setting. Scores are compared with In-Training Exam [ITE] scores and board[ABP] scores and qualitatively through annual alumni survey.

Results: A total of 183 scores were available since test inception [2007]. Mean scores were 120 for PGY-1 to 143 for PGY-3 (pdiff=0.002). Correlations between ITE and ABP scores ranged from r2= 0.25-0.4. Correlations between OSCKE and ABP scores ranged from r2= 0.1 – 0.7, with OSCKE scores correlating more strongly than ITE in recent years. Graduates rated the OSCKE as one of the most effective teaching tools.

Discussion: The OSCKE is a reliable source of standardized formative assessment. Alumni frequently report the OSCKE to be a valuable aspect of their training. Scores on the OSCKE discriminated well between classes and correlated with ABP performance. The OSCKE is a valuable tool to supplement learning and inform board preparedness.

141. Validating an assessment tool for paracentesis in residency training

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Introduction: Internal Medicine residents must learn and demonstrate procedural competence in paracentesis during their training. While direct observation and

feedback are essential to the development of procedural skills, assessment tools are often impractical for the busy clinical environment. Using the Modified Delphi Methodology, we previously created a paracentesis assessment tool from expert consensus. The purpose of this current study is to determine the internal consistency of our tool as a step towards validating it for use.

Methods: Three residents with various levels of training were filmed performing a therapeutic paracentesis in the outpatient setting. The videos were edited to remove any identifying characteristics of the patients and participants. Videos were distributed to senior residents, fellows, and staff physicians, who assessed each resident using the paracentesis assessment tool. Assessment scores will be analyzed using Cronbach's alpha to determine the internal consistency and inter-rater reliability of our tool.

Conclusion: This study is an important step towards validating our paracentesis assessment tool. Although there are existing assessment tools for paracentesis, our study introduces a validation method that mimics the real-world clinical setting. Using pre-recorded videos, we can establish the internal consistency and inter-rater reliability of our tool among senior residents, fellows, and staff physicians. Furthermore, this study will provide insight into the assessment styles of users from different levels of training and help inform the future design of procedural assessment tools.

142. Development of an assessment tool for advanced care planning communication skills

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Background: Advanced care planning (ACP) is a core competency for many residency programs, but there is a lack of evidence regarding how to assess this skill effectively. Learners have identified challenges in establishing goals of care: knowledge gaps pertaining to this skill; a lack of educational interventions; and the need for feedback that serves to address these gaps. Although assessment tools have been developed for evaluating other essential communication skills, assessment of communication around goals of care has been limited by the lack of validated tools. The aim of this study is to develop a competency-based assessment tool for postgraduate education in advanced care planning communication skills.

Methods: We conducted a multi-centre focus group discussion with experts on ACP skills to guide development of an initial assessment tool. The discussion sought to identify themes and items that were important for assessment of competency in ACP and shared decision-making with patients. Using a modified Delphi approach, a feedback rubric was constructed with defined milestones for levels of competency. The tool was evaluated by multiple assessors using videotaped simulated patient interactions to establish inter-user reliability.

Conclusions: The communication skills required to effectively lead advanced care planning discussion with patients is complex and requires thoughtful verbal and non-verbal communication. The use of a validated assessment tool is important for ensuring these skills develop appropriately and are ultimately mastered during medical training. Further, a validated tool is important for assessing the effectiveness of related education interactions.

143. CANDIES entrustment scale allows good discriminatory evaluation of diagnostic imaging residents

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Introduction: The Canadian Diagnostic Imaging Entrustment Scale (CANDIES) is a nationally vetted formative assessment designed specifically for diagnostic imaging (DI) residents. The tool identifies five competencies across the CanMEDs roles, each evaluated with a 5-point scale (1-5) anchored with narrative descriptions. We sought to determine if the CANDIES evaluation form would allow discrimination by training level and would limit clustering of responses at the higher end of the scale.

Methods: The CANDIES tool was piloted in five core rotations for a period of 14 months at Dalhousie University. Faculty completed the form based on a resident's single day of work. Institutional REB was obtained.

Results: 103 CANDIES were completed, 67 (65.0%) for junior residents (PGY2-3) and 36 (35.0%) for senior residents (PGY4-6) for a total 468 individual scores. Scores for junior residents (mean 2.7, SD 0.80) were significantly lower than for senior residents (mean 3.7, SD 0.77)

(p<0.01). This difference was most marked for "diagnostic ability" (medical expert role) with junior residents scoring mean 2.3 and senior residents scoring mean 3.6 (p<0.01). Mean scores were most similar for "communication and collaboration" (professional, communicator and collaboration roles) with junior residents scoring mean 3.3 and senior residents mean 4.0 (p<0.01). A wide standard deviation was present across all training levels and all five evaluated competencies.

Conclusion: In this pilot the CANDIES scale allowed both good discrimination by training level and wide distribution of scores. Further study is needed to ensure the results are generalizable in other DI residency programs.

144. Performance under pressure: The use of EPAs to standardize pediatric mock code feedback

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Introduction: Pediatric mock code simulation plays a critical role in the development of a trainee's skills for high-stakes, low frequency situations. Timely and specific feedback is an essential element. The aim of this study is to pilot the American Board of Pediatrics' (ABP) Entrustable Professional Activities (EPAs) for mock code feedback.

Method: Trainees participate in a standard curriculum with 13 total cases. We created an online assessment tool based on the ABP's EPA 10 (resuscitation and initial stabilization) incorporating objective clinical behaviors as well as an entrustability rating. EPAs and communication were rated based on narrative anchors with seven and five possible levels. The tool was used to facilitate and record feedback from faculty to trainee. Other mock code observers evaluated the trainee using the tool in real time. In the first 6 months, 21 residents (45% of PGY-2, PGY-3 classes) have received one-to-one verbal and written feedback using our tool. 90 evaluations were completed by faculty and observers. The average EPA rating and communication score of residents was 5.4 (SD 1.27) and 3.66 (SD 0.75), respectively. There were no significant differences observed in the EPA or communication ratings between the observers and faculty (*P* = 0.46 and 0.8, respectively). In the post-simulation survey, 93% (13/14) of trainees indicated the feedback process would improve their future performance.

Conclusions: An EPA-based assessment tool shows promise in the mock code setting. We found that observers with varying levels of expertise gave similar ratings, suggesting future possibilities for peer feedback.

145. Improving narrative feedback for resident-led academic rounds: The effects of evaluation form design changes

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Introduction: This research explores the effect of a formatting change (i.e. relocating the comment section from the bottom of a form to the top) on residents' oral presentation evaluation forms and, in particular, if this affects the quality and quantity of narrative feedback provided by evaluators.

Methods: A feedback scoring system based on the theory of deliberate practice, was used to assess the quality of written feedback provided to residents on academic rounds evaluations forms before and after implementing a form design change. Other form variables including word count, presence of any comment and Likert numerical ratings were also assessed. Additionally, evaluators were surveyed to explore their subjective experience of this formatting change.

Results: When the comment section was placed at the top of the evaluation form there were significantly more comments present ($\chi^2(1) = 6.54$, p=0.011) as well as a significant increase in the specificity related to the deliberate practice component of task, or what was done well ($\chi^2(3) = 20.12$, p=<.0001). The formatting change did not have a significant effect on evaluators' subjective experience, with the most commonly identified barriers to providing narrative feedback were time constraints and concern about potential harm to learners.

Discussion: Placing the narrative feedback section more prominently on evaluation forms may help to increase both the quality and quantity of feedback delivered to learners. Medical educators might improve the value of learner feedback by incorporating more deliberate practice components in their written feedback in a time efficient manner.

146. Enhancing surgical education using the Canadian Association of General Surgeons (CAGS) formative examination

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Introduction: Each year all General Surgeon residents in Canada write the Canadian Association of General Surgeons (CAGS) examination. This formative exam assesses the full breadth of core and fundamental knowledge required by trainees in their residency in multiple different domains. The purpose of the study was to evaluate the potential use of the exam for enhancing surgical education in Canada.

Methods: Residents' exam performance was analyzed in three successive test administrations (2017, 2018, 2019) (N=806). The examinees' (test-takers who had written the exam at least once) performance was used to determine if the exam reflected their progression of knowledge across 13 surgical domains. Residents' longitudinal performance was also analyzed across the exam for residents who had taken the exam in three successive administrations (n=214).

Results: The analyses revealed that the test differentiates performance between junior and senior residents. The test also provides domain-specific information about residents' strengths and areas for improvement. The longitudinal analyses revealed that learners' overall performance improved over successive test administrations; however, their performance across the different assessment domains (e.g., trauma, breast) varied.

Conclusion: These findings reveal that the CAGS exam has a wealth of potential for advancing teaching and learning in general surgery programs by: i) Providing specific information to program directors regarding curriculum delivery; ii) identifying learners who are not advancing as expected; iii) generating diagnostic information about learners' performance over time, and across different surgical domains.

147. It's a matter of trust: Teacher perceptions of an entrustment scale in family medicine maternity care

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Introduction: While entrustment scales (ES) have come into favour in an era of competency-based medical education (CBME), little research exists on how teachers make entrustment decisions using these scales. There is controversy in the literature as to how much faculty development is required prior to transitioning from traditional rating scales to ES. To explore this, we conducted cognitive interviews with teachers who had used a validated ES for family medicine maternity care assessments. We asked the teachers what the anchors meant to them and how they decided when to use them.

Methods: We used purposive sampling and conducted 14 cognitive interviews with faculty who had completed at least 2 entrustment-based assessments in family medicine maternity care over the last 6 mos. Interviews were recorded and transcribed. A constant comparison approach was used to code and analyze the data using NVivo 11 until consensus was reached regarding emerging themes.

Results: Themes: 1) Teachers interpretation of the anchors varied based on their own experience and values. 2) Teachers reported that ES better allowed them to objectively report on a resident's observed behaviour as compared to traditional rating scales, however their evaluations belied that they often struggled to limit their assessments to a report of observable behaviour, choosing instead to use the form to provide summative judgments.

Conclusions: Entrustment scales hold much promise, but teachers would likely benefit from faculty development or the use of a shared mental model to maximize their potential use in CBME

148. Unheard voices – nurses' perspectives on providing multisource feedback of resident physicians

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Introduction: Multisource Feedback (MSF) - an assessment method that includes feedback from non-physicians - is increasingly being incorporated into residency training programs to facilitate more holistic resident assessment. Registered nurses (RNs) are a key source for MSF as they often observe trainees during clinical encounters where supervisors are not present. This study investigated RN perspectives about providing MSF and explored the factors influencing their engagement in MSF of resident physicians.

Methods: Informed by constructivist grounded theory and applying a workplace-based assessment lens as a sensitizing concept, we interviewed 11 emergency medicine and 5 internal medicine RNs from two tertiary care centers in Ottawa, Canada. Participants were interviewed about their experiences working with and observing residents in clinical practice. Interviews were coded and analyzed in an iterative fashion by a research team consisting of physicians, a social scientist and a nurse.

Results: RNs consistently felt they could provide feedback regarding a resident's skills, behaviors and abilities, particularly those related to patient advocacy, communication, leadership and professionalism. Furthermore, RNs expressed wanting to contribute to resident training through MSF. However, they reported hesitancy in providing feedback because of fear of crossing professional boundaries and apprehensions that their feedback might not be perceived as credible by residents and supervisors.

Conclusion: RN interactions with residents offer a unique opportunity for observation of resident performance. Feedback from nurses may serve as a robust means of assessing resident non-medical expert competencies. However, tensions around socio-professional boundaries remain a major barrier to implementation of RN driven MSF.

149. Failures on the Royal College of Physicians and Surgeons of Canada internal medicine examination: Can those at risk be identified through clinical performance assessment?

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Introduction: Canadian residency training programs determine clinical competence, and readiness to challenge Royal College of Physician and Surgeons of Canada (RC) certification exams through completion of a final in-training evaluation report (FITER). Little is known on the relationship between performance on the FITER and outcome on the criterion-based RC exams.

Method: The FITER scores of Internal Medicine exam eligible residents in 2016 were categorized into 5 categories and compared to overall pass/fail decisions on the RC exam. As well, we examined the relationship of the FITER score with the performance on the MCQ component of the RC exam (the overall pass/fail decision is compensatory but requires a minimal performance on the MCQ).

Results: In total, there were 491 eligible FITERs with corresponding exam performance results. Of those, 48 residents were identified in the lowest 3 performance categories, and 3 of those individuals failed the RC exam (6.25%) compared to 6 failures for 422 candidates in the highest performing category (1.4%). Additionally, residents in the lower 3 categories were more likely to fail the MCQ (7/48 or 14.58%) compared to 26/422 (6.16%) for the higher performing category, where most of the residents were categorized.

Conclusion: Residents scoring lower on the FITER based assessment of clinical competence were 4 times more likely to fail the Royal College Examination. In additionk, they were more 'at risk' of failing the RC exam due to inadequate results on the MCQ. These results build additional validity evidence for the RC examination and identify residents that may require additional support in training.

150. The development and evaluation of a faculty advisor program and training curriculum

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Introduction: As part of the Paediatric Residency Program's transition to Competence By Design (CBD), we will adopt a Faculty Advisor program. Currently, there is no Faculty Advisor training designed for paediatrics. Additionally, despite the need for active resident engagement in CBD, there are no workshops that include the trainee. We aim to develop a training curriculum for Paediatric Faculty Advisors and Residents Evaluate the effectiveness of our training curriculum in the context of transition to CBD.

Methods: We used Kern's Model[3] for curriculum development. We first conducted focus groups with residents, advisors, and Medical Education leaders. This informed development of the Advisor role, and workshop curriculum. Program evaluation is ongoing, and was done by anonymous survey, where participant satisfaction, knowledge and practice change was assessed.

Results: Focus groups indicated a desire for 1) Clear role definition 2) Training on how to coach and be coached 3) Individualize feedback for each trainee. In workshop 1, roles and tasks were clearly defined; Advisors were trained on interpreting assessments, providing feedback, and coaching; Residents were trained on receiving feedback, being coached, and developing personalized learning plans. Workshop 2 will focus on coaching struggling and excelling learners. Results from workshop evaluations are pending.

Conclusions: Our program is unique, in that content was informed completely by key stakeholders. Our workshops provide an exceptional opportunity for Advisors and residents to learn together. We believe our approach to developing and implementing curricula improves advisor/advisee relationship building, engagement, and ongoing program improvement

151. Transition to CBME—experiences in a Neonatal-Perinatal Medicine Program

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Introduction: Canadian residency programs are transitioning faculty, trainees, and curricula to CBME. The transition can be overwhelming and difficult to navigate. A transition plan is needed in anticipation of challenges of risks of a reductionist approach to assessments (1) and establishing a culture of mutual accountability (2). We describe our two-year transition plan to CBME, with a focus on strategies and cultural perspectives that target aforementioned challenges.

Methods: Our Neonatal-Perinatal Medicine sub-specialty residency program at Western Ontario planned a 2-year transition process to CBME. The first year focused on strategies to centralize information and resources, introduce the new language and culture of CBME through faculty development, and a transition to assessments employing entrustment scores. The second year involved a soft-launch into CBME, a functioning Competency Committee, EPAs mapped to learning experiences, a coaching program, and strategies to develop incentives for program adoption by stakeholders. We describe the design for ongoing feedback and quality improvement and preliminary perspectives of faculty and residents. Unique cultural challenges of international medical graduate trainees were also considered.

Conclusions: Our goal is to share our experience of initiatives and the transition process to CBME, effective strategies and challenges that arose. Strategies for curriculum and culture shifts are relevant to all programs, and can be helpful for all leaders enacting change.

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152. Perceptions of and barriers to Competency-based Education (CBE) within Canada: An examination of resident and faculty perspectives on the implementation of CBE

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Introduction: Competency-based education (CBE) has been implemented across Canadian post-graduate medical training programs through Competence By Design (CBD). We describe our initial experiences, highlighting

perceptions and barriers to facilitate implementation at other centers.

Methods: An anonymous online survey was administered to faculty and residents transitioning to CBE (138 respondents) including 1) Queen's Residents (QR)[n= 102], 2) Queen's Faculty (Program Directors and CBME Leads) [n=27]and 3) Canadian Neurology Program Directors (NPD)[n = 9] and analyzed the data using descriptive and inferential statistical techniques.

Results: Perceptions were favorable ($\bar{x}$ = 3.55, SD = 0.71) and 81.58% perceived CBE enhanced training; however, perceptions were more favorable in faculty. QF indicated that CBE did not improve their ability to provide negative feedback. NPDs did not perceive their institution had adequately prepared them. QR did not perceive improved quality of feedback. There was variability in barriers perceived across groups. NPDs were concerned about access to information technology. QF were concerned about resident initiative. QR felt assessment selection and faculty responsiveness to feedback were barriers.

Conclusion: Our results indicate Faculty were concerned about reluctance of residents to actively participate in CBE. Residents were hesitant to assume such a role due to lack of familiarity and perceived benefit. This discrepancy indicates attention should be devoted to 1) institutional administrative/educational supports, 2) faculty development around feedback/assessment and 3) resident engagement to foster ownership of their learning and familiarity with CBE.

153. Current state of CBME in Australia in 2019

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Introduction: The Australian Medical Council (AMC) is the accreditation authority in Australia for medicine. In 2010, we published a position paper on Competence-Based Medical Education (CBME). In 2019, the AMC decided to update that position paper incorporating key changes in CBME over the decade. As part of this work, a survey was undertaken to ascertain uptake of CBME by medical education providers in the Australian context.

Methods: An electronic survey was distributed to medical education providers (62 possible respondents) across all phases of the education continuum including medical school, prevocational and residency training. Questions related to usage of CBME terminology, perceived usefulness and uptake of CBME principles, perceived benefits, and challenges of implementing CBME. It included thoughts on what support the AMC should provide relating to CBME. Simple statistical and thematic analysis was performed on responses.

Results: Thirty-three education providers (53%) responded to our survey. Although 43% of respondents (16/33) reported using CBME terminology (highest with residency training colleges, (61%; 11/18)), most agreed or strongly agreed that CBME was useful. Responders felt CBME provided a mechanism to link the continuum in a meaningful and learner-centric way, but expressed concerns that overall oversight and coordination of implementation during training hampered success. Implementation challenges included budgetary and change management concerns.

Conclusion: In the Australian context, CBME is viewed as useful despite partial usage of terminology and principles. Although our implementation challenges are not unique, the fragmented medical education continuum is felt to hamper uptake despite efforts in the last ten years.

154. Evaluating the child and adolescent psychiatry sub-specialty program using a rapid-cycle approach

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Introduction: Queen's University launched Competency-Based Medical Education (CBME) in July 2017. Due to the relatively small size of the Child and Adolescent program, the ability to iteratively respond to programmatic needs has been limited, primarily due to the lack of data. The purpose of this study is to evaluate the transition to CBME for the Child and Adolescent Psychiatry program at Queen's University.

Methods: The first cycle of this rapid evaluation was completed in November 2019. Residents, faculty, program leaders, allied health professionals, educational consultant (*n*=12) participated in a focus group or interview to understand experiences following CBME implementation and to identify areas for improvement. All data were analyzed thematically.

Results: Residents appreciated receiving timely feedback, identifying areas for improvement, and acknowledging efforts of program leaders. Program leaders identified the small and relatively new program as a challenge, often

resulting in faculty serving multiple roles. Time commitment was identified as a concern across participants. Findings suggest ongoing refinement of assessment tools based on their feedback is appreciated and the competence committee is moving closer to implementing as intended. Areas of support included the educational consultant, CBME lead, and learning from faculty and residents who had experience with CBME. Areas for refinement included interpretation and alignment of the entrustment scale and clarification of CBME expectations.

Conclusions: The findings have identified what is working well following the CBME transition and areas for program improvement. Despite the focus on one program, the findings can inform the implementation of other CBME programs.

155. An evaluation of the implementation of CBME in physical medicine & rehabilitation at Queen's University

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Introduction: As part of an institution-wide transition, the physical medicine and rehabilitation (PMR) program at Queen's University implemented competency-based medical education (CBME) in July 2017. This study aimed to conduct a program evaluation of PMR's implementation of CBME.

