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A new world of residency education: game changers and proven practices
Une nouvelle ère de formation des résidents : changements de paradigme et pratiques avérées

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26. Internal Medicine residents' and program directors' perception of virtual interviews during COVID-19: A national survey

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Introduction: Due to the coronavirus disease 2019 (COVID-19) pandemic, all interviews for internal medicine (IM) subspecialty programs were conducted virtually for the first time across Canada. It is critical to improve the virtual interview process to provide the best experience, and thus match outcome, for both residents and programs. This study explored the perceptions and experiences of IM residents, subspecialty program directors (PDs), and interviewers during this year's virtual interviews.

Methods: We invited all Canadian third-year (PGY-3) IM residents, subspecialty PDs, and interviewers who participated in subspecialty medicine interviews in 2020 to complete a branching survey. The anonymous survey was distributed after the submission of the rank order lists, such that participation would not affect residency match outcomes. Qualitative data were open-coded thematically and quantitative data were cleaned and then statistically analysed.

Abstracts have been printed as they were submitted.

Results: 62 PGY-3 IM residents, 59 PDs, and 113 interviewers responded to the survey with representation from almost all Canadian medical faculties and medical subspecialties. Strengths of virtual interviews included reduced cost, stress, risk of COVID-19 infection, and more environmental friendliness. Weaknesses of virtual interviews included decreased ability to connect personally and informally, and inability to tour medical facilities and cities. A majority of both residents (59.6%) and PDs/interviewers (54.5%) supported conducting interviews virtually in the future.

Conclusion: This study provides suggestions on how to improve the virtual interview process for the next iteration, and highlights the impact COVID-19 has had on IM residents during the subspecialty match process. Virtual interviews were found to have different stressors as compared to in-person interviews and these require additional study.

27. Program website evaluation of Canadian obstetrics and gynecology residency and fellowship programs

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Introduction: The purpose of our study was to assess the comprehensiveness of Canadian obstetrics and gynecology residency and fellowship program websites to understand the quality of information available to prospective students and make recommendations, if needed.

Methods: All active Canadian residency and fellowship websites (as of May, 2020) were evaluated and compared using 72-point criteria in the following domains: Recruitment, Faculty, Current Residents/Fellows, Research and Education, Surgical Procedures, Clinical Work, Benefits and Incentives, Wellness, and Environment. Fellowship programs without websites were excluded from the study. Program website information availability was compared by geographic region.

Results: Out of the identified 80 residency and fellowship programs, 68.75% (n=55/80), while 6.25% (n=5/80) were from Atlantic Canada and 25% (n=20/80) from Western Canada. The mean score for residency websites was 35.28% (n= 25.4 ± 7.59). The domain with the highest and lowest inclusion was Research and Education (46.3% criteria complete) and Current Residents (16.2% criteria complete), respectively. The mean score of fellowship websites was 38.75% (n= 27.9 ± 8.89). Wellness had the highest inclusion rate (66.0% criteria complete) on fellowship websites, while Current Fellows had the lowest (13.2% criteria complete). Overall, fellowship program websites scored higher than residency websites (Fellowship: 27.9 ± 8.89 out of 72 criteria; Residency: 25.4 ± 7.59 out of 72 criteria).

Conclusion: Canadian residency and fellowships websites should consider adding details on Current Residents and Fellows, respectively.

28. Creation of a national in-training examination in radiation oncology: Impact evaluation

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Introduction: 2020 marked the first ever administration of a national in-training radiation oncology examination coordinated through the collaborative effort of radiation oncology program directors across Canada. The primary aim of this project is to see if a national written examination in radiation oncology is perceived as useful by residents and program directors (PDs) and if so, how can it be improved for future years.

Methods: A written examination including both short answer questions and clinical cases addressing exam subjects covered as per the Royal College wasdesigned for radiation-oncology residents from years 2 to 5 (PGY2-5). An anonymous electronic survey was distributed to residents and program directors of the 13 programs in Canada immediately following the completion of the examination and again after examination results were released. Likert scale and free text questions regarding their preparation and overall impression of the examination were asked.

Results: 33 of 102 PGY2-5 completed a pre-examination survey and 9 a post one. More than 95% agreed that the examination should be administered again and that results would highlight areas that needed reviewing prior to the Royal College examination. 9 of 12 eligible PDs responded to the pre-examination survey. Over 75%

agreed that this standardized national exam was more efficient to refine teaching topics than the usual local examination. Recurrent recommendations included more radiation biology and physics questions, increased question clarity and consideration for transitioning to an online platform.

Conclusion: The first national written examination for radiation-oncology residents administered this year was in majority viewed positively by both residents and program directors. This standardized examination was viewed as an efficient method to better prepare residents for their Royal College examinations. Categories should be added to the examination and further reviews with increased participation will be useful in order to improve the quality of the examination for upcoming years.

29. Examining relationship between continuity of supervision and characteristics of low stakes workplace-based assessments

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Introduction: How important is continuity of supervision (CoS) for residency training? Most evidence comes from undergraduate medical education, particularly longitudinal clerkships; evidence at the postgraduate (residency) level is sparse. Evidence is needed to justify the resource costs of structuring learning experiences to support CoS in residency. This exploratory study examined similarities and differences in assessment behaviours of continuous supervisors versus episodic supervisors in a residency program.

Methods: This exploratory retrospective cohort study used archived low-stakes assessment forms (field notes – FN; N=8909). Variables included were: competency (labelled Sentinel Habit – SH); clinical domain (CD); judgement of performance (progress level – PL); and a code indicating whether the FN was made by a continuous supervisor or an episodic supervisor. Analyses: Distributions of the proportion of continuous vs episodic FNs were visualized across the 10 SHs, 9 CDs, and 3 PLs. Logistic regression was used to determine which variables best predict if a FN is episodic or continuous.

Results: Analysis of 6104 FNs (69%) showed several notable differences in proportion of episodic vs continuous FN across SHs, CDs, and PLs, including higher proportion of SH 8 (teaching competency) for episodic versus continuous FN. For PL, we found a greater proportion of PL2 (In Progress) for episodic FN, and a greater proportion of PL3 (Got it!) for continuous FN. The logistic regression yielded multiple significant results. Highest loadings were on SH 8 (coef = -1.227, 95% CI = [-1.512, -0.941]), as well as PL 2, and all CD areas except for 6.

Conclusion: Assessment behaviours differ between episodic versus continuous supervisors, especially in judgements of performance and which clinical domains are assessed. While these findings indicate systematic differences in the assessment behaviour of episodic versus continuous supervisors, this study was exploratory; educational implications of these findings will require further research.

30. From disbelief to documentation: The tipping point in identifying reportable failure

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Introduction: Coming face-to-face with a trainee who needs to be failed is a difficult test for any supervisor. How supervisors respond to this test is highly consequential for the trainee. Recent work identified a phase of disbelief as supervisors encountered unanticipated signs of underperformance. What remains unknown is how they come to the point of believing that the trainee needs to be failed. This shift must be studied to understand failure-to-fail phenomenon.

Methods: Following constructivist grounded theory methodology, we recruited 42 physicians and surgeons in British Columbia with purposive sampling to share their experiences supervising trainees who required extensive remediation or were dismissed from the program. We identified recurring themes using an iterative, constant comparative process.

Results: The shift from disbelief to reportable failure followed three distinct patterns: accumulation of significant incidents; discovery of an "egregious" error after negligible deficits; or illumination of an overlooked deficit when pointed out by someone else. Frustration and a sense of duty to prevent harm to patients and the profession permeated recollections of reportable failure. It was acknowledged that having many colleagues monitoring for and documenting evidence of "dangerous

patient care" could place trainees "under a microscope" and adversely impact fair assessment.

Conclusion: Coming to the point of believing that a trainee needs to fail is reminiscent of the psychological process of a tipping point where people first realize that noise is signal and cross a threshold where the pattern is no longer an anomaly. This warrants caution because tipping points happen faster and with less evidence than we think they do, threatening veracity. While failing to fail may be harmful, striving for faster identification of failure may be a risky venture. Tipping points, once reached, may blind supervisors and programs to disconfirming evidence. Our processes for identifying failure require further inspection.

31. Refining entrustment scale through consultation with learners and assessors

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Introduction: EPAs are central the Competence By Design (CBD) model. Using an overall entrustment score framed around levels of supervision can make the entrustment decision more objective (ten Cate, 2020). A standardized overall entrustment scale and approach is used across specialties at the University of Toronto to enable decision consistency. After 3 years of implementation and informal feedback, the PGME team sought to refine the scale to foster a more shared approach to entrustment decisions, aligned with current best practices in the literature.

Methods: 1) A scoping review of articles to explore best practices in 'entrustment decision-making'. 2) Surveys distributed to Residents and Faculty with 3 or more EPA assessments completed to explore: a) views on CBD implementation and the EPA completion process; b) issues relating to the EPA scale, the concept of 'entrustment' and faculty and resident development / change management. 3) Survey results were analyzed using thematic, frequency and comparative analyses between respondent groups and subgroups to identify trends and themes relevant to CBD implementation, EPA refinement and faculty/learner change management. 4) An advisory committee and local experts worked iteratively to refine the entrustment scale based on gathered information.

Results: 1) Entrustment refinements were made to scale wording (e.g., oriented toward the assessor's experience;

omitting problematic wording re:"Autonomy"); 2) assessment instructions (e.g., emphasizing that ultimate 'entrustability' occurs at the Competence Committee level, and assessors should focus on performance around a specific encounter); 3) developing learner and faculty resources.

Conclusion: Careful attention must be paid to the experiences of residents and faculty to identify challenges with potential to impact model fidelity and learning outcomes. Faculty and resident education development appear to be areas of ongoing need. Monitoring EPA scale changes and other implementation issues have been identified for follow up study.

32. This abstract has been withdrawn.

33. Use of entrustment-supervision scales in workplace-based assessments: Does leniency bias persist?

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Introduction: Workplace-based assessments (WBA) play crucial roles in the assessment system of competency-based medical education programs. Basing WBAs on entrustment-supervision scales may encourage assessors to use the entire scale and to overcome the biases associated with proficiency scales. We aimed to examine whether entrustment-supervision scales resolved leniency bias in a WBA used for postgraduate anesthesiology training.

Methods: One of our program's WBAs for perioperative care includes a global rating scale (GRS) assessing 8 clinical competencies and overall independence, where supervisors rate residents on a 5-point entrustment-supervision scale, with descriptive anchors. We analyzed WBA data from assessors who completed at least 10 assessments, from July 2017 to January 2020, for the frequency of low scores (i.e., 'Intervention' or 'Direction') and high scores (i.e., 'Autonomous' or 'Consultancy level') on the GRS items and the overall independence rating.

Results: We analyzed 7871 assessments for 137 residents, completed by 214 assessors. Across all residents, 10.75% (23/214) and 27.10% (58/214) of assessors never assigned low scores for any GRS item or for the overall independence rating, respectively. On at least one WBA,

94.64% (53/57) of first-year residents were rated as 'Autonomous' or 'Consultancy level' for overall independence, and 24.79% (±15.35) of their overall independence ratings were assigned as 'Autonomous' or 'Consultancy level.'

Conclusion: Our findings suggest that leniency bias in resident assessment persists with entrustment-supervision scales. This highlights the need for further research to identify factors maintaining leniency bias with these scales and approaches to mitigate bias and its consequences in a competency-based assessment system.

34. "Everything new is happening all at once": A qualitative study exploring early career obstetrician/gynaecologists' preparedness for transition to practice

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Introduction: The transition from residency training into practice is a high-stakes period with increasing risk of litigation, burnout, and stress. Yet, we know very little about how best to prepare graduates for areas of independent practice beyond the "medical expert" role. Thus, this study seeks to explore how recent Obstetrics and Gynecology graduates experienced their transition to practice (TTP) and their perceived readiness for all aspects of practice.

Methods: Using constructivist grounded theory, we conducted semi-structured interviews with 10 Obstetrician/Gynaecologists who graduated from 1 of 5 Canadian residency programs within the last 5 years. Data collection and analysis proceeded iteratively, which allowed for identification of emerging concepts and themes.

Results: Our analysis uncovered 3 inter-related themes that encompassed our participants' descriptions of their TTP experience. The theme "Existing practice gaps" included areas of unpreparedness highlighted by new graduates. These fit within 5 domains: clinical experiences, such as managing unfamiliar low-risk ambulatory presentations; logistics, such as triaging patient referrals; administration, such as hiring or firing support staff; professional identity, such as navigating patient complaints or litigation; and personhood, such as boundary-setting between work and home life. "External modifiers" represented various factors that either mitigated or exacerbated the practice gap. Finally, the

theme "Retrospective clarity" captured a shared sense among participants that they had underestimated many challenging realities of practice.

Conclusion: Our analysis revealed that integration of a longitudinal TTP curriculum with an emphasis on managing an office-based practice and making independent clinical and surgical decisions may address many of the identified practice gaps. However, our findings also suggest that some aspects of practice may not be amenable to curriculum-based solutions and instead require ongoing mentorship that extends into practice to support new graduates as they experience the realities of practice.

35. "Next steps are...": An exploration of coaching language in EPA assessment comments

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Introduction: Entrustable Professional Activities (EPA) assessments are intended to facilitate more meaningful coaching and feedback, partly through the provision of written comments. We analyzed the comments on communication skills EPAs in a cohort of internal medicine (IM) residents for evidence of feedback and coaching language, as well as specificity.

Methods: All written comments from EPA assessments of communication (n = 278) were retrospectively collected from the 2018-2019 first-year IM resident cohort (n = 82) at the University of Toronto. Data were analyzed using principles of constructivist grounded theory.

Results: Nearly all EPA assessments contained narrative feedback on observations during focused clinical encounters. Comments often contained coaching language, including phrases like "continue to", "don't forget to", and "next steps are" followed by specific suggestions for improvements or reinforcement of desired communication strategies. A variety of words, including "autonomy" and "independence", were used to describe entrustment decisions. In some cases, feedback was generic, non-specific (e.g., "Great communicator!") or lacked personalized, actionable suggestions for improvement (e.g., "...further refine excellent approach"). Additionally, although 94% of assessments contained comments on areas of strength, only 50% contained comments on areas for improvement. When critical feedback was provided, politeness strategies were pervasive, including the use of indirect language and

hedging, seemingly to minimize harm to the supervisor-trainee relationship.

Conclusion: EPA assessment comments clearly contained evidence of written coaching feedback, suggesting that they are being used by faculty as intended as a means of formative, in-the-moment feedback to promote learning. Further work is needed to improve the consistency with which coaching and specific, actionable comments are provided in order to harness their full potential. Ongoing faculty development and form revisions may help, but there will also be a need to address the social dynamics of the supervisor-trainee relationship and culture of politeness that has pervaded assessment in CBME.

36. A collective case study of supervision and competence judgments on the inpatient internal medicine ward
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Introduction: Workplace-based assessment in competency-based medical education employs entrustment supervision scales to suggest trainee competence. However, entrustment decision-making likely reflects more than trainee competence since clinical supervision involves contextual factors. We must understand whether documenting the level of supervision provided truly represents a supervisor's impression of trainee competence. In this study, we aimed to address these questions: What informs the level of supervision provided to a trainee for a specific task; and how do levels of supervision align with judgments of trainee competence?

Methods: We undertook a collective case study with field observations and semi-structured interviews. Each case was a dyad (an attending internal medicine physician supervising a senior resident) on a Clinical Teaching Unit inpatient ward. Data was analysed within each case and across cases to identify supervisory behaviours, what triggered the behaviours, and how they related to judgments of trainee competence.

Results: Ten dyads participated. We identified eight supervisory behaviours that represented a change or a choice in the level of supervision provided. The supervisory behaviours were enacted in response to trainee and non-trainee factors and corresponded with varying assessments of trainee competence. A change in an attending's judgment of resident competence did not

always correspond with a change in subsequent observable behaviours.

Discussion: There was no consistent relationship between a trigger for supervision, judgment of trainee competence, and subsequent supervisory behaviour. The amount of supervision provided for inpatient medicine is often due to non-trainee factors. This has direct implications for entrustment assessments tying competence to supervisory behaviours.

37. A novel transition to practice curriculum for internal medicine and general internal medicine trainees
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Introduction: Physicians face many challenges during the transition from residency training to independent practice. Non-clinical skills are necessary to succeed during this transitional period but are infrequently taught during residency training. We designed and implemented a longitudinal transition-to-practice (TTP) curriculum tailored to the needs of internal medicine (IM) and general internal medicine (GIM) residents.

Methods: Our curriculum design was informed by consultations with key stakeholders in the residency program, a needs assessment survey distributed to IM/GIM residents, and previously published TTP initiatives. We constructed our curriculum based upon four major themes: "Entering the Workforce", "Managing Your Practice", "Managing Your Finances", and "Maintenance of Wellness". Eleven TTP sessions were held during IM/GIM academic half-days between July 2019 and April 2020. Quantitative and qualitative feedback pertaining to individual sessions and the overall curriculum were obtained via participant surveys. Session scores were quantified using a 5-point Likert scale.

Results: Eleven residents participated in the curriculum. A median of 6 residents attended each session. We achieved a 100% response rate across our surveys. The average individual session score was 4.25 out of 5. The majority of residents agreed or strongly agreed that the curriculum included topics that were important to TTP (91%), that the sessions improved their comfort level with the topics presented (100%), and that the curriculum was an important part of their residency training (91%). Sessions related to personal finance and wellness were particularly well received. Residents expressed that sessions related to career development and clinical

practice management should independently address the needs of those interested in practicing community medicine versus those interested in practicing academic medicine.

Conclusion: Longitudinal curricula are an effective means for teaching non-clinical TTP competencies to IM and GIM residents during their transition to independent practice. Our curriculum framework can be adapted to other specialty training programs across Canada.

38. An evaluation of Competency-based Medical Education implementation in orthopedic surgery at Queen's University

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Introduction: In July 2020, Canadian Orthopedic Surgery postgraduate programs transitioned to a Competency by Design (CBD) training model. However, as part of an institutional systems-based initiative beginning in July 2017, Queen's University transitioned 29 of their postgraduate programs (including Orthopedic Surgery) ahead of the national rollout. A program evaluation of its Competency-Based Medical Education (CBME) implementation was conducted to understand the fidelity of implementation, early outcomes, and provide recommendations for adaptations.

Methods: The CBME Core Components Framework guided the use of qualitative rapid evaluation methodology to examine Queen's Orthopedic Surgery program's implementation of CBME. Trainees, faculty, and program leaders (n=16) participated in focus groups and interviews eliciting their perspectives of, and experiences with, CBME, including intended versus enacted transition plans. Data were analyzed thematically with the goal of generating potential responsive program adaptation.

Results: Stakeholders emphasized the learning curve experienced during the transition to a CBD model. Further, despite valuing the intended outcomes of CBME and agreeing with its theoretical foundations, stakeholders suggested that CBME may not fully be enacted as intended. Faculty and residents shared the administrative burden associated with CBME. Stakeholders highlighted a range of benefits at the individual, program, and organizational levels. These benefits were facilitated by institution and affiliated supports. Several avenues for potential improvement were identified, including enhanced stakeholder engagement, streamlined assessment processes, improved technological platforms, and the continued incorporation of global feedback.

Conclusion: These findings provide insight into the benefits and challenges of implementing CBME in Orthopedic Surgery programs. Findings will be used to develop adaptation plans to address the challenges and build on the positive experiences. Further, this evaluation outlines a process that can be used for evaluating CBME implementation and outcomes in postgraduate medical education programs.