Methods: Using rapid evaluation methodology, the intended implementation of CBME in the Queen's PMR program was first explicitly described. Focus groups and interviews were conducted with trainees, faculty, and program leaders, to capture their experiences in the first two years of implementation. Analyses were abductive, using the CBME core components framework and thematic analysis to understand stakeholders' experiences, and compare planned versus enacted implementation, with an aim towards adaptation.

Results: Of the 16 stakeholders, 14 (88%) participated in this study. Overwhelmingly, participants felt CBME was 'good in theory but challenging in practice'. Implementation of CBME enabled more documentation, intentional review of *all*trainees, and created a shared experience with clinicians and educators in other specialties. However, dealing with the increased workload, concept of stage-specific entrustment, and amount of assessment data remained major challenges. While processes have evolved, program size, nature/length of consults, emphasis on multidisciplinary collaboration, and the upcoming transition to the national version of Competence by Design were also identified as unique challenges to implementation.

Conclusions: Rapid evaluation provided critical insights into the successes and challenges of operationalizing CBME in PMR at Queen's University. These findings will be used to support continued change to the PMR program, and provide PMR programs, among others, with valuable information about CBME implementation.

156. CBD implementation in the department of anatomical pathology program at the Ottawa Hospital

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Introduction: In 2016, formal measures were taken by the Anatomical Pathology (AP) residency program at the University of Ottawa (UofO) to implement competency-based medical education (CBME). Here we discuss the steps taken for the rollout of Competency By Design (CBD) on July 1st 2019 and to evaluate its successful implementation.

Methods: 3 meetings were held over 2 years at the Royal College for the transition to CBD in AP. The core competencies were developed and the AP program website was re-designed to incorporate all the CBME documents. The EPAs, milestones and assessment tools were integrated into Elentra. The Curriculum Rotation Map was created and residents played an integral role in its development. 4 lunch/learn sessions took place with the PGME office to trial Elentra. CBD officially commenced on July 1, 2019.

Results: A 1-month questionnaire was sent to the AP program post CBD implementation. 42 respondents including staff and residents participated. The questionnaire consisted of 9 questions on a 5-point Likert scale covering topics including CBD education and learner feedback. Respondents mostly agreed (4 out 5) with statements covering the above areas. Respondent feedback focused on increased time commitments and EPA/milestone optimization.

Conclusion: We have outlined the CBD implementation process in the AP program at the UofO which was a collaborative undertaking. Our 1-month questionnaire revealed users have had a positive experience with CBD. We plan on sending out additional questionnaires at 6 and 12 months and a resident focus group to obtain more data for potential improvement.

157. Variability in EPAs and observations across disciplines in Competence By Design (CBD)

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Introduction: 19 specialties and 13 subspecialties have completed their CBD specialty education design and started implementation. A large number of EPAs and required observations is perceived to be a barrier to implementation.

Methods: In their initial design, the number of entrustable professional activities (EPAs) varies from 15-87 for specialties (mean 38), and from 15-38 for subspecialties (mean 25). The recommended total number of EPA observations varies from 66-638 (mean 271) for specialties and from 81-189 (mean 124) for subspecialties. The 19 specialties include 9 surgical and 10 medical disciplines; the 13 subspecialties include 1 surgical and 12 medical disciplines. The mean total number of EPAs is higher in surgical versus medical disciplines: 44 versus 33 in specialties (range 27-61 versus 15-87), and 38 versus 25 (range 15-36) in subspecialties. Conversely, the mean total number of recommended observations is higher in medical versus surgical disciplines: mean 330 versus 201 in specialties (range 66-638 versus 133-267) and 126 (range 81-189) versus 119 in subspecialties.

Results: 5 disciplines have completed revisions to their EPAs: two reduced the number of EPAs and observations (Anesthesiology from 87 to 49 EPAs, from 581 to 296 observations; and Otolaryngology-Head and Neck Surgery, change in progress). Nephrology, Forensic Pathology and Obstetrics and Gynecology revised their EPAs without affecting the number of EPAs or observations.

Conclusion: An ideal number of EPAs is not known; this analysis demonstrates significant variability among the disciplines that have implemented CBD. Ongoing program evaluation will demonstrate the feasibility of implementing the specialty education design.

158. Implementing changes to a residency program curriculum before Competency-based Medical Education: A survey of Canadian medical oncology program directors

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Background: Postgraduate medical education is undergoing a paradigm shift in universities worldwide, transitioning from a time-based model to Competency-Based Medical Education (CBME). Residency programs may need to alter clinical rotations, educational curricula, assessment methods and faculty involvement in preparation for CBME, a process not yet characterized in the literature. The objective of this study was to gain an understanding of the changes made within Canadian medical oncology residency programs in preparation for CBME.

Methods: We surveyed medical oncology program directors around 5 themes: rotation changes, orientation of incoming residents and faculty to CBME, changes to resident learning resources, changes to teaching and assessment of trainees, and responsibilities of faculty members.

Results: Prior to implementing CBME, all program directors changed at least one clinical rotation, most commonly changing malignant hematology (74%) from a mixed inpatient and outpatient rotation to being entirely outpatient and eliminating the radiation oncology rotation (64%). Introductory rotations were altered to focus on common tumour sites, while later rotations increased learner autonomy. Most program directors planned to enhance resident learning with electronic teaching modules (79%), new training experiences (71%), and changing academic half-days (50%). Most program directors (64%) planned to change assessment methods to be entirely based on entrustable professional activities and milestones. All programs had developed a competence committee to review learner progress and most (86%) integrated academic coaches.

Conclusions: Transitioning to CBME led to major structural and curricular changes within medical oncology training programs. Awareness of commonly implemented changes may help other programs transition to CBME.

159. Curriculum changes and the introduction of EPAs in the UK: Resident and attending perspectives

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Introduction: Imminent UK surgical curricula changes will see the introduction of Entrustable Professional Activities (EPAs) and more focus on Non-Technical Skills (NOTSS) and professional behaviours (PB). Our aim was to establish Yorkshire Orthopaedic Resident and Attending perspectives whilst simultaneously identifying barriers to successful implementation.

Methods: A questionnaire was distributed to all delegates at our Annual Yorkshire Orthopaedic Faculty Day to identify current perceptions, with a response rate of 69%(63/91). A second questionnaire, identifying barriers to change was distributed to all Yorkshire Orthopaedic Residents, with a response rate of 60%(48/80).

Results: 14% of Attendings lacked confidence in assessing residents on EPAs, with 65% wanting training on how to perform these assessments. 49% felt there was a lack of both opportunities and time for EPAs. However, 89% agreed EPAs and NOTSS were important additions to the curriculum with 83% agreeing that EPAs and NOTSS represent skills required as a Day 1 Attending. Residents identified the following four barriers to change; a lack of NOTSS and PB training, concerns Attendings will not be able or willing to assess them, lack of time to perform them and forgetting to incorporate these new skills into their clinical practice.

Conclusions: Importantly, both Attendings and Residents value the importance of these curricula changes and support the introduction of EPAs and a greater focus on NOTSS and PB. However, there are significant concerns with regards to a lack of time and training, which need to be addressed urgently to ensure these curricula changes are successfully implemented.

160. What can regulatory bodies do to help implement Competency-based Medical Education?

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Introduction: Despite the potential benefits that CBME curricula can provide learners, teachers, and patients, it must be recognized that its implementation can be challenging. This presentation examines how regulatory bodies, in their important roles, can either help or unintentionally hinder the implementation and successful functioning of CBME in graduate medical education.

Methods: Using the case examples of CBME implementation in Canada, the Netherlands, and the USA, we outline that the way regulatory bodies are structured and operate affect the implementation of CBME. In Canada and the Netherlands, where one regulatory body plays the only role in accrediting PGME, implementation has occurred albeit with significant interaction with those that are responsible for organizing and supervising the change. In the US, the complex relationship of multiple regulatory bodies and stakeholders has led to challenges in nationwide implementation. If CBME is to be the new paradigm for medical education, we must collectively identify how the barriers to successful implementation can be overcome. A first step involves restructuring accreditation and regulatory criteria to align with CBME principles, as is happening in the US where initiatives such as the Milestones and CLER are helping to move towards an outcomes-based system of accreditation.

Conclusion: Regulatory bodies must work together in a co-ordinated fashion to ensure alignment of vital regulatory meaures throughout the training and practice continuum of a physician. Individuals and programs must also be allowed to adapt CBME to meet their local environments and innovate in order to meet the needs of the communities that they serve.

161. Effect of continuous versus episodic supervision on assessment

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Introduction: Continuity of supervision is assumed to be an important element of good competency-based medical

education (CBME), and a necessity for effective assessment. However, most literature about continuity of supervision comes from undergraduate medical education, not postgraduate medical education. The purpose of this study is to determine the effect of continuous versus episodic supervision on assessment of learners in a postgraduate program.

Methods: Retrospective secondary data analysis design. Fieldnotes (work-based assessment tool; n=2000) from family medicine residents across three teaching sites and three cohorts were included. Each resident is matched to a continuous supervisor for the duration of training, but residents also receive assessments from episodic supervisors. Fieldnotes were categorized into "from continuous supervisor" (CS) or "from episodic supervisor" (ES). Outcome measures were quality of feedback (scored using a validated tool) and competency selected. Descriptive analyses were conducted to determine trends within and between CS and ES.

Results: There was high variability in numbers of fieldnotes completed by continuous supervisors. Quality of feedback varied by supervisor, not by degree of continuity. In the CS category, there was a trend towards a greater range of competency categories selected, while the ES group showed a trend to more limited competency categories selected.

Conclusion: The data suggests a greater range of competencies were assessed when there is continuity of supervision. However, quality of feedback appeared to be a supervisor-specific phenomenon. While this study suggested some benefits, further research into the effects of continuity of supervision is warranted.

162. Resident perspectives on Competence By Design curriculum

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Introduction: There is growing literature outlining the potential merits and pitfalls of competency-based residency training; however, little has been published from the resident perspective. Before the Royal College of Physicians and Surgeons of Canada started to implement competency-by-design (CBD) curriculum for Obstetrics and Gynecology (OBGYN), the University of Calgary OBGYN residents were surveyed regarding their viewpoints. Having resident perspectives available to programs implementing CBD curriculum allows trainee expectations and concerns to be incorporated into the design and implementation process.

Methods: An anonymous survey containing a mixture of Likert-scale responses, multiple-choice questions, and free-text response questions was administered to University of Calgary OBGYN residents. Summary statistics were performed on the Likert-scale and multiple-choice responses, and thematic analysis was used to analyze free-text responses.

Results: The OBGYN resident participants identified many perceived benefits and challenges regarding the transition to CBD curriculum. Overall, resident respondents seemed optimistic about the benefits that are anticipated with the curriculum redesign. However, many residents voiced concerns, which included potential impacts on work relationships, the amount of time and effort that evaluation will require under CBD, and increased scheduling challenges for both the operating room and call given the less rigid structure of CBD.

Conclusion: Residents offer valuable insight into the potential benefits and challenges that come with CBD curriculum redesign and implementation. Collecting and including resident input it in the curriculum redesign and implementation process will strengthen the new curriculum and help with resident buy-in.

163. The shift to Competency-based Medical Education in Canada: A qualitative study of resident experiences

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Introduction: Competency-based medical education (CBME) has emerged as a new curricular paradigm focused on ensuring that graduates are competent to meet the needs of patients. However, the resident experience with CBME has not been well studied, yet as key participants in this educational model, their engagement is key to successful implementation. We explored the experiences of residents in Canadian training program that have implemented CBME.

Methods: Using qualitative methodology, we conducted semi-structured interviews with residents (n =16) in Canadian training programs, exploring their experiences

with CBME. Participants were equally divided between family medicine and specialty programs. Themes were identified using constant comparative analysis.

Results: Residents were receptive to the goals of CBME, but in practice, described several drawbacks. For many residents, the significant time commitment and frequent need to initiate assessment encounters disrupted workflow and was anxiety-provoking, creating a culture of constant assessment. At times, evaluations were felt to lack meaning as supervisors focused on “checking-boxes” or provided overly broad, non-specific comments. Frustration with the perceived subjectivity of assessment was common, especially if assessments were used to delay residents’ progression to greater independence, and led to attempts to "game the system". Faculty engagement and support improved residents’ experiences with CBME.

Conclusion: Although residents value the potential for CBME to improve the quality of education, assessment and feedback provided, CBME may not be consistently achieving these objectives. Initiatives are needed to better address and improve the resident experience, perhaps through improving faculty engagement and development.

164. Faculty assessment practices in six internal medicine Competency-based Medical Education subspecialty residency training programs: Assessment practices and opportunities

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Introduction: In July 2017, all 29 postgraduate training programs at Queen’s University in Kingston, Ontario implemented a competency-based approach to medical education, the first Canadian school to do so. Within competency based medical education (CBME), there is an increase in the amount of formative work-based assessments and concrete, narrative feedback to be completed (Hodges 2010). Despite the central role faculty members play in resident learning and assessment, there is limited research on faculty assessment practices (Holmboe et al. 2010). Thus, the co-investigators set out to understand faculty assessment practices within CBME.

Methods: Twenty-one-hour semi-structured interviews were completed with faculty assessors in six internal medicine subspecialty residency training programs at Queen’s University between November 2017 and April 2018. Using thematic analysis, the research team coded and analyzed interview data and emergent themes were identified through this process.

Results: Results indicate that while faculty assessors had not changed their assessment practices from before the implementation of CBME, they were actively contemplating and anticipating assessment opportunities. To facilitate their assessment processes, participants recommend regular, ongoing communication with regards to assessment requirements and a consistent application of CBME across internal medicine training programs.

Conclusion: This research concludes that there is opportunity to facilitate the assessment process through the enhancement of education specific to CBME, and postgraduate and training program communications regarding program-specific assessment requirements. The knowledge gained from this research could assist other internal medicine subspecialty residency training programs locally, nationally and internationally. Future research would examine the interaction of assessor cognition and competence in clinical tasks.

165. Partnering assessment and curriculum in simulation: Creation of a comprehensive EPA-informed pediatric mock code curriculum

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Introduction: Pediatric mock codes are an essential element in preparing trainees for emergent situations. However, without standardization or attention to desired learner outcomes, their impact may be variable. The primary aim was to develop and implement a structured simulated mock code curriculum, informed by the key competencies outlined by the American Board of Pediatrics (ABP) Entrustable Professional Activity (EPA) for resuscitation, stabilization, and triage (EPA 10).

Methods: A curriculum of 13 pediatric scenarios was outlined after reviewing the EPA 10 key competencies. These cases, following review by program directors and simulation staff, included emergencies of airway, breathing, circulation, disability/neurology, and trauma. All of our facilitators received debrief training, and we created a listserv to facilitate communication. To standardize feedback, an online assessment tool was

developed that included a holistic EPA rating and specific behavior checklists tied to the expected interventions for each case. 6 months after implementation, 88% (21/24) of the scheduled high-fidelity simulations were completed. At each simulation, one-to-one EPA based feedback was completed 100% of the time between faculty and resident (21 evaluations). Additionally, 69 evaluations were completed by other participants (students and residents). 93% (13/14) of trainees indicated that the feedback process would improve their future performance.

Conclusion: A standardized, EPA-informed mock code curriculum was successfully developed and implemented. Using the EPA framework as a driver for our curriculum development ensured that our approach covered the desired competencies. Additionally, incorporating trainees as assessors allows the assessment tool to serve as its own curricular intervention.

166. Competency-based Medical Education implementation pulse check

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Introduction: To identify trends and facilitate adjustments to implementation, this study evaluated the fidelity (the extent to which key features are implemented) and integrity (the extent to which a program embodies key features) of CBME implementation in the 2017 and 2018 launch disciplines across Canada's system of specialty medicine. It also examined early outcomes through current benefits and challenges.

Methods: A survey was distributed to program directors in June 2019. It addressed the degree of implementation of key features of CBME using an innovation configuration map approach. It further assessed faculty development, benefits, challenges, and steps for moving forward. A subset of participants was interviewed to more deeply understand their experience.

Results: Survey response rate was 30.5% (n=33) with 30% (n=10) completing interviews. Respondents rated their overall CBME implementation an average of 3.31 out of 5, with most programs on their way to full implementation of CBME features. Competence Committees were implemented most fully while many had not yet fully implemented individualized resident stage based learning. Common challenges were time investment, EPA observation and completion, culture change, and electronic platforms. Common benefits were more frequent and better-quality feedback, more objective review of residents, catching struggling residents earlier, and more engaged faculty and residents.

Conclusions: Most programs are adhering to the fidelity of CBME and are working towards fully implementing key features of CBME. However, integrity of implementation is still a work in progress for some programs. These results highlight successes and key areas of focus to improve CBME implementation.

167. Including patient and caregiver assessment in the pediatric Competence By Design residency curriculum: A consensus study

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Introduction: Evidence supports diverse assessment strategies, including patient involvement, in Competency-Based Medical Education (CBME). However, few residency programs formally include patients in assessment. This study aimed to reach consensus among Canadian pediatric program directors on the milestones for which patient/caregiver assessment would be valuable within the pediatric Competence By Design (CBD) curriculum.

Method: Program (and assistant program) directors from 17 Canadian medical schools were invited to participate in a 2-round modified Delphi. In round 1, participants rated the value of including patients/caregivers in assessment of milestones with the following scale: extremely valuable; valuable; somewhat valuable but not essential; not valuable at all. For analysis, first and last two options were collapsed into 'valuable' or 'not valuable'. Items achieving consensus (80% agreement) were removed. In round 2, participants rated remaining items, considering group feedback from round 1, with the same 4-point scale.

Results: In round 1, 16 (55%) of 29 individuals participated, representing 13 institutions. Of 210 milestones reviewed, there was consensus on 60 milestones, mainly relating to communication, as 'valuable' (of which 11 met consensus for "extremely

valuable"). 89 met consensus for 'not valuable'. Round 2 results are pending; complete data will be presented at the conference.

Conclusion: Preliminary results reveal that patient/caregiver assessment would be valuable for at least 60 milestones in the pediatric CBD curriculum, mainly regarding communication skills. This confirms the importance of patient/caregiver assessment of trainees; formal inclusion is recommended. Future directions include surveying patients regarding their role in assessment and validating patients' assessment skills.

168. Rivalries for attention: Implications for evaluating the implementation of Competence By Design

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Introduction: Competence by Design (CBD) is being implemented within a complex system with multiple related organizational changes required for its implementation. Gauging the successful implementation of CBD, therefore, necessarily involves an exploration of how CBD interacts with and is influenced by this complexity. We explore how the concurrent implementation of CBD and a new curriculum management system (CMS) complicates a realist evaluation of the implementation of CBD at the University of Manitoba.

Methods: During phase one of the evaluation study, data were gathered through 3 focus groups with residents (*n*=10) and faculty (*n*=8) and interviews with program directors (*n*=3) and program administrators (*n*=3) across 4 residency programs. We conducted a template analysis that included the development of a coding framework based on the initial coding of a sample of transcripts that was then applied to all of the focus group and interview transcripts and refined in the process.

Results: Distinguishing between CBD and the new CMS during data analysis proved difficult. Findings revealed that limitations of the new CMS, implementation fatigue, and in some cases, conflation of CBD and the new CMS resulted in increased workloads, resistance and confusion in faculty and residents, and a focus on certain aspects of CBD over others.

Discussion: The concurrent implementation of a new CMS presents a rival intervention that influenced the implementation of CBD at the University of Manitoba and presents a challenge to the ongoing realist evaluation of the CBD implementation.

169. The impact of a new surgical coaching tool: Facilitating collaborative teaching experiences

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Introduction: Despite evidence positioning coaching techniques as a central component of competency-based medical education (CBME), implementations of coaching are highly heterogenous in medical education to date. In the present study, we explored the impact of a new surgical coaching checklist on teaching and learning experiences in the operating room (OR).

Method: Eight staff and eight surgical trainees used the new coaching checklist for four weeks. Following this, they participated in individual interviews. Questions explored experiences with the coaching tool, barriers and facilitators to use of the tool, and perceived effectiveness of the tool. Interviews were transcribed verbatim and analyzed for themes.

Results: Staff and trainees reported that the checklist was helpful, providing opportunities for persistent interactions, facilitating more direct feedback, and creating a consistent, structured framework for teaching in the OR. The tool was most effective when both parties believed its use would add value to the teaching encounter. Lack of preparation, individual teaching preferences, inability to communicate openly, and competing time demands impeded usage of the tool.

Conclusions: The surgical coaching tool fosters good educational practice and more positive teaching and learning experiences, encouraging a more collaborative teaching environment. The adoption of coaching techniques continues to become increasingly important as more programs shift towards CBME curriculums. Future work will further explore how the tool will help provision and interpretation of meaningful feedback and improving the culture around assessment in CBME.

170. Development of an entrustment scale for interventional radiology trainees

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Introduction: Residency training is in the midst of transitioning to Competency-Based Medical Education (CBME). Entrustment scales are essential for learner evaluation and feedback, and there is a need to develop standardized specialty-specific scales for procedural work in interventional radiology. With input from across the country, we developed a nationally-vetted tool for the formative assessment of Entrustable Professional Activities (EPAs) specific to interventional radiology.

Methods: Thirty-one Canadian Diagnostic Radiology Residency and Interventional Radiology Fellowship Program Directors were surveyed to provide qualitative feedback on two draft iterations of the tool in a Delphi process. The data was analyzed thematically and used to modify the instrument. We also asked participants for their perspective on CBME trainee assessment in interventional radiological training and analyzed those responses thematically.

Results: Participants indicated that the draft tool was useful, but initially required substantive changes which were subsequently incorporated into later drafts. They reported satisfaction with the final version, and many indicated they would consider using the tool with their trainees. Participant opinions about CBME trainee assessment were mixed, with some indicating positive or optimistic feelings, while others were uncertain or apprehensive about the utility of the feedback and/or the potential increase in number of evaluations on a per-trainee basis.

Conclusions: We developed an assessment tool for EPAs in interventional radiology which can be used by diagnostic radiology residency and interventional radiology fellowship programs. The participants verified the content and validity of the instrument and increased their confidence in implementing CBME for interventional radiology procedures at their institutions.

171. Exploring junior trainee experiences of early Competence By Design implementation in a large paediatric residency program: Barriers, facilitators, and opportunities for improvement

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Introduction: Competence by Design (CBD) is one of the largest change initiatives to have occurred in medical education in Canada. The successful implementation of CBD in residency programs requires an understanding of the perspectives of multiple stakeholders, including the trainees who will complete their training within this new model. We undertook a study to explore resident experiences within the early implementation of assessment in CBD in order to identify best practices and opportunities for improvement.

Methods: A cohort of Foundations of Discipline (PGY-1) paediatric residents at the University of Toronto were asked to complete a brief (18 questions) online survey regarding their early experiences with assessment in CBD as the paediatric residency program transitions to this curricular model. Questions concerned: utilization, barriers, facilitators and improvement opportunities.

Results: In total, 23 residents participated (100% participation). Findings showed significant variation in completed assessments with only <10% (2/23) of participants meeting program-recommended targets. Key barriers to securing assessments included: time constraints (87%, 20/23), duplication of feedback work (78%, 18/23), technology issues (39%, 9/23), and perceived faculty attitudes toward CBD (17%, 4/23). Key facilitators included: real-time completion and mobile accessibility. Participant-identified opportunities for improvement included: faculty and resident training on the entrustment scale, addressing technological difficulties, and minimizing the duplication of feedback work.

Conclusion: Successful implementation of robust assessment in CBD demands an understanding of trainee perceptions. Our study points at major barriers and facilitators to assessment in CBD, that might guide development of improved approaches for capturing resident performance in the CBD era.

172. Examining quality of feedback at initial implementation and seven years post-implementation of a Competency-based Medical Education innovation

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Introduction: Effective formative feedback is essential to learning, a fact reflected in the dominance of formative feedback in all published competency-based medical education (CBME) frameworks and models. Our residency program introduced a CBME model in 2010 that included an emphasis on capturing feedback conversations between learners and observers as comments on narrative forms called FieldNotes. Given the importance of this feedback to learning, we compared FieldNotes from the first year of CBME with those from seven years later to examine whether quality of feedback changed over time.

Methods: Secondary data analysis. FieldNotes from two large urban teaching sites were extracted for two academic years; 2010-2011 and 2017-2018 (N=3780). FieldNotes were independently coded for quality by three researchers using a validated tool. Descriptive statistics were calculated, and t-tests were used to compare means.

Results: In 2010, there were 1071 and 721 FieldNotes entered in the system for Sites 1 and 2 respectively. Mean feedback scores were 2.57 (Site 1) and 2.81 (Site 2). In 2017, Site 1 had 902 FieldNotes (mean feedback score = 3.64); Site 2 had 1086 FieldNotes (mean feedback score = 3.36). T-tests showed no significant difference between sites, but a significant difference was found between years for both sites (Site 1: $F=5.204$, $p<.05$; Site 2 $F=23.002$; $p<.05$).

Conclusions: Seven years after implementation, significant improvements were seen in the quality of feedback documented about residents. These results suggest that our CBME approach resulted in improved assessment information shared with residents to support their progress to competence.

173. Competence By Design in Canadian neurosurgical residency programs

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Background: In July 2019, Canadian neurosurgery residency programs began using the Competence by Design (CBD) model for resident evaluation using Entrustable Professional Activities (EPAs) as its basis. The aim of this study was to identify the potential benefits and pitfalls of CBD in neurosurgery through a resident's lens.

Methods: A survey was distributed to all current first year neurosurgery residents in Canada over a 6-month period. The survey comprised six themes of questions that assessed three major facets of educational program implementation: 1) CBD knowledge of key stakeholders, 2) potential system barriers, and 3) educational and psychological impacts on residents. Respondent characteristics and responses were analysed by pre and post CBD comparison.

Results: Preliminary results of first survey show a response rate of 80% (n=25). 95% of respondents agreed that their residency program was ready for CBD implementation. However, 53% had instances of staff surgeons not willing to complete EPAs. When asked to weigh benefits and pitfalls of CBD, more pitfalls were chosen by residents ($p=0.03$). The most recognized pitfalls were lack of time (100%) and residents delay in initiating their own EPA forms (74%).

Conclusion: This study was the first to assess the feasibility of EPAs and the early pitfalls and benefits of CBD in Canadian neurosurgery residency education. Despite adequate preparation for CBD, significant barriers for success still exist in terms of faculty buy-in and resident time management. This work sets the stage for real-time modifications of CBD by the RCPSC to improve overall user experience.

174. Dalhousie's navigation of CBME: Staying the course with one45

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Introduction: The introduction of competency-based medical education created uncertainty among medical education institutions as to how to best handle the new requirements technologically.

Methods: The software program one45, originally designed for rotation scheduling, periodic evaluations, and basic summary reporting on resident achievement did not immediately appear to support the required EPA sendouts and tracking, 360 evaluations, and competence committee access. Some institutions trialed other software options, but Dalhousie University stayed the course with one45 and collaboratively developed operable short-term workarounds. Through regular working groups of program directors (PDs) and program administrators (PAs), needs assessments from competence committees and other faculty, communication with peer institutions, and strategy meetings with one45, new tools were developed to solve our most immediate problems. The CBME Lead and MedIT group advocated for other preferred modifications and reporting tools and even designed sample reports that made it into released tools.

Conclusion: Weekly offered workshops on form building, CBME setup, and CBME reporting increased PAs technology competencies and confidence, and created a source of best practice and innovation. This framework has set us on a path to a more usable system and a great working relationship with one45.

175. An evaluation of the implementation of CBME in pediatrics at Queen's University

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Introduction: In 2017, Queen's University launched Competency-Based Medical Education (CBME) across 29 programs simultaneously. Three years post-implementation we asked key stakeholders for their perspectives on CBME and their experiences during implementation.

Methods: Using rapid evaluation methodology, the intended implementation of CBME in the Queen's Pediatrics program was explicitly described. Focus groups and interviews were then conducted with trainees, faculty, and program leaders, to capture the experience of stakeholders in the first two years of implementation. Analyses were abductive, using the CBME core components framework and data-driven approaches to understand stakeholders' experiences, and compare planned versus enacted implementation, with an aim towards program improvement.

Results: Overall, the concept of CBME makes sense to all stakeholders and they understand the rationale for implementation. Trainees identified the high number of assessments required and delayed written feedback as challenges. Faculty noted the increased number of assessments and completing timely assessments in busy clinical settings as challenges. Program leaders identified the CBME Lead and Educational Consultant as vital supports during development and implementation while also recognizing some of the challenges identified by other stakeholders. Academic Advisors and Competence Committee members liked the frequency of progress meetings but reported that entrustment scales need further refinement.

Conclusion: The results provide critical insight into how well the intended outcomes have been achieved as well as areas for improvement in the design, delivery, or assessment practices of the program. These results and proposed changes can be used to inform and guide CBME implementation in other programs and institutions.

176. The development of a competency-based curriculum for the internship program in Ireland

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Introduction: Internship is a one-year programme for first year doctors, delivered in six regionally organised training networks in Ireland. A new national curriculum is being developed for a competency based training programme involving a programmatic approach to assessment. The proposed model for the curriculum involves competencies within the fields of 'being', 'doing' and 'knowing' – adapted from the Royal Australasia Basic Training Curricula Standards. Seven Entrustable Professional Activities (EPAs) have already been developed for Irish Internship to describe the 'doing' element.

Method: A workshop was organised to engage stakeholders and agree a model for the framework. A working group devised templates for each field, with exemplars of detailed content. Competency frameworks for comparable contexts were reviewed to inform the description of themes, competencies and learning outcomes for the 'being' domain. Curriculum documents from Intern Networks were reviewed to determine core content and topics in the 'knowing' element.

Results: A model for a curriculum standards framework for Internship has been devised. Templates with exemplars of themes, topics and competencies have been drafted. A wider consultative process will contribute to development of the framework. A programmatic approach to assessment will be achieved by blueprinting competencies within the 'being', 'doing' and 'knowing' elements of the curriculum to EPA assessment tools and identifying any other approaches required.

Conclusion: A curriculum organised around trainees' competence in the being, doing and knowing elements provides a comprehensive framework for a programmatic approach to assessment, ensuring interns provide triangulated evidence of attainment of professional competence.

177. The relationship between gender, relationship status, and ambition amongst medical students entering clerkship: A randomized controlled trial

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Background: Gender, relationship status, and publicity of responses impacted self-reported ambition amongst business school students. We hypothesized that female medical students experience similar pressures, which may contribute to the gender gap in academic medicine.

Methods: We evaluated the effects of public versus private disclosure of ambition among medical students entering clerkship at 1 Israeli and 2 Canadian medical schools. We randomized participants to receive an experimental survey (told responses would be shared publicly) or a control survey (told responses would be private). Our primary outcome was self-reported ambition, assessed as a composite Z-score that integrated 6 variables: desired salary, willingness to work nights and weekends, expected hours per week, tendency to lead, professional ambitiousness relative to peers, and comfort in competitive environments.

Results: There were 206 participants with 108 participants randomized to public and 98 to private disclosure; 1 participant from each group was excluded due to missing data. In our primary analysis, there was no difference in expressed ambition between those students who were informed that their answers would be disclosed publicly versus privately. However, female participants expressed lower ambition overall when compared with male participants (composite Z-score mean difference -0.35 (95% confidence interval -0.56 to -0.15, p=0.0007).

Conclusion: Relationship status and response publicity did not impact the expression of ambition, however, ambition and gender showed a significant association. The current study demonstrates that gender differences in ambition emerge prior to clerkship. Our results highlight the importance of timing when creating interventions to address gender discrepancies in academic medicine.

178. Changing perception: An evaluation of the Leeds Medical Education Academy Summer School

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Introduction: This research project focused on the evaluation of the Leeds Medical Education Academy Summer School (LMEASS): a week-long outreach activity created and delivered by medical students and doctors at the University of Leeds. The aim of the LMEASS is to shift the perception of medical school and raise the aspirations of WP students in applying to medical school.

This study assessed how and the extent to which the LMEASS changed the perception and aspirations of students.

Methods: 22 participants were recruited via email to participate in an online questionnaire. Questions consisted of a mixture of Likert scale and open-text questions. The frequency and mode were calculated in the Likert scale data and open-text responses were thematically analysed.

Results: The Likert scale data showed a positive perception of the LMEASS, with modal responses in either 'agree' or 'strongly agree' when asked whether a shift in perception and aspiration occurred. Three themes were identified: sense of community, perception of medical school, and the journey into university.

Conclusion: The Likert scale data showed a change in the perception and aspirations of students, with the themes of the study demonstrating how this was/wasn't achieved. The significance of WP medical student volunteers was highlighted in shifting the perception of students and

providing insight into medical school with a WP perspective. Seeing a WP student in medical school inspired the participants in applying to medical school, suggesting that WP interventions should reflect the focus of WP in selecting WP medical students to volunteer.

179. Does the gender make different with standardized residency training programs, a multicenter, longitudinal, retrospective cohort study on male OB/GYN residency trainees in China

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Objective: The purpose of this study was to analysis the evolution and characteristics of male OB/GYN physicians receiving training since the standardized residency training programs (SRTP) was introduced in China. Study methods: A multicenter, longitudinal, retrospective cohort study for gender differences, through questionnaires on male OB/GYN physicians receiving SRTP, compared with the same period of female OB/GYN physicians across China.

Results: 102 OB/GYN physicians, from 16 hospitals and 8 training programs nationwide, since SRTP was introduced in 2014, were included in this study (mean age 32.3 years). In 27 variables during and after the residency training, (including gender identity, self-assessment ,working hours, chances for clinical practice, preference from Instructors and patients, choices for subspecialties, opportunities for further study and promotion, time for building families and having children, etc.) were evaluated, 4 variables (including working hours, choices for subspecialties, time for building families and having children)showed significant differences between genders, and in male physicians, 13 variables(including self-assessment ,working hours, chances for clinical practice, preference from Instructors and patients, choices for subspecialties, opportunities for further study and promotion, time for building families and having children) were significant difference between during and after residency training, and no significant differences in the aspects of hospital level and years after training.

Conclusion: Small differences in characteristics between male and female were demonstrated in a survey of young OB/GYN physicians. Changing demographics and behaviors of the shows more pragmatic, humanized and positive trending in male OB/GYN physicians with SRTP in China.

180. Piloting a presentation on race-based microaggressions in medical training at a Canadian pediatric hospital

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Introduction: Minority resident physicians can experience a daily barrage of race-based microaggressions in the workplace, and this is likely underrecognized by institutions. There is no formal training on microaggressions for residents or faculty in pediatrics at the IWK Health Centre (IWK) in Halifax, Nova Scotia, Canada. We piloted a presentation for residents and faculty to define microaggressions, discuss their impact and suggest an approach to addressing race-based microaggressions as a Leader in the workplace.

Method: A 35-minute PowerPoint presentation on "Race-Based Microaggressions in Medical Training" was created and delivered by a senior pediatric resident to groups of faculty (n=4) and residents (n=14) at the IWK, with time incorporated for discussion and reflection. Surveys were completed by all attendees and measured perceived confidence in ability to recognize and respond to microaggressions before and after the presentation using a Likert scale ranging from "not at all confident" to "extremely confident." Descriptive statistics were used to compare responses.

Conclusion: After the presentation, 61% of attendees felt more confident in their ability to recognize a microaggression and 56% felt more confident in their ability to respond to a microaggression. Narrative feedback concluded that this presentation was a fast and effective way of conveying information on identifying and responding to microaggressions in the medical training environment. The presentation generated discussion, encouraged reflection, was easily implemented in the workplace and could be adapted by other programs/specialties. The authors plan to continue providing this presentation to others at the IWK, including subspecialty faculty, nursing and allied health.

181. Relative influence of multilingualism on surgical cognitive correlates, academic reach, and differential attainment: the Wittgenstein perspective

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Background: Ludwig Wittgenstein (1922) contended that learning a different language facilitates bigger world perspectives, and that multilingualism is advantageous. This study aimed to evaluate the potential influence of multilingualism on the career attainments of a cohort of consultant general surgeons from a single UK Deanery (Wales).

Methods: Multilinguals (ML, n=69, English & Welsh (n=14), English & European language (n=14), English non-European language (n=41)) were compared retrospectively with unilingual English peers (UL, n=110) over a 30-year period. Primary outcome measures were Hirsch Indices (HI, Elsevier, RELX Group) to assess academic profiles, and Advisory Committee on Clinical Excellence Awards (ACCEA) to assess perceived clinical service distinction.

Results: Overall median (range) HIs and numbers (%) of ACCEAs in ML vs. UL surgeons were 4 (0-36) and 8 (11.6%) vs. 7 (0-52, p=0.001) and 18 (16.4%, p=0.378) respectively. ML Welsh ability was associated with higher numbers of publications (23 vs. 13, p=0.030), HI (7 vs. 5, p=0.091) and ACCEAs (42.9% vs. 12.1%, p=0.002). On multivariable binary logistic regression analysis, the factors independently associated with ACCEA were high HI (HI>10, OR 12.11 (95% CI 3.02-48.55), p<0.001), consultant seniority (OR 17.09 (3.53-82.76), p<0.001) and ML Welsh language skills (OR 22.57 (2.50-203.51), p=0.005).

Conclusion: A hybrid picture emerged with no Wittgenstein effect related to global multilingualism, but Welsh multilingualism was associated with a strong effect; two-fold more publications, 50% higher HI, and four-fold more ACCEAs.

182. Women speakers in Healthcare; Changing representation at educational events

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Introduction: Conferences offer unrivalled opportunities to showcase diversity and inclusivity, and as a lever for cultural and organizational change. Yet often, they do not reflect the diverse healthcare workforce in their speakers. (1) Women Speakers in Healthcare (WSH) was founded to address this imbalance, by creating and maintaining the UK's largest database of women speakers in healthcare and connecting them to conferences who would otherwise have little to no female representation.

Methods: We audited our first 9 months of activity by accessing the number of signups on our database, number of twitter followers and the number of medical specialties signed up to the database. As well as rates of self-identification, which includes, LGBTQ and BAME.

Results: At the time of submission, WSH has 536 sign ups, 2345 twitter followers and our database include a variety of specialties from Forensic Medicine, medical journalism to Acute Medicine. We have had 34 speaker requests with 13 (38%) identified speakers. Unfortunately, our fill rate is currently 32%. This is mostly due to short notice of the request, and some requests still being worked on.

Conclusion: Women comprise the majority of the health and social care workforce in the UK, yet occupy approximately 41% of seats on NHS organizational boards and remain significantly underrepresented in senior leadership positions across the sector [2] We cannot be what we cannot see. Therefore, educational events must endeavor to showcase our diverse healthcare workforce, to help address the disparity between healthcare leadership diversity and workforce diversity.

183. Gender diversity of speakers at Regional Surgical Teaching Days

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Introduction: In the UK 30% of general surgical trainees are female. For Consultants this drops to 12%. (1) This review sought to access the 'role modeling' of speaking

slots at mandatory teaching days. With such a large attrition of female trainees, it is possible training days play into the stereotype of only men can be surgeons.

Methods: Nine mandatory teaching days for higher surgical trainees in a Deanary in the UK were reviewed for gender of speakers. If a speaker was talking more than once on the same day, only one slot was counted. Difference between surgical speaker and non-surgical speakers was assessed. Industry staff were not counted.

Results: A total of 9 different hospital days were reviewed, including District General Hospitals (7) and Teaching Hospital (2). Across all 9 days there were 59 available speaking slots, of which 47 (80%) were male speakers. However, if only surgical speakers were evaluated, there were 46 surgical speaking slots, filled by 41 male surgeons (89%).

Conclusion: If the adage you cannot be what you cannot see is true, training days could play a role in the feeling of belonging female surgeons will have not only to their specialty but to their region. We know that diversity is good for patient safety and healthcare, but with only 12% of general surgeons being women, more can be done at a grass roots level to role model and sign post that women belong in a 21st century surgical team.

184. Developing the power of the pack: The long-term leadership impact of peer mentoring for female clinicians as part of the RCP Emerging Women Leaders Programme

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Introduction: With women making up 54% of junior doctors (Kings Fund, 2014) and almost 60% of new medical students (BMJ, 2019) why does it remain that only 32% consultants and 24% trust medical directors are women (Kings Fund, 2014)? It has been suggested that a lack of effective mentoring for female clinicians aspiring to leadership positions has contributed to this under-representation at a senior leadership level (Nath et al, 2014). The RCP Emerging Women Leaders (EWL) Programme launched in 2018 for female early-career consultants. The programme was designed to help address the under-representation of women in leadership roles within medicine by developing leadership skills and using peer and senior mentorship. The RCP EWL Programme uses facilitated peer mentoring known as 'Action Learning Sets' (NHS, 2007) following increasing evidence to support the effectiveness of female peer mentoring in healthcare (Varkey et al, 2012). Participants highlighted the significance of facilitated peer mentoring in their post-programme feedback and it was decided to build on this feedback to formally develop research within this field.