39. Barriers and facilitators to the use and implementation of personal learning plans in a Competency-based internal medicine residency program

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Introduction: Personal Learning Plans (PLPs) provide residents opportunities for self-regulated learning, an essential skill needed for continuous professional development. We explored residents' and academic advisors' (AAs) experiences with PLPs to identify barriers and facilitators to their use in a competency-based internal medicine (IM) residency program.

Methods: Using mixed methods we examined PLPs from three cohorts of IM residents (2017-2020). We evaluated goals set in the PLPs using a rubric based on goal specificity, learning strategy, and outcomes. We evaluated goals for alignment with faculty feedback. We conducted semi-structured interviews with residents and AAs to explore their experiences of PLPs. Quantitative data were analyzed within and across training cohorts using descriptive and variance component modeling techniques. Qualitative data were analyzed inductively and deductively.

Results: Fifty PLPs containing 214 goals were independently scored by two IM medical educators. Completion rate was 47.6%, 73.9%, 95.8% for 2017, 2018 and 2019 cohorts respectively. 47% of goals aligned with faculty feedback. Overall, scores for goals were moderate and varied within resident: goal specificity ($\bar{x}$ =1.56, range: 0-3; ICC = 0.46), learning plan quality ($\bar{x}$ =1.80, range: 0-3, ICC = 0.53), and the outcome identified ($\bar{x}$

=1.56, range: 0-3, ICC = 0.39). Most interviewees thought PLPs developed residents' self-reflection skills and promoted the use of feedback to identify learning goals. Barriers included challenges with self-reflection, inexperience with goal and plan generation, challenges with online platforms, limited time, and insufficient clarity around expectations. Facilitators included a supportive learning environment, coaching by AAs, protected academic time, and high-quality narrative feedback.

Conclusion: This study provides insights into the current quality of PLPs and facilitators to effective implementation of PLPs in residency training: on-going resident and AA training sessions, coaching residents on writing learning goals and self-reflection, setting clear expectations, and providing dedicated time to develop PLPs.

40. Competence by Design implementation pulse check

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Introduction: 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 for the 2017, 2018, and 2019 Competence by Design (CBD) launch specialties. It also examined early outcomes through benefits and challenges.

Methods: This study took place over one year, surveying program directors of CBD launch specialties longitudinally at distinct time points: T1-June 2019 (2018 and 2017 launch specialties); T2-January 2020 (2019 launch specialties); and T3-June 2020, (all launched specialties). Key features of CBME were measured using an innovation configuration map approach. Participants were invited to participate in a follow-up interview to better understand their implementation experience.

Results: T1 had a survey response rate of 31% (n=33), with 30% (n=10) completing interviews, T2 had a survey response rate of 44% (n=79), with 19% (n=15) completing interviews, and T3 had a 30% (n=88) response rate, with 20% (n=18) completing interviews. Scores on the perceived efficacy of CBD implementation, and on almost all key features, increased over time, both across and within launched specialty cohorts.

Common challenges over time and across cohorts were the time, workload, and resource investment in CBD, completion of EPA assessments, challenges with the electronic platform, challenges with EPAs, and culture change. Common benefits over time include more frequent and better quality feedback for residents, more objective review of residents, and catching struggling residents earlier.

Conclusion: Most programs are adhering to the fidelity of CBME and are working towards fully implementing key features. Fidelity often improves the longer programs have been in CBD, suggesting that they are moving towards ideal implementation. However, the integrity of implementation is still a work in progress for programs, as many struggle with culture change. Recurring challenges highlight key areas where future interventions may be needed.

41. This abstract has been withdrawn.

42. Competency-based Medical Education in diagnostic radiology residency and its effect on resident case volumes

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Introduction: Canadian residency training programs began implementation of competency-based medical education (CBME) curricula at Queen's University in 2017, including the first CBME-based Diagnostic Radiology residency program in Canada. This shift toward achievement of observable milestones rather than traditional time-based progression has introduced new challenges for resident assessment, including a lack of data pertaining to whether CBME training models will reduce resident clinical volumes and exposure to cases. The purpose of this study was to evaluate if a CBME curriculum affects residency case volumes of Diagnostic Radiology residents at Queen's University when compared to the traditional time-based curriculum.

Methods: Case volumes were determined for each of the CBME residents (n=6) on their Abdominal, Chest, and Neuroradiology junior rotations from 2018-2019, and compared to residents from the traditional curriculum who completed these rotations in 2016-2017 (n=6).

Research data was collected using Nuance mPower Clinical Analytics, which is a natural language processing cloud-based platform that allows accelerated access to detailed information concerning prior radiology reports.

Results: For each junior rotation, the CBME residents reported a larger mean volume of total cases than the traditional program residents. However, the only statistically significant difference was case volumes reported during the first Abdominal imaging rotation (p=0.036).

Conclusion: CBME implementation for Radiology training promises to allow for more timely feedback and mentorship from faculty supervisors. CBME implementation has not resulted in a decrease in resident case volumes. Prior studies have shown that Radiology case volumes correlate with competency.

43. Connecting the dots: Defining what emergency medicine program directors expect of entering interns based on the core entrustable professional activities for entering residency

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Introduction: Residency program directors (PDs) identify that students are often unprepared for the patient care responsibilities expected of them upon entering residency. The Association for American Medical Colleges (AAMC) developed the Core Entrustable Professional Activities (Core EPAs) for Entering Residency to address this concern by defining thirteen core tasks students should be able to do with minimal supervision upon graduation. However, PDs have not been queried about how the Core EPAs address their expectations of entering interns.

Methods: We used Delphi consensus methodology to define what emergency medicine (EM) PDs expect of entering interns based on the Core EPAs. Twelve expert medical educators in EM drafted observable practice activities (OPAs) based on the Core EPAs and their associated core functions. Twelve EM PDs broadly representative of the various training paradigms within the specialty of EM participated in three rounds of voting with consensus for inclusion set at 80%. Comments were encouraged to explain votes, and thematic analysis was performed using an inductive approach.

Results: Of the 321 OPAs drafted, 127 were adopted as expectations for entering interns based on the Core EPAs. The adopted OPAs were all general expectations; none were specialty-specific. Four main themes emerged from the comments: Schools are not responsible for specialty-specific training, PDs do not trust schools' assessments, supervision expectations of graduates should be lowered for higher-order EPAs, and the context in which the student performs a task and its associated complexity matter greatly with regard to entrustment.

Conclusion: The Core EPAs have created general expectations for graduating students entering residency. PDs agree regarding many basic expectations; however, PDs feel that specialty training should be left to residency programs and feel the need to verify entrustment within their context. Transparency in assessment and summative entrustment processes may aid in unifying stakeholder expectations.

44. Context is key: Impact of health sciences system's context on the implementation of CBME at the University of Manitoba

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Introduction: Successfully implementing competency-based medical education (CBME) needs to account for local contexts and program variability. We conducted a realist evaluation of the implementation of Competence by Design (CBD), a hybrid version of CBME in Canada, at the University of Manitoba in order to identify factors that contributed to a successful implementation.

Methods: Realist evaluation focuses on developing and refining a program theory. Our initial program theory used the core components of CBME and was refined through three focus groups with residents (n=17), one focus group with faculty (n=8), and interviews with program directors (n=17) and program administrators (n=8) from 2018-2021. Data were collected from 11 of 25 programs and examined using template analysis.

Results: We identified three contexts (rival initiatives, institutional structures, and articulation of CBD) and three key mechanisms (adaptation, communication, and participation) that influenced the successful implementation of CBD at the University of Manitoba.

Major outcomes included a better understanding of resident progress, improved learning experiences, multiple unmet expectations, and change fatigue.

Conclusions: We found that the implementation of CBD at the University of Manitoba is influenced more by the contexts of the academic health sciences system than by individual or program choices or actions. Continued implementation efforts can be facilitated by clearly distinguishing between CBD and other major initiatives, clarifying expectations, and supporting programs as they adapt CBD to their unique program needs.

45. Does observation type influence quality of workplace-based assessment written comments?
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Introduction: A key component of competency-based medical education (CBME) is direct observation of trainees. Direct observation has been emphasized as an ideal form of workplace-based assessment (WBA) yet previously identified challenges may limit its successful implementation. Given these challenges, it is imperative to fully understand the value of direct observation within a CBME program of assessment. Specifically, it is not known whether the quality of WBA documentation is influenced by observation type (direct or indirect). The objective of this study was to determine the influence of observation type (direct or indirect) on quality of entrustable professional activity (EPA) assessment documentation within a CBME program.

Methods: EPA assessments were scored by four raters using the Quality for Assessment of Learning (Qual) instrument, a previously published three-item quantitative measure of quality of written comments associated with a single clinical performance score. An analysis of variance was performed to compare mean Qual scores among the direct and indirect observation groups. The reliability of the Qual for EPA assessments was calculated using a generalizability analysis.

Results: A total of 244 EPA assessments (122 direct observation, 122 indirect observation) were rated for quality using the Qual instrument. No difference in mean Qual score was identified between the direct and indirect observation groups (P = 0.17). The reliability of the Qual for EPA assessments was 0.84.

Conclusions: To the author's knowledge, this study is the first of its kind to determine the influence of observation type (direct or indirect) on quality of WBA documentation. Given that observation type did not influence the quality of WBA documentation, this study raises further questions regarding how direct and indirect observation truly differ and the implications for competence committees responsible for making judgements related to trainee promotion.

46. Eliminating the blank slate phenomenon: What residency program directors want in a learner handover
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Introduction: Central to competency-based medical education is the need for a developmental continuum of training and practice. Trainees currently experience significant discontinuity in the transition from undergraduate (UME) to graduate medical education (GME). The learner handover aims to smooth this transition; however, little is known about the GME perspective of the desired content of the handover or the process of receiving such a handover.

Methods: Using case study methodology, semi-structured interviews were conducted with twelve emergency medicine PDs within the United States from October to November 2020. Participants were asked to describe the ideal content and process of a learner handover from UME to GME. Conventional content analysis was performed using an inductive approach.

Results: A model was designed based on the desired content of a learner handover from UME to GME. This model includes a summary of the student's progress UME EPAs broken down by core functions, progress on specialty-specific EPAs, and a reflection on diagnostic reasoning and critical thinking skills, team leadership and communication, follow-through on professional responsibilities, capacity for self-directed learning, and strategies to facilitate wellbeing in residency. An ideal process was also defined for transmitting, processing, and utilizing the information received. This includes a conversational handover where UME and GME stakeholders discuss the student's strengths and areas for growth and subsequently co-develop the first iteration of a GME-focused individualized learning plan.

Conclusion: Program directors desire an honest assessment of each students' strengths and areas for growth in order to aid them in their transition to residency and facilitate ongoing their development. A learner handover following the proposed model will ameliorate much of the discontinuity felt by students and facilitate a true continuum from UME to GME. Formal evaluation of the proposed learner handover process is essential to ensure the needs of all stakeholders are met.

47. Evaluation of a Transition to Discipline (TTD) longitudinal bootcamp for first year paediatric residents: Adapted to a virtual learning platform

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Introduction: The University of Toronto Paediatric Residency Program implemented a mandatory TTD bootcamp in 2019. Based on our 2019 bootcamp evaluation, we iteratively re-designed the bootcamp prior to its delivery in 2020. We aim to: 1) evaluate the 2020 bootcamp, comparing to 2019, and 2) assess the newly implemented virtual learning strategies.

Methods: The 2020 bootcamp consisted of 12 half-days spanning the first three blocks of PGY1. Feedback from the 2019 evaluation was incorporated into designing the 2020 curriculum, which was then further adapted to be delivered predominantly virtually. After completing the bootcamp, residents completed a questionnaire evaluating their experience.

Results: Over 90% of residents felt the bootcamp contributed to their learning during TTD. The highest rated sessions were: neonatal resuscitation, growth/nutrition, pharmacy 101, acute care resuscitation, G-tube basics, and respiratory therapy. The lowest rated sessions were: patient safety/error prevention and shadowing a nurse. The most well-received virtual learning strategies were: the chat box feature, the annotate feature, and audience polls.

Conclusions: The results of the 2020 bootcamp evaluation are congruent with the 2019 results. The bootcamp was again perceived to enhance early PGY-1/TTD residency education and transition, and again residents identified topics considered essential for clinical rotations to be most valuable in the bootcamp model. Furthermore, virtual learning strategies that required the learner to actively participate enhanced the learning experience.

While this study is limited by subjectivity of resident feedback, it provides essential information to continue to enhance the bootcamp and meet the needs of the early PGY-1/TTD resident.

48. Examining enablers and barriers to EPA acquisition using the theoretical domains framework: A qualitative framework analysis study

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Introduction: In 2018, the Royal College Emergency Medicine training program transitioned to the Competence by Design framework. Within this framework, the major unit of assessment is the entrustable professional activity (EPA), an observable task of the discipline upon which workplace-based assessments are focused. However, with the shift to this new system, there are concerns that trainees are not getting enough opportunities for EPA observations. The purpose of this study was to identify enablers and barriers for accumulating EPA observations in emergency medicine.

Methods: We conducted a multicentre, qualitative, interview-based study of faculty and residents at 4 centres in Canada (McMaster University, Queen's University, University of Ottawa, University of Saskatchewan). After audio-recording and transcribing Zoom-based interviews by our trainee investigators, our team conducted a framework analysis of these data using the Theoretical Domains Framework (TDF), a model used to phenotype enablers and barriers towards a particular action. To decrease power differentials we ensured the investigators did not interview participants from their own site. Two coders conducted line-by-line coding of each transcript looking for elements linked to known TDF codes. Codes deemed unclear were reviewed by a second team of four coders to resolve differences.

Results: Interviews lasted between 26 and 62 minutes and yielded a total of 185 pages of transcripts. The most common TDF enabling codes were: Behavioural Regulation (25.3%), Memory, attention & decision processes (16.3%), and Knowledge (12.4%). The most

common TDF barrier codes were: Environmental context & resources (29.5%), Beliefs about Consequences (21.5%), Social influence (8.1%), and Goals (8.1%). Sub-themes within each domain were identified.

Conclusion: EPA-focused assessment is likely to remain a key component of residency education. Therefore, the enablers and barriers identified in this study may be useful for residency programs to create faculty or resident development, as well as identify systemic barriers that need to be addressed.

49. How do competence committees make decisions?
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Introduction: Competence committees (CC) determine trainees' progression through competency-based postgraduate medical education (CBME) programs. Models of how CC function identify that most programs take a problem-identification approach while others provide developmental feedback to every trainee. While CC are tasked with high stakes decisions, the process by which they discuss and make decisions about resident progression remains uncertain, with few publications addressing this question. The purpose of this qualitative study was to describe the factors affecting CC decision making.

Methods: This instrumental case study examined 2 CC at a Canadian institution, 3 years post-CBME launch. Over a 6-month period, 1 researcher observed 4 CC meetings and conducted interviews with 10 CC members which were audio recorded and transcribed verbatim. Royal College documents, CC terms of reference, investigator reflections, and memos created throughout the study were also examined. Following a constructivist grounded theory approach with constant comparison, 2 researchers coded transcripts independently and jointly to refine a codebook and identify themes in the data.

Results: A shared understanding of CC process underlies smooth functioning and evolves with experience. Frontline faculty's understanding of EPA assessments and ability to provide informative feedback is critical for robust decision-making. CC members bring personal impressions of trainees to the meetings, which affects data interpretation. A single comment is sufficient to trigger discussion, regardless of the number and trajectory of EPA completion. Conversely, strong trainees are promoted with minimal conversation or developmental advice.

Conclusion: Ongoing challenges with CC functioning persist 3 years post-CBME implementation. Despite Royal College recommendations and local terms of reference, CC provide limited developmental feedback to trainees who are doing well, and acknowledge that biases could affect the intended process. While this study only examined 2 CC, it identifies important themes to address when considering a robust CC process.

50. Identifying and addressing barriers to successful completion of Entrustable Professional Activities (EPA) in internal medicine (IM) residency: Applying qualitative improvement (QI) methodology to medical education
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Introduction: As IM programs make the transition to competency-based medical education (CBME), continuous evaluation of the EPA process is imperative. The goal of this project is to identify challenges in CBME implementation, and to optimize education on the clinical teaching unit (CTU) at McMaster.

Methods: 77 residents at McMaster IM have transitioned to CBME. QI methodology was used to identify areas of improvement. A root cause analysis identified barriers including lack of knowledge on EPA opportunities, EPAs expiring, and lack of time. 46% of residents stated posters can potentially improve knowledge on EPA opportunities. A poster was designed outlining EPAs that can be completed on CTU. We measured self-reported EPA completion and opportunity awareness through surveys using a Likert scale. We hoped to improve the number of EPAs triggered in 2 blocks by 25%.

Results: 47% of respondents noticed the posters, and 86% stated they were easy to understand. However, there was no self-reported increase in the number of triggered EPAs, and residents continue to cite similar barriers to completion. 84% of residents stated the posters did not help them identify more EPAs to complete. 0% of respondents reported using the posters to direct evaluators to potential EPAs.

Conclusion: Posters were not an effective intervention to improve knowledge or completion of EPAs. This highlights the importance of iterative exploration and re-sampling of residents in order to develop solutions. Based on repeat survey results, our group developed a two-pronged approach of lanyard cards and buttons to increase

awareness of EPA opportunities, which will be evaluated in the next survey cycle.

51. Improving competence committee documentation and due process

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Introduction: Competence Committees (CC) are central to the Competence by Design (CBD) process to ensure fairness, due process and transparency in the promotion of residents from one CBD stage to the next.To better understand programs' adherence to PGME Competence Committee (CC) Guidelines, a program evaluation of key documents was conducted from a sample of residency programs who have implemented the Competence by Design (CBD) model and to specifically to: 1) evaluate adherence to the CC Guidelines; 2) identify potential improvements to the CC guidelines; and 3) identify potential opportunities for faculty development of CCs.

Methods: Three types of CC documents were evaluated for a purposeful sample of 12 CBD programs (i.e. Terms of Reference (TOR), Meeting Agendas, CC Meeting Notes) and were analyzed and scored using an a priori scoring system against key elements of the PGME Guidelines for Competence Committees established to ensure fairness, due process and transparency. Strengths, weaknesses and best practices were identified for each program and across the group.

Results: 83% of the programs were compliant or strongly compliant with their TOR; 50% of the programs were compliant or strongly compliant with the Agendas; 67% of the programs were compliant or strongly compliant with their Meeting Notes. 75% of the programs were compliant across the 3 domains (i.e. TOR, Agendas, Meeting Notes). Many programs' CC processes are exemplar while some need additional support.

Conclusion: Monitoring implementation using structured processes was very informative. The results for the individually reviewed programs will be shared. Sharing best practices across programs is beneficial. CC monitoring and improvement are important to ensure consistency in attention to fairness, due process and transparency. CC feedback and faculty development enhancements are planned. Samples for TOR, Agendas, and Meeting Notes will be developed to attach to the CC Guidelines.

52. Including patient and caregiver assessment in the pediatric Competence by Design residency curriculum: A national consensus study

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Introduction: Evidence supports the use of diverse assessment strategies, including patient/caregiver involvement, in Competency-Based Medical Education (CBME). However, few residency programs formally include patients/caregivers in assessment. The purpose of our national study was to identify the milestones that are most valuable for patients and caregivers to assess within the Royal College of Physicians and Surgeons of Canada's Pediatric Competence By Design (CBD) curriculum.

Methods: Pediatric program directors and assistant program directors (n=29) from 17 Canadian medical schools were invited to participate in a Delphi study. The Delphi questionnaire included 209/320 milestones from the proposed pediatric CBD curriculum available at the time of the study (111 were excluded as skills that patients/caregivers are unable to assess). In round 1, participants rated the value of including patients/caregivers in the assessment of each milestone using a 4-point scale ranging from "extremely valuable" to "not at all valuable". Participants were invited to provide feedback regarding their rating decisions. In round 2, participants rated any remaining items without consensus using the same 4-point scale while considering the participant feedback from round 1.