Method: Participants are current and previous cohorts of the RCP EWL programme. Qualitative data is being gathered in two phases; a qualitative questionnaire and follow-up 1:1 interviews which will be analysed using a hybrid method of emergent and a priori codes and themes.

Conclusion: We intend to share the results of this study and make recommendations for the use of facilitated peer mentoring to support under-represented groups in leadership roles within healthcare and support the leadership development of junior doctors.

185. Compassion fatigue and the impact on quality of life of residents at Hospital Infantil de Mexico Federico Gomez

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Quality of professional life is defined as the subjective well-being that is perceived in relation to work performed as health professionals. The positive aspects are called compassion satisfaction and the negative aspects are known as compassion fatigue. Compassion fatigue manifests as burnout or as secondary traumatic stress (STS). The Professional Quality of Life Scale is used internationally for measuring positive and negative effects on health professionals. The high prevalence of burnout among residents and its impact on the quality of life is widely documented. The present study aims to identify compassion fatigue and if it leads to burnout or STS in the population of residents. Residents were invited to participate anonymously through an online survey. Of the 374 residents, 102 participated. Forty-six percent of the residents presented compassion satisfaction on an average level and 53% presented a high level. All the residents presented burnout. Of these none presented a high level, however, 70% presented a moderate level and 32% low. All the residents presented STS. Of these none presented a high level, 80% presented a moderate level and 22% low. Residents are the workforce of the hospital, it is an invaluable human resource for the institution. The

well-being of residents, both physical and emotional, must be a priority for the authorities of the institution, since it impacts the care of pediatric patients. It is relevant to highlight that residents who experience high levels of compassion satisfaction live in groups, do not consume stimulants other than alcohol and exercise regularly.

186. Walking learners: Enhancing wellness without impacting performance

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Background: Worldwide, residents do not meet exercise guidelines. Simultaneously, uing walking workstations in non-medical educational and work settings shows improvement in cognitive abilities. We investigated the boundaries of improved cognitive performance with physical activity using real-life tasks in participants having varying medical knowledge and experience. We hypothesized that, irrespective of expertise level, physical activity bolsters diagnostic performance.

Methods: 92 participants in their Year 2 of studies (30 family medicine residents (FMRs), 31 medical students (MS), 31 psychology students (PS)) were equally and randomly assigned desk-sitting or treadmill-walking. Following training slides showing a representative picture and brief description of 4 skin conditions, participants named skin conditions shown in 20 different pictures distributed among those previously studied.

Results: A mixed two-way 2x3 ANOVA with Expertise (PS/MS/FMRs) and Exercise (yes/no) as factors found a main effect for Expertise, $F(2,85)=3.51$, $p=.034$, $\eta_p^2=.076$. Bonferroni post-hoc tests revealed the difference in number of correct answers was significant between PS and FMRs ($p=.032$), while no significant differences were found between PS and MS ($p=.320$) nor MS and FMRs ($p=.944$). No main effect was found for Exercise, $F(1,85)=0.57$, $p=.453$, $\eta_p^2=.007$ nor interaction effect, $F(2,85)=0.01$, $p=.986$, $\eta_p^2=.954$.

Conclusion: While an expertise effect exists, more interestingly -- perhaps counterintuitively for some -- walking did not decrease performance at any expertise level during this complex task requiring problem-solving and short-term recall. When combined with studies showing that treadmill-walking reduces task stress and boredom while increasing arousal and mood, our study suggests a way to promote and enhance wellness during working hours without impacting medical learners' performance.

187. A novel approach to junior doctor induction: A focus on wellbeing for interns

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Introduction: The Medical Intern Unit in Ireland is engaged in the modernisation of the Intern Year project. This major project addresses the need to ensure comparable education and training experiences for interns across the country. The change from working in a protected undergraduate student environment to functioning competently in a team that relies on efficiency can result in significant distress amongst new medical graduates. Our project aimed to provide an induction programme focussed on well-being and based on needs previously identified from interns.

Method: We carried out a survey of interns after 3 months of work to evaluate their perceived preparedness for practice as well as their perceived wellbeing. At the start of the year, we ran an induction event aimed at improving the confidence level of incoming interns by providing them with tools and skills to manage their well-being. We also introduced a paid induction period for the first time.

Results: We reviewed the anxiety level in the cohort of interns. It was noted that 79.3% of them felt happy with 11.5% feeling anxious on their own. 32% reported palpitations and panic feelings. The results also showed 70% of interns felt prepared for intern practice which compares to over 40% not having sufficient knowledge of the environment they will work in. And over 60% not being familiar with the equipment they were required to use.

Conclusion: The focussed induction day improved self-perceived confidence but it was noted that familiarisation was an important aspect for preparedness for clinical practice.

188. Reflection on professional identity: A novel way to support resident wellness

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Background/Objective: The prevalence of depression and anxiety among medical trainees is high, with educational

consequences including reduced productivity, poorer quality of care and increased medical errors. Mitigating interventions often include some form of reflective practice, although none have emphasized the role of professional identity formation which is increasingly recognized as critical to wellness. A novel curriculum was therefore designed to support resident wellness through reflection on professional identity.

Method: The curriculum spanned the 2-year Family Medicine residency and consisted of 8 2-hour sessions, each focused on a theme commensurate with the professional identity of residents at its delivery. All residents (total 50) at two academic teaching units at the University of Toronto participated. Residents were divided into small groups based on residency year and training site, and each group was facilitated by a faculty member from the alternate site. Qualitative data were collected through post-session feedback forms, as well as through resident and faculty focus groups, transcripts of which were subjected to rigorous thematic analysis.

Results: The reflective curriculum was perceived to support resident wellness. Additional findings elucidated the mechanisms at play (peer support, normalization of experiences), the importance of "protecting" the discussions, the critical role of facilitators and their skillsets, and the impact of participants' personality traits and professional developmental stage.

Conclusion: A longitudinal curriculum encouraging reflection on professional identity appears to support resident wellness. Future iterations will continue to be studied to improve understanding of the relationship between professional identity formation and wellness.

189. Biosensors, biomarkers, and biometrics: A bootcamp perspective

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Introduction: Competitive athletic performance is routinely monitored by wearable technology (biosensors), yet professional healthcare is not despite the high prevalence of trainee stress and burnout, notwithstanding the corresponding risk to patient safety. The present study aimed to document the physiological stress response of UK Core Surgical Trainees (CSTs) during simulation training.

Methods: CSTs (n=20, 10m, 10f) were fitted with Vital Scout Wellness Monitors (VivaLNK, Inc., Campbell, CA) for an intensive 3-day training 'Bootcamp'. In addition to physiological parameters, CST demographics, event diaries, and burnout scores (Maslach Burnout Inventory (MBI)) were recorded prospectively during exposure to three scenarios: interactive lectures, clinical skills-simulation, and non-clinical (communication) training.

Results: Baseline Heart Rate (BHR, 60bpm (range 39-81bpm)) and Respiratory Rate (RR 14/min (11-18/min)) varied considerably (rho 0.076, p=0.772), with BHR associated with weekly exercise levels (66bpm (<1hr) vs. 43bpm (>5hr), p=0.004). Trainee response (standardised median HR vs. BHR) revealed HR was related incrementally to interactive lectures (71bpm, p<0.001), communication-skills (79bpm, p<0.001) and clinical skills simulation (88bpm, p<0.001). RR responded similarly (p<0.001). HR during clinical skills simulation was associated with MBI Emotional Exhaustion (p=0.044), but maximum HR was unrelated to CSTs' perceived peak stressor.

Discussion: Biosensor HR derived stress response varied significantly, with clinical skill simulation associated with a 47% higher HR drive. Its direct implication on oxygen uptake, and thus energy expenditure, highlights the physical demands placed upon clinicians. Research to measure workplace stress must be a priority to develop countermeasures aimed at both clinicians in training and the wider hospital environment.

190. Learner wellness in Canadian medical schools: An environmental scan

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Introduction: Although there are myriad interventions designed to address this wellness, most are at the level of the individual such as mindfulness or resilience which ignore the complex dynamics occurring between individual, programs and systems in the creation of healthy learners. We conducted an environmental scan of all 17 medical schools in Canada to determine wellness support systems with respect to infrastructure, policies, procedures and programming.

Method: Our target population included any type of learner within a medical school from undergraduate education, graduate education, undergraduate medical education and postgraduate medical education. The goal

of the environmental scan was to understand the design of learner wellness at Canadian medical schools. Data obtained from each of schools' websites was extracted and coded according to the Wellness Innovation Scholarship for Health Professions Education and Health Sciences (WISHES) framework which depicts wellness in five domains: mental wellness, physical wellness, intellectual wellness, occupational wellness and social wellness. This allowed for the analysis of strengths, weaknesses, opportunities, and threats (SWOT) for each school.

Conclusion: The infrastructure of wellness for medical learners greatly differed across the 17 schools which impacted the types of policies and programs that advocated wellness for learners. Interventions to address learner wellness in medical schools also need to consider interventions at multiple levels of action. In the educational context, this may include programmatic change within the medical school, but as our learners exist at the intersections of the health care and educational systems, this requires examination of system-wide changes.

191. Understanding burnout through the lens of the pediatric residency training environment

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Background: Despite interventions, burnout continues to increase among trainees. In a recent study of pediatric residents, the burnout rate was found to be > 50%. Though burnout is a major issue, there is limited data on effective interventions. This begs the question, what are we missing? An organizational context for burnout titled *Areas of Worklife,* identified 6 areas that affect burnout in the workplace: control, values, reward, fairness, workload, and community.This study aimed to gain a deeper understanding of resident perspectives of the six A*reas* and their significance in residency.

Methods: Using qualitative methodology, we conducted semi-structured interviews with a convenience sample of 15 residents. Interviews were recorded and transcribed verbatim. Analysis was conducted concurrent with data collection using a constant comparison method; we used ATLAS.ti to manage the data for coding and the principal investigator and 2 co-investigators created themes.

Results: Themes were identified for each of the *Worklife* areas. Overall, patient care was a lens through which residents understood the areas of control, reward, values, and workload. The themes identified in these leading areas focused on the resident's ability to interact with and learn from patients.

Conclusions: Resident definitions of the *Worklife* areas highlight the importance of patient involvement in the residency training experience, which is consistent with literature demonstrating patient care as a means for residents to find meaning in their work. Understanding residents' perspectives on *Worklife* areas is essential when developing potential interventions for burnout in residency.

192. Stress and burnout in surgical training; the trainees' perspective

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Introduction: Stress and burnout in surgical trainees in Wales have been reported as most prevalent in core surgical trainees (CST) and in particular women. This study aimed to identify the factors perceived by CSTs to be associated with burnout.

Methods: An open-ended questionnaire was distributed to 79 CSTs (54 male, 25 female) at the end of the 2018-19 academic year.

Results: Sixty responses were received (response rate 75.9%), of which all responded regarding to CST burnout and 36 (60.0%) responded to causes related to female gender. The commonest themes reported to be related to high burnout among the total cohort were examination and academic pressures (n=34, 56.7%), stress associated with annual target requirements of workplace-based assessments and operative log-book caseload (n=29, 48.3%), clinical ward work service provision limiting access to operating theatre time (n=16, 26.7%), lack of senior support and engagement (n=13, 21.7%), and poor of work-life balance (n=11, 18.3%). In contrast the commonest themes reported to be related to high burnout among female trainees were family-work balance and family planning (n=18, 50.0%), male dominated work environment and perceived male bravado (n=16, 44.4%), low numbers of female role models (n=5, 13.9%), and perception of a necessity to prove oneself when compared with their male counterparts (n=5, 3.9%).

Conclusion: CST perception regarding the NHS surgical training environment is worrying and targeted stressor counter-measures must be implemented to improve the clinical training atmosphere and reduce burnout.

193. Helping residents cope: Utilization data of a formal pediatric debrief team

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Residents experience significant intellectual, psychological, and emotional challenges as they care for sick children and their families. When distressing events occur, residents must use their resilience training to decrease their risk of burnout and depression. In order to address this risk, a Pediatric Debrief Team was implemented at the University of Rochester in February 2019. Here we share utilization and preliminary outcomes data from our first year.

The goal of the team is to respond to events of pediatric patients that residents perceive to be challenging, including disagreements regarding treatment goals, unexpected outcomes, and deaths. The team consists of physicians from multiple services, Pediatric Residency leadership, chaplain, and nurse managers and is activated by providers via email/verbal communication. The team then schedules and facilitates the debrief. Cases that require individualized support are referred to the Employee Assistance Program.

We reviewed all debrief requests and analyzed who sent the request, why, what service the patient was admitted to, and if a formal debrief resulted. To date, we have received 24 emails, most commonly due to patient death (96%). Our team is utilized most frequently by PICU (54%), NICU (37.5%), and Heme-Onc (23%). In our review, any resident email resulted in a formal debrief. We recently received our first nursing-initiated request, which shows expansion of our team.

Our team is reviewing how we can better provide services to the hospital teams and hope that in the future we will continue to be utilized to foster the resilience of our excellent care team.

194. Resident and health professions student well-being: A novel promotive and hinderance perspective on their thriving

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Introduction: Resident and Health Professions student well-being is a topic at the forefront of Canadian and international conversations. A majority of initiatives for trainee wellness have focussed on promoting positive wellbeing strategies as opposed to addressing the systematic hinderances to thriving.

Methods: This 2018-2019 cohort survey asked health professional trainees 90 closed-ended items from previously validated thriving (Comprehensive Inventory of Thriving) and self-determination scales (Perceived Autonomy Support and Perceived Competence Scale) as well as five open-ended questions about motivations, barriers, and supports to their well-being. Their anonymized responses were thematically analysed in Atlas.ti(v.8) and statistically analysed using MANOVAs in SPSS(v.24).

Results: This 2018-2019 cohort survey study sample included residents (n=128), medical (n=130), nursing (n=78), rehabilitation therapy (n=215), public health sciences (n=124), and biomedical sciences student respondents (n=183) from Queen's University who responded to email invitations. Response rate varied by profession from 11-51%. Statistical and thematic results suggest, in the aggregate, residents and medical students have comparable levels of thriving-promotive factors that include engagement, positive experiences, and self-worth as their other health profession peers, but significantly lower comprehensive thriving as well as control over their lives while also having significantly higher perceived loneliness and negative feelings than their other health sciences peers (p-values=<0.001, 99% confidence, medium/large effect sizes).

Conclusion: This study points to addressing hinderances to thriving being where efforts and research should be focused for the greatest potential effect in effecting meaningful improvement in the wellbeing of our future medical professionals.

195. Next steps in physician wellness: Starting to change the game

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Introduction: From the wealth of physician wellness literature, it becomes clear that there is no single solution for improving wellness. Many factors contribute to wellness and institutions must identify the solutions that work best within their specific teaching and learning environments. In our School of Medicine, we have conducted a needs assessment to help us understand the needs of our learners and educators.

Methods: We distributed an online version of the Maslach Burnout Toolkit™ for Medical Personnel to medical students, residents and faculty across the school of medicine. We received responses from 102 medical students, 113 residents and 197 faculty members. We added demographic and open-ended text questions to capture the specific needs of our institution. We conducted follow up interviews with 4 medical students, 3 residents and 6 faculty members.

Results: Residents scored higher on measures of Emotional Exhaustion and Depersonalization (both of which contribute to burnout) than medical students or faculty. However, on measures of Personal Accomplishment which serve as a protective factor, residents and faculty had high scores. These three aspects combine to create a burnout profile. Qualitative responses were thematically analyzed. Factors that promoted wellbeing included social support while factors that hindered wellbeing included workload and job demands.

Conclusion: These results provide the groundwork to inform the development and implementation of wellness programming. Leadership at our university and affiliated hospitals have committed to effecting positive changes in physician wellness. We will distribute this tool again in 3 years as part of a continuous quality improvement cycle.

196. Well-being in residency: A prospective observational study

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Introduction: Well-being in residency is a priority of multiple organizations involved in the accreditation of postgraduate programs yet there are only three prospective observational studies published on resident well-being. Our study follows a cohort of residents enrolled across all residency programs in one university for one year and assesses how their well-being and perception of stressors related to residency varies over time.

Methods: All residents enrolled as PGY-1 at the Université de Sherbrooke in July 2019 completed a socio-demographic questionnaire, the Satisfaction with Life Scale, the World Health Organisation Quality of Life-BREF questionnaire as well as a homemade questionnaire where they graded 37 stressors using a Likert scale at the beginning of residency and at six and twelve months of their PGY-1 year. The results of the entire cohort were compared against each other at different timepoints using ANOVA with repeated measures statistics.

Results: Resident well-being significantly decreased between the beginning of residency and the end of PGY-1. At the start of residency, residents were mainly stressed about the quantity of knowledge they needed to master, being on call, and making a mistake. At the end of the year, the level of stress over finding a job, changing hospitals, lack of clinical exposure, long hours, program support, and licensing exams increased. Levels of stress only decreased with respect to being on call and remained stable in the other thirty stressors assessed.

Conclusion: Overall, these results suggest that residency negatively impacts well-being and identifies certain stressors which can be addressed by programs to ameliorate wellness.

197. Trainee burnout; when does the fire start?

D. Robinson[1], L. Hopkins[1], C. Brown[1], R. Egan[1], W. Lewis[1], O. P. James[2]

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Introduction: Burnout is an increasingly recognised phenomenon in acute health-care specialties and

associated with training programme attrition, depersonalisation, and ill health. This study aimed to quantify the contributory physiological variables that may promote stress in newly qualified doctors.

Methods: PGY1 doctors (n=13, 7f, 6m) were fitted with a VivaLNK Vital Scout wellness device for 4 days prior to starting (Induction) and first 14 days as a qualified doctor. Minute-by-minute Heart Rate (HR), Respiratory Rate (RR) and Stress Index (SI, 0-100) were collected. Data was triangulated against a sleep diary (Sleep Time (Azumio) smartphone application), and rota duties; Induction vs. Normal Working Day (NWD) vs. on-call.

Results: Individual shifts numbering 132 were recorded. Clinical work (Induction baseline vs. NWD vs. on-call) was associated with higher median HRs of 18bpm (4-63) vs. 27 (0-51) vs. 25 (10-39), p=0.041 respectively; and SI (9 (0-76) vs. 48 (0-85) vs. 42 (0-81), p=0.041 respectively. No RR differences were observed. With regard to on-call shift time, twilight shifts were associated with more HR divergence from baseline (31 (25-39) vs. 24bpm (10-38) vs. 24 (13-34), p=0.046), RR (5 (1-9) vs. 1 (-1-3) vs. 1 (-1-6); p=0.033) and SI (64 (0-77) vs. 43 (0-81) vs. 39 (0-75), p=0.348), compared with day and night shifts respectively. SI did not correlate with sleep parameters.

Conclusion: Starting work as a doctor is associated with profound increases in stress associated physiological variables compared with the protected environment of induction, suggesting that clinician burnout stimulus begins on day one.

198. Perceived intimidation, harassment and discrimination during family medicine residency training: A mixed methods study

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Introduction: Residency training is a challenging and stressful time for residents and experiences of intimidation, harassment and/or discrimination (IHD) can intensify this stress. This study aimed to examine the perceived occurrence of IHD during family medicine residency training and the effect the experience had on residents.

Methods: A mixed methods study employing a cross-sectional survey and telephone interviews was conducted at two western Canadian universities. Survey participants included 307 family medicine graduates who completed residency training during 2006-2011. Eleven graduates were interviewed. Survey questions addressed the frequency, type and source of IHD. Interview questions explored the perceived basis and the effect IHD had on residents. Survey data were analyzed using descriptive statistics. Interview data were analyzed qualitatively from a descriptive perspective.