Results: Sixteen individuals (55%), representing 13 institutions, completed the first round. Consensus (defined as 80% participant agreement) was met for 150 milestones, leaving 58 for re-exposure. During round 2, 14/16 individuals (88%) participated, and consensus was met for an additional 13 milestones. A total of 67 milestones met consensus for "valuable", of which 11 met consensus for "extremely valuable". These milestones predominantly represent communication skills.

Conclusion: Patient/caregiver assessment appears to be valuable for 21% of milestones in the current pediatric CBD curriculum, mainly those relating to communication skills. This confirms the importance of patient/caregiver assessment of trainees; formal inclusion is recommended. Future directions include surveying patients regarding

their perceived role in assessment and validating patients' assessment skills.

53. Patterns of observation in a new Competency-based residency program

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Introduction: A key component of competency-based medical education is workplace-based assessment which includes observation (direct or indirect) of residents. Direct observation has been emphasized as an ideal form of assessment yet challenges have been identified which may limit its adoption. At present, it remains unclear how often direct and indirect observation are being used within the clinical setting. The objective of this study was to describe patterns of observation in an emergency medicine competency-based program two years post implementation.

Methods: Emergency medicine residents (n=19) recorded the type of observation they received (direct or indirect) following workplace-based entrustable professional activity assessments from December 15, 2019 – April 30, 2020. Assessment forms were reviewed and analysed to describe patters of observation.

Results: Assessments were collected on all 19 eligible residents (100% participation). A total of 1070 entrustable professional activity assessments were completed during the study period, of which 798 (74.6%) had the type of observation recorded. Of these recorded observations, 546 (68.4%) were directly observed and 252 (31.6%) were indirectly observed. The length of written comments contained within assessments following direct and indirect observation did not differ significantly. There was no significant association between resident gender and observation type or resident stage of training and observation type. Certain entrustable professional activity assessments showed a clear preference towards either direct or indirect observation.

Conclusion: To our knowledge, this study is the first to report patterns of observation in a competency-based residency program. The results suggest that direct observation can be quickly adopted as the primary means of workplace-based assessment. Indirect observation comprised a sizeable minority of observations and may be an underrecognized contributor to workplace-based assessment. The preference towards either direct or indirect observation for certain entrustable professional activity assessments suggests that the entrustable professional activity itself may influence the type of observation.

54. Prepared to practice? The longitudinal challenges physicians face in their first year of practice

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Introduction: The transition from residency to independent practice is not a moment in time; it is a longitudinal process that can be fraught with challenges. However, little is known about the longitudinal nature of transition to practice. We conducted a study to better understand the influence of mentorship, regulatory bodies, team dynamics, organizational and team consequences on transition to independent practice.

Methods: We conducted a realist study to explore the transition from residency to independent practice. We interviewed 20 participants across multiple specialties at three distinct points in time; one month before their transition to practice, one to two months into their transition and then nine months into their transition to independent practice.

Results: Those starting independent practice in a different location to where they trained faced the greatest challenges. They found it harder to navigate resources, develop new relationships and understand local culture and practice patterns. Although residency programs provided a range of supports (orientations, mentorship, shadow shifts etc), the timing of these supports varied and this limited the extent to which they were helpful. Those who had been employed on locum contracts had difficulty with leadership transparency, a lack of security, and difficulty understanding performance metrics and what they meant for their future careers. Teaching senior residents, managing learners in difficulty, and balancing the needs of learners without compromising patient care were also identified as challenges.

Conclusion: The transition from residency to independent practice has many challenges, some of which have been previously described and mitigated. However, this study has identified many new areas of concern, many of which can be addressed with Competency Based Medical Education transition to practice curriculum. Transition to unsupervised practice has endless individual,

interpersonal, institutional and national factors that can affect how each physician experiences it.

55. Quality of written feedback received through Entrustable Professional Activities (EPAs) in internal medicine: A continuous quality improvement (CQI) study

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Introduction: Recent accreditation reform emphasizes CQI in residency education. One goal of Competency by Design (CBD) is to provide meaningful feedback to coach a resident towards improvement. The Internal Medicine program at Western University initiated a CQI project using? PDSA cycle to evaluate the quality of resident feedback on EPA observations.

Methods: Plan – Between July 2018 and –June 2019 a CBD soft launch took place within the Department of Internal Medicine to educate faculty and residents. This included education regarding quality feedback and how to provide/receive feedback. Faculty development included: two meetings with each Division, quarterly posters with learning points, presentations to Department Executive, and Grand Rounds. Resident development included pre-residency information on CBD, inclusion of admission interview question about feedback, program director updates, and an experiential learning activity about giving and receiving feedback. Do- CBD launched in July 2019. Study –Four blinded reviewers assessed written feedback quality from all PGY1 EPAs completed between July 2019-May 2020. Reviewers rated four elements of quality based on literature review. These were timeliness (<7days), task-oriented (yes/no), actionability (very/semi/not actionable), and polarity (positive/ negative/mixed/ neutral).

Results: A total of 1981 EPAs were evaluated. Forty-seven percent of EPAs were timely, 85% were task-specific, 83% consisted of positive feedback. Only 30% were semi-or very actionable. Act- Results were shared with program leadership, CBME experts, and peers. We are focusing the next round of faculty development on improving the actionability of feedback and the need for mixed feedback as part of coaching mindset. Resident development includes townhalls to determine ways to change the culture of giving and receiving feedback.

Conclusion: The PDSA cycle evaluating EPA feedback is time and labour intensive. However, it is necessary if we are to improve quality of feedback residents receive through EPAs.

56. Ready to launch? Measuring readiness among 2019 and 2020 disciplines implementing CBME in Canada

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Introduction: Organizational readiness is critical for successful implementation of an innovation such as Competency-Based Medical Education (CBME). This study evaluated program readiness among Canadian disciplines implementing CBME in 2019 and 2020.

Methods: A survey was distributed to program directors one month prior to implementation. Questions were informed by the R=MC2 framework of organizational readiness addressing: program motivation, general capacity for change, and innovation-specific capacity. An overall readiness score was calculated. An independent t-test was conducted to compare readiness scores between cohorts. An ANOVA was conducted to compare scores between disciplines.

Results: Survey response rate was 42% (n=79) and 45% (n=54) for the 2019 and 2020 cohorts, respectively. There were no significant differences in mean overall readiness scores between cohorts (2019: M=73.3, SD=12.6; 2020: M=75.1,SD=12.0; p=0.35) or between disciplines in either cohort. The majority of respondents agreed that successful implementation of CBME was a priority (2019: 74%, 2020: 74%) and that their leadership (2019: 94%, 2020: 98%) and faculty and residents (2019: 87%, 2020: 75%) were supportive of change. Fewer perceived that CBME was a move in the right direction (2019: 58%, 2020: 51%), and that implementation was a manageable task (2019: 53%, 2020: 48%). 2020 launch disciplines completed significantly more innovation specific capacity tasks (M=0.79) than 2019 launch disciplines (M=0.72), (p<0.05), particularly within the domains of competence committees, resident orientation, and program monitoring. Fewer programs had completed tasks related to preparing off-service disciplines for CBME (2019: 42%, 2020: 47%), and updating program policies (2019: 53%, 2020: 54%).

Conclusion: Organizational readiness is critical for successful implementation of an innovation. Our study highlights important areas within each component of the R=MC2 framework where programs excelled in their preparation for CBME, as well as common challenges that serve as targets for future intervention to improve program readiness for CBME implementation.

57. Simulation vs workplace-based assessment: A descriptive analysis and comparison between multiple postgraduate medical training programs

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Introduction: Simulation-based assessment (SBA) can complement workplace-based assessment particularly for rare or time-sensitive Entrustable Professional Activities (EPA). It is not clear how SBA is being used by postgraduate medical training programs in Canada. This study aims to 1) compare the use of SBA for resuscitation-focused EPAs common to multiple postgraduate medical training programs and 2) describe faculty perceptions of SBA.

Methods: Entrustment scores and assessment setting (simulation or workplace) were extracted from an institution-wide database for internal medicine (IM), emergency medicine (EM), and surgical foundations (SF) residents at the transition to discipline (D) and foundations of discipline (F) stages of training. Descriptive statistics included number of assessments within each program and at each stage of training. Mean entrustment scores were compared between clinical settings within each program. A questionnaire was piloted then distributed to competency committee members from IM, EM and SF.

Results: Our search yielded 682 EPA assessments, with 75 (11%) taking place in the simulated setting. The use of SBA did not differ between programs. Within SF only, a differential use of simulation existed (p<0.001) with 29/77 (37.7%) D level and 7/197 (3.6%) F level assessments in the simulated setting. The only difference in entrustment scores was within EM at the D level (simulation: 4.82 ± 0.60, workplace: 3.74 ± 0.93; p < 0.001). 14/20 competency committee members completed the questionnaire. Of those that use SBA, 5/11 interpret assessment data differently, 8/11 trust simulation for high stakes assessments, and 11/11 trust simulation for low stakes assessments.

Conclusion: Within resuscitation-focused EPAs, the use of SBA between three postgraduate medical training programs did not differ. Although variation exists in the interpretation of SBA data, all respondents support its use for low stakes, and the majority for high stakes assessment. These findings have practical implications for the future development of SBA.

58. The expectations and experiences of Competency-based Medical Education (CBME) in a teaching hospital in Taiwan

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Introduction: Competency-based medical education (CBME) has gradually become a worldwide medical education reform. The Joint Commission of Taiwan, Taiwan Society of Emergency Medicine, Taiwan Society of Anesthesiologists, and Taiwan Society of Internal Medicine, utilized milestones and entrustable professional activities as a framework tool for post-graduate medical education in Taiwan. However, the differences in culture and context may affect the degree of acceptance and implantation. To explore the expectations and experiences of clinical teachers' and residents' using the CMBE framework in our hospital, we conducted a qualitative study using the focus group method from Jan 2020 to Nov 2020.

Methods: Interview questions were synthesized and modified by 3 senior medical educators. 9 Program leaders, 4 medical education administrators, 12 clinical teachers, and 12 residents participated. Semi-structured interviews were conducted in 11 groups, consisting of three to four participants, by two investigators. Thematic analysis was used to analyze the data.

Results: Initial mixed reactions of confusion, resistance and acceptance were noticed in the residents' group while most clinical teachers and program leaders commended the structured CBME framework and its emphasis on evaluation and feedback. However, the lack of standardized checklists, subjective assessment criteria, and most importantly the lack of, manpower, and time may potentially affect the accuracy of assessments. The effectiveness of the CBME framework was also dependent on the quality of feedback, residents' motivations, and systematic support such as online-portfolio.

Conclusion: The incorporation of CBME in post-graduate medical education in our institute required further

refinement to tailor to both clinical teachers' and residents' expectations and capabilities to improve learning experiences.

59. The invisible bridge: Exploring program directors' perceptions of learner handover from medical school to residency

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Introduction: Central to competency-based medical education is the need for a seamless developmental continuum of training and practice. Trainees currently experience significant discontinuity in the transition from undergraduate (UME) to graduate medical education (GME). The learner handover aims to smooth this transition, but little is known about the GME perspective. This study explores program directors (PDs) perspective of the learner handover from UME to GME.

Methods: Using case study methodology, semi-structured interviews were conducted with 12 Emergency medicine PDs within the United States from October to November 2020. Participants were asked to describe their current perception of the learner handover from UME to GME. Thematic analysis was performed using an inductive approach.

Results: Two main themes emerged: The invisibility of the learner handover and the challenges of creating a successful UME-to-GME learner handover. PDs described the current state of the learner handover as "nonexistent," while also acknowledging that certain information is transmitted from UME to GME particularly as part of the residency selection process. Participants also highlighted key challenges to successful learner handover from UME to GME which hcentered around conflicting purposes and expectations of UME and GME, issues of trust and transparency between UME and GME stakeholders, and the scarcity of assessment data to hand over.

Conclusion: There appears to be an invisibility of the learner handover from the perspective of PDs. Challenges with the learner handover may require shifting the culture of trust, transparency, and communication between UME and GME stakeholders. Formal evaluation of the learner handover is essential to ensure the needs of all stakeholders are met in the handover process. National level organizations may need to examine this process and come to consensus on a unified approach to the transmission of transparent, growth-oriented learner data as part of a formal learner handover from UME to GME.

60. The pediatric Clinical Teaching Unit (CTU) and Competence by Design (CBD): A qualitative study exploring the role of the CTU in 21st century residency training

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Introduction: The CTU has been cornerstone of pediatric training since its inception over fifty years ago. The shift to CBD acknowledges that achieving pediatric competencies can successfully be done in multiple clinical settings. The purpose of this study was to explore the role of the CTU as a decentralized component of CBD education.

Methods: We adopted a pragmatic paradigm for this qualitative study undertaken at a tertiary care children's hospital. Specifically we set out to 1) Determine key competencies mapped to the CTU 2) Determine uniqueness of the CTU in facilitating learning 3) Explore perceptions of the purpose of the CTU. Using purposive sampling, semi-structured interviews were completed, audio-recorded and transcribed. Thematic analysis using the Framework Method was performed. Four members of the research team coded transcripts in duplicate. Discrepancies were resolved through discussion until consensus achieved.

Results: Twelve interviews were completed (n=4 residents, n=2 chief residents, n=3 CTU paediatricians, n=2 Education leaders, n=2 Department leaders, n=1 RTC). All CanMEDS roles were prevalent in the CTU experience with most to least dominant being Medical Expert, Leader, Communicator and Collaborator. Less commonly identified included Health Advocate, Professional and Scholar. The CTU was unique in developing these competencies due to the learning content (complexity, volume, longitudinal exposures, full care coordination, undifferentiated as well as common cases) as well as the learning context (multi-disciplinary, less nursing support, hierarchical team approach and dynamics). The overall purpose of the CTU was most fitting with a spiral

curriculum: trainees return to this environment several times through their training, building on previous knowledge and skills with increasing depth and complexity each time.

Conclusion: The CTU allows for the development of skills across several CanMEDS roles from novice to expert through the application of a spiral curriculum. Next steps include observations of teaching and learning in this environment

61. Transitioning to CBD: From design to evaluation of a comprehensive transition to discipline curriculum

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Introduction: Transition to Discipline (TtD) is the first stage in Competency by Design (CBD), and the Royal College outlines the goals for psychiatry trainees as being oriented to the program and institutions, developing basic skills in psychiatry, and establishing effective communication skills. In 2019 our psychiatry program launched a comprehensive TtD curriculum integrating clinical and classroom-based learning strategies over the first eight weeks of residency.

Methods: An existing orientation curriculum was adapted and expanded to meet the new CBD training requirements. A working group was established to design and implement TtD, including a TtD faculty and resident lead, and the program director. Additional faculty and senior residents were recruited to deliver classroom-based teaching sessions and provide clinical supervision.

Nine students over two campuses participated in each of the first two years of the program. Classroom components included lectures, small group discussions, simulations, problem-based learning, and individual and group assignments. These activities were adapted to a virtual learning environment during the second iteration due to the coronavirus pandemic. Clinical components included placements in general inpatient and/or outpatient psychiatry, as well as emergency psychiatry.

Program evaluation included session evaluations, end-of-rotation survey and focus group, and feedback from faculty. Stufflebeam's Context-Input-Process-Product model is used as an organizing framework. [SW1] Outcomes included learner satisfaction (Kirkpatrick level 1) and learning (Kirkpatrick level 2).

Conclusion: Resident feedback indicated that TtD met the goals of orienting them to the program and providing foundational skills in psychiatry. Specific challenges and opportunities were identified for future iterations.

62. Understanding the association between stage of training and distribution of cases in a Competency-based internal medicine training program

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Introduction: A competency based medical education program must promote learning and accurately evaluate competence. To accomplish these goals, assessments must include a variety of clinical scenarios and contextual variables that change over time to match learners' evolving needs. This is particularly true in internal medicine where the diversity of clinical presentations is extensive. By analyzing the distribution of patients seen by trainees we sought to understand the clinical presentations, patient characteristics and level of acuity trainees are exposed to at various stages of training. In this way, we highlight a novel method of evaluating a program's curriculum and program of assessment.

Methods: We reviewed 607 internal medicine referrals from the emergency department over a 30-day period in the summer of 2019 at Kingston General Hospital in Canada. For each referral the presenting complaint, diagnosis, admitting destination (ward/ICU) and learner training level were captured.

Results: The most common diagnoses encountered by learners are consistent with the most common diagnoses of the specialty, including COPD Exacerbation (8.2%), GI Bleed (7.2%) and Pneumonia (6.1%). First year residents primarily managed routine cases while senior residents disproportionately managed atypical presentations and rare diagnoses. Acuity increased with training level.

Conclusion: Analyzing the distribution of cases among trainees reveals that learners are exposed to cases appropriate for their stage of training. Acuity and complexity increase with seniority. This evidence adds validity evidence to our assessment system. This method of program evaluation serves as a model to assess validity of a program of assessment and inform curriculum development.

63. Utilizing a change management framework to implement Competency-based Medical Education in emergency medicine training programs

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Introduction: While many agree that competency-based medical education (CBME) and its focus on an outcomes framework will produce higher quality physicians trained to meet the needs of society, implementing CBME has remained a daunting task for many key stakeholders.

Methods: In order to gain the necessary stakeholder support and move to implement CBME within emergency medicine residency training programs in the United States, we adopted Kotter's Eight-Step Process for Leading Change. This framework includes creating a sense of urgency, building a guiding coalition, forming a strategic vision and initiatives, enlisting a volunteer army, enabling action by removing barriers, generating short-term wins, sustaining acceleration, and instituting change.

Results: While the sense of urgency has long been recognized, the remaining steps required operationalization. We built a coalition of key stakeholders representative of the breadth of emergency medicine training and practice to address the implementation of key components of CBME. This team united behind a vision of a tiered EPA framework of outcomes, technology driven programmatic assessment, and the development of individualized learning plans for all residency trainees from the transition into residency through the commencement of independent practice. Stakeholders across all sites have been recruited to support this effort and barriers systematically removed by the coalition and specialty societies.

Conclusion: An organized approach utilizing a change management framework is required in order to form a coalition, gain traction, maintain momentum, and truly succeed in actualizing the full vision of CBME. At this stage, we are generating small wins and anticipate the ability to sustain acceleration to truly implement CBME across all emergency medicine residency programs in the United States. Our approach provides a roadmap for others regarding how to utilize change management principles to move toward a competency-based approach across all training programs.

64. Results of the April 2021 Resident Doctors of Canada national resident survey

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Introduction: In April 2021, Resident Doctors of Canada (RDoC) distributed part two of its bilingual online questionnaire, the National Resident Survey, to resident doctors training at 13 faculties of medicine across Canada.

Methods: In this 24-question survey, residents were asked to share their personal experience and opinions on residency training, in particular concerning competency-based medical education, the quality of feedback received, and the use of simulation as a training tool. A number of questions are iterative from the previously administered 2018 iteration of the survey, allowing for longitudinal analysis and comparison. The RDoC National Resident Survey was approved by the University of Toronto Research Ethics Board.

Conclusion: This poster will present some of the data gathered from the April 2021 edition of the RDoC National Resident Survey along with the implications of the findings.

At the end of this poster session, viewers will understand identify the many issues, perspectives, and challenges of resident doctors in Canada relating to competency-based medical education and evaluation.

65. Exploring the outcomes of resident well-being: A template analysis of medical resident experiences

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Introduction: Research suggests that well-being impacts the health of residents and their ability to learn and provide patient care. Within medical education, there is scarce guidance on how to conduct qualitative well-being research. We developed a framework for organizing and understanding themes that appear when trainees provide open-ended comments on a voluntary survey.