Results: Survey response rate was 47.2% (307/651). IHD was experienced by 44.7% of respondents. More females (51.9%) than males (33.9%) experienced IHD (p=0.003). The most common form of IHD was inappropriate verbal comments (86.8%). The main sources of IHD were specialists (75.7%), hospital nurses (47.8%), family physicians (33.8%), patients (26.5%), and specialty residents (24.3%). Interviewees attributed IHD to power tripping, medical professional hierarchy, the hidden medical curriculum, and a lesser perceived value of family medicine as a career choice. IHD experiences resulted in learners feeling angry, anxious, threatened, powerless, humiliated and having decreased self-esteem and confidence. As a result, some experienced sleep disturbances, required medication, underwent counselling and/or changed career decisions.

Conclusion: IHD is prevalent during residency training, having a negative emotional impact on residents. Residency programs need to better understand the underlying causes of IHD, help residents cope, and design strategies to eradicate it.

199. Attitudes towards orthopaedic volunteering in low-resource settings: A national survey of UK trainees and training programme directors

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Introduction: Surgical volunteering in low-resource settings can enhance the personal and professional development of volunteers and hosts alike. For volunteers, skills gained are applicable to NHS practice.

Objective: We sought to assess attitudes amongst orthopaedic trainees and training programme directors (TPDs) in the United Kingdom (UK) regarding low-resource volunteering during higher surgical training.

Methods: Two online surveys using SurveyMonkey were developed and distributed using e- mail. Survey One was aimed at British Orthopaedic Trainees Association (BOTA) members and was conducted over a nine month period (12th May 2018 to 13th February 2019). Survey Two was distributed to all 32 orthopaedic training programme directors and was conducted over three weeks (16th April 2018 to 5th May 2018). All responses were anonymous.

Results: Responses from 179 trainees (16%) and 50 TPDs (50%) responded to Survey One and Two were received respectively. The majority of trainees (69%) had never engaged with overseas work; however, 88% would volunteer overseas for any length of time if it were to count towards their Certificate of Completion of Training (CCT). The majority of TPDs (80%) felt trainees should be involved with overseas work, but only 60% had a pathway for enabling such opportunities.

Discussion: Our survey demonstrates a strong interest in volunteering in low-resource settings amongst UK orthopaedic trainees, with strong support from TPDs. We recommend greater engagement with key stakeholders to effect the changes necessary to facilitate overseas volunteering.

200. Bringing the hidden curriculum to light: The impact of a one-hour workshop for post graduate trainees

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Introduction: The hidden curriculum is a well-recognized avenue of learning that contributes to the professional development of medical trainees. Methods to address the hidden curriculum in post graduate training is not well described in the literature.

Methods: Materials for a one-hour small group workshop on the hidden curriculum was piloted during protected academic time for the Pediatric residency, Emergency Medicine residency and General Pediatric fellowship programs at McMaster University. A participant and facilitator guide were created, along with a supplemental presentation to stimulate discussion. Forty-five participants completed a pre-session and post-session survey collecting both quantitative and qualitative data inquiring about several aspects of the hidden curriculum.

Results: The workshop led to increased familiarity and awareness of the hidden curriculum's impact on the trainees' learning environment with a mean difference of 1.8(1.19, 2.41) and 1.93(1.29.2.58) respectively on the seven-point Likert scale. Lived experiences of the hidden curriculum by trainees highlighted unintended messages that often contradict the formal curriculum. Participants felt that the workshop provided insight into their role as facilitators of the hidden curriculum for junior trainees with commitments for behavioral change based on the workshop discussion.

Conclusion: Post graduate trainees have a unique role as learners and preceptors. In order to take control of the hidden curriculum, it is important for senior trainees to understand the messages they are conveying to other learners. This one-hour workshop can be used as an educational tool for post graduate training programs to generate awareness of their impact on the hidden curriculum.

201. How are we meeting the RCPSC pediatric and adolescent gynecology objectives in Canada: A survey, needs assessment and opportunity for education of residents and program directors

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Introduction: Pediatric and Adolescent Gynecology (PAG) is an essential part of ObGyn post-graduate training programs and specific PAG objectives are set out by the RCPSC. Exposure to PAG training varies across Canada and there are concerns that objectives are not being.

Methods: This is a comparative descriptive design where the 16 ObGyn Residency Program Directors (PD) in Canada were asked to participate in a 20-minute phone interview. The questions explored how PAG objectives are met in each program, the PD's awareness of PAG opportunities in North America and the feasibility of a mandatory PAG training experience. REB approved.

Results: 12 out of 16 PDs gave consent and completed the phone interview. There is at least 1 PAG-trained ObGyn per institution. There is a wide variety of PAG clinical and academic experiences for residents between the different residency programs. All PDs feel that PAG training is important and should be mandatory. However many PDs feel they lack the resources to implement a PAG mandatory training experience. The PDs also offered

solutions to these barriers which actually already exist and are available.

Conclusion: PAG training experiences should be mandatory in all programs in order to achieve the RCPSC PAG objectives. PAG providers are available in all Canadian training centers and efforts should be made to support these providers in delivering the educational PAG content to ObGyn residents so they may become competent in the care of young women and children. PDs need to be educated on the available PAG educational resources and resident elective opportunities.

202. A framework for documenting serious illness conversations in neurologic care

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Introduction: Serious illness conversations involve discussions about diagnosis, potential treatment options and prognosis with patients and their families involved in making health and personal care decisions. There exist educational tools to teach physicians how to have serious illness conversations. However, at present there is no comprehensive framework on how to document these serious illness conversations. Using acute neurologic care we aim to create a novel framework that can aid trainees in documenting serious illness conversations in neurology.

Methods: Our pre- intervention assessment tool involves sending an e-mail survey to approximately 210 Neurology residents across Canada, to gauge their comfort level on documenting serious illness conversations. Our educational tool will be based on development of a framework informed by resident responses. We will conduct focused interviews of a subset surveyed. Our education framework will include online modules and podcasts geared at documenting serious illness conversations in Neurology.

Conclusion: We hope that going forward our framework can serve as a basis for resident physicians to document serious illness conversations. Furthermore, we hope that our framework starts the dialogue between providers about serious illness conversations and will foster discussion and open attention to the manner by which these challenging encounters are documented. We also hope that our findings will have broader implication for other residency curriculums in the future.

203. Barriers to teaching on surgical ward rounds

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Background: No research in the UK has looked at the prevalence of teaching on surgical ward rounds (WRs). This has traditionally been a key opportunity for senior surgeons to teach and inspire juniors in order to attract them to enter surgical training.

Methods: An adapted validated paper questionnaire was distributed during November 2019 to General Surgery Junior Doctors in a UK tertiary referral centre.

Results: Total of 18 respondents across 3 specialties (Vascular, Upper GI, Lower GI) and spread across FY1 (9), FY2 (4), Trust (2) and CST (3) grades. Respondents on average participated in 4 Consultant and 1 Registrar led WR per week. 6% of WR time is felt to be dedicated to teaching. 11.1% strongly agreed and 83% agreed that the learning experience of ward rounds could be improved. Time was considered the main barrier to teaching on WRs. The emphasis on 'getting the ward round done' was also cited with 44% (n=8) strongly agreeing. Most respondents felt it important for learning to discuss patients away from the bedside (78%, n=14). However, this is achieved in just 55% of ward-rounds.

Conclusion: 94% of trainees felt educational value of ward rounds could be improved. Suggestions to achieve this include presenting patients or protected time following the ward round to discuss identified points. WR teaching could be a cheap intervention to increase surgical numbers, by role modelling and inspiring junior doctors. We would like to widen this research to see if this is a local issue or national.

204. Surgical learning styles; a gender gap perspective

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Introduction: Learning styles offer the opportunity to tailor training to an individual learner's requirements, yet are seldom considered because of increasing health

service demand and working time restrictions. In extremis, training environments incongruent with certain learning styles could arguably lead to adverse outcomes culminating in poor performance in professional examinations and ARCP. This study aimed to quantify the learning styles of a cohort of Core Surgical Trainees (CST).

Methods: The Kolb learning style inventory was distributed to CSTs during an induction bootcamp. Learning styles were analysed related gender, surgical specialty theme, and year of training.

Results: Of 103 responses received (response rate 64.4%, female 36.1%), the commonest learning style was Converging (35.0%) followed by Accommodating (26.2%), Diverging (23.3%) and Assimilating (15.5%). Male trainees were more likely to have a converging learning style (29/64) compared with female trainees (7/39), who were more likely to have a diverging learning style (14/39) compared with male trainees (10/64, p=0.020). Female trainees were statistically more likely to be team-based learners (accommodating / diverging) than their male counterparts (27/39 vs. 24/64, p=0.002). No significant variation was observed in learning styles related to specialty training theme or year of training entry.

Discussion: Gross differences in gender specific learning styles were apparent with female CSTs almost twice as likely to favour team-based learning. Potential implications for selection strategies, curriculum design, and postgraduate examinations are likely.

205. The hidden curriculum: At the core of the problem

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Introduction: The hidden curriculum refers to elements within a programme of study that are not explicit or directly taught. Within the arena of surgical education, it has been reported that a hidden curriculum can lead to dissemination of cultural and social biases reinforcing negative behaviours and perceptions. This study aimed to quantify knowledge of the hidden curriculum and its impact amongst a population of medical students and doctors in postgraduate training.

Methods: A structured, multi-question electronic survey was distributed to medical students from a single UK medical school and postgraduate junior doctors from a single UK training deanery with responses recorded anonymously on a 10-point Likert scale.

Results: Of 184 responses (57.1% female, 43.5% medical students) received, the median (IQR) awareness of the hidden curriculum was 5(4) with no difference related to gender, or level of medical training (medical students vs. junior doctors). Medical students described witnessing less positive behaviour (7 [2] vs. 8 [2], p= 0.027) and more negative behaviour (5 [4] vs. 5 [3], p=0.023) when compared with junior doctors. Junior residents reported less frequent positive behavior (7 [2] vs. 9 [2] vs. 8 [2], p=0.002), and more frequent negative behavior (6 [2] vs. 6 [3] vs. 5 [2], p= 0.030) when compared to Interns and Senior Residents, respectively.

Discussion: Medical students and Junior Residents are most exposed to negative aspects of the hidden curriculum. Educational and clinical leaders must rise to the challenge of counter-measures and remedial culture change.

206. The hidden curriculum: Unearthing the truth

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Background: The hidden curriculum refers to the elements of a curriculum that are not explicit or directly taught, and which may adversely influence training. This study aimed to quantify the recognition and impact of the hidden curriculum in a cohort of post-graduate trainees.

Methods: A structured 9-question survey, based on themes reported in the literature, was distributed to a trainee cohort at various stages of postgraduate training. Likert scale responses (1-10) were collated and anonymised, prior to non-parametric statistical analysis.

Results: One hundred and four responses were received (46 m, 58 f). Median (IQR) awareness of the hidden curriculum was 5(5.25), and perceived importance of addressing the hidden curriculum 8(3). Trainee reported frequency of exposure to positive behaviour (never-very frequently) from other health professionals was reported with a frequency of 8(2), compared with negative behaviour 5(3); one trainee reporting no exposure. Surgical trainees were considered at risk of unrecognised

sleep deprivation 9 (2) and burnout 9 (2). Females reported more gender-specific hidden curriculum effects (strongly disagree-strongly agree) 5.75 (3.75) vs. 3(4), p=0.028, as did medical compared with general and orthopaedic surgery trainees, respectively (9 [2] vs. 8 [3] vs. 8 [1.75], p<0.001). Junior residents reported positive behaviour less frequently than interns and senior residents (7 [2] vs. 8.5 [2] vs. 8 [2]; p=0.009).

Discussion: Hidden curriculum awareness is variable although most trainees reported positive elements. Nevertheless, the witnessing of negative behaviour remained almost universal, and post-graduate female and junior residents appeared most vulnerable.

207. Improving paediatric written exam teaching in Wales

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Method: Uptake of traditional face-to-face MRCPCH written exam teaching sessions in Wales has been poor for three years despite interest being high among trainees. During 2018-19 only 4 students were able to attend teaching. The aim of this project was to explore examinee experiences with the teaching programme and to use learner suggestions as part of a collaborative process to design a new teaching programme. A survey was sent to doctors working in paediatrics in Wales. Data were collected from February until March 2019. Results were then used to design a new teaching system.

Results: There were 17 respondents. The most common reason for not attending teaching included having prior clinical commitments (47.1%). The two most popular suggestions to improve teaching were to "improve access" and to "teach on difficult topics specifically", with teaching preferably delivered online.

Conclusion: All materials delivered face-to-face are now being delivered by pre-recorded lectures online, which has improved access. Difficult topics have been identified and a new podcast was launched in order to make access to these lectures available outside Wales also; DragonBytes. Teaching was opened up to non-paediatric trainees, a peer support network was established, and a mentorship programme was introduced for struggling trainees. Early results from studying the impact of these interventions have been very positive, though data collection is still ongoing. During the first 4 months of 2019-20, 20 doctors (including 7 non-paediatricians) have accessed the resources.

208. DragonBytes paediatric podcast: Using data analytics to determine learner interests

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Method: As part of a quality improvement project for paediatric doctors in training in Wales, a new podcast was launched in September 2019; DragonBytes. The initial aim of this to support trainees more holistically with training, with episodes covering a wide range of topics, such as complex paediatric conditions, reflective writing or career advice. The podcast has been made available to all and the aim of this project is to determine uptake and popularity of the new series by using website data analytics.

Results: As of January 1st, 2020, here have been 1058 unique listens to the podcasts; 838 via SoundCloud and 220 via Spotify. The average number of listeners per podcast is 64.3. The most popular episode is "Nephrotic Syndrome", with 128 listens. The most popular episodes are those with a focus on theory and written exams (average 82.25 listens per episode). The least popular are reports from events (average 36 listens per episode). Listeners on Spotify are 71% female and 27% male. Those aged 28-34 are most likely to listen, accounting for 50% of listens to the podcast. Outside of the UK, the three countries that most listen to the podcasts are Saudi Arabia, Ireland and the United States.

Conclusion: Having teaching delivered digitally has the advantage of easy access to analytical data that can shape future teaching sessions. There is a clear strong appetite for theory-based podcasts and so more focus needs to be given to this area.

209. Surgical training rotation design: A retrospective observational cohort study of hospital status, rotation theme, and duration

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Introduction: Entrants into UK surgical specialty training undertake a 2-year programme of Core Surgical Training, rotating through specialties for varying lengths of time, at different hospitals, to gain breadth of experience. This

study aimed to assess whether these variables influenced core surgical trainee (CST) work productivity.

Methods: Intercollegiate Surgical Curriculum Programme (ISCP) portfolios of consecutive 344 rotations, by 111 CSTs were included; primary outcome measures were Workplace-Based Assessment (WBA) completion, operative experience, and academic outputs; presentations to learned societies, publications, and audits.

Results: Incremental increases in attainment were observed related to CST rotation duration, specifically; total consultant validated WBAs completed related to rotations of 4 vs. 6 vs. 12 months revealed median numbers of 48 [0-189] vs. 54 [10-120] vs. 75 [6-94] ($p<0.001$), operative caseloads of (Primary Operator) 84 [3-357] vs. 110 [44-394] vs. 134 [56-366] ($p<0.001$) and presentations to learned societies 0 [0-12] vs. 0 [0-14] vs. 1 [0-5] ($p=0.012$). Hospital status and specialty training theme were unrelated to workplace productivity. Binary logistic regression identified length of hospital rotation as the only factor independently associated with total WBA count ($p=0.001$), audit completion ($p=0.001$) and number of presentations delivered ($p=0.001$).

Conclusion: Longer rotations with a single educational supervisor, in one training centre, are associated with better workplace productivity. Consideration should be given to this when reconfiguring training programmes within the arena of workforce planning.

210. Competence by volume? Using databases at five Canadian teaching hospitals to estimate internal medicine bedside procedure volumes

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Introduction: Internal medicine (IM) residents and staff perform invasive bedside procedures for diagnostic and therapeutic purposes. Presently, it is unknown whether procedural volumes are sufficient for personnel to acquire and maintain competency. We sought to quantify the number of core IM procedures performed on clinical teaching units (CTUs).

Methods: Using the General Internal Medicine Inpatient Initiative (GEMINI) database, we analyzed the number of fluid samples sent for lab analyses and inferred the number of procedures performed at five Toronto teaching hospitals from April 2010 to December 2014. We made a crude estimate of the number of annual procedures per hospital site, identified the number of core IM residents and staff, and divided the total number of procedures equally among those personnel. We will refine our analyses prior to ICRE 2020.

Results: Our preliminary analyses estimate that IM personnel perform an average of 7.54 (SD=0.50) total procedures per year including paracentesis, thoracentesis, lumbar puncture, arthrocentesis, and unclassified procedures with unclear site of origin. We observed variability across site, but not across year.

Conclusions: Our analysis suggests low annual volumes on CTUs for many IM procedures on a per-personnel basis. While using only lab data may underestimate procedure totals, our approach also likely overestimates the per personnel average, given we did not include medical students, off-service residents or clinical fellows as IM personnel. These preliminary data suggest procedure volumes may be insufficient for residents to acquire and maintain competency in all mandated procedures.

211. Continuity clinic in neurology programs across Canada

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Introduction: Resident Continuity Clinics (RCCs) are an important part of medical education, allowing residents to follow patients longitudinally. As such they have recently been added as a mandatory experience to the Royal College of Physicians and Surgeons of Canada's new Competence By Design neurology curriculum. This project was undertaken to obtain information on how RCCs currently function in Canadian neurology residency programs.

Methods: A questionnaire was sent to all program directors of neurology (adult and pediatric) across Canada.

Results: Responses were received from all 24 programs. An RCC was present in 87% of adult and 89 % of pediatric neurology programs. The median duration is 3 years for adult neurology programs, the majority starting in their R3 year. The median duration is 4 years for pediatric neurology program with varying starts between R1 and R3 years. Clinics occur mostly on a weekly or biweekly basis, although quarterly, bi-monthly and monthly clinic frequency were also reported. Three to 4 patients are seen per clinic, with a few programs highlighting a graded system with junior residents seeing fewer patients than

senior residents. Patients are allocated to clinic primarily from regular triage by faculty, but also from ward follow up and phone calls triaged by residents. Upon completion of the residency, most continuity clinic patients are transferred to appropriate faculty.

Conclusion: These results highlight the heterogeneity of RCCs across Canadian neurology programs. Future work to identify best practices for RCCs, will be helpful to assist program directors and inform future accreditation standards.

212. Unpacking the phenomenon of attrition from a program directors' perspective; a focus group study

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Background: Attrition of trainees is a worldwide concern with high impact. To do justice to the interaction of factors and actors playing a role in the learning environment, we investigated the perspective of an important stakeholder involved; the Program Director (PD).

Method: We conducted focus groups with 27 TPD's from 5 training hospitals. We explored how PDs perceive attrition and interactions in the learning environment which play a role in the process leading up to attrition. A template approach was used for data-analysis.

Results: PDs discern attrition as an unwarranted outcome, yet also identify cases in which attrition might be for the better. PDs identify personal, system- and workplace related factors and causes to play a role in a complex interplay. PDs take various roles when guiding their trainees; and seem to struggle balancing these roles. They use resources, mainly in a reactive rather than a proactive manner, to assist trainees in difficulty. Generation differences between faculty and trainees are noted to be a potential source of misunderstanding.

Conclusion: We suggest interventions at different levels. Training programmes should consider implementing pro-active support for trainees; such as coaching and mentoring. Creating awareness regarding generational differences amongst faculty and trainees might increase mutual understanding and social belonging. Conflicting roles of PDs could be addressed by reallocating responsibilities to independent 'third-parties', such as educationalists or psychologists.

213.Educating residents about professionalism: An asynchronous online course

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Introduction: Professionalism in medicine is essential for building collegial relationships and fostering patient trust. In the postgraduate setting, lapses in professionalism create obstacles for learning and taint working relationships. Professionalism is often the target of remediation, and one that presents a formidable challenge for educators. We adapted a faculty-focused curriculum on professionalism for delivery to residents. The program was faculty-facilitated, online, and asynchronous. Learners met virtually at the beginning and end of the course and provided commentary throughout via discussion boards.

Methods: To evaluate the course, we examined discussion board activity and administered a brief post-course questionnaire.

Results: The course was completed by 18 residents from a variety of specialties representing training levels PGY1-4. Message board participation throughout the course was regular and commentary revealed thoughtful engagement with course materials. The evaluation survey (n=5) revealed that most (80%) found the online format to be a good way to learn course content and that discussion boards enhanced their learning; 100% agreed that they would be able to use what they learned in the program. Finally, 80-100% reported that as a result of the course they felt better able to discuss professionalism, appreciate the importance of addressing lapses in professionalism, and explain how professionalism relates to physician wellness and patient safety.

Conclusion: This first offering of an online course to address professionalism was well-received and highly evaluated. Although modeling of professional behaviour and policy to address lapses also play key roles, this programming may support the development of professionalism among residents.

214. A winning game plan? Sport medicine training in Canadian pediatric residency programs

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Introduction: Despite millions of youth participating in sports, many general pediatricians do not feel comfortable managing musculoskeletal injuries and would have liked more sport and exercise medicine (SEM) training during residency. We surveyed Canadian pediatric residents and program directors about SEM training in Canadian pediatric residencies.

Methods: This was a survey study of senior pediatric residents (320 PGY3/4, of whom 45 were French-speaking) and pediatric residency program directors across Canada (18 programs). The Canadian Pediatric Program Directors Research Group emailed surveys to the participants, with 2 email reminders. Participants were asked how much SEM training was provided in their program, how SEM training was provided, and whether they felt their program was adequately preparing pediatric residents for practice. Data was reported as percentages.

Results: Response rates were 13.5% for English-speaking residents, 0% for French-speaking residents, and 38.9% for program directors. No program had more than 10 hours of orthopedic or SEM formal teaching (academic half days or rounds). Most SEM teaching was received during emergency medicine rotations. 75.7% of residents felt there was not enough SEM training; 81.1% wanted more SEM training. No respondents felt that pediatric residents are adequately prepared to care for young athletes once in practice. 71.4% of program directors who responded felt that there should be a standard national curriculum in SEM in Canadian paediatric residency programs.

Conclusion: Canadian pediatric residents have limited exposure to SEM training during residency. Canadian pediatric residency programs should include more SEM training to better prepare future pediatricians for practice.

215. How do subspecialty portfolios work, for whom, and why? A realist evaluation of the transfusion medicine area of focused competence

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Background: The Area of Focused Competence (AFC) in Transfusion Medicine was approved in 2011 as a competency-based portfolio for post-residency training. We performed a program evaluation to explore how portfolio completion enables the achievement of subspecialty competence.

Methods: A middle range theory (MRT) was constructed after review of curricular documents and interviews with two curricular developers. Semi-structured interviews with key stakeholders were conducted to explore this MRT. A realist approach to analysis was used to ascertain for whom the portfolio was working, under what circumstances, and why (context, mechanism, outcome).

Results: The MRT proposed that experiential learning, assessment for learning, and self-determination theory were mechanisms by which the portfolio was working. Interviews with twenty-one stakeholders (twelve current or former trainees, seven physician or non-physician teachers, one program director, one curriculum developer) were recorded and analyzed. Interim analysis of trainee and teacher transcripts indicated that the achievement of competence in the laboratory, clinical, and administrative domains of transfusion medicine (outcomes) are influenced by several mechanisms aligned with the MRT. Comprehensive analysis of all transcripts, along with contexts impacting on these mechanisms, will be presented upon study completion.

Conclusion: The completion of a competency-based portfolio that reflects the actual work of practicing transfusion medicine specialists supports the development of competence. Mechanisms including experiential learning, assessment for learning, and self-determination theory may support this learning as different portfolio components interact with contexts intrinsic and extrinsic to learners. These findings support

the ongoing implementation of this AFC and should be evaluated in other programs.

216. Comfort in pediatric acute care appears to remain static after training

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Background: Training in acute care in pediatrics is variable and evidence suggests there is a gap in pediatric resuscitation skills. Thus training for rare, high stakes resuscitation is important because it is unlikely competence comes with experience. It is unknown how comfortable pediatricians feel managing acute care clinical scenarios or how this varies with time.

Objectives: To determine if the training general pediatricians receive is sufficient to achieve a high comfort level in acute care that is sustained after 5 years in practice.

Methods: An anonymous cross-sectional survey was piloted to a random sample of pediatricians in Ontario. Demographic data regarding practice was collected. Clinical scenarios based on the Pediatrics Objectives of Training were used. Respondents were asked to rate their comfort managing these using a 5-point Likert scale. Statistical differences were measured using the Mann-Whitney-U test.

Results: Response rate was 24% (248/1000). 84% of respondents were from urban centers. 81% had been in practice more than 5 years. 64% and 48% felt comfortable leading neonatal and pediatric resuscitations respectively with no difference between those in practice more or less than 5 years (p=0.69 and 0.07 respectively). For procedural skills, comfort is not associated with time in practice but appears positively correlated with frequency of the procedure.

Conclusion: Our pilot suggests that ensuring competence in acute care in pediatrics residency is important because comfort with resuscitation remains static over time. The skills pediatricians report most discomfort in should be targeted for professional development or reconsidered as objectives of training.

217. Active management of transition to residency

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Introduction: As postgraduate medical education moves to a competency-based training framework, we anticipate that a strong orientation to specialty will be essential for a smooth transition to the junior level of training. “Transition to Discipline” is identified as the point of entry to the CanMEDs Competence Continuum for all specialties and is a well-constructed foundational rotation necessary for incoming residents in ObGyn. We developed and evaluated a 4-week Foundations rotation for incoming OBGYN residents to smooth the transition into postgraduate training.

Methods: We partnered with Surgical Foundations and our Simulation Centre colleagues to incorporate multiple domains of education designed to both build on existing knowledge and expand skills training needed to be prepared for expectations of a PGY-1 level trainee. The rotation was then evaluated by trainees on how well it prepared them for residency.

Results: This 4-week comprehensive rotation included wellness, orientations, workshops, certifications, simulation labs, lectures, and service initiations. Skills and simulation sessions incorporated practise models with C-section, perineal laceration repairs, vaginal deliveries, ultrasound, and obstetrical emergencies. Certification courses in Fetal Heart Surveillance in Labour and Neonatal Resuscitation were completed along with the mandatory bootcamp for Surgical Foundations. All open time was spent shadowing senior residents on core rotations. Based on evaluations completed by the trainee this rotation better prepared incoming trainees for OBGYN residency.

Conclusions: The “Foundations” rotation was assessed as a comprehensive orientation which facilitated smooth transition to discipline from medical students to junior residents in the OBGYN department.

218. Self-regulated learning behaviours of residents entering two different family medicine residency programs

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Introduction: Lifelong learning is essential to the safe practice of medicine. One of the goals of competency-based medical education (CBME) is to produce good lifelong learners. Self-regulated learning (SRL) theory is an approach to understanding how learners can be proactive in their learning by identifying what they need to learn, and choosing the appropriate strategies. Learners who engage in adaptive SRL plan their time, organize their study strategies, and are flexible in their approaches to learning as determined by their goals. In this study we measured self-reported SRL behaviours of PGY1 residents at two Canadian programs to determine their level of SRL skills at start of training.

Methods: A questionnaire was developed based on three existing validated instruments to measure residents' self-reported SRL skills (metacognitive self-regulation, critical thinking, and cognitive awareness). Surveys were distributed to residents at two different universities in the first 6 weeks of start of residency. Ethics approval was obtained at both sites. Descriptive analyses and means comparisons (t-tests) were used.

Results: Surveys were completed by 74% of residents at Site A and 36% of residents at Site B. No significant differences were found between Sites.

Conclusion: This study provides insight into the SRL skills that residents bring into training. The fact that no significant differences were found between schools suggests that there is consistency in the SRL skills of graduates from Canadian medical schools. This might give programs a baseline to allow for determination if CBME can improve SRL skills over time in residency training.

219. Exploring feedback in the context of regulatory-body mandated peer review

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Background: Upon entering practice, residents can anticipate interacting with regulatory bodies that obligate participation in peer-facilitated programs aimed at supporting life-long learning. Given the limitations of self-assessment and insufficiency of feedback commonplace in clinical practice, such interactions are necessary for continued professional development. However, similar to challenges experienced during residency, mandatory participation in these programs may conflict with their formative intentions. To facilitate meaningful learning, we explored perceptions of feedback generated in this setting.

Methods: We interviewed 9 physicians about their experiences with a Canadian regulatory authority's peer-facilitated quality improvement program. Constructivist grounded theory informed data collection and analysis.

Results: Nearly all participants worried their notice of an upcoming assessment signaled a problem, provoking anxiety that an assessor might discover previously unidentified deficiencies that could threaten licensure. Despite concerns, the assessments were relatively innocuous for most. Because feedback was based on chart reviews rather than direct observation of patient care, it was perceived as relatively unhelpful for improving day-to-day clinical practice. Nonetheless, it seemed to provide participants with reassurance that their performance met professional standards.

Conclusion: The perceived learning value of peer feedback may be affected by both lack of direct observation and real or perceived threats to professional identity. However, while not necessarily anticipated as valuable, assessor feedback seemed to mitigate fears about blindspots in practice—a form of uncertainty that can cause distress and impede professional development. Given the emotional overtones of interviews, future research should consider the relationship between feedback and well-being across the medical education continuum.

220. Revision of the toxicology objectives of training in pediatric emergency medicine using a delphi approach: Results of a pilot survey

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Background: Pediatric Emergency Medicine (PEM) subspecialty residents have a broad list of training objectives to complete in preparation for practice. Unique to the speciality, PEM physicians are considered experts in diagnosing and managing pediatric toxicologic exposures. It is unknown if the current objectives of training (OT) for

toxicology for PEM are adequate. This study's primary objective is to generate practice relevant toxicology objectives for the PEM fellowship curriculum using a Delphi model surveying pertinent education stakeholders.

Methods: A comprehensive survey of possible toxicology OT was developed in consultation with PEM and toxicology experts. This survey was piloted with local PEM and toxicology practitioners. The survey was modified to better assess learning needs, and will serve as the basis for a 2-tiered Delphi study involving Canadian PEM fellowship program directors and toxicologists.

Results: Results from the pilot demonstrate need for a more comprehensive list of toxicology objectives than currently provided. However, survey data was skewed towards all topics being important, suggesting an issue with the discriminating ability of the measurement tool. The survey was revised with Competency Based Design (CBD) anchors, which should provide improved discriminating of the relevance of the objectives list. In our pilot phase, there is agreement between PEM and toxicologists with this revised list.

Conclusion: Using pilot survey results, we present a CBD survey tool that we will utilize to develop a national PEM subspecialty toxicology curriculum that is relevant and comprehensive for practice. Pilot survey data suggests that this list will differ from current OT.

221. Initial steps in the development of an innovation curriculum for post-graduate medical education: A preliminary scoping review of the processes of innovation in healthcare

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Introduction: Innovation is the development of a novel concept, methodology, or product. While it may be easy to identify problems in healthcare settings, developing novel concepts, methodologies, and products that are not based on historical thinking or previous trends is challenging. It requires one to think creatively and unconventionally and beyond current knowledge. We conducted a preliminary scoping review to inform the development of an innovation curriculum for post-graduate medical education.

Methods: A preliminary scoping review was conducted using a modified Arksey & O'Malley framework. The medical literature within the OVID (Medline and EMBASE), PubMed, Web of Science, and Compendex databases was comprehensively searched to assess the process of innovation in healthcare. Dynamic search terms encompassing relevant Medical Subject Headings (MeSH) as well as additional relevant search terms were employed. Additional search strategies involving reference searches of identified literature were also applied.

Results: Medical literature identified varied greatly in terms of purpose, methodology, and detail of reporting. Though significant variability among medical literature was noted key concepts and themes of the process of innovation in healthcare identified included problem identification, process deliberation, innovation conceptualization and innovation execution. Much of the available medical literature further identified collaboration as integral to the process of innovation in healthcare.

Conclusions: While the process of innovation may take various forms, developing an innovation curriculum for post-graduate medical education will allow medical and surgical residents to adeptly translate this process into a tangible framework that may be applied to each of their day-to-day healthcare encounters.

222. Implementing an anatomy curriculum in a Canadian orthopedic residency program. A response to decreased anatomy knowledge among incoming trainees

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Background: Medical students are spending less time in anatomy labs than ever before (Rockarts et al., 2019). This has raised concerns that students, particularly those wishing to pursue a surgical specialty, may be underprepared when entering residency. This study aimed to 1) pilot and evaluate an anatomy program for orthopaedic trainees; and 2) explore perceptions of anatomy knowledge and the usefulness the pilot program.

Methods: In partnership with the Queen's Clinical Anatomy program, a 9-week surgical anatomy program was designed and implemented. Change in pre- and post-multiple-choice quiz (MCQ) scores was used to measure

trainee knowledge. Trainees and faculty were also invited to complete a survey on previous anatomy experience, perceived knowledge, and perceptions regarding the utility of the anatomy program.

Results: Faculty expected trainees to enter residency with adequate anatomy knowledge; however, reported knowledge as being 'poor' to 'very poor'. Trainees reported variable anatomy training during medical school (10-80 hours), with 64% of trainees reporting no anatomy experience prior to medical school. Following the anatomy program, MCQ scores improved by 10% (20% on surgical approach questions). Though the difference did not meet statistical significance (p = 0 .1), 80% of trainees ranked the program as 'very useful', and 100% indicated the program should be continued in future years.

Conclusions: Our findings suggest surgical trainees can benefit from supplementary anatomy training following medical school. Further studies should explore whether this translates into the clinical environment and whether alternate modalities, such as virtual reality, are equally effective.

223. Point-of-care ultrasound (POCUS) training in University of British Columbia family practice residency: An environmental scan and curriculum recommendations

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Introduction: The use of and interest in PoCUS is growing amongst family medicine residents. Yet, PoCUS training amongst Canadian residents highly variable. The UBC family practice residency curricular objectives do not include any pertaining to the use of ultrasound. In this resident-driven study, we assessed the current state of PoCUS training amongst UBC family medicine residents. Data and previous work was used to propose practical and standardized methods of formally integrating training into the curriculum.

Methods: A cross-sectional analysis was performed via a survey tool distributed to residents by email. The survey assessed access to ultrasound training, the quantity and quality of this training, as well as its perceived impact on professional development.

Results: Eighty residents responded. Sixty percent indicated that their residency site did not provide PoCUS training. One quarter of residents took course(s) independently. The majority felt that bedside experience or completion of ultrasound courses was the best setting to deliver training. Reported barriers to ultrasound training included cost and lack of preceptors, time, and machines. Almost all respondents were in favour of a program-wide, centrally administered PoCUS course.

Conclusions: There is heterogeneity amongst UBC family practice residents' experience with PoCUS education. Residents perceive PoCUS training to be beneficial to their professional development. Our suggested curriculum recommendations are designed to help standardize PoCUS training across UBC training sites.

224. A scoping review of social medicine curricula in health education applied to the pediatric context

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Introduction: Social determinants of health defined by the WHO are the conditions in which people are born, grow, live, work and age. These forces are determinative of health outcome inequities, including developmental, behavioural, and learning challenges in children and youth. Medical schools are developing social medicine curricula; however, it is unclear which pedagogical strategies are most effective. This scoping review describes educational interventions used to teach social medicine in health disciplines in the child health context and assesses their potential effectiveness in a social pediatrics curriculum for senior residents.

Methods: We conducted a literature search using Ovid MEDLINE and MedEd PORTAL. Studies found in references of relevant articles and in the grey literature were also collected. Studies were included if they describe and/or evaluate educational interventions aimed to teach social determinants of health or social medicine to health professional trainees within a child health context. Studies were excluded if published before 2000.

Results: Initial search algorithm yielded 433 articles. A primary screen by title yielded 81 studies. A second screen by abstract yielded 25 papers. Educational interventions found included: long- and short-term clinical experiences, didactics, experiential education, virtual experiences, case studies, and project-based education. Interwoven throughout educational methods were strategies for

learning consolidation including self-directed learning and reflection-based learning.

Conclusion: Educational strategies described in the literature should inform the development of social pediatrics curricula for residents. An ideal curriculum incorporates a combination of the described pedagogies, using concepts of self-directed learning and reflection to consolidate residents' learning in social pediatrics.

225. The current state of general pediatric fellowships in Canada

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Introduction: There has been rapid growth of General Pediatric Fellowship programs over the last decade. In the US the number increased from only 3 programs in 2003 to over 30 in 2015 and is expected to continue to increase. The Canadian landscape has not yet been described; this knowledge is needed to promote standardization and ensure high quality training across Canada. We aimed to characterize and explore the need for general pediatric fellowships in Canada.

Methods: We conducted a descriptive cross-sectional study. We developed a questionnaire through an iterative process, modeled after a similar study conducted in the US. An invitation to participate was sent to General Pediatric Leaders (Division Head or equivalent) across Canada, with a request to forward the survey to the most appropriate individual within their local context (e.g. a General Pediatric Fellowship program director).

Results: There were a total of 19 responses (95%). 8 universities offer general paediatric fellowships with one additional university aiming to start a program in the coming year. Existing programs are variable with respect to size, funding structures, and curriculum. The majority of leaders feel that there is a need for general paediatric fellowship programs in Canada but cite funding as the most common perceived barrier.

Conclusion: The number of general paediatric fellowships is increasing across Canada. Existing programs are variable in structure and content. Collaboration between programs is required to advance General Pediatric Fellowship training in Canada and work towards standardization with potential accreditation in the future.

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Keyword Index

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Pratiques efficaces : des innovations pour la formation et l'évaluation des residents

226. JUDO (Junior Doctor On-call) podcast improves clinician confidence and knowledge

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Introduction: This study aimed to develop podcasts to deliver concise guidance on the management of acute medical scenarios and analyse their effectiveness.

Methods: Four JUDO (JUnior Doctor On-call) podcasts, <3 minutes in duration, were developed by consensus on pertinent medical subjects: hyperkalaemia, hypoglycaemia, seizure, and urinary retention. 42 junior residents and clinical medical students at Cambridge University Hospitals listened to the podcasts and completed pre- and post- intervention confidence and knowledge surveys.

Results: Participants had significantly improved confidence in their approach to scenarios after listening; on a Likert scale from 1 (very uncomfortable) to 5 (very comfortable), mean (SD) pre-podcast vs. post-podcast: hyperkalaemia 1.76 (1.21) vs. 4.83 (0.38) P<0.001, hypoglycaemia 1.60 (1.01) vs. 4.88 (0.33) P<0.001, seizure 1.52 (0.97) vs. 4.79 (0.47) P<0.001, and urinary retention 1.48 (0.97) vs. 4.81 (0.55) P<0.001. Participants had significantly improved knowledge after listening; on knowledge based questions, mean % correct response (SD) pre-podcast vs. post-podcast: hyperkalaemia 17.46% (7.65) vs. 92.86% (2.38) P<0.01, hypoglycaemia 15.87 (7.27) vs. 95.24 (2.38) P<0.01, seizure 21.43 (2.38) vs. 92.86 (2.38) P<0.001, and urinary retention 15.87 (9.62) vs. 92.86 (1.37) P<0.01.

Conclusion: JUDO podcasts led to a marked improvement in the confidence and knowledge of clinicians approaching acute medical scenarios.

227. Piloting a trainee survey as part of a process of international training accreditation

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Introduction: The Federation of the Royal College of Physicians in the UK have introduced a three level accreditation process for international physicianly training. The highest level is training equivalent to Internal Medicine (Stage 1) training in the UK. The accreditation and reaccreditation process uses a number of data sources including a evidenced self-assessment, attendance at the annual ARCP process with scrutiny of all trainees e portfolios and face to face meetings, separately, with trainees and trainers.

However in the UK the GMC , the national regulator, has a detailed trainee survey that is completed by all 56,000 UK trainees each year. Giving a subjective but trackable, overview of all sites and training programs. It is widely used to investigate problems and support improvement processes.

Method: In 2019 I piloted a short web based survey using a relevant subset of 18 very similar questions in one of the Federations partner sites in India. All trainees in the program completed it before the accreditation visit. It provided data that could be directly compared in both tabular and graphical fashion with the results across the UK. Finding included high levels of satisfaction with the training and supervision compared with the UK but also identified site specific concerns such as training in consent that might not otherwise have been identified. The process was straightforward and acceptable to both trainees and trainers.