Methods: In 2016 and 2017, all trainees enrolled in ACGME accredited programs were invited to complete an optional, anonymous survey of well-being. 5,000 trainees shared personal experiences about factors affecting their

well-being and professional development. Descriptive analysis was performed on demographic data, template analysis was performed on the qualitative comments, and a mixed-methods analysis was completed to triangulate the data.

Results: Using template analysis to code trainees' comments was successful in exposing issues relevant to trainees. This approach first enabled us to establish a general thematic categorization for important themes. We were then able to connect the outcomes defined by trainees with the factors that respondents attributed to these outcomes. Many trainees described the positive factors impacting their training, such as a good work/life balance and positive relationships with faculty. These factors resulted in positive experiences, including satisfaction with training and high engagement. Others shared the negative factors within their programs, such as mistreatment from faculty and a lack of adequate teaching. These factors were associated with negative experiences, such as mental health problems and feeling unprepared for independent practice.

Conclusion: While there is increasing recognition that qualitative methods should be integrated into well-being research, few frameworks, and guidelines provide guidance on which qualitative methods to use and for what purpose. As qualitative methods are employed in exploring the well-being of trainees, we stand to gain a better understanding of the underlying reasons for the high rates of burnout and depression observed among this population.

66. A nationwide survey of parental leave policies in Canadian surgical training programs

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Introduction: For decades, there have been calls to implement parental leave policies for physicians. Although progress has been made, policies are variable across sites, and many are unclear or unspecific. Taking parental leave can be especially challenging in surgical specialties, which are lengthy and have fewer residents per program to cover for those on leave. The present study examined parental leave policies at Canadian academic surgical centres, as well as perspectives on these policies and the effects of becoming a parent in a surgical career.

Methods: An online survey was sent to 16 surgical department chairs across Canada, who were asked to distribute it to all surgical residents, fellows, faculty, and program directors (PDs) within their respective institutions, as well as to complete it themselves. The survey contained closed- and open-ended questions that probed participants' opinions on parental leave, parental leave policies, and the effects of becoming a parent. 182 responses were received between January and May 2019 and analyzed using descriptive statistics.

Results: Findings showed that the ideal amount of time to be taken off for childbearing parental leave was between 9 months and 1 year; however, the actual time taken off was considerably less. PDs and chairs perceived that residents and faculty took more time off for parental leave than what was actually reported. The perceived effect of becoming a parent on wellbeing was poorer for residents than for faculty. Across all roles, respondents reported a lack of knowledge about parental leave, breastfeeding, and return-to-work policies.

Conclusion: Canadian surgical programs do not present clear policies regarding parental leave, and the amount of time taken off is much less than desired. Further research into the socioeconomic barriers that prevent residents and faculty from taking leave and on ways of more effectively integrating new parents back into the workforce is needed.

67. Addressing racism in medicine through academic half days

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Introduction: On June 2020, the Toronto Board of Health unanimously declared anti-black racism a public health crisis, and several public health units in Ontario followed. This was catalyzed by health inequities that have overwhelmingly affected racialized groups and were amplified during the pandemic. To educate resident doctors on these health disparities in Canada, we implemented a novel Internal Medicine residency academic half-day (AHD) on the impact of racism in healthcare.

Methods: A committee led by residents and expert faculty developed learning objectives for a mandatory AHD attended by PGY-1-PGY-3 Internal Medicine residents. This 3.5-hour session started with invited expert speakers discussing the impact of systemic racism in healthcare towards Black and Indigenous communities. This was

followed by a panel discussion where local Black and Indigenous physicians shared their personal stories on racism and answered questions posed live and anonymously. Pre- and post-AHD surveys were conducted to assess participants' knowledge and personal experiences regarding racism in healthcare. Survey answers and analysis remained anonymous. Data analysis of the results of the survey is quantitative.

Results: Out of the 90 attendees, 73 (60 residents; 13 staff) responded to the pre-survey. Our preliminary results demonstrate that most participants believe that racism exists in healthcare (72.6%) and that most have either faced (64.4%) or observed it (35.6%). Many wanted to know how to address it in medicine. A minority of participants did not find racism in medicine to be an issue. Post-survey results remain pending.

Conclusion: Our preliminary results reveal that formal teaching on racism in healthcare is an important lived experience for healthcare providers. The interactive format allowed for an open discussion together with provided resources to address it. In summary, these workshops are necessary, and further results will help determine the extent to which these AHDs can help in dismantling systemic racism.

68. Building a RAFFT: Creating and sustaining a successful women in EM mentorship program

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Introduction: Although women now make up 50% of all medical students and almost 40% of emergency medicine residents in the United States, they comprise only 27% of academic faculty. Peer support and mentorship are recognized to be important contributors to the career advancement of women. Best practices for implementation of programs to support women residents and faculty in Emergency Medicine are not well-described.

Methods: In 2020, The Ohio State University implemented a Women in EM curriculum and mentorship program, Resident and Faculty Female Tribe (RAFFT). Prior to the start of the program, a planning group with content expertise convened to create a list of various knowledge areas important to career success (e.g. successful self-promotion, mentorship vs sponsorship, imposter syndrome, balancing commitments). We surveyed women

residents and faculty to rate their current level of understanding and desire to learn about these topics, and also queried their expectations and hopes for a women in EM program in free text responses. From August 2020-May 2021, we will have implemented a longitudinal 10-session program. Each monthly session is comprised of pre-readings and a guided discussion on a particular topic. Following completion of the 10-session program, we will compare survey responses pre- and post-implementation for "current level of understanding" using student's T test and share thematic analyses of qualitative free text responses.

Conclusion: Successful implementation of a Women in EM program as measured by participant receptivity, perceived value, and increase in knowledge would allow for this single-site intervention to serve as a model across departments of Emergency Medicine. Future directions include incorporation of multiple sites for study and a semi-structured qualitative interview of participants to assess for perceived value and acceptability.

69. This abstract has been withdrawn.

70. Equity, diversity and inclusion: Generating a desired state of harmony in postgraduate medical education environments

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Introduction: Assessment of institutional capacity for equity, diversity and inclusion (EDI) has become increasingly important in healthcare organizations. As part of on-going evaluations, we sought resident suggestions on addressing past concerns on EDI, as well as suggestions for developing EDI within our institution.

Methods: An on-line survey was completed by 118 resident groups across 21 programs. Residents were asked about persisting EDI issues, and to provide suggestions on 'a way forward'. Questions revolved around eight inclusion factors, which map onto three engagement domains: Appreciation (respect, appreciation of individual attributes), Camaraderie (sense of belonging, trust), and Vision/Purpose (common purpose, access to opportunity, equitable reward and recognition, cultural competence). Qualitative data was imported into NVIVO, common themes for each domain were generated from responses.

Results: Although suggestions were generated across all engagement domains, most discussion revolved around

factors of trust, respect, and cultural competence. Residents voiced several major concerns with past issues about trust, including communication (e.g., address resident concerns) and changes needed with institutional policies (e.g., on-going review and modification). Open communication and enabling a culture of engagement and accountability were some suggestions for improvement. Discussion around respect resulted in several dominant themes, past concerns included faculty development (e.g., professionalism) and open communication (e.g., discussing different opinions). Residents suggested cultural change was necessary (e.g., diverse leadership team, positive environment) and better communication practices as a way to move forward. Cultural Competence resulted in similar past concerns and suggestions, residents emphasized cultural training and ensuring a diverse work force within the college.

Conclusion: Having diverse and inclusive medical institutions helps foster culturally competent physician populations. The results from this evaluation will be used to modify institutional policies and procedures, as well as be considered for specific actions to improve resident experiences, feedback, learning and well-being.

71. Findings from the implementation of a R2C2 model of feedback that considers intersectionality for psychiatry residents within a Competency-based Medical Education framework

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Introduction: Studies demonstrate feedback in clinical settings often lack the ingredients necessary to support learner progression. This assumes greater significance within a competency-based medical education (CBME) framework. R2C2 is an evidence-based model of feedback involving four phases: building relationship, exploring reactions, exploring content, coaching. To address the need for structured feedback, this study describes the implementation of R2C2 model of feedback that considers intersectionality in a CBME context.

Method: 15 supervisors received training sessions from experts on R2C2 and used this feedback model with residents in longitudinal ambulatory rotation. Education leaders support was available to solidify learning. Semi-structured interviews were conducted with supervisors

(n=10) to understand their experience with the model. The Consolidated Framework for Implementation Research was used to identify factors that influence implementation and effectiveness of R2C2.

Results: Preliminary results showed four themes. First, participants' adherence to R2C2 focused on the first stage of the model "building relationship". Second, participants expressed positive attitudes toward the model and that it helped structure feedback. Third, participants shared they needed to understand the model more before application. They highlighted the need for faculty development on R2C2 using variety of teaching modalities (ie. role play, videos). Fourth, participants were mixed in the impact of intersectionality on the learning relationship.

Conclusion: R2C2 can be useful in the CBME and virtual context. Future implementation efforts should focus on faculty development and incorporate resident experience. Conclusion: Pilot study provides promising insights on feedback and coaching in resident education that considers equity and power-dynamics.

72. Residency training experiences of residents with children: A phenomenology study

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Introduction: Parenthood during post-graduate medical training has become an increasingly relevant topic in recent years. While previous research has attempted to explore the experiences of residents in a parenting role through surveys and limited qualitative studies, the essence of the post-graduate training experience has not been clearly described. The optimal means of supporting trainees completing residency while parenting remains unclear.

Methods: We conducted 15 semi-structured telephone interviews to develop a rich understanding of the residency training experience of residents in a parenting role. Transcendental phenomenology was used as a methodology. Our study population included post-graduate trainees in a variety of programs at the University of Alberta who were parents upon entry to residency or who became parents during residency training.

Results: Thematic analysis of residents' training experiences revealed the following themes: 1) work-life

balance; 2) challenges of being a parent with residency responsibilities; 3) availability of support systems; 4) impact on patient interactions; 5) impact on other interactions; and 6) hidden curriculum. Participants suggested actionable solutions to improve the training experience for residents in a parenting role, which included: 1) family-inclusive events; 2) scheduling flexibility; 3) supports for fathers; and 4) optimizing supports for breastfeeding mothers.

Conclusion: Residents in a parenting role represent a unique post-graduate trainee population. Despite focus on resident wellness, challenges remain for individuals trying to navigate parenthood and residency. This data may be utilized to inform supports and strategies to optimize the training experiences of these residents.

73. Beyond transition to practice: Mentorship needs assessment for early career faculty in the department of pediatrics at McMaster University

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Introduction: Comptency-By-Design continuum promotes lifelong learning beyond transition to practice. Mentorship for early career faculty (ECF) is critical for promoting professional development, research productivity, job satisfaction, and wellness. Robust needs assessments, which are currently lacking, are needed to inform development of effective mentorship programs. We aimed to examine mentorship needs, and identify enablers and barriers to effective mentorship among ECF in Pediatrics.

Methods: All faculty (N=139) in the Department of Pediatrics at McMaster University were surveyed between February-March 2020. The survey captured demographic information, experience, perspectives and needs surrounding mentorship. Data from ECF, defined as any faculty 0 to 5 years post-training, were analyzed as frequencies and proportions.

Results: Twenty-three ECF completed the survey (66% response rate). Of these, 96% had never participated in a mentorship program, 74% had informal mentors, and 78% were interested in receiving mentorship. Of ECF with mentors, 71% (12/17) reported having difficulty identifying a mentor, citing a lack of mentorship program as the primary challenge. Barriers to effective mentorship

included mentor-mentee incompatibility, time, inadequate role clarity, and insufficient mentor expertise. Unstructured one-on-one or small group mentorship were preferred among 94% (16/17) of ECF seeking mentorship. ECF identified career trajectory, research and leadership development, and work-life integration as priority areas for mentorship.

Conclusion: Most ECF reported difficulty establishing mentorship despite their keen interest. Innovative mentorship programs to bridge the existing gap are required. Mentorship program design should focus on ECF needs and implement strategies to optimize mentor-mentee matching, role clarity, time-efficient mentorship and mentor development.

74. Positive learning experience and behavioural changes after a faculty development course on teaching and assessing the CanMEDS Roles in Latin America

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Introduction: Competency-based medical education (CBME) is an effective model for postgraduate medical education (PGME), with several frameworks available. In Chile, PUC adopted the CanMEDS framework and obtained international accreditation by the Royal College of Physicians and Surgeons of Canada. However, other institutions in the region have not yet implemented CBME frameworks for PGME. This study evaluates the impact on learning and behaviour, of a faculty development course for medical educators and PGME leaders within the Spanish-speaking community.

Methods: 52 educators undertook a 40-hour online course focused on teaching and assessing the CanMEDS roles in clinical settings, and recommendations for implementation. The group included clinical educators, program directors, PGME directors and office managers from Chile,Mexico,Ecuador. Kirkpatricks' levels 1 and 2 were evaluated through a survey at the end of the course, while level 3 was evaluated through a second survey 12 weeks after course completion. These were analysed through descriptive statistics and thematic analysis.

Results: A 50% (n=26) response rate was obtained for the first survey, and 35% (n=19) for the second. The first survey (scale 1-4) evidenced: global satisfaction: 3.7;

quality of teaching methodology: 3.8; learning perception: 3.7. 100% would recommend the course. The second survey showed that all participants agree that their academic practice has changed positively, while 89% declare positive changes in their professional practice. 79% have implemented changes in their teaching strategies, and 84% in assessment methods. Most participants describe a focus on role-modelling and wellness strategies.

Conclusion: An online course on teaching and assessing CanMEDS roles in clinical settings was positively evaluated by clinical educators and PGME leaders, with high satisfaction and learning perception. Participants report changes in academic and professional practice after 12 weeks, mainly in role-modelling, and teaching and assessment strategies. Faculty development courses may promote implementation of PGME trends within LatinAmerica.

75. This abstract has been withdrawn.

76. A virtual collaborative teaching model for small residency training programs

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Introduction: Collaborative work in education promotes academic achievement and team cohesion. Small residency programs lack sufficient trainees to provide opportunities for group learning and have limited faculty resources. In the smallest programs academic teaching involves one-on-one sessions and trainees forego the benefits of interactive group learning, discussions, exposure to niche areas of expertise provided by larger faculties and opportunities for presenting/teaching skills. Geographical separation between small programs and isolation of learners, even at the individual sites of learning, have been exacerbated by the physical distancing requirements of the COVID-19 pandemic era and have forced an abrupt change to on-line learning.

Methods: The Program Directors of the three Occupational Medicine subspecialty training programs in Canada, each of which have only one or two residents, formed a working group to develop a combined academic teaching program delivered in a weekly "Academic Half Day" format using the Zoom virtual platform. The model applies the established concept of virtual communities of practice, which facilitate the use of scarce and geographically distributed health-care resources to promote continual learning and collaboration, to an academic educational setting. The virtual community of learning establishes an academic curriculum based on a two-year rotating schedule reflecting the objectives of training set by the Royal College of Physicians and Surgeons of Canada.

Results: Residents reported positive feedback on the combined curriculum and virtual format highlighting access to expanded teaching resources and opportunities for cooperative learning. The virtual program also prompted the residents to establish a virtual study group and created a collaborative learning forum for the residents.

Conclusion: Systematic evaluation of individual and collective evaluation results will be used for continuous quality improvement of the curriculum and opportunities to expand the program to additional trainees in geographically isolated regions that have local occupational medicine learning needs will be identified.

77. Automated postgraduate medical education compliant call schedule creation

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Introduction: Call schedules can have a significant impact on medical resident wellness and patient care. Chief residents are often responsible for manually generating call schedules that balance factors such as educational requirements, vacation time, and idiosyncratic workplace rules. There are approximately 10 billion post-graduate medical education (PGME)-compliant schedules possible for a 28-day block with 4 residents. Given the vast number of schedules, manual schedule selection may be challenging and prone to bias. We trialled an automated call schedule software (ACSS) to generate PGME-compliant schedules.

Methods: To quantify the performance of schedules, we created the Dalhousie Neurosurgery Score (DNS), which accounts for 2 competing criteria: (1) prioritizing resident seniority; and (2) minimizing consecutive call shifts.Schedules with a lower DNS were considered more desirable. The ACSS was used to generate call schedules for Neurosurgery residents between January 2019-2020. ACSS-generated schedules were compared to historically

published (manually-generated) schedules using the DNS (2-tailed t-test).

Results: Previously published schedules had DNS values in the 4thpercentile (mean: 3.6% ± 1.8 std) of randomly ACSS-generated schedules, suggesting that previous chief residents were implicitly using rules similar to the DNS. ACSS-generated schedules had a lower DNS compared to manually-generated schedules (89 vs. 104; p < 0.005).

Conclusion: The ACSS was used to efficiently create resident call schedules in practice over a 12-month period. The automation of schedule selection allows arbitrary rules to be applied to schedule residents explicitly. Rules may be adjusted to reflect values of individual programs, while retaining transparency in the process of scheduling.

78. Can you RELATE? Navigating care crises and building trust with parents in the pediatric hospital setting: A workshop and simulation-based curriculum for pediatric residents

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Introduction: Care crises (CCs) in pediatrics are conflicts regarding patient care between a parent and healthcare provider (HCP) that: 1) create barriers to the provision of safe and timely patient care and 2) negatively impact the therapeutic relationship. Navigating emotionally charged situations is a key competence in pediatrics (EPA 10) and curricula are limited. This study evaluated the impact of a novel curriculum on CCs, "Can You RELATE," in the pediatric resident population.

Methods: We used a pre/post curricular intervention design. The one-day curriculum consisted of didactic teaching and practice CC simulation scenarios with debriefing and feedback. Participant competence scores from self-assessment, actors and expert facilitators in both pre- and post-simulations were compared using paired t-tests, along with self-assessment of confidence and coping.

Results: All participants (n=29) frequently experienced CCs in their work; half at least weekly. Self-assessment of confidence and coping improved from 15.9 to 19.1/25 (CI+1.9-4.4; p<0.001) and competence improved from 35.5 to 42.6/50 (CI+5.1-9.4; p<0.001). Assessment of participant competence by actors improved from 38.6 to 47.8/50 (CI+6.2-12; p<0.001) and by expert facilitators

from 36.7 to 44.4/50 (CI+3.4-11.4; p<0.001). The greatest improvements related to integrating the knowledge and expertise of parents. Residents described the simulations as highly relevant to their work (4.8/5).

Conclusion: The Can You RELATE curriculum significantly improved competence, confidence, and coping for pediatric residents in simulated CCs. The curriculum promotes relationship-centered care and the value of parent and family perspectives in healthcare. Further research is planned with a larger sample size, additional sites, and assessing the sustained impact through delayed semi-structured interviews.

79. Development and implementation of a tool for faculty evaluation of residency programs

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Introduction: At present, there is a scarcity of literature that explores the role of the teaching faculty as a component of Canadian residency program evaluation (RPE). Much of the available literature pertains to quality improvement initiatives and is often in response to criticisms from accreditation. However, involving faculty is imperative to thoroughly identify strengths and weaknesses and ensure the RPE is continuously adapting to evolving needs. This study's purpose is to conduct an outcomes-based evaluation for the development of a generalizable formal RPE feedback tool for faculty.

Methods: Following a literature review, 5 key stakeholders in the McMaster University neuroradiology residency program were interviewed. Information sought included the current method for providing feedback, barriers, and preferences. The anonymized interview transcripts were qualitatively analyzed by committee members to draw out central themes. Using this data, a feedback tool will be developed and implemented. Subsequently, key stakeholders will be interviewed to evaluate the tool's impact. Additional outcome measures include resident satisfaction on exit surveys, resident in-training exam scores, and accreditation outcomes. Using these, the tool will be modified in an iterative process.