Conclusion: The questionnaire as part of the process of accreditation has now been rolled out to two other partners sites with recent accreditation visits. https://www.jrcptb.org.uk/about-us/international-programme-accreditation

228. We got engaged! A faculty support bundle to increase engagement in simulation teaching

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Introduction: Both residents and faculty have increasing administrative and educational demands on their time. Many emergency medicine residency training programs employ simulation-based education that is dependent on faculty participation. Motivating faculty to meet these programmatic demands can be challenging. Using Self-Determination Theory (SDT) as a theoretical framework, we assessed barriers to and facilitators of faculty engagement in simulation teaching. A faculty support

bundle was then developed to optimize faculty participation.

Methods: Faculty from a large academic emergency department were surveyed regarding motivation to participate in non-clinical educational activities. Faculty identified barriers and motivators for participating in simulation-based educational activities. Responses were reviewed and categorized by themes.

Results: 47 faculty (41%) completed the survey. Identified barriers were primarily external factors (scheduling, competing responsibilities) or based on perceived low self-efficacy (low confidence, perceived lack of experience). Identified facilitators were primarily internal motivators, with the strongest based on the SDT themes of relatedness and competence. Using these results, simulation educators developed a faculty support bundle to minimize external barriers (standardized scheduling and organization, development of facilitator guides and supporting materials) and emphasize motivating factors (connecting with the missions of other divisions, emphasizing collaborative teaching).

Conclusion: Harnessing internal motivators - particularly relatedness and competence - and minimizing external barriers may be effective strategies to increase faculty engagement in non-clinical teaching activities.

229. High stakes: Residents teaching medical students to recognize and manage common emergencies in Namibia

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Introduction: The University of Namibia (UNAM) School of Medicine does not have a specific Emergency Medicine curriculum. Recognizing that a structured approach to emergencies could build confidence in learners, improve care and save lives, Emergency Medicine residents at McMaster University worked with UNAM to develop a targeted emergency medicine curriculum. We developed a five-day course for senior medical students covering emergencies in surgery, internal medicine, pediatrics, obstetrics and gynecology, psychiatry and crisis communication.

Methods: We reviewed the literature for causes of morbidity and mortality that are amenable to emergency care in sub-Saharan Africa and engaged local consultants to develop a five-day emergency medicine curriculum. Teaching methods included: lectures, case-based learning, hands on skills instruction and simulation. The course was delivered primarily by residents with support from faculty. We used focus groups to understand the impact of the course on medical students, which were transcribed and thematically coded by two independent reviewers.

Results: Forty-nine students participated in the course and were exposed to 10 hours of lecture, 8 skill stations, 12 small group sessions, and 32 simulations. Twenty-seven students completed surveys and 14 participated in focus groups. All rated the course highly and stated it would change their practice. Many reported increased confidence and comfort in managing emergencies. Some cited positive outcomes from using skills learned through the course on hospital shifts while attending the course.

Conclusion: We developed an initial undergraduate curriculum for emergencies relevant to sub-Saharan Africa, which was taught by residents and rated beneficial by medical students.

230. Longitudinal study of progression following support for trainees/residents in Wales

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Introduction: HEIW is responsible for training doctors and dentists in Wales (c.2700) and for any issues that may arise and prevent progression throughout training. To ensure the quality management we have developed systems to respond quickly to any concerns raised. The Professional Support Unit (PSU) was created in 2008 and provides guidance and information to all stakeholders involved in postgraduate medical and dental training. To date PSU has provided support for >2020 individuals with up to 350 in active support at any one time. We observed 90% positive outcomes for closed cases.

Methods: The PSU maintains meticulous database of trainees accessing support and their progress. Data is used to report to stakeholders, improve training experience and direct focus of PSU interventions. To assess value of the PSU service for the National Health Service (NHS) we have carried out a longitudinal study of outcomes for trainees who accessed support for training progression from the PSU. We analysed data for closed cases (382) between 2015 and 2019, the reasons for the referrals and the outcomes at the time of case closed. The outcomes

were cross referenced with the General Medical Council (GMC) database to establish career outcomes and progression for past beneficiaries of support.

Results: The evidence supports PSU findings that support has a positive effect on career and does not hinder progression or increase chances for interactions with regulators. 97% work without GMC conditions. This suggests that investing in support helps trainees to address issues early and continue in training and progress their careers.

231. Educational impact of Targeted Neonatal Echocardiography (TNE) on Neonatal-Perinatal Medicine (NPM) subspecialty residents

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[1]London Health Sciences Centre, London, ON; [2]University of Iowa, Iowa City, IA; [3]Western University, London, ON

Background: TNE is a point-of-care modality performed primarily by neonatologists at bedside. It has been used as a means to answer questions related to neonates' myocardial function, volume and hemodynamic status, intra- and extra-cardiac shunting, and line placement. There is emerging literature on the clinical utility of TNE, with evidence suggesting that TNE can positively alter the course of patient care.

There is a paucity of data regarding the impact of TNE on neonatal education, and controversies exist regarding standardization of training, evaluation, and quality assurance. We will survey NPM subspecialty residents to identify how TNE impacts current curricula, and tease out areas of need. The overarching study goal is to elicit enough information, to eventually optimize and standardize TNE programs so that each subspecialty resident can fulfill and exceed in his or her role as a CanMEDS "scholar" and "medical expert."

Methods: This is a mixed quantitative and qualitative study using questionnaire methodology. We will survey NPM subspecialty residents, with and without TNE programs, to determine current curricular content and delivery, and obtain residents' perspectives on these. We will be looking to identify which curricular modalities allow for optimal learning (e.g., didactic or bedside lessons, simulations), and how residents best understand, identify, and manage neonatal anatomical and physiologic issues.

Conclusion: Our study has just received Ethics approval from Western University. We anticipate having results and data analysis ready to share at the 2020 ICRE conference.

232. Building a new generation of internists - preparing PGY-3s for the RCPSC examination

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Introduction: Traditionally, internal medicine residents sat their RCPSC examinations following their final year of training. Recently, the examination was moved ahead one year, proposing 2018-2019 as the pilot academic year, despite R-3s having less training, experience, and preparation compared to previous cohorts. The project aimed to utilize the CanMEDS roles of collaborator, communicator, and scholar to prepare trainees to successfully achieve their RCPSC certification and subsequently analyze the success of any interventions to the educational curriculum.

Method: Informal and focus-group discussions identified the need for alterations to the educational curriculum focusing specifically on helping prepare residents for the RCPSC examination. Residents identified challenges such as reduced time to prepare, competing demands with current residency workload and exam preparation, novelty of situation for curriculum planning etc. As such, this project incorporated new additions and modifications to the existing core educational curriculum, such as independent study time, 'study leave' days, supplemental interactive lectures, formation of study groups, and practical teaching sessions. The changes were implemented from July 2018 to June 2019. An online survey was subsequently distributed to eligible residents to acquire data on the success of these interventions, feedback, suggestions for improvement, residents' study time, study settings, and resources used.

Conclusion: Feedback obtained was overwhelmingly positive for this project. Perceived effectiveness of each intervention was scored >=86/100 and the overall perceived effectiveness was 97/100. Among survey respondents, the RCSPC examination pass rate was 100%. It has been planned to repeat this survey for the 2019-2020 year and continuously update the curriculum.

233. Vancouver notes: A collaborative trainee-led approach to educational resource development

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Introduction: Comprehensive history taking has been shown to comprise almost 80% of clinical diagnosis (Peterson et al., 1992). However, when medical learners begin training in internal medicine, it is often unclear what historical features, physical findings, and investigations are most pertinent to subspecialty-specific patient presentations; this process-based skill is often only tacitly acquired throughout a given rotation. Vancouver Notes is a novel medical textbook which addresses this issue, by providing learners with consultation templates for common presentations in internal medicine subspecialties, equipping medical students and residents with the tools to succeed from day one.

Method: Vancouver Notes will contain consultation templates for 16 internal medicine subspecialties defined by the Canadian Resident Matching Service. We will recruit expert teams at the University of British Columbia comprising of core internal medicine residents, subspecialty fellows, and at least one staff physician to author each subspecialty chapter. By leveraging the resident body for content creation, not only do authors exercise the Collaborator and Scholar CanMEDS competencies, we will also fill a gap in educational resources.

Conclusion: Vancouver Notes addresses an important gap in internal medicine training and uses a novel, collaborative trainee-led production strategy to develop an educational resource. This approach to resource development leverages the expertise of diverse medical learners, is highly efficient, and encourages collaboration and mentorship across different career stages. Finally, this model is generalizable and can be applied in other fields and programs for resource creation.

234. Development and implementation of online radiopharmacy course for nuclear medicine residents

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Introduction: In collaboration with an expert, national team of radiopharmacists, we developed and deployed an online course in radiopharmacy aimed at residents in nuclear medicine (NM) programs. The course consists of 20 modules covering basic sciences and clinical topics in radiopharmacy with integrated quizzes. The course was made available online as a free resource for learners.

Methods: The course was developed through a national collaboration of NM physicians, Radiopharmacists and NM technologists, their residents and students. Core basic science modules were developed by the NM physicians and Radiopharmacists. Clinical topic modules were developed by residents and NM technology students under the supervision of a mentor. The modules were reviewed and edited by the expert team and posted online in a Moodle course site which is currently being transferred into Brightspace. Registrants complete a pre-course multiple choice test, complete the modules at their own pace and then complete a post-course test.

Results: 63 users have registered for the course over the past 7 years. Course registrants hail from 14 countries on four continents. Course participants have included NM residents, pharmacists, and NM technologist students.

Conclusion: The online course at www.radiopharmacycourse.ca is a free resource for students interested in learning about radiopharmacy. The course provides an educational resource for a topic for which there are relatively few teachers available in Canada.

235. Building an evaluative framework to understand the impact of the Royal Australasian College of Surgeons (RACS) surgical training program

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Introduction: RACS is accredited by the Australian Medical Council and Medical Council of New Zealand to train surgeons. RACS wishes to understand the impact and outcomes from its graduate programs to establish best practice and secure evidence-based practice for the future. As delivery of surgical education happens in the real world of clinical practice, it is recognised that many systems-based factors affect the actual lived experience of trainees and potentially the outcomes of training. The aim of this study is to develop an overarching evaluative framework that includes all training and educational

processes as well as program and graduate outcomes at the RACS.

Methods: The framework will be founded on the Cultural-Historical Activity Theory (CHAT) in order to explore how surgical training shapes, and is shaped by, the wider clinical environment. CHAT is presented as 'an integrated road map for educational research and practice' and has been frequently adopted by workplace theorists including in medicine. CHAT is relevant to examining surgical training because it provides an accessible and flexible framework with which to identify and examine any contradictions that play out as it is implemented. Through this process we will map the journey of our trainees and understand the key milestones and touchpoints throughout training.

Conclusion: This work will describe a holistic approach to capturing the impact of our surgical training programs. This impact may be broadened significantly through its applicability to other specialist medical training programs.

236. Practice improvement essentials workshop – changing quality improvement culture in Canada by training family medicine residents, faculty, physicians and their teams

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Introduction: In 2017, the College of Family Physicians of Canada (CFPC) undertook an in-depth needs assessment to identify the status, needs and gaps for Quality Improvement (QI) in primary care in Canada. Considerable variability was identified regarding the resources available to support QI in family medicine residency programs and for family physicians. The scans highlighted the need for a practical one-day workshop to provide training for family physicians, residents and faculty to understand, participate, or lead QI activities. Methods used for the scans included meetings with stakeholders; survey of CFPC members and departments of family medicine (DFM); retreat with family medicine QI experts and literature search of national and international resources.

Method: A two-part introductory workshop, called the Practice Improvement Essentials (PIE) was developed and peer-reviewed. It combines didactic and interactive teaching methods which provide participants with a basic understanding of the theory and tools of QI and an opportunity to apply these during the hands-on, facilitated exercises. The DFMs at the University of Alberta, Manitoba, McGill, Montreal and Saskatchewan have delivered the workshop for their faculty development and residency education program and the CFPC chapters have delivered it for family physicians. The workshop feedback has been positive and obtained through participant, facilitator and organizers' evaluations. Feedback is reviewed by working groups and changes are made as appropriate.

Conclusion: There is a growing interest in QI in family medicine and the PIE workshops address this need and could support a standardized approach to teaching QI in primary care and family medicine in Canada.

237. Fatigue risk management pilot protocol in a pediatric residency program

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Introduction: Resident physicians are at a high risk of fatigue given the demands of post-graduate training. Fatigue influences resident wellness as well as patient safety. Efforts to reduce resident duty hours in order to mitigate fatigue have been implemented and furthermore, the National Steering Committee on Resident Duty Hours in Canada recommended that residency programs develop a Fatigue Risk Management Plan (FRMP). FRM policies enforce risk reduction strategies within the system in which residents work to help prevent fatigue-related errors. The CHEO Pediatrics residency program has received a grant from the Royal College to propose and implement a pilot FRMP.

Method: Resident focus groups in each residency year will be run in order to explore the concept of fatigue and fatigue related error. Questions will include how much sleep residents get on average and their perceived level of fatigue, as well as how fatigue affect their and their colleagues' performances. Residents will be asked what hospital-wide strategies could help mitigate fatigue-related error.

Residents will complete a sleep diary to quantify the amount of sleep and perceived fatigue in relation to the amount of overnight call. After resident data is gathered, focus groups will be run with key hospital stakeholders to explore potential hospital-wide FRM policies.

Conclusion: The data drawn from these focus groups will be used to create a FRM plan to implement at CHEO. The

goal is to pilot this project and use it as a basis for FRM programs in other residency programs.

238. Mentoring program for medical residents: The next generation

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Introduction: The Tecnológico de Monterrey's Multicentric Program of Medical Specialties identified the need to implement a solid Residents' Mentoring Program for personal and academic support, to positively influence the resident's academic and personal wellbeing and professional development.

Method: The program design began in April 2018. 5 programs were selected for initial implementation in 2018. A specific faculty development program for mentors was designed and required to faculty invited to the Mentoring Program. In August 2019, 10 more medical specialties implemented the program.

A total of 111 faculty of 15 medical residency programs participated as Mentors in the implementation of the mentoring program and the required faculty development for mentors. Residents participated in the selection of their mentor and had two mentoring interviews scheduled each semester.

Feedback surveys were applied in 2019 to mentors and residents of the 5 initial programs. 59.25% of the residents (32 of 54) answered the survey: 21.9% residents had more than two mentoring sessions, 31.3% two sessions, one session 19.4%, and 25.8% none. 84.4% Residents were satisfied with their mentor and 75% considered the program had relevance in their training and career development decision making. 92% of the surveyed Mentors considered the program to be of great value and great benefits both for the residents and faculty.

Conclusions: The Mentoring Program for Residents was implemented in 15 Medical Specialties, prior training of Mentors. Follow-up and improvements are being carried out in the program implementation, feedback, and mentors specific training.

239. Development of an innovation curriculum for post-graduate medical education

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Introduction: Innovation is the development of a novel concept, methodology, or product. While it may be easy to identify problems in healthcare settings, developing novel concepts, methodologies, and products that are not based on historical thinking or previous trends is challenging. While innovation remains integral to advancing healthcare, post-graduate medical education trainees receive limited education and training as to how best to approach such endeavours. As such, we sought to develop an innovation curriculum for post-graduate medical education trainees.

Method: A preliminary scoping review as well as structured systematic review shall be undertaken to review the medical literature to inform curriculum development. Key concepts and themes identified from the aforementioned reviews shall formulate the basis of modules within the anticipated curriculum. Information contained within modules shall be conveyed in independent units, that shall be comprised of text format, video and/or animated content format, or a combination of both formats. An independent website address shall be established to house the information contained within these modules and to allow for ease of access to this information for all medical and surgical residents. Accepted learning theories shall be readily applied throughout curriculum development and project completion to ensure the diligent conveyance of content.

Conclusions: The development of an innovation curriculum for post-graduate medical education will enhance medical and surgical residents' ability to pursue the process of innovation during their post-graduate medical training and beyond.

240. Curriculum evaluation model for the selection of candidates for the residency program

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Introduction: In Brazil, each institution carries out the selection process for the admission of residents using subjective criteria of curriculum evaluation

In 2009 we developed a standardized model with specific weight for each activity developed during graduation

Method: Based on the curriculum guidelines, we group the activities into 10 sessions

1 - School performance

2 - Foreign language

3 - Extra Internship at a certified institution

4 - Scientific Initiation

5 - Participation in a research project

6 - Organization or participation in the academic league

7 - Life support courses

8 - Participation in the organization of scientific events.

9 - Extra MBE courses and / or medical ethics

10 - Participation in publication

Although the maximum score is 10 points, the possible score was 14.5 points, to allow the candidate to have more than one chance to obtain the 10 points.

Result: in 9 years of using the model in 545 resident programs in Minas Gerais, there has been an evolution in the search for recognized activities and the percentage of candidates with a degree English language courses evolved from 8.3% to 18.2% and the realization of life support courses evolved from 12.8% to 24.1%.

Conclusion: This model the evaluation of candidates for medical residency made the process transparent and induced candidates to seek activities with a standard of quality with improvement in academic training.

241. House calls: Strengthening communities of practice in faculty development in distributive medical education

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Introduction: The emergence of community-based, distributive medical education (DME) as a new model of medical education presents universities with new challenges in faculty development (FD). Few theories or models guide the design and implementation of FD programs in this setting. Both Dalhousie and McMaster Universities recently entered a second decade of DME. The teams arrived at a similar curriculum independently. In our collaboration, we found the conceptual framework of communities of practice (CoP) a major factor in our success.

Method: We describe the process of identifying distinct clinical CoP's in our DME communities. We then endeavor to engage each CoP through key stakeholders. Programs and workshops are designed to be highly relevant, with CoP-specific learning needs in mind. Finally, the teams deliver this content in the natural environment of the CoP ("House Calls") where groups normally congregate and function. We adjust our programming based on their feedback, and periodically deliver updated content. In this process, we recognize and harness the structure and functions of existing CoPs and strengthen them with additional value. In time, we have also created new communities of (teaching) practice which may in turn positively influence clinical CoPs. Through this method, we have significantly expanded the reach and impact of our FD programming.

Conclusion: DME presents a challenging context for faculty developers and institutions. FD programs in the DME context can improve the impact of their programs by taking advantage of the conceptual framework of CoPs.

242. Development of a resident-as-teacher MOOC (Massive Open Online Course)

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Introduction: Residents have a pivotal role in teaching residents and medical students. Educational interventions have been developed in countries like Canada (CanMEDS Scholar role), but less so in developing countries (http://www.biomedcentral.com/1472-6920/10/17). We designed a face-to-face workshop, but it has limited outreach because of faculty resources and large distances among sites. The objective of this study is to develop a "resident-as-teacher" course in Spanish using MOOC (Massive Open Online Course) methodology.

Method: National Autonomous University of Mexico (UNAM) Faculty of Medicine is a large medical school, with 11,000 residents in a hundred sites. We used Kern's curriculum development model, adapted to MOOC format (https://www.ncbi.nlm.nih.gov/pubmed/30681454). A team of clinicians and educators developed five modules: residents' teaching role; teaching in the clinics; how to teach psychomotor skills; how to give a conference; leadership and conflict resolution. Modules are short, practice-oriented activities, with videos, discussion forums, and formative assessment activities. There are summative tests, if the participant desires a formal Coursera certificate. The final materials will be finished in

February 2020, and the course will be piloted with a sample of internal medicine residents in April, to obtain initial data about its efficacy. After the course is available worldwide, the platform can provide a large amount of quantitative and qualitative data, which will be the subject of further study.

Conclusion/Implications: The MOOC online modality is feasible for developing residents' educational material, it provides self-paced educational interventions that can be made available to large populations of residents in different geographical locations

243. Abstract withdrawn.

244. One room schoolhouse: A novel intervention for inspired learning in distributed campus settings

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Introduction: Many postgraduate medical training programs struggle with the question of how to inspire learners and simultaneously deter educational passivity. Data widely suggests that academic half day (AHD) learning lacks educational engagement. This challenge is amplified in distributed campus settings where geographical disadvantages often demand reliance on videoconferencing technologies. The need for robustness in distributed campus AHD learning led to the development and evaluation of the One Room Schoolhouse (ORS). It was hypothesized that the novel pedagogical elements focusing on learner engagement in the ORS would result in better test scores and improved learner satisfaction.