Results: Central themes that emerged from initial interviews address the timing, mode, and topics of an ideal tool. Regarding timing of feedback solicitation, interviewees advocated that a sufficient time interval is required to enable thoughtful, non-onerous feedback. A multifaceted approach was highlighted including an

electronic form which actively solicits feedback, face-to-face meetings and a constantly available anonymized online platform. Content underscored include academic half-day topics, non-academic/wellness teaching, teaching resources, site-specific and rotation-specific feedback.

Conclusion: This study's results reflect a desire for a formal tool to allow faculty to provide feedback on residency programs as part of program evaluation. It guides development and implementation of the tool by revealing key themes such as timing, modality, and content of the tool.

80. Development of a clinician scholar program for psychiatry residents

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Introduction: The Clinician-Scientist Programs have provided a "career-track" for residents interested in research with a focused research curriculum and protected time for completion of research projects and graduate degree programs. To address the demand of a similar program with specialized training on education scholarship, quality improvement (QI), and creative professional activity (CPA), our Department of Psychiatry is developing a Clinician Scholar Program (CSP) for psychiatry residents interested in pursuing careers in these domains. An environmental scan of research literature and residency programs across Canada suggested that this is a novel approach in enhancing training and career development for those wanting to work in these areas of scholarship, well aligned with the Scholar CanMEDS competency. However, there is limited knowledge and understanding about the educational and practical needs of residents in this type of program. The aim of this project is to investigate resident knowledge, skills, and attitudes towards education scholarship, QI, and CPA.

Methods: This project is a mixed-method needs assessment, which includes an online questionnaire, followed by three resident focus groups. The online questionnaire will be administered to 35 incoming PGY-1 psychiatry residents in July 2021. Data collected from the questionnaire will be subject to descriptive statistical analysis (for quantitative data) and thematic analysis (for qualitative/free-text data). Findings from the online questionnaire will inform the focus group interview guide. Recordings of the focus groups will be transcribed,

followed by thematic analysis and constant comparison with findings generated from the online questionnaire, through which we will learn more about resident prior learning or practice experience in education scholarship, QI, and CPA, and their expectations of the CSP.

Conclusion: We will use these findings to better define the CSP goals and objectives and associated educational strategies. We plan to share our findings with other residency programs through publications and presentations.

81. Professional identity of residents transitioning to practice: Forged by tension between personal expectations and tacit group culture

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Introduction: Successful transition from residency to practice requires professional identity formation (PIF) as a clinician. Personal expectations and socialization within a group shape this journey, but informal knowledge can be tacit. We do not fully understand how new transitioned-to-practice (TTP) physicians gain tacit knowledge to navigate PIF. We set out to describe the tacit knowledge acquired by new TTP physicians and how they responded to unwritten group social culture norms.

Methods: Informed by constructivist grounded theory, we interviewed 23 new TTP physicians about tacit knowledge they acquired in early practice. Data collection and analysis occurred iteratively. We identified themes using constant comparative analysis. We generated a theory that went through member checking by study participants.

Results: New TTP physicians formed expectations via training and work experiences. They felt implicitly judged by the existing group on their competence, expertise, and efficiency. They also encountered unspoken norms and tacitly approved quirks when they asked for assistance or handed over care to others. Tension between their expectations and tacit group culture led to internal conflict. They responded in three ways: agonized and doubted, adjusted to merge with norms, or avoided situations.

Conclusion: We describe a novel theory of how new TTP physicians acquired tacit knowledge of group culture to function in a new community of practice. As conflict arose between expectations and tacit culture, their responses of

agony, adjustment, or avoidance shaped their professional identity. By grappling with these conflicts, new TTP physicians could move towards the centre of their community of practice. Residency education leaders should prepare residents to navigate tacit aspects of transition to practice.

82. Take a breath: Investigating the effect of box-breathing on the stress, cognitive load, and performance of junior residents in a simulation-based resuscitation OSCE

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Introduction: Resuscitating unwell patients is stressfully overwhelming for junior residents. Cognitive load theory suggests resuscitation's inherent complexity and gravity (intrinsic cognitive load - ICL), and off-task distractions (extraneous cognitive load - ECL) can overload cognitive capacity and impair performance. Box Breathing (BB) can mitigate the human stress response and maintain performance. We investigated the effect of BB on residents' cognitive load, and its implications on stress and performance.

Methods: Thirty-nine (n=39) "Foundations of Discipline'' (PGY1) level residents from 14 specialties participated in a summative simulation-based resuscitation OSCE. Residents were randomized to perform either BB or a control colour naming (CN) task for 20 seconds prior to the four OSCE stations, with resuscitation performance entrustment scores assigned by faculty. Residents completed STAI-6 and a modified Leppink cognitive load questionnaire after each station. Intervention arms were compared with unpaired student's t-test, and linear regression models examined relationships between cognitive load, stress and entrustment scores.

Results: The BB group reported significantly lower ICL (4.03 vs 4.86, p=0.0011), and also non-significantly lower stress (13.8vs14.5, p=0.1452), lower total cognitive load (6.47vs6.99, p=0.249), and higher EPA scores (4.12vs4.01,p=0.4028). Higher ICL amongst the CN group was associated with decreased EPA scores (b=-0.149, p=0.0177), but the BB group's EPA scores were not associated with ICL (b=0.041, p=0.4348). Amongst all participants, STAI-6 scores were significantly associated with higher total cognitive load (b=0.277, p=0.0003), both ICL (b=0.164, p=0.0002) and ECL (b=0.113, p=0.0452), and lower EPA scores (b=-0.074, p=0.0005).

Conclusion: Residents using BB reported significantly lower ICL, urging BB's inclusion in resuscitation training. Furthermore, the BB group had increased tolerance for ICL without affecting EPA scores; suggesting the psychophysiological impact of BB is protective against ICL-induced cognitive overload, which would otherwise impair performance. Additionally, we demonstrated higher levels of stress may cause higher levels of cognitive load and lower EPAs.

83. X+Y scheduling increases individualized career development opportunities in a pediatric residency program

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Introduction: Traditional pediatric residency block scheduling provides limited individualized opportunities for longitudinal career development. For the academic year of 2020-2021, our program transitioned to an X+Y scheduling model, consisting of 6 weeks of inpatient and ED ("X") followed by 2 weeks of primary care and electives ("Y"). There is scarce literature among residency programs to describe the impact of X+Y scheduling on resident career development. Thus, we sought to assess the impact of X+Y scheduling on resident opportunities for individualized career development in the largest pediatric residency program to date to transition to this model.

Methods: Residents in our freestanding quaternary care center's pediatric training program completed a baseline survey at the time of curricular transition and a follow up survey after the completion of two X+Y cycles (16 weeks). Quantitative data were analyzed using univariate statistical techniques, and qualitative data were coded and organized using thematic analysis.

Results: For baseline survey, 85 out of 160 eligible residents (53%) responded, and,for follow up survey, 92 out of 165 eligible residents (56%) responded. For both surveys, respondents were at various levels of training (baseline: 33% PL-2, 42% PL-3+, 25% recent graduate; follow up: 38% PL-1, 29% PL2, 33% PL3). Compared to baseline, more residents reported having adequate time for career development opportunities (82% vs. 52%, p<0.01), pursuit of personal interest projects (79% vs.

40%, p<0.01), and longitudinal mentoring relationships (84% vs. 52%, p<0.01). Qualitative responses demonstrated appreciation for protected research time and perceived increased autonomy as learners. Overall, 95% of residents preferred X+Y scheduling to the previous block scheduling system.

Conclusion: Residents reported an increase in career development opportunities, pursuit of personal interest projects, and individualized mentorship following transition to X+Y curriculum. Future research should target whether these early findings impact resident career development and academic pursuits.

84. Leadership development programs for surgical residents: A review of the literature

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Introduction: Surgeons are expected to thrive in multi-disciplinary teams. While accreditation bodies have included leadership as a core competency for all clinicians, there remains a lack of definition and strategy to achieve that objective. This paper aimed to systematically review the literature on leadership development programs (LDPs) for surgical residents.

Methods: The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines were used to search for studies on LDPs for surgical residents. We examined the setting, frequency, content, teaching methods, and learning outcomes of each program. The Kirkpatrick effectiveness and Best Evidence Medical Education (BEME) scales were used to assess curriculum effectiveness and quality. Relevant Accreditation Council for Graduate Medical Education and Royal College of Physicians and Surgeons of Canada learning outcomes were cross-referenced with the content of each LDP.

Results: The final analysis included nine studies. The majority of LDPs were delivered in a didactic (n=8), classroom (n=7), longitudinal format (n=5). The most common topics included leadership theory (n=8) and team building techniques (n=5). Learning outcomes included an improved understanding of leadership (n=4), communication skills (n=3), and team building and management (n=3). The overall effectiveness of each program was low, with six studies having a Kirkpatrick score of 1/4, indicating only a change in learners'

attitudes. The highest BEME score, achieved by five of programs, was 3/5, indicating that their conclusions can probably be based on the results. Only three of the studies placed their learning outcomes in the context of competencies outlined by national accreditation committees.

Conclusion: The current body of literature on leadership curricula for surgical residents is heterogeneous and limited in effectiveness and quality. Future programs need to be rooted in leadership theory and national accreditation competencies, with a focus on deliberate practice, in order to adequately prepare today's residents to become tomorrow's surgeon-leaders.

85. Development and implementation of a resident assessment dashboard for Competency-based Medical Education in anesthesiology: A mixed methods study

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Introduction: Challenges in accessing the high volume of assessments in competency-based medical education may impede resident use of self-regulated learning (SRL) skills, including self-assessment and goal setting. We used an iterative design-based framework, incorporating resident and faculty stakeholder perspectives, to create a resident assessment dashboard (RAD) whereby residents access assessment results on a consolidated platform. Our aims were to enhance access to assessment data and understand the potential utility of a RAD in the context of SRL theory.

Methods: We employed a mixed-methods approach. An anonymous survey was used to investigate elements faculty and residents felt were important for a RAD. We subsequently performed resident and faculty focus groups to deepen survey findings, and probe stakeholder perspectives on the utility of an RAD in SRL. Thematic analysis using a grounded theory approach was used to analyse focus group transcripts.

Results: Quantitative analysis revealed that 92% (24/26) of residents and 92% (17/19) of faculty felt that timely access to assessment results was important, and 77% (20/26) of residents felt that comparing their performance to anonymized peer assessment data was an important RAD feature. Thematic analysis of focus groups revealed that residents and faculty viewed the RAD as a tool to help residents accurately assess their performance, target their

learning efforts, plan their learning strategy, and monitor for progress. Faculty and resident perspectives diverged on issues relating to confidentiality, with residents primarily concerned with assessor anonymity compromise, and faculty concerned with resident assessment data confidentiality. Although the RAD displayed both summative and formative assessment data, residents viewed the RAD primarily as a formative assessment tool.

Conclusion: An iterative, design-based approach facilitated co-development of a RAD by resident and faculty stakeholders. The anticipated uses of the RAD overlapped with SRL processes. Use of a RAD may enhance resident engagement with learning and assessment.

86. A signal: Resident perspectives on decision-making processes and impacts of back-up call activations in an internal medicine residency program

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Introduction: Residency programs rely on jeopardy or back-up call systems to address gaps in coverage when a resident cannot complete their call shift. Residents' perceptions on underlying motivations for activating back-up, and how these decisions vary by context, remain unknown. The authors explored residents' reasons for call activations and impacts of the back-up call system on education and burnout.

Methods: Eighteen semi-structured one-on-one interviews were conducted from September 2019 to February 2020 with internal medicine and chief medical residents from the University of Toronto. Interviews explored participants' experiences and perceptions with call activations. A constructivist grounded theory approach was used to develop a conceptual understanding of the back-up system as it relates to residents' decisions underlying activations, downstream impacts and relationships to burnout.

Results: Residents described a complex thought process when deciding whether to activate. Decisions were coloured by inner conflicts including sense of collegiality, need to maintain an image, and time of year balanced against self-reported burnout. Residents described how back-up models can inherently perpetuate burnout, lowering thresholds to trigger activations. Impacts included anxiety of not knowing whether an activation would occur, decreased educational productivity from exhaustion and the "domino effect" of increased workload for colleagues.

Conclusion: Residents weigh inner tensions when deciding to activate back-up. Their collective experience suggests that burnout is both a trigger and consequence of back-up call activations, creating a cyclical relationship. Escalating rates of call activations may signal that burnout amongst residents is high, warranting further exploration from educational leads.

87. A United States national survey of wellness interventions in emergency medicine residency programs

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Introduction: In 2017 the Accreditation Council for Graduate Medical Education (ACGME) revised its Common Program Requirements to support trainees and faculty by mandating programs to provide dedicated wellness resources and education. Emergency Medicine (EM) may benefit highly from this change due to high burnout rates within the specialty. However, the current state of wellness interventions in EM residency programs has not yet been well described. Understanding current practices is necessary to assess unmet needs and inform the development and evaluation of future interventions that aim to improve trainee wellness. The goal of this study was to describe currently implemented wellness interventions in EM residency programs.

Methods: This descriptive study surveyed 250 ACGME-accredited EM residency programs between March 1 and June 1, 2020. Survey items included demographic questions; structured multiple choice questions about cost, frequency, and champions; and free text response options to briefly describe the interventions. Respondents were also asked to classify the interventions according to the seven factors described in the National Academy of Medicine (NAM) Model of Clinician Well-Being. Descriptive statistics were used for demographic questions and intervention category; thematic analysis was used to analyze qualitative data.

Results: 90 residency programs participated, describing 161 unique wellness interventions. Respondents classified the majority of interventions (n=136, 84%) as targeting personal factors according to the NAM model. Qualitative analysis revealed five major themes describing the interventions: program culture; program factors; environmental and clinical factors; wellness activities and practices; and wellness resources.

Conclusion: Results of this survey may help to inform a national needs assessment highlighting the current state of wellness interventions in EM residency programs. In particular, there exists a need for a future focus on interventions targeting external factors impacting resident well-being. Limitations of this study include response rate and response bias.

88. This abstract has been withdrawn.

89. Assessment of burnout in Canadian radiation oncology trainees during the early phase of the COVID-19 pandemic

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Introduction: Our objective was to assess the impact of the COVID-19 pandemic on burnout levels, clinical duties, and education in Canadian Radiation Oncology trainees.

Methods: We distributed a cross-sectional, anonymous survey to Radiation Oncology trainees at all 13 Canadian training programs between April-June 2020. Burnout was measured using the validated Oldenburg Burnout Inventory (OLBI). Linear regression was used to assess independent associations between variables and burnout scores. Both univariate and multivariable analyses were performed with two-sided $p<0.05$ considered significant.

Results: Seventy completed surveys were received (62 residents, 8 fellows; estimated response rate 41%). Respondents were 60% male and included all PGY levels and training programs. The COVID-19 pandemic resulted in fewer in-person clinics (83% of respondents) and treatment-planning activities (37%); virtual clinics increased (71%) but total clinic volume decreased (50%). Educational opportunities decreased with less education lectures (51%), in-clinic staff teaching (70%), and education-related rounds (84%). Forty-one percent missed work due to self-isolation, and 7% were redeployed. Average OLBI score was 2.39 (standard deviation 0.49) with sub-scores of 2.47 (SD 0.51) for exhaustion (EX) and 2.35 (SD 0.45) for disengagement (DE). Thresholds for burnout (EX=2.25; DE=2.1) were exceeded in 74% and 75% of respondents, respectively. On multivariable analysis, female gender was significantly associated with higher OLBI and DE; fair/poor sleep quality with higher EX; decreased social interactions and self-learning with higher OLBI, DE, and EX. Only 16% accessed support resources, mostly virtual counseling and peer support. Highest ranked wellness resources were childcare, private counseling, and mental health support programs.

Conclusion: Our study indicates high prevalence of burnout among Radiation Oncology trainees during the early stages of the pandemic. Fewer social interactions, less self-learning, and poor sleep quality were risk factors for burnout in this population. Training programs are encouraged to develop and promote appropriate strategies to enhance trainee wellness.

90. Covid 19: The personal, professional, and psychological impacts

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Introduction: The presentation will reflect on the impact the Covid 19 pandemic has had on trainees/residents in several areas of their lives. In the UK a strong hero narrative was developed around NHS staff and their work, doctors are already expected to be 'superhuman' and during the pandemic this pressure continued. However many juniors doctors have sought support for anxiety and fear about Covid, the pressure of not seeing family, isolation and concerns about their professional and career progression. Acknowledgement and discussion of the main impacts and concerns can lead to appropriate support. Professional Support Units are responsible for the pastoral support of junior doctors. Doctors can self-refer to the PSU for support at any point during training. There has been an increase in referral rate to the PSU during the pandemic and doctors seen have required more sessions. This project aimed to review all the referrals and explore the reasons doctors sought support and required additional support. This information can be used to consider the impact the pandemic has had and draw conclusion about the support structure that are needed.

Methods: The PSU maintains a database of trainees accessing support and the reasons for initial referral. We analysed data for the referrals from March 2020 onwards. We analysed the initial reason for the referral, requests for extra support and the challenges disclosed during the subsequent meetings with the PSU.

Conclusion: The evidence indicates that there has been an increased demand for support during the pandemic. The main concerns are around safety of self and others, challenges to career progression, anxiety regarding redeployment, isolation and loneliness, and difficulties with health including long Covid. Recognising the main themes helps in the design and planning of services going forwards.

91. Faculty wellness needs assessment and impact of COVID-19 in the pediatrics department at McMaster University

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Introduction: Burnout is a grave concern for physician wellbeing, and is exacerbated by COVID-19. Despite extensive wellness research, no clear strategies yield measurable improvements in wellness. Our objective is to conduct a wellness survey to identify determinants of burnout and psychological safety, and impact of COVID-19.

Methods: A cross-sectional wellness survey captured quantitative and qualitative data including demographics, burnout (abbreviated Maslach Burnout Inventory), psychological safety (A. Edmondson scale), factors impacting and strategies to improve wellness. Responses were analyzed as frequencies and proportions, differences in proportions were assessed using chi-square. Thematic analysis was used for qualitative data.

Results: In October-November 2020, 81/148 of physicians (55%) in McMaster University Pediatrics Department completed a wellness survey. Overall, 38% reported burnout, with no difference by gender ($x^2=0.20$, p=0.66). Burnout was higher in mid-career faculty (50%) versus early-career and established faculty (35%, $x^2=6.25$, p=0.04), and in clinically-focused (42%) versus research-focused faculty (17%, $x^2=15.0$, p<0.001). Only 36% reported a high level of psychological safety. Workplace inefficiencies, workload and work-life interference significantly impacted wellness. COVID-19 further affected childcare, family physical and mental health.

Highly-rated strategies included peer support, faculty engagement in system change and fostering a culture of respect and autonomy.

Conclusion: Our robust wellness needs assessment identified specific determinants of burnout locally. We reported higher burnout in mid-career and clinically-focused faculty, supporting that competing demands and workload are leading factors for burnout. An effective wellness framework should ensure safety culture, leadership training, stakeholder engagement and team building to address system-level issues and effect cultural change.

92. Impact of an onsite night intensivist on resident training and level of stress/anxiety while working in critical care units during the Covid-19 pandemic

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Introduction: The COVID-19 pandemic has resulted in increased challenges for internal medicine (IM) residents on intensive care units (ICUs) night shifts when onsite supervision is often unavailable. The impact of onsite night intensivists on care quality has been controversial, and the effect on resident training is unclear, particularly during a time of crisis. We attempted to better understand the challenges for IM residents on ICU night shifts during a COVID-19 surge, and the impact of an onsite night intensivist on resident training, autonomy, and stress.

Methods: This study was conducted in the MedStar Health IM residency program in Baltimore after IRB approval. A mixed-methods survey was conducted in spring 2020 (during a COVID-19 surge in the region) to assess our resident's experiences in the ICUs and the impact of onsite night intensivists on their education, autonomy, and stress.

Results: Of 63 participating residents, 40% were female. During a COVID-19 surge, 72% (44/61) residents endorsed moderate to severe stress and anxiety in making critical decisions in the ICU at night due to increased acuity of patients, work volume, unfamiliar interventions, distress, and decreased efficiency due to donning personal protective equipment. 78% (39/50) of residents endorsed better education with an onsite night intensivist, and most (74%, 37/50) saw minimal or no decrease in autonomy. Comments about onsite night intensivists cited improved

patient care, safety, and additional teaching. These benefits were viewed as more important than the perceived sacrifice in autonomy.

Conclusion: The COVID-19 pandemic has created new challenges for IM residents in ICUs. Our results reflect an overall positive evaluation by residents of an onsite night attending intensivist in enhancing resident training and mitigating stress on ICUs night shifts without compromising autonomy during a crisis. Our findings are limited to our setting and reflect resident perceptions rather than more objective measures of outcomes.

93. Impostorism is a significant risk factor for burnout and anxiety in Canadian resident physicians: A cross sectional survey

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Introduction: "Impostor phenomenon" (IP) characterizes the feeling of extreme self-doubt despite consistently positive feedback. Though it's prevalence in Medicine is increasingly recognized, previous research has not demonstrated the role IP plays in the wellbeing of resident physicians. We explored the relationships between IP, burnout, and anxiety in Canadian residents.

Methods: Surveys were emailed to 1,434 residents enrolled in Family Medicine (FM), Paediatric Medicine (PM), Anesthesiology (AN), and General Surgery (GS) programs across Canada. IP, burnout, and anxiety symptoms were evaluated using the Clance Impostor Phenomenon Scale (CIPS), Maslach Burnout Inventory-Human Services Survey (MBI-HSS), and the General Anxiety Disorder-7 (GAD-7) questionnaires.

Results: 269 residents responded to the survey (FM=24.9%, PM=33.1%, AN=20.4%, GS=21.6%). IP was identified in 62.7% of all participants. Females were at higher risk for IP (RR=1.27, 95% CI: 1.03-1.57). Residents who did not feel "well supported" were up to 1.57 times more likely to have IP (p<0.01), 1.87 to 3.26 times more likely to have burnout (p<0.01), and up to twice as likely to experience anxiety (p=0.03). Scoring positive for IP was an independent risk factor for both burnout (RR=1.82, 95% CI: 1.07-3.08) and anxiety (RR=3.64, 95% CI:1.96-6.76). Increasing scores on the CIPS was associated with increasing scores on both the MBI-HSS and GAD-7 (p<0.01).

Conclusion: Impostorism is experienced by residents of all specialties surveyed and likely contributes to the development of both burnout and anxiety symptoms. Educators must focus on providing the necessary support to residents throughout their education.

94. Pandemic and postponed exams: Impacts on resident wellness

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Introduction: Residency training in Canada includes a certification exam administered by the Royal College of Physicians and Surgeons of Canada or the College of Family Physicians of Canada. Due to the COVID-19 pandemic, certification examinations in 2020 were significantly delayed, with the process leading to anger, confusion, and frustration among stakeholders in medical education in Canada. Our objectives were to explore the resident experience during this unique exam year, specifically: a) What is the experience and impact of the COVID-19 pandemic on residents in their certification year?, b) What are residents' reactions to, and perceptions of, the deferral of their certification exams?, and c) What strategies or supports do residents use to cope with the stressors and challenges inflicted during this time?

Methods: Qualitative description methodology was used for this study. Participants were residents in their certification exam year from McMaster University and the University of Toronto. In depth, semi-structured one-on-one interviews were conducted by one of the investigators. Each was transcribed, reviewed and coded using content analysis by two members of the investigating team.

Results: Uncertainty and loss were identified as the predominant emotions experienced by residents through the frequent changes and ambiguity. Significant concerns were identified regarding future career prospects and ability to learn in the pandemic environment. Licensure and ability to practice at the end of residency also presented financial and career stress. Mitigating factors included a robust response from training programs and well formed social support networks.

Conclusion: Residents face unique challenges in their certification exam year. A global pandemic and the difficulties experienced by Canadian certification colleges

in contingency planning exacerbated the fear, stress, and uncertainty. This experience may present an opportunity to revisit the delivery and premise of high stakes certification examinations.

95. Scribes on an inpatient resident team: Creating time for meaningful work

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Introduction: Time spent in meaningful work has an inverse relationship with physician burnout, while time spent in electronic documentation is associated with higher burnout and less satisfaction. Scribes have been shown to decrease time in documentation and increase physician satisfaction. We examined interns' rankings of meaningful work activities and the effect of scribes on an inpatient medicine resident team on time spent in work activities, wellbeing scores, and patient satisfaction.

Methods: We assigned scribes to two inpatient medicine resident teams over five rotations (four weeks each); each intern (n=20) had a scribe for half the rotation (cross-over design). An observer recorded work activities of interns. Interns completed rankings of meaningful work and the Professional Fulfillment Index (PFI). A one-item patient satisfaction survey was utilized.

Results: Interns ranked patient care as the most meaningful work activity (mean rank 1.43); documentation was tied for the least meaningful (mean rank 5.5). With a scribe, interns spent a lower percentage of time in documentation (mean percentage without scribe = 39%, SE = 0.94; with scribe = 33.2%, SE = 0.97; p < 0.0001), and a higher percentage of time in patient care (without scribe = 12%, SE= 0.55; with scribe = 13.3%, SE = 0.58; p < 0.05). PFI scores demonstrated high fulfillment and minimal burnout overall. Patient satisfaction data did not vary sufficiently for analysis; 97% of patients indicated they were satisfied in the time spent with them by the intern.

Conclusion: Scribes on inpatient medicine resident teams decreased time interns spent in documentation (ranked as least meaningful by interns), and increased time in patient care (ranked as most meaningful). Research in samples with lower baseline wellbeing scores may help clarify the impact of scribes on wellbeing measures. The use of scribes shows promise to increase interns time spent in meaningful work activities.

96. This abstract has been withdrawn.

97. The relationship between empathy and educational environment in Canadian emergency medicine residents

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Introduction: Resident physicians experience a high level of burnout. Empathy and the educational environment appear to be inversely correlated with burnout but the relationship between the two is largely unknown. The primary objective of this study was to examine the relationship between postgraduate educational environment and resident empathy. Secondary outcomes included impact of gender, year of residency and on- versus off-service context on levels of empathy and educational environment.

Methods: A modified Dillman approach was used to conduct an email survey of all Canadian Royal College Emergency Medicine (EM) residents in June 2020. The survey instrument, distributed by program directors, consisting of demographic data, the Toronto Empathy Questionnaire (TEQ) and the Scan of Postgraduate Educational Environment Domains (SPEED) was administered via Survey Monkey Inc. Logistic regression was utilized to determine associations between validated measures of empathy (TEQ), educational environment (SPEED), and other covariates of interest. Linear regression was used for associations between mean SPEED scores and covariates.

Results: Response rate was 38% (138/363) with representation from each of the 14 Canadian Royal College EM programs. Respondents were 59.9% male and 34, 28, 25, 33, and 18 were in post-graduate year (PGY) 1-5, respectively. There was no statistically significant association between high/low TEQ scores and mean SPEED score (p=0.97). There was no statistically significant associations between any of the covariates and high/low TEQ scores (gender, p=0.21; PGY, p=0.58; on versus off service, p=0.46) or mean SPEED (gender, p=0.95; PGY, p=0.48; on- versus off-service, p=0.07).

Conclusion: There was no statistically significant relationship found between empathy and educational environment in Canadian EM residents. While educational environment is inversely associated with burnout, these

results suggest that the influence of educational environment on burnout may be mediated by factors other than empathy. Future research is needed to better characterize protective factors against burnout in residents.

98. What does wellness mean to residents? A needs assessment of psychiatry resident wellbeing

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Introduction: Residents report high rates of depression and burnout; to address this, resident wellbeing has become a priority in postgraduate medical education. However, a gap exists between resident-led definitions of wellbeing and the way institutions operationalize their wellness supports. This study aimed to understand how residents in a large psychiatry program defined "wellness" and how they perceived current barriers and enablers of wellbeing.

Methods: Drawing from literature on resident wellness and a previous departmental needs assessment, the authors piloted and compiled a survey (including Likert ratings and free-text responses) to assess resident definitions, enablers, and barriers of wellbeing. The authors used thematic analysis to code the aggregated data and achieved saturation of themes via iterative coding.

Results: 142 of 222 residents (64.0%) participated in the survey, and most commonly defined wellness as "a sense of meaning at work" and "sense of psychological safety". Enablers of wellbeing included the ability to care for one's mental and physical health via access to accommodations and time to attend appointments. Residents also cited support from trusted faculty members, chief residents, and protected time to socialize with peers. Barriers to wellness included the lack of time to attend appointments, feeling feedback would not lead to change, and feeling isolated from peers.

Conclusion: Consistent with existing literature, a key barrier to resident wellness in our sample was the lack of time to attend to personal needs related to health and other life roles. Results of this study point to specific policy and institutional changes to remove these barriers, including clear communication about existing wellness resources, access to a transparent accommodations policy, and the value of meaningful mentorship to support resident wellbeing. These results are promising, and

future directions include assessing residents across specialities to understand the applicability of these themes across general postgraduate training programs.

99. Who am I? Personal and professional journeys in critical care

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Introduction: Critical care clinicians practice a liminal medicine at the border between life and death, witnessing suffering and tragedy which cannot fail to impact the clinicians themselves. Clinicians' professional identity is predicated upon their iterative efforts to articulate and contextualize these experiences, while a failure to do so may lead to burnout. This journey of self-discovery is illuminated by clinician narratives which capture key moments in building their professional identity. We analyzed a collection of narratives by critical care clinicians to determine which experiences most profoundly impacted their professional identity formation.

Method: After surveying 30 critical care journals, we identified one journal that published 84 clinician narratives since 2013; these constituted our data source. A clinician educator, an art historian, and an anthropologist analyzed these pieces using a narrative analysis technique identifying major themes and subthemes. Once the research team agreed on a thematic structure, a clinician-ethicist and a trainee read all the pieces for analytic validation.

Results: The main theme that emerged across all these pieces was the experience of existing at the heart of the dynamic tension between life and death. We identified three further sub-themes: the experience of bridging the existential divide between dissimilar worlds and contexts, fulfilling divergent roles, and the concurrent experience of feeling dissonant emotions.

Conclusion: Our study constitutes a novel exploration of transformative clinical experiences within Critical Care, introducing a methodology that equips medical educators in Critical Care and beyond to better understand and support clinicians in their professional identity formation. As clinician burnout soars amidst increasing stressors on our healthcare systems, a healthy professional identity formation is an invaluable asset for personal growth and moral resilience. Our study paves the way for post-

graduate and continuing education interventions that foster mindful personal growth within the medical subspecialties.

100. Working with complexity

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Introduction: HEIW is accountable for training doctors and dentists in Wales. HEIW's Professional Support Unit is responsible for the pastoral support of junior doctors. Doctors are able to self-refer for support at any point during training. There has been an expediential growth in referral rate to the HEIW PSU over the past 4 years and in the complexity of the challenges the trainees are experiencing. Trainees often seek support for reasons relating to training progression such as exam failure. The PSU are skilled in recognising and eliciting when this reason may be masking more complex concerns and difficulties.

Methods: The PSU maintains a database of trainees accessing support and the reasons for initial referral. Between 2015 and 2019 a total of 1137 trainees sought support from PSU and 495 received tertiary support with a therapist from Hammet Street Consultants Ltd (HSC). We analysed data for the total of 777 closed cases of which 296 had further HSC support and compared the initial reason for the referral and the challenges disclosed during the subsequent meetings with the PSU.

Conclusion: The evidence indicates that junior doctors will seek support based on reasons of training progression such as difficulties with exams. However, with the help of a skilled professionals they are able to acknowledge and disclose more complex reasons for needing support. The PSU have developed skills in recognising the early indicators of distress and techniques to enable junior doctors to feel safe to disclose and therefore access the relevant support.

101. Speaking up for patient safety: Overcoming individual and contextual barriers during residency

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Introduction: Speaking up, or declaring one's opinion or knowledge to someone in a position of authority, may be challenging for residents due to their lack of power within hierarchical learning environments. When a resident has experienced intimidation or harassment (I&H) within the context of their training, the instinct to speak up may be further suppressed. We sought to characterize speaking up behaviours in residents and determine how such behaviours are impacted by I&H and a hostile learning environment.

Methods: This mixed methods study employed an explanatory sequential design. An online survey of resident experiences of I&H and patient safety incidents, speaking up, and perceived psychological safety for speaking up was made available to all residents in training at Dalhousie University. Findings of the survey informed the development of individual interviews where residents offered personal reactions and explanations for patterns in the survey data.

Results: Residents (N=139) from 30 programs and all training levels responded. 34% (own department) to 48% (other department) reported experiencing I&H within the prior six months. Nurses and supervising faculty members were identified as frequent perpetrators of I&H against residents, and inpatient settings highlighted as particularly risky. Many experiencing I&H do not report despite awareness of available reporting mechanisms. Those experiencing I&H were less likely to speak up in scenarios where patient safety could be compromised and perceived lower psychological safety for doing so.

Survey findings resonated with residents participating in individual interviews (N=10, ongoing). Participants provided valuable input on how reporting mechanisms and education to support speaking up can be improved.

Conclusion: In addition to threatening the progress of postgraduate learners, hostile learning environments pose significant risks for patient safety. Efforts must be made to improve learning environments and to equip residents with the needed supports to speak up despite power differentials within clinical care teams.

102. Dalhousie's clinical cadaver program: A novel procedural skills initiative

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Introduction: Cadavers have long been a part of medical education. While traditionally reserved for formal anatomy teaching, clinician educators and researchers at

Dalhousie University have recently been exploring the use of clinical cadavers within residency education programs. Using innovative techniques for preservation, this unique 'soft fixation' allows donated bodies to retain much of their life-like qualities and tissue integrity. To our knowledge, little has been documented about the educational uses of these types of cadavers.

Method: Our broader ethnographic study engaged observation [n=30 hours], interviews [n=30], and document analysis [n=22] to study the Clinical Cadaver Program over a two-year period (2018-2020) at Dalhousie University. This current presentation focuses on semi-structured interviews conducted with Emergency Medicine residents to better understand the role of clinical cadavers within the postgraduate curriculum.

Conclusions Residents overwhelmingly identified the cadaver program as a fundamental component of their procedural skills training. They highlighted the degree of anatomic variability and the life-like nature of the tissues as being significant strengths when compared to traditional sim manikins and task trainers. Perhaps most important, learners uniformly valued the rare opportunity to practice 'high acuity, low opportunity' procedures (e.g., lateral canthotomies, thoracotomies) for which there are few or no alternative learning opportunities in simulation settings. As programs continue the transition to competency based education, Dalhousie University's Clinical Cadaver Program is expected to play an increasingly vital role in ensuring high fidelity, safe procedural practice opportunities for resident trainees.

103. Do preparatory online modules optimize cognitive load during simulated resuscitation scenarios?

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Introduction: Simulation can provide a safe and reproducible learning experience; however, it can trigger high levels of cognitive load (CL) in learners, potentially impacting learning and performance. CL has limited capacity and comprises the complexity of the task (ICL), off-task stimuli (ECL) and schema making (GCL). Thus, in this project we aimed to optimize CL by providing preparatory online modules to the learners before simulation sessions.

Methods: The Nightmares course is a simulation-based curriculum that teaches and assesses resuscitation skills, through 4 learning sessions (each with 3 simulation scenarios). Fifty-three residents in their first postgraduate (PGY-1) year were randomly assigned to either the online modules group (OG – n=27) or control group (CG – n=26). Only the OG received an online preparatory module (5-10 minutes-long) before each session. During the session, after each scenario the residents completed the Leppink cognitive load questionnaire. And performance was assessed by an attending physician using an entrustment score (EPA).

Results: The preparatory online modules had a significant effect (p=0.044) on the ECL of the scenario leaders, with the CG having an increasing trend over four sessions (b=0.33, p=0.0016) and the OG having a decreasing trend over four sessions (b=-0.16, p<0.0001). We also found a significant change (p=0.0027) in the relation of the ICL vs EPA of the OG and CG. With the CG having a decreasing trend in the relation between ICL and EPA (b=-0.10, p<0.0001) and the OG having an increasing trend in this relation (b=0.041, p<0.0001).

Conclusion: PGY-1 residents participating in the Nightmares course, using the preparatory online modules had a lowering trend in their ECL. Since CL is a limited resource, a lower ECL frees up space in working memory. So, ICL can be used more effectively to complete the task without resulting in cognitive overload and resulting in higher performance scores.

104. Mediating conflict in simulation debriefing: "There's a lot of tension in the room"

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Introduction: Interpersonal conflict during simulation debriefing can interfere with learning. Debriefers express uncertainty in how to address conflict in simulation and current debriefing frameworks do not provide guidance on how to address conflict between learners. The purpose of this study was to explore debriefers' experiences of conflict and explore their approaches to conflict mediation.

Methods: We performed a secondary analysis of data collected as part of a larger study examining simulation debriefers' approaches to challenges in debriefing. For this study, we used thematic analysis to analyze segments

of transcripts from simulated debriefings (n=10) and pre-simulation (n=11) and post-simulation (n=10) interviews that pertained to interpersonal conflict between learners.

Results: We identified when, why and how debriefers adopted mediation strategies. These strategies were applied when there were threats to psychological safety, persistent conflict, or opportunities for shared understanding. Mediation strategies were adopted for the purpose of re-establishing psychological safety, reducing the intensity of emotion, achieving a shared understanding, and facilitating productive conversation. Specific mediation strategies were applied in an adaptive way and included intervening, addressing power dynamics, reconciling differences, circumventing the conflict, and shifting beyond the conflict.

Conclusion: Our description of mediation strategies for navigating conflict between learners in simulation is grounded in the practices of experienced debriefers and may be useful for informing future professional development for simulation debriefers.

105. Mode of delivery: Development and implementation of an obstetrical in situ simulation program

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Introduction: Simulation is increasingly valued as a teaching and learning tool in obstetrical practice. In situ simulation assesses the hands-on and critical thinking skills demonstrated by a healthcare team within their clinical setting. We aimed to create an in situ simulation program to promote skill acquisition, enhance team work and identify underlying system limitations.

Methods: Key obstetrical emergencies were identified through a needs assessment. In situ simulations were developed to address these clinical presentations. During each simulation, latent safety threats were identified by organizers and participants. Medical management was evaluated through comprehensive emergency specific checklists. Leadership attitudes were assessed using the modified Perinatal Emergency Team Response Assessment tool. Following each simulation, team members were debriefed and qualitative and quantitative feedback was solicited and aggregated by specialty and discipline.

Results: Simulations were conducted monthly at two academic centers over 14 months. Multidisciplinary participation included medical learners, staff physicians, nursing, and allied health team members from Obstetrics, Anesthesia and Neonatology. Overall, participants reported their involvement was enjoyable. Participants reported improved communication skills, content knowledge and procedural knowledge. Participants rated the spontaneity of simulations, clinically relevant scenarios, safe learning environment and use of realistic equipment favourably. Latent safety threats were identified relating to equipment, medication, personnel, resources and technical skills.