Methods: The ORS was implemented at McMaster's Waterloo Regional Campus in 2017. Residents across training cohorts (N=9) engaged in co-learning based on scenarios developed from clinical experiences within the region. The learning approach relies on multiple, evidence informed pedagogical strategies. A mixed-methods approach was utilized to evaluate the ORS curriculum. Between-subjects analyses of variance were used to compare scores on practice exams, objective structured clinical exams, rotation evaluations, and the Royal College licensing exam for ORS learners and traditional AHD learners. A semi-structured focus group probing residents' experiences with the ORS was analyzed using interpretive description.

Conclusions/Implications: Data suggested that ORS learners performed at the same level as trainees in the traditional curriculum. Qualitative themes suggested considerable advantages of the ORS in inspiring learning, engaging learners, and improving self-confidence. Limitations include the lack of pre-post testing. Preliminary ORS data suggest that this AHD framework may be an important consideration for other distributed campus settings.

245. Are pediatric programs effective in teaching "critical care"? Use of a novel course to augment traditional PICU rotations

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Introduction: Critical care CanMEDS competencies in Pediatrics have been traditionally taught by having residents observe and manage patients in a PICU. At BC Children's Hospital (BCCH) PICU, the pediatric residents have identified competence and confidence gaps with this experiential learning model. These gaps are felt to be hampering their readiness for pediatric practice. The Basic Assessment and Support in Pediatric Intensive Care (PedsBASIC) course was piloted with the BCCH pediatric residents in 2019 to provide them with improved confidence in critical care management and to address CanMEDS competencies.

Method: A group of twenty second- and fourth-year pediatric trainees participated in PedsBASIC – a two-day didactic and simulation-based course taught by pediatric critical care faculty. All participants except for two had completed at least one rotation in PICU. A pre and post-test on content was administered, as was a pre and post self-assessment questionnaire. CanMEDS roles were embedded into cases in the simulation portion of the course.

Conclusions: The resident self-assessments demonstrated increased confidence in the management of every critical care condition taught. Average rating of confidence pre-course was 2.9/5 and post-course was 3.6/5. Course feedback was overwhelmingly positive in terms of meeting their learning needs (4.5/5), recommending the course to colleagues (4.5/5), and impact on future practice

(4.6/5). Scores on content knowledge testing also improved post-course. This PedsBASIC course could be very valuable in the era of CBME where objective measures of critical care competence will be required and are unlikely to be simply observed in traditional PICU rotations.

246. #HaiQ - clinical questions in Haiku form as a social media quiz

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Method:

Syllables arranged
Carefully five-seven-five
Make up a haiku

A form that forces
Precision and succinctness
To the mind's forefront

I have introduced
A daily quiz on Twitter
Using this metre

Social media
Allows participation
With relative ease

Light-hearted poems
Undermine the trepidation
Of public answers

No need for unease
When tests are framed as a game
Delight masks mistakes

If interest has
Taken hold please enjoy the
Example below

"Dealt A Faulty Gene
Found I've, oh, hatred for those
Everlasting Coughs"

Cystic fibrosis!
You'll find the gene intertwined
Throughout the poem

Explaining answers
Offers a chance for readers
To learn something new

A question takes shape
"Would others enjoy writing
Haikus of their own?"

In this submission
A unique approach to testing
Will be presented

Data from Twitter
Can determine engagement
Through careful study

Results: From 16th October 2019 a haiku has been posted daily. A spot analysis of data was done on 09th January 2020. 44 different users have answered haikus, including doctors, nurses, pharmacists and medical students. For 87 questions there have been 183 correct answers and 14 incorrect answers. Incorrect answers don't stop participation. The most viewed haiku was seen 1000 times.

Conclusion: Social media has begun to transform how those interested in learning can engage with teaching materials. This is a new and unique approach that has already proved popular despite a relatively short time online. This could easily be adopted by other specialties or in other languages as a fun way to learn

247. CBME framework to transition residents to senior overnight call

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Introduction: Our innovative framework improves the traditional transition to independent senior overnight call process by adding workplace-based (WBA) assessments. Our new process ensures that faculty and residents have a shared understanding of what competencies need to be demonstrated before residents can work independently as the in-house senior resident on-call.

Methods: Senior residents in the Queen's Dept of Pediatrics are now required to participate in our new framework to transition to overnight senior independent call. Five out of 6 current senior residents have successfully completed this transition thus far. The new framework requires that before a senior resident can

take independent call, they must undergo a transition process that includes three core components: 1) Buddied overnight shifts paired with a more senior resident, 2) assessment rubrics to evaluate on-call competencies, and 3) complete the items outlined a clear expectations document delineating the core competencies to be demonstrated before a resident can be "unbuddied". Initial perceptions suggest an increase in resident confidence while on call and improved faculty comfort when paired with these senior residents. We believe that this increase in confidence will in turn be reflected in enhanced patient care.

Conclusion: As Canadian residency programs implement Competence by Design (CBD), it will be important to integrate traditional ways of transitioning residents to senior level independent overnight call with a workplace-based assessment (WBA) process and this framework provides a successful way for this to be accomplished.

248. Decrypting clerkship: A novel resident mentorship program facilitating the transition to clerkship

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Introduction: There is a disparity between the high proportion of residents interested in medical education and the limited opportunities provided for formal teaching. We developed a novel, resident-led initiative to prepare second-year medical students for clerkship by focusing on areas often underrepresented in the preclinical curriculum. Through small group sessions facilitated by residents, we aimed to better support medical students during this critical transition, while also providing residents opportunities to hone their teaching skills.

Methods: Seven sessions were held over the academic year with a range of topics including introduction to performing a consultation, medical handover, and rounding on the wards. Each session was attended by 40-110 medical students and up to 15 resident facilitators. Residents led groups of 4-8 students through clinical cases and provided support as students navigated information, performed new skills, and generated differential diagnoses. Through these sessions, residents strengthened teaching competencies including didactic lecturing, facilitating small-group case discussion, role-modeling, and providing high-quality feedback. Medical students completed surveys reporting the session's impact on their comfort with the material. Students also provided qualitative feedback to resident facilitators.

Conclusion: Our program supports medical students, while providing residents opportunities to receive valuable feedback on their teaching. The success of this program has been recognized through formal integration into the University of Toronto's Transition to Clerkship curriculum. Future directions will involve collecting quantitative and qualitative information from residents regarding the impact of these sessions on their teaching abilities.

249. A logic model for IMed: An internal medicine summer exploration program for pre-clerkship students

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Introduction: Medical students often have a difficulty selecting a Residency training program as the application deadline predates exposure to all departments. At the University of Ottawa, the six-week internal medicine rotation is entirely on the inpatient general internal medicine ward. As medical students with a particular interest in the specialty, we identified a need to increase exposure to various subspecialties of internal medicine in order to enrich our understanding of the field. This led us to create a two-week summer program that would give pre-clerkship students such exposure to assist with the Residency match.

Methods: The two-week summer program for pre-clerkship students involved morning observerships, lunchtime career talks, and afternoon workshops in multiple subspecialties of internal medicine. The morning shadowing gave students a sense of common presentations in the subspecialty, the career talk was an opportunity to discuss lifestyle, the job market and opportunities in the field, whereas students practiced hands-on procedures in the afternoon such as ultrasound imaging of joints in Rheumatology. By the end of the program, students had a taste of nine different subspecialties of Internal Medicine. The program was inaugurated in June 2018 with 18 students participating.

Conclusion: Overwhelmingly participants had positive feedback with regards to the program and felt that they were more prepared to make future decisions about

Residency. We created a logic model in order to illustrate our program design and intended outcomes. Our hope is that our comprehensive model will facilitate the creation of similar programs at other institutions.

250. The MacEmerg podcast: A community podcast created by a community of practice

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Introduction: Creating connectivity of trainees and faculty across multiple teaching campuses on a single faculty can be challenging. To better connect our faculty and trainees, the three McMaster Emergency Medicine Divisions (Departments of Family Medicine, Pediatrics, and Medicine) collaborated to create the MacEmerg Podcast.

Method: Residents and faculty collaboratively form a community of podcast practitioners focusing on creating and editing podcast content. Trainees are featured with a standard section (Resident's Corner) that they record and edit. Another recurring section, (Teaching that Counts), introduces bedside teaching tips for faculty development. Faculty also record other segments featuring local faculty in their areas of expertise, and guest speakers at regional rounds at one of our teaching sites. To measure engagement, we report aggregated data analytics from podcast listens and downloads. We also examined our analytics to determine trends in geographical listening patterns.

Conclusions: In our first year (Jan 2019- Jan 2020), we created 12 episodes with 2482 listens in total and each episode averaging 206 listens (range: 111-326). Most listeners (77%) are from Canada, with some from the USA (13.5%) and other countries (9.5%). Of the Canadian listeners (n=1932), the majority (78.2%) were tagged to cities within the McMaster region or directly neighbouring cities where our trainees and physicians may live and practice. This data supports that, if designed by purpose, podcasts can have a high local impact on connecting regional teaching sites in a highly disconnected system. Podcasts like ours may hold high potential in reaching geographically dispersed faculty and trainees

251. Continuous Reflective Assessment for Training (CRAFT): A programmatic approach to competency-based assessment in residency training

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Introduction: The shift to competency-based medical education has not always been smooth. Effective competency-based assessment (CBA) is challenging, with scant evidence about its effectiveness. In 2010, Canadian family medicine residency training programs began to adopt the Continuous Reflective Assessment for Training (CRAFT) model of assessment. Evaluation data about the effectiveness of CRAFT is now available.

Method: The intervention: CRAFT, a programmatic assessment model, involves regular point-in-time low stakes workplace assessments and regular high stakes performance reviews where learners, guided by a continuous advisor, reflect on their progress and need for training modifications. Participants: Canadian family medicine residency programs. Research design: Mixed methods. Primary data sources are learning analytics, questionnaires, and focus groups. Outcome measures: Differentiation between learners at different levels of training; range of assessment information beyond Medical Expert role; evidence of self-reflection by learners; evidence of learning plans across training; increase in quality of feedback. Analysis: Descriptive statistics, thematic analysis of qualitative data, ANOVAs, Chi square tests.

Conclusion: Learners report a significant increase in self-reflection opportunities. Programs report moderate to large increases in feedback quality. Most programs indicate moderate to large increases in assessment data about non-Medical Expert CanMEDS roles. One early adopter program reports significant increases in early identification of learners in difficulty. Programs report varying levels of implementation of learning plans. For all programs, faculty development is the biggest challenge in effective use of CRAFT. Overall, CRAFT appears to be an effective approach to programmatic CBA.

252. Medical student perception of radiation oncology: Information sources used and changes in perception through a two-week rotating elective program

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Background/Objective: Radiation Oncology (RO) is a field with infrequent exposure in undergraduate medical curriculum. To better understand medical student's perceptions of the field, our study investigated the sources of information students use and value most when forming their perspective of RO both before and after exposure through a rotating elective program (PREP).

Method: Surveys were distributed to 2nd year medical students both before and after their first RO elective exposure, evaluating which sources of information students use and value most, along with their perceptions of various factors associated with RO using a Likert Scale. Quantitative analysis was performed to highlight changes in information sources used when forming perceptions of RO and student opinion on career factors associated with RO.

Results: Students formed their opinion on RO primarily based on Lectures prior to PREP with increases in using Preceptors, Residents as information sources post-PREP. Additionally, students were found to consistently strongly value Preceptors, Residents, and Healthcare Team Members as information sources post-PREP. Through exposure to RO, students improved their perspective on RO in terms of "Flexibility", "Favourable Patient Population", and "Stress Levels".

Conclusion: The results demonstrated the value in a single elective experience in RO for increasing student interest and the importance of students interacting with Preceptors and Residents in RO. For students unable to experience RO, it is important to supplement lectures with information on the field of RO with respect to the diverse opportunities in the field and the rewarding patient population.

253. Findings from six years of implementation of the Competency-Based Assessment System (CBAS) in two Sport and Exercise Medicine (SEM) enhanced skills residency programs

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Introduction: Assessment in competency-based medical education (CBME) has proven to be challenging, especially in settings where potential presentations and clinical populations are varied and unpredictable. In 2013, the Competency-Based Achievement System (CBAS) was implemented in two Canadian Sport and Exercise Medicine (SEM) residency programs. This study was a program evaluation of CBAS in this setting.

Methods: Mixed methods prospective cohort study. Intervention: CBAS is a programmatic assessment model where frequent low-stakes workplace assessments (FieldNotes) include documented formative feedback regarding competencies, and contribute to cumulative evidence of progress that informs high-stakes assessment. Data came from FieldNotes and from interviews with Preceptors (n=26), Residents (n=14), and Program Directors (n=2) from two SEM programs. Outcome Measures were number/range of FieldNotes (quantitative); barriers and enablers of CBAS (qualitative). Findings indicate that although the number of FieldNotes provided to residents was initially low (22-30 FieldNotes/resident/year), there was a gradual increase over time. FieldNotes were representative across all SEM competencies/clinical domains. Qualitative findings indicate that FieldNotes are a valuable tool to efficiently and accurately track competence development, including early identification of residents in difficulty, and contributed useful data about resident progress that informed high-stakes assessments. Perceptions of CBAS were initially guarded, but improved when former residents trained in CBAS were integrated as new preceptors.

Conclusions: Uptake of SEM CBAS increased over time, with higher implementation fidelity. CBAS is an effective system for CBME assessment, including early identification of residents in difficulty. Modifications of SEM CBAS continue, particularly delivery format (paper-based vs electronic; improvements to electronic system).

254. Before the training wheels come off: A structured curriculum for transition to senior pediatric resident

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Introduction: The transition to senior pediatric resident (SPR) can be anxiety provoking for junior pediatric residents (JPR) with the transition to overnight SPR responsibilities generating the most anxiety. Residents have identified non-medical expert skills as essential for an SPR to be successful. Traditionally in the McMaster Pediatrics program, the PGY-2 resident is scheduled for their SPR night float after they have completed their JPR and pediatric critical care night float rotations, but before any formal daytime SPR experience. During SPR night float, the PGY-2 resident is often the most senior in-house trainee.

Methods: A two-part senior transition curriculum was implemented for the 2019-2020 academic year. To optimize the PGY-2 JPR float, a guide was created that outlined graduated exposure to SPR responsibilities. Additionally, all PGY-2 residents completed a five-day transition float where they assumed the SPR role during an 8-hour shift. They were responsible for triaging, allocating, and reviewing consults with support from an in-house SPR. An entrustment-based assessment tool was created to ensure that residents were demonstrating competence in core SPR skills.

Discussion: A qualitative analysis was conducted using a combination of surveys, focus groups and structured individual interviews. Overall, PGY-2 residents felt that having an opportunity to practice senior responsibilities with in-house support facilitated their transition to SPR while decreasing their anxiety during the transition. Gaps identified included the need to train SPRs in feedback skills and difficulties assessing the SPR. This program provides a competency-based framework for transition to SPR in a pediatrics program.

255. Next generation residents' wellbeing program: Self-care as a professional competence

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Introduction. The Residents' Wellbeing Program (RWP) of Tecnológico de Monterrey, first of its kind in Mexico, aims to develop self-care as a professional competence and to impact residents' well-being.

Method: In March 2019, the RWP was implemented with all 1st year residents of 17 specialty programs:

I. Orientation sessions (2 days):

a. Introduction to RWP.

b. Support services: mentoring, nutrition, sports, art and culture.

c. Counseling Service: basic assessment of mental health.

d. Substance abuse prevention program.

II. Biannual sessions of strategies, support services and resources for well-being and self-care:

a. Individual session with the Counseling Service.

b. QPR Certification: basic training for identification, persuasion and reference of people at risk or attempted suicide.

c. Workshop "Active Witness" to promote respectful environments.

d. Stress management workshop.

e. Workshop of strengths and vulnerability of the resident.

f. Sessions in course "Clinical Ethics": burnout syndrome, self-care and self-regulation as a social responsibility of the profession.

g. Personal and professional wellbeing plan.

All 1st year residents attended the required orientation sessions. An electronic questionnaire was applied on well-being and basic mental health assessment, with prior consent. All residents attended at least 3 RWP sessions in protected academic periods in March-August 2019.

Conclusions: Participation in the RWP of all first-year residents was achieved in the orientation sessions and at least in 3 of the biannual sessions. Most residents

scheduled a meeting with the counseling service and prepared a personal and professional wellbeing plan. Feedback surveys and improvement actions will be implemented.

256. Medically centered creative writing workshop: A prospective cohort study

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Background: Writing workshops have recently been employed as a means to increase empathy and critical reflection in medicine. Yet few studies have looked at the critical component of creative medical writing, the literary techniques specific to medicine, and the best practices for medically-based writing workshops.

Method: Evaluate the benefits of creative writing and literary skills on medical practitioners. A four-month course was created alongside a Creative Writing Director and a neurologist. 11 were selected for a prospective cohort study. Workshops consisted of pre-reading, interactive lectures on literary skills, practice writing prompts, and a discussion of the participants' pieces, for a total of two hours. Data was collected on pretest and post-test skill-level, frequency of writing, confidence, empathy, and relation to patients. Statistics were calculated with SPSS25, with U-Mann Whitney for non-normal distribution.

Results: 80.2% reported a subjective increase in confidence. Frequency of writing immediately after and 1 month after the intervention increased by 89% and 80% respectively ($p<0.001$). Technical skill improved in reading comprehension, creativity generated, and empathy ($p<0.001$, OR 0.27 (0.16-0.44). Writers report that their clinical communication by 73% ($p>0.05$). All (11/11) stated the course had utility and should be widely applied in medicine. 54% were able to publish their work in peer-reviewed journals after 1 month, of which 81% had never tried before.

Conclusion: Literary focused writing workshops improve clinical comprehension, creative generation, understanding of patient-physician relationships, and offer unique opportunities for publishing. Future work looks at expanding the program and resident specific benefits.

257. "The Parent Trap": Development and evaluation of a workshop on navigating parenthood for internal medicine residents

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Introduction: Combining a career in medicine with parenthood may be associated with many challenges including workplace bias and difficulty reconciling professional and personal responsibilities. Residents have been shown to be concerned about the impact of current or future childrearing on their careers, and often lack guidance, mentorship, and role modelling. To address this gap, we developed a workshop on navigating parenthood in medicine for internal medicine residents at the University of Toronto.

Methods: The 1-hour workshop was delivered to two groups of second-year residents (n=37) during an annual resident retreat in November 2019. It was facilitated by a chief medical resident and involved five parent panelists, who were faculty or fellows and varied in age, gender, sexual orientation, subspecialty practice and practice setting. The discussion focused on the personal experiences of panelists including successful strategies to manage competing clinical and personal duties, childcare decisions, parental leave policies, and timing of childbearing. Discussions led to several resident parents disclosing experiences of workplace harassment or discrimination during pregnancy and after parental leave. Survey data showed significant perceived value of the workshop, especially for resident parents, who felt it provided needed role modeling, support and a forum to disclose harmful incidents.

Conclusion: An interactive workshop on navigating parenthood helped to address an important resident need while providing role modelling and support. This workshop has led to greater recognition of the unique challenges faced by trainees who provide dependent care and generated efforts to improve existing policies and to create resident-parent mentorship programs.

258. Validity of an MMI station to predict feedback-seeking behaviours in pediatrics residency candidates

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Introduction: Trainee selection is an integral aspect of the continuing success of a residency program. Past research suggests the multiple mini-interview (MMI) score of an applicant correlates with academic performance and non-academic traits. As residencies in Canada transition to a competency-based education framework, feedback-seeking and reflection behaviours are increasingly important for the success of pediatric residents. Our objective was to design and assess the reliability and validity of a feedback specific MMI station to select applicants with feedback-seeking behaviours.

Methods: All applicants granted interviews to the pediatrics program at McMaster University (n=95) for the 2019 PGY1 match were included in this study. Using Messick's framework, we attempted to construct a validity argument with respect to internal structure and relation to other variables. A generalizability study was used to assess the reliability of the station and the station score was assessed for its correlation to the overall MMI score and the eventual rank list order. In order to further examine its relation to other variables, feedback seeking behaviours of matched residents will be assessed through interviews with the program directors and surveys distributed to the matched cohort at the end of the academic year.

Conclusions/Implications: The MMI station designed to elicit feedback-seeking behaviours appeared reliable in discriminating candidates and showed positive correlation to the final rank list and ability to discriminate lower ranking candidates. We will further look at its ability to detect authentic feedback-seeking behaviours through interviews and survey data at the end of the academic

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