Conclusion: We present the successful implementation of a comprehensive in situ simulation program in two busy academic centers. In situ simulation allows for deliberate practice of obstetrical emergencies and promotes a culture of patient safety and collaborative care. The lessons learned serve as valuable data to identify limitations within our current practices and inform future policy change.

106. Simulation-based assessment for learning: Validity evidence for an in situ simulation of rare endoscopic procedures (S-REP) to teach intrinsic CanMEDS Roles for pediatric gastroenterology residents

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Introduction: Research is lacking in the use of simulation-based methods to train Pediatric Gastroenterology (PG) residents in the intrinsic CanMEDS roles of communication and leadership. To address this gap and the need to learn and assess competency in rarely encountered clinical scenarios in pediatric gastroenterology, we developed a novel in-situ simulation program. Using Messick's framework, validity evidence was gathered for simulation-based assessment tools designed to target key competencies of communication, leadership, and medical expert.

Methods: Simulation scenarios were developed by content experts for two gastrointestinal emergencies, upper gastrointestinal bleeding (UGIB) and foreign body (FB) ingestion, which are Entrustable Professional Activities in the PG Transition to Discipline stage. The in-situ simulation was standardized across clinical setting and personnel and piloted on three PG residents for response process evidence. The Queen's Simulation

Assessment Tool (QSAT) was adapted to assess global medical management. Communication and leadership were assessed using a modified Oxford Non-Technical Skills (NOTECHS) scale. Assessments were completed by two independent observers. PG resident satisfaction questionnaires were completed. Inter-rater reliability (IRR) was determined by intraclass correlation coefficient estimates and their 95% confidence intervals were calculated based on an absolute-agreement, 2-way mixed effects model.

Results: The QSAT IRR over the 6 assessments, was 0.926 (0.11-0.99) for the UGIB and 0.896 (0.37-0.98) for the FB simulations. The IRR of the NOTECHs scale between all scenarios was acceptable with an interclass correlation coefficient 0.764 (-0.026-0.942). Satisfaction scores were high in all questionnaire domains (>95%).

Conclusion: We describe the development of a novel In-Situ Simulation of Rare Endoscopic Procedures (S-REP) in pediatric gastroenterology training. Preliminary internal structure validity was strong for the assessment of communicator, leader, and medical expert CanMEDS roles using the adapted QSAT and NOTECHS tools. Resident evaluations for the simulations were highly favourable.

107. Training in bronchoscopy simulation: Is automatic data seen as feedback or judgment of performance

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Introduction: Competency Based Medical Education (CBME) requires multiple observations and assessment for learning, documenting and supporting the path to competence. Ideally, assessment is for learning rather than a judgment of performance and assessment of learning. Judgment of performance and feedback on performance are inseparably linked and which one is the most dominant depends on many factors. The purpose of this study was to examine learners' practice pattern in a context of training in bronchoscopy using automatic data generated by the simulator

Methods: We conducted a mixed methods study. 20 novices automatic scores generated by the Simulator during each practice and their time to practice without being assessed were recorded to plot their learning curves toward achievement of a set standard. Using a case study design, we observed and interviewed learners.

Results: Description of learning curves showed that most learners choose to be assessed for the first time after an average of 2 hours of practice and when their score is close to the set standard. Whether automatic data is seen as feedback vs. judgment on performance depends on individual and contextual factors as well as data representation, with the dominant view that data is a measurement of performance rather than feedback. Individual factors (participants' goals, their impression on use of data once recorded, their rate of improvement), contextual factors (the competitive culture, consequences of having a set standard in simulation, sparse clinical opportunities), data representation (numerical values rather then descriptive analyzes of the attempts) decreased the value of feedback from the automatic scores.

Conclusion: The findings show that even in a low stake environment such as simulation training for a skill, the pendulum of data is swinging opposite feedback and toward a judgment of performance.

108. Virtual simulation in acute care: Shifting the focus towards functional fidelity

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Introduction: Teaching critical life-saving skills is a crucial component of pediatric residency training curricula. Hands-on, in-person simulations have traditionally been the cornerstone of this teaching. Restrictions resulting from the COVID-19 pandemic required educators to find new strategies to teach these essential competencies. We report on the successful adaptation of a critical care simulation to an online format, in which we shifted the focus from structural fidelity (physical resemblances) to functional fidelity (close alignment between the clinical and simulation tasks).

Methods: As part of an intensive course to prepare incoming General Pediatrics residents at McGill University for their new clinical responsibilities, we delivered a 3-hour acute care simulation using the Zoom virtual platform. In groups of five to six participants, two scenarios (septic shock and respiratory distress) were covered. The session aimed to preserve functional fidelity by (1) using commonly encountered pediatric clinical cases, (2) having a leader and co-leader work together to reflect the team dynamics in the clinical setting, and (3) using a vital sign simulator that provided ongoing visual

and auditory stimuli characteristic of the clinical environment. This approach aimed to maintain the emotional responses associated with simulations despite the loss of structural fidelity. After the session, evaluations were collected from participants through anonymous self-administered surveys.

Conclusion: Eleven first year residents participated in this virtual simulation. The session was rated as highly as the previous year's in-person simulation, which covered the same content and case scenarios. Narrative comments indicated that residents perceived it as a meaningful experience that elicited authentic emotional responses comparable to those experienced during in-person simulations.

Simulations can be time and resource intensive. Identifying competencies that can be effectively taught virtually, with a focus on functional rather than structural fidelity, can help programs provide more frequent and accessible simulations during and following the COVID-19 pandemic.

109. Cardiothoracic surgical training in a pandemic: Junior doctors' experiences one year on

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Introduction: The World Health Organisation declared the COVID-19 pandemic in March 2020. A year on, this disease continues to disrupt health services. In the United Kingdom (UK), the first wave of the pandemic is noted as Spring 2020 and the second as Autumn 2020. The aim of this study is to compare the pandemic's impact on UK cardiothoracic junior doctors' training and well-being during both waves.

Methods: A 23-item questionnaire was designed on Google Forms and circulated nationally via email through the Society for Cardiothoracic Surgery and messaging services to UK junior doctors working in cardiothoracic surgery.

Results: 39 cardiothoracic doctors completed the survey, representing all training grades and half of the UK cardiothoracic centres. 16 (41%) and 22 (46%) trainees were either at least partially re-deployed into another specialty during the first and second waves, respectively. During the first wave, 15 (39%) reported there was a >75% reduction in theatre time and 29 (74%) reported no access

to face-to-face clinics compared to the pre-pandemic era. Whereas, in the second wave, 9 (23%) reported reduced theatre time and 22 (56%) reduced clinic time. 35 (90%) stated a significant disruption to courses and conferences during both waves. 30 (76%) have had access to scheduled teaching during the second wave, compared to only 12 (30%) in the first wave. 20 (51%) reported their well-being has suffered due to burnout and stress. 24 (60%) were concerned about their annual review of competency progression.

Conclusion: During both waves, junior doctors' training and wellbeing has been affected, with fewer theatre and clinic opportunities. However, access to scheduled teaching has improved in the second wave. Allocated trainee theatre lists and clinics could help current training. The pandemic's full impact is still unknown but timely actions must be taken to ensure doctors' education and well-being are well-supported.

110. Current educational interventions for improving crisis resource management skills in surgery

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Introduction: Crisis resource management (CRM) is an established model for non-technical skills development, widely used across high-reliability industries. CRM has become an important model for team-based education in surgery, used in simulation and didactic-based methods. The purpose of this systematic review is to synthesize and examine published CRM-based educational paradigms designed to improve trainee performance in surgery, and to analyze their strengths and limitations.

Methods: A literature search of the Excerpta Medica dataBASE (EMBASE), the Medical Literature Analysis and Retrieval System Online (MEDLINE), the Cochrane Library, and PsycINFO databases was performed to identify literature focused on current educational interventions for improving crisis resource management in surgery. The Medical Education Research Study Quality Instrument (MERSQI) was used to evaluate the overall quality of evidence.

Results: A total of 1785 articles were identified, of which 15 were selected for full text review. Studies were categorized into the intraoperative and postoperative phases of surgery. The types of educational interventions included simulation, didactic seminars, and debriefing

scenarios. Metrics used to measure the effectiveness of the educational interventions included ANTS, Ottawa GRS, NOTSS, NOTECHS, and Trauma Management Skills Score. Overall, the studies had an average MERSQI score of 13.7/18.

Conclusion: Crisis resource management in a surgical setting requires further study to discover what constitutes an effective educational intervention in the operative setting. Further work is needed to link CRM training with educational and patient outcomes and to develop an effective approach to integrating these interventions longitudinally into training curricula.

111. Current educational interventions for improving technical skills of surgical trainees in laparoscopic surgery
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Introduction: Training in laparoscopic surgery is a field that has grown tremendously over the last decade. Development of educational interventions has employed various pedagogical models, including simulation and didactic-based methods. The purpose of this systematic review is to synthesize and examine published laparoscopic educational paradigms designed to improve trainee performance in surgery, and to analyze their strengths and limitations. This is the first systematic review focused exclusively on all interventions with measurable technical improvements for training laparoscopic surgery.

Methods: A literature search of the Ovid EMBASE, MEDLINE, the Cochrane Library, and PsycINFO databases was performed to identify literature focused on current educational interventions for improving laparoscopic surgical training. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol was used for identifying qualifying articles for data extraction, and the Medical Education Research Study Quality Instrument (MERSQI) was used to evaluate the methodological quality of the included papers.

Results: A total of 5642 articles were identified, of which 51 were selected for full text review. Studies were categorized based on surgical specialties identified, including: general surgery, obstetrics and gynecology, and urology. The types of educational interventions included curricula, virtual reality simulations, wet and dry lab simulations, and video debriefing scenarios. Specialty and

modality-specific rating scales were used to measure the effectiveness of the educational interventions. Overall, the studies had an average MERSQI score of 13.95.

Conclusion: Current educational interventions utilize a wide variety of training modalities for laparoscopic surgery of which comparisons need to be made to determine optimal combinations of modalities. Further work is also needed to connect technical performance in academic settings with patient outcomes and to develop a standardized curricular approach to laparoscopic surgical training.

112. Perceptions and attitudes of learners towards video recording of their operative performance for assessment of surgical skills
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Introduction: With the advancement of competency-based education, there has been increasing interest in video data collection in the operating room (OR) as a means for objective surgical skill assessment. However, studies evaluating the feasibility of this new assessment method have had limited focus on the learner side. Our objective was to survey surgical trainees on their perceptions of videotaped surgical performance and its use in education and assessment.

Methods: A previously piloted online survey was distributed to all Canadian surgical program administrative staff and program directors with the request to be internally distributed to residents. All participants were anonymous. The survey was administrated over a 4-week time frame.

Results: A total of 138 of 548 responses were received (23.7% response rate). All surgical specialties and years of training were represented. 89% had no experience having their own operative skills recorded, while 66% reported the use of online surgical video recordings for surgical preparation. Most trainees (92%) were receptive to having their operative skills recorded for assessment, stating recordings would depict a true representation and be more objective than current methods. 95% felt that videotaping one's operative performance could play a role in their learning; yet 52% indicated these should not be part of summative evaluation. A total of 66% expressed levels of concern with litigation issues, while 70% were not concerned with personal privacy. Trainees expressed that

video recording in the OR would not be intrusive (55%), nor would it affect the "true" OR environment (56%).

Conclusion: The majority of surgical trainees were receptive to having their surgical skills recorded in the OR for educational purposes and felt that recordings would serve as an objective representation of surgical skills. Provided patient and trainee consent, surgical residency programs are encouraged to incorporate and increase the accessibility of operative video recording of its residents.

113. Reproductive endocrinology and infertility fellowship program website assessment

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Objective: To assess the comprehensiveness of Reproductive Endocrinology and Infertility (REI) fellowship program websites in Canada and the United States (US). All active Canadian and US REI fellowship program websites (as of May 2020) were evaluated and compared using a 72-point criteria checklist. Fellowship programs without websites were excluded from the study. Program website information availability was compared by geographic region.

Methods: Online American and Canadian REI program websites were individually assessed using a 72-point criteria checklist that was adapted from previous studies employing similar methodology and criteria to assess fellowship websites in various medical specialties. Program websites were grouped based on geographic location.

Main outcome measure(s): The scoring criteria consisted of a total of 72 items with the following subcategories: recruitment, fellow information, faculty information, research and education, procedural learning, clinical work, work benefits, wellness and environment.

Results: We identified 49 REI fellowship programs in the US and 9 in Canada. 100% of the Canadian programs and 95.9% of the US programs had an accessible website. The mean score across all American websites was 61.47% and 47.68% for the Canadian websites, which is significantly lower (p<0.000).The "wellness" subcategory had the highest prevalence of criteria (85.33%) across all program websites, whereas the 'fellow information' subcategory had the lowest score (20.0%).

Conclusion: Canadian and US REI fellowship websites overall lacked content relevant to prospective applicants. Program websites can improve sections on clinical work, current fellows and details on research requirements and opportunities to increase applicant engagement and recruitment.

114. Resident's satisfaction in their otolaryngology-head and neck surgery residency training

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Introduction: Evaluate perception of preparedness for independent practice following the Otolaryngology-Head and Neck Surgery (OTO-HNS) residency program of Université de Montréal. There is no literature on resident's confidence in OTO-HNS. However, The Competency by Design framework provided by Royal College of Physicians and Surgeons of Canada highlights competencies that should be mastered upon graduation. The primary goal is to identify areas of potential weaknesses in the residency program to improve the curriculum.

Methods: Cross-sectional survey of graduates from the past 10 years (42). Participants were asked to grade their level of confidence at the end of residency for various procedures in every OTO-HNS subspecialties using a 5-point Likert scale. Analysis was done using standard descriptive statistics.

Results: Response rate was 45%. 7 out of 27 procedures were mastered by most physicians at the end of residency. The highest confidence level was in head and neck surgery (4 out of 5 procedures with a mean confidence level of 4 or higher) and lowest in laryngology and otology (both having 3 procedures with a median confidence level of 2 or less). The lowest confidence level was seen in ossiculoplasty and thyroplasty, being the only procedures to have a mean confidence level below 2, with respectively, 1,9 (SD=1,2) and 1,6 (SD=0,8). The highest scores were seen in superficial parotidectomy, direct microlaryngoscopy and trans-oral drainage of an abscess. For these procedures, every respondent had a confidence level of 4 or 5.

Conclusion: This study highlights procedures and OTO-HNS subspecialties in which more surgical exposure or curriculum changes could increase resident's confidence and skills for a comprehensive OTO-HNS practice. The principal limitations are the subjective nature of the

assessment and the recall bias. Implementing surgical simulation in the targeted subspecialties could enhance resident's confidence and the impact of such modifications will be assessed eventually.

115. Survey of Canadian urology residency programs: Perception of virtual education during COVID-19 and beyond

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Introduction: The COVID-19 pandemic have caused many residency programs to pivot from traditional face-to-face to virtual teaching. In this study, we aim to assess the state of virtual education in Canadian urology programs during the COVID-19 pandemic and gauge interest in a national virtual curriculum.

Methods: An electronic 15-item survey was distributed to all 13 Canadian urology resident programs, to program directors and residents. Data collection took place over 6 weeks from September to November 2020. A mixed methods approach was used employing descriptive statistics. A qualitative synthesis of responses to open-ended questions was conducted in the form of an inductive thematic analysis.

Results: Eleven program directors and 32 residents from all four geographic areas (Western, Ontario, Quebec, and Atlantic regions) responded to the survey. 95.3% of respondents indicated a role of virtual education in their program during the pandemic. Residents reported an average of 6.9±1.1 hours spent per week in online learning. A majority of respondents (74.4%) believe there is a significant or very significant role for a virtual national urology curriculum. 90.6% of resident respondents indicated they believe such a curriculum will be at least somewhat important to their learning. Commonly described benefits of a national virtual curriculum by program directors and residents include exposure to educators and expertise at other institutions, exposure to subspecialties, and standardization of teaching. Commonly described barriers include difficulty with engagement, time zone differences, and lack of dedicated time for attendance.

Conclusions: During the COVID-19 pandemic, virtual education has become well-integrated in Canadian urology programs. A national virtual curriculum has the potential to ensure residents have foundational learning of core concepts and enable exposure to expertise at other institutions. This study highlights interest in the development of such a curriculum, and some key considerations to maximize its success and educational value.

116. The effect of the COVID-19 pandemic on training of surgical residents in Canada: A survey of residents and program directors

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Introduction: The coronavirus disease 2019 pandemic has had a significant impact on healthcare systems in Canada and Worldwide. The restructuring of health care delivery has subsequently had secondary effects on medical education, particularly at the post graduate level. The aim of this study was to examine the impact of the COVID 19 pandemic on the training of surgical residents in Canada.

Methods: The study consisted of a 25 question survey for residents and a 22 question survey for program directors. Survey questions sought to illicit trainee surgical and academic experiences during the first wave of the pandemic. The surveys were distributed electronically to surgical residents and program directors across Canada July 3rd- July 11th, 2020. Data was analysed using Microsoft Excel Version 15.17 to conduct basic statistics and a thematic analysis was completed for the comments portion.

Results: 108 residents and 21 program directors, from various surgical specialties across Canada, completed the survey. Operative exposures were reported to be reduced by 25-100% and 39% of residents were redeployed. However, 89% of residents reported accessing academic half days virtually and 57% had additional online modules. Despite lost time, 100% of program directors confirmed that residents did not require training extensions. Concerns regarding training, personal health, employability and fellowships were raised. 55-70% of residents and program directors advocated for alternative educational courses, increasing elective time, utilizing simulation for assessment and flexibility in crediting different training experiences.

Conclusion: Canadian residents experienced a reduction in operative opportunities during the pandemic. Many lost training time due to redeployment, cancelled electives, quarantine, and for personal health reasons. Fortunately, academic activities were re-instituted virtually. As the

COVID 19 situation continues to evolve, residents remain uncertain regarding their future. Moving forward, it will be important to find novel alternative educational experiences and offer flexibility in assessment of trainees.

117. The impact of virtual surgical conferences

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Introduction: In recent years, there has been a reduction in those pursuing a surgical career in the United Kingdom. The COVID-19 pandemic has resulted in the cancellation of surgical placements for medical students and the re-deployment of junior doctors into specialties other than surgery, thus, affecting surgical education at all levels. We aimed to assess the impact of a 1-day virtual surgical conference for medical students and newly graduated doctors in encouraging attendees to pursue a surgical career.

Methods: All delegates of the 2021 Barts and The London National Surgical Conference were invited to participate in two online surveys: pre- and post- conference. Data was collected and analysed to evaluate delegates' reasons for attending the conference, attitudes to a surgical career and a virtual format before and after the conference.

Results: 129 participants attended of which, 122 (95%) completed the surveys. The pre-clinical cohort illustrated a statistically significant difference in interest in pursuing a surgical career after the conference than before (p=0.002) unlike the clinical students and doctors, who showed minimal change in their interest level. Following the conference, there was a statistical difference in those preferring a virtual conference over a face-to-face event (p=0.04). 85 (70%) wanted talks and 95 (78%) favoured research presentations to be delivered virtually. However, 116 (95%) preferred workshops and 99 (81%) wanted networking to be in a face-to-face format. Furthermore, delegates liked the global accessibility and environmentally friendly nature of virtual conferences but found they can be less engaging and be disrupted due to internet connection.

Conclusion: Virtual surgical conferences can still help sway pre-clinical students' towards a surgical career and it could help bridge the educational gap during these unprecedented times for both students and junior doctors.

118. The use of 3D motion capture for the quantitative assessment of surgical tool motion in expert laparoscopic and naïve surgeons

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Introduction: Objective, quantitative methods allowing trainees to independently improve surgical skill outside the OR are critical to ensure the highest possible standard of care is provided to patients. However, current evaluation models lack feedback relating to quality of movement. This study sought to evaluate the efficacy of using quantitative variables derived from 3D motion analysis to differentiate laparoscopic surgical skill level.

Methods: An observational case-control study design recruited expert laparoscopic surgeons (n=7) and naïve surgeons (n=10) to complete the Fundamentals of Laparoscopic Surgery (FLS) peg transfer task. All participants watched an instructional video prior to data collection and completed the task three times. A 3D motion capture system recorded trajectories of retroreflective markers placed on two Maryland graspers and location of surgical tool tips were computed relative to a box trainer. Variables of completion time, surgical tool translation in sagittal, frontal, and coronal planes, surgical tool pathlength, and symmetry ratios (dominant vs. non-dominant tool motion) were extracted. Independent one-tailed T-tests evaluated significant between group differences at the p<0.05 level.

Results: Experts completed the task with significantly shorter (mean±stdev) times (119.4±61.7s)(p=0.007) compared to naïve surgeons (201.9±78.4s). This is complemented by significantly shorter tool pathlengths (dominant=195.1±108.7cm; non-dominant=187.1±103.9cm)(p=0.038,0.004) and more symmetrical grasper use (symmetry ratio=0.95±0.19)(p=0.019) in experts compared to naïve surgeons (dominant=297.6±110.7cm; non-dominant=356.9±118.3cm; symmetry ratio=1.24±0.29). No between group differences in surgical tool tip translations were observed.

Conclusion: 3D motion variables can be used to quantify between group differences in surgical tool motion. Not only did expert surgeons complete the tasks more quickly, they also moved more efficiently (less motion) and

displayed more symmetrical use of their dominant and non-dominant hands compared to naïve surgeons, who favoured their dominant hand during the task. We believe motion capture can be a valuable adjunct to current evaluation models to improve self-directed surgical education and resident technicity.

119. Validity evidence for procedure-specific competence assessment tools in general surgery: A scoping review

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Introduction: Operative skill assessment is a key component of competency-based surgical education. In order to provide high quality formative and summative evaluations, operative assessment tools and their outcomes must be supported by robust validity evidence. The unitary framework identifies five sources of validity: content, response process, internal structure, relation to other variables, and consequences. This study aims to evaluate the validity evidence supporting procedure-specific operative assessment tools in general surgery.

Methods: A systematic search of eight databases for studies containing procedure-specific operative assessment tools in general surgery was conducted. Studies were evaluated and scored for validity evidence in alignment with the unitary framework and for methodological rigour using the Medical Education Research Study Quality Instrument (MERSQI). Tool educational utility was assessed with the Accreditation Council for Graduate Medical Education (ACGME) framework.

Results: A total of 29 studies met inclusion criteria and 23 unique tools were assessed. The strength of validity evidence supporting each tool varied widely with scores ranging from 2 – 14 (maximum 15). Quality of study methodology was also variable (MERSQI scores 8.5-15.5; maximum 16.5). There was minimal reporting of the factors contributing to educational utility within studies.

Conclusion: There is a small group of procedure-specific operative assessment tools in general surgery supported by strong validity evidence. Unfortunately, the majority of tools have not been studied with sufficient rigour to be used in a summative or certification context. As general surgery transitions to competency-based training, a more robust library of operative assessment tools will be required to support resident education and evaluation.

120. "Patients are the people who teach me the most": Exploring resident perspectives on the development of physician-patient communication skills

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Introduction: Physician-patient communication training is a vital component of medical education and an active area of research. Despite extensive literature on the potential efficacy of various communication training interventions, little is known about which training modalities residents find effective or how residents believe they learn to communicate with patients. We sought to understand resident perspectives on existing communication training and on their personal communication skills development.

Methods: We conducted one-on-one interviews with 15 Internal Medicine residents from all 3 years of the University of Toronto's Internal Medicine program. Residents were asked to reflect on their communication skills development and to discuss their experiences with different methods of communication training. Interviews were conducted, transcribed, and analyzed iteratively using constructivist grounded theory.

Results: Residents credited the majority of their skills development to self-reflection on unsupervised interactions with patients, without guidance from an attending. Attendings' contributions were still perceived as significant but primarily through role modelling, with little perceived learning coming from direct feedback on observed interactions. This was partly explained by residents' proclivity to alter their communication styles when observed, rendering any feedback less relevant to their authentic practice, and by residents generally receiving positive feedback lacking in constructive features. Time constraints on inpatient services led many residents to develop communication styles that prioritized efficiency at the cost of patient-centeredness, which residents recognized as discordant with the tenets of medicine and sometimes caused feelings of guilt.

Conclusion: These findings suggest current models of resident communication training and assessment may lack validity due to an overreliance on observation by attendings and examiners, which fail to unearth the authentic and largely self-taught communication habits of residents. Further research is required to ascertain the feasibility and potential value of other forms of

communication skills training and assessment, such as through patient feedback.

121. "What? You study?": Understanding study practices amongst first-year internal medicine residents

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Introduction: During residency, formal teaching decreases, and self-directed learning takes on a more important role. While senior residents' study practices are predominantly driven by exams, a wider variety of factors influence studying amongst residents earlier in their training. We aimed to further elucidate these factors amongst more junior internal medicine (IM) residents, including their values towards studying and its impact on resident identity and well-being.

Methods: We conducted one-on-one semi-structured interviews with 15 first- and second-year IM residents to explore why and how they approached studying during first year. Analysis was conducted alongside data collection using principles of constructivist grounded theory.

Results: Residents were motivated to study for a wide variety of reasons, including better patient care and fear of missing diagnoses, impressing staff, perceived knowledge of other colleagues, and a genuine curiosity. Time and maintaining balance represented the biggest barriers, whilst clear objectives and resources, less call-heavy rotations, and protected time helped facilitate studying. Residents held varying views on the importance of studying on resident quality, ranging from helpful but unnecessary to mandatory for competence. An over-arching "culture" of studying was also described, whereby reading outside of work was often viewed negatively by peers, in turn further influencing resident study practices. The COVID-19 pandemic had variable effects: early on, residents had increased downtime due to quarantines and lower volumes which facilitated studying; as the pandemic progressed, increasing physical and mental fatigue, loss of interaction with peers, and further blurring of lines between home/work made studying challenging.

Conclusion: Study practices of IM residents are influenced by a wide variety of factors, a further understanding of which helps to inform existing models of self-directed learning in residents. Residents' self-directed learning may be supported by clear, centralized objectives; financial

support for resources; and program explicitness about the expected process of self-directed learning.

122. A virtual formative curriculum to support clinical skills development in preparation for licensure exams

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Introduction: Residents must demonstrate competence in the physician activities and dimensions of care outlined in the MCC blueprint. Promoting competence in the array of skills required to navigate successful clinical practice is a complex endeavor undertaken by faculty throughout residency training. Yet, some learners require extra support in preparation for the MCCQEII exam. For-profit options exist to supplement resident training but these options are not accessible to all. In response to declining performance on the MCCQEII exam for Dalhousie residents, an online OSCE-type session was developed to support preparedness.

Methods: A team of educators at Dalhousie created an intensive half-day program for a small number of residents with a demonstrated need (who had a previous unsuccessful attempt at the exam; N = 11). Four patient-physician scenarios were designed to evoke four physician activities (assessment/diagnosis, management, communication, and professional behaviours) and support skill development along four dimensions of care (health promotion, acute, chronic, and psychosocial aspects). The Covid-19 pandemic forced programming to an individualized online setting. The scenarios were enacted by simulated patients, residents were assessed by physician examiners, and a group debrief session followed.

An evaluation survey was administered immediately following the session (73% response rate.)

Results: Findings revealed that each of the cases required all physician activities and invoked all dimensions of care to varying extents. Residents rated highly the examiner feedback and 76% of respondents reported greater confidence to take the MCCQE Part II exam as a result of the session.

Conclusion: This intervention was successful in boosting resident confidence to take their second MCCQE exam. Although the Covid-19 pandemic has temporarily suspended the exam, resident feedback on the intervention suggested that it could be useful for all learners. Our team has received institutional funding to

adapt and evaluate the intervention content for asynchronous online use.

123. An educational intervention improves pediatric resident knowledge of the Canadian 24-hour movement guidelines

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Introduction: Pediatric residents routinely provide counselling about health behaviours. The 2016/2017 Canadian 24-Hour Movement Guidelines (the Guidelines) reflect emerging evidence of the important relationship between pediatric physical activity, sedentary behaviour and sleep; influencing physical, psychological and cognitive health indicators. This study assessed pediatric resident awareness, knowledge and use of the Guidelines, and changes in these parameters following an educational intervention.

Methods: 71 UBC pediatric residents in years 1-4 were invited to participate in a didactic and interactive educational session on the Guidelines. Participants completed pre and post assessments (immediate, 3 months), assessing awareness, knowledge, and use of the Guidelines in practice. Perceived benefit of the intervention was assessed. Results were analyzed using paired t-test.

Results: 15 (21%) of residents completed the pre-intervention assessment with 14/15 (93%) reporting they were 'not at all aware' of the Guidelines for both Early Years and Children and Youth, and 87% reporting they were 'not at all comfortable' counselling patients on the Guidelines. 93% of participants rated their knowledge of the Guidelines as 'very poor'. 7/15 (47%) completed the post-intervention assessment with 100% either 'agreeing' or 'strongly agreeing' that the intervention improved their knowledge. Immediately post-intervention, there were improvements in self-reported and objective knowledge of the Guidelines (P<0.001 and P=0.045 respectively). Response rate was not adequate to comment on knowledge retention at 3 months.

Conclusion: An educational intervention improved pediatric residents' knowledge and awareness of the Guidelines. Inclusion of the Guidelines in the academic curriculum may improve knowledge and use of the Guidelines in practice.

124. Are CanMEDS competencies and skills implemented in Finnish specialist training?

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Introduction: CanMEDS framework gives a useful tool to evaluate the contents of postgraduate medical training. The aim of our study was to evaluate how the CanMEDS competencies appears in Finnish specialist training and whether there are differences between specialty groups or universities.

Methods: The Physician 2018 questionnaire was sent to medical doctors under the age of 70 living in Finland and born on even days (n = 11,336). Our study pertains to the cohort of doctors graduated as a specialist in 2008-2018 (n=1339) or are currently specializing (n=887). The response rate was 40%.

As part of the survey respondents were asked: "To what extent did you receive training in the following matters during your specialist medical training?" Responses to 25 CanMEDS competencies rated on 5-point Likert scale compared between specialties and universities using Chi-Square test.

Results: Most of the respondents felt that training of diagnostic skills and treatment (84%), interprofessionalism (78%) and professional values (85%) were sufficient. The competences with the highest proportion of insufficient training were management skills (health economics, resource planning and group leadership) with insufficient training in 63 %, 57% and 56 % of the responses, respectively. There were some significant (p<0,001) differences between specialty groups. The specialties with problems to provide sufficient training in these competences were especially Psychiatry, Internal Medicine and Gynecology.

Conclusion: This study identified areas for improvement within the CanMeds competencies in the medical specialist training in Finland. This is important as education is developed towards competence based medical education (CBME).

125. Assessing attitudes and educational impact of virtual gross anatomy rounds: A year-long experience with an online education initiative in pathology

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Introduction: Traditional in-person gross anatomy rounds (TGR) is a crucial component of Anatomical Pathology Residency training. TGRs were limited due to COVID-19 restrictions, especially impacting Competency-By-Design (CBD) trainees because of decreased exposure. To address this, we previously reported on the implementation of Virtual Gross Rounds (VGR)—a novel weekly live online initiative during this pandemic. We aim to assess attitudes and impact of VGR as an education modality after 12 months of implementation.

Methods: Since April 2020, CBD residents participate in VGR. After the first 4 weeks, participants were surveyed and provided feedback. Mixed-method analysis was used to follow attendance and assess engagement via usage and poll reports generated by the conferencing platform. At 12 months, we aim to survey our residents for feedback and use thematic analysis to assess for attitudes and impact of VGR on resident learning.

Results: Twelve CBD residents were surveyed at the beginning of VGR, with 100% response rate. Participants rated this as an effective educational tool (mean score 4 out of 5). Responders identified accessibility as the main advantage over TGR (83%). There was a clear preference for TGR (mean score 4.6) over the virtual sessions, with trainees identifying loss of actual specimen handling as the main disadvantage (75%). To date, we have discussed over 60 gross pathology specimens. Our attendance has steadily grown and at 8 months VGR was launched nationally, reaching even more CBD pathology residents. Interval data show persistent interest and continued engagement among trainees.

Conclusion: The early responses of CBD residents showed a preference for TGR. However, interval data at 10 months demonstrates a maintained interest and engagement among trainees. We anticipate that CBD residents' experience of VGR at 1 year will further inform this initiative and assess the viability of online education resources in the training of residents.

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Introduction: The on-call experience is an important opportunity for Psychiatry residents to learn about assessment and management of acute presentations. However, there is little data available about the educational experiences on-call in Psychiatry residency programs. The primary purpose of this study is to identify the factors that mediate the on-call educational experience of Psychiatry residents.

Methods: This study consisted of an online survey, distributed to the 168 residents taking call in the University of Toronto's Psychiatry program, inquiring about their on-call educational experience; followed by focus group interviews revisiting survey topics in detail. We analyzed the survey using descriptive statistics and applied a thematic analysis to the focus group interviews.

Results: Sixty-two residents responded to the survey; 65% of whom reported never receiving direct observation or feedback on clinical assessments. The majority indicated a desire for more supervision. Qualitative thematic analysis of the focus group interviews with 8 residents revealed that the on-call educational experience was mediated by the relationship with the supervisor, the learning environment, and the learner's individual features. Residents endorsed an educational model on-call that would recognize their developmental learning needs in residency. We identified the relationship with the supervisor as a factor that could contribute to or mitigate the psychological distress experienced on-call.

Conclusion: Our study identified that call remains an underdeveloped educational opportunity in Psychiatry training. Faculty development should focus on the relationship between the resident and the supervisor and how supportive supervision might help prevent resident distress and burnout.

126. Beyond the duty of call: Examining psychiatry residents' experiences of on-call education

N. Izadi[1], S. Levitt[2], J. Teshima[3], K. Wang[3]

127. Can you hear me now? Improving communication between physicians and nurses

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Introduction: Effective communication between physicians and nurses is essential in improving patient outcomes and health services rendered. However, research indicates that the interprofessional collaboration and teamwork between physicians and nurses is challenged by frequent communication barriers including a lack of openness, collaboration, and professional respect; logistical challenges; language difficulties; and nurse preparedness (Tija et al, 2009). In 2019, the University of the Fraser Valley (UFV) Nursing program and the University of British Columbia (UBC) Abbotsford-Mission Family Practice Residency program embarked on a collaborative effort to design and implement simulations to address these communication challenges that nurses and physicians experience when addressing patient care. Our pedagogical objectives included developing knowledge of healthcare team members roles; demonstrating effective, collaborative, and respectful interprofessional communication; demonstrating collaborative leadership skills when caring for a critically ill patient; and managing the care of a deteriorating/changing patient.

Methods: Two simulations were designed that included a family physician resident and a nursing student managing a critically-ill patient and delivering bad news to a family member. The simulations were conducted live and in-person over a virtual platform and delivered to an audience of both nursing students and residents. Prior to the simulation, participants were pre-briefed. During the simulation, the audience engaged in a live chat and following the simulation were led through a facilitated group dialogue. Furthermore, the simulation participants were debriefed to discuss their approach, strengths, and areas for further growth. A survey was disseminated to participants to assess their learning experience.

Conclusion: Survey respondents indicated that they felt better prepared to work as part of an interprofessional team; had a better understanding of their role and the role of other team members; that they were able to reflect on their own learning, actions, and critical thinking; and further develop their interprofessional communication and collaboration skills.

128. Cultivating learner-centeredness in a time of rupture: Lessons from the shift to virtual pediatric academic half day during the COVID-19 pandemic

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Introduction: The COVID-19 pandemic has significantly disrupted the postgraduate learning environment. In light of public health recommendations and the need to offer safe learning environments, many programs have drawn upon virtual technologies to continue delivery of formal academic curricula. Despite widespread use, little is currently known as to how trainees view these changes. The authors sought to explore pediatric resident perceptions on shift to virtual academic half day (AHD) delivery.

Methods: A cross-sectional survey was created and distributed to 51 pediatric residents who participated in virtual AHD at a university-affiliated Canadian program between March to June 2020. Survey responses were obtained confidentially through a secure, online platform (REDCap). Descriptive statistics and inductive thematic analysis were used to analyze responses.

Results: Response rate was 60.8%. Residents reported statistically significant improvement in their attitudes towards virtual AHD across all metrics collected. Areas most strongly rated included increased trainee engagement and overall satisfaction with virtual delivery, in part due to increased relevance of content. Factors enabling participation included educationally safe interactions and a more comfortable and flexible learning environment.

Conclusion: These results suggest that the transition to virtual AHD was generally well received. During an uncertain time when trainee vulnerability is heightened, the need to explicitly attend to educational issues of relevance, engagement, safety, and comfort are crucial. Further, given the rapid and reactive pivots to new curricular strategies in the wake of COVID-19, it is incumbent upon programs to incorporate resident feedback to ensure a learner-centered environment is maintained.

129. Development of an educational training program leading endocrinology residents to become tutors in small group problem-based learning for medical students

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Introduction: Problem-based learning (PBL) has become a cornerstone in medical training. Medical residents have great potential as PBL tutors. However, they may not be comfortable with all the skills required, some of which will be addressed in the project. This study investigates whether a 3-hour training session for residents and coaching given by experienced tutors help in the preparation for becoming a PBL tutor.

Methods: Eight endocrinology residents underwent the training program. Each resident was matched with an experienced tutor to have debriefing sessions before and after each teaching. To assess the impact of the program, each resident completed an initial pre-test, a second pre-test following the training session and a post-test after the end of the course, assessing stress levels, fear of misleading students, management skills and overall readiness using a scale from 0 to 10. A variation of 2 points or more was considered significant.

Results: Results are reported as the percentage of residents who had a variation of 2 points or more between 1-) initial pre-test and pre-test following training session and 2-) initial pre-test and post-test. Overall, there was a reduction in stress levels (25% and 37.5%), an improvement in feeling of readiness to be a tutor (100% and 100%), an improvement in management skills (25% and 25%) and a decrease in the fear of misleading the students (25% and 50%).

Conclusion: In our small qualitative study, an educational training program to prepare medical residents to be PBL tutors had a beneficial impact on stress levels, feeling of readiness, management skills and fear of misleading students.

130. Does the format residents use to give and receive feedback about teaching affect the usefulness of the feedback?

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Introduction: An important element in each teaching workshop for resident doctors at the University of Saskatchewan is the microteaching sessions which includes feedback. We set out to test our observations that one format for organizing the feedback was better. In one format, those giving feedback observed and attempted to give feedback in all areas listed on our feedback form; in the other format, those giving feedback were only assigned some areas listed on the form.

Methods: Over 120 residents participated in the teaching workshop in 2019-2020 academic year. Each resident experienced both formats for giving and receiving feedback—about half with one format first and the other half in the opposite order. We developed and tested a simple survey that asked about the usefulness of the feedback.

Results: We used Mann-Whitney U test for differences between some areas or all areas formats. We found a statistically significant difference with small to moderate effect sizes (Cohen's d) favouring the some areas format.

Conclusion: Residents found the usefulness of feedback given or received using the format some areas more useful compared to the format all areas. We will now only use the some areas format, and recommend that other teaching workshops that use microteaching practice sessions consider using this format as well.

131. Exploring resident and faculty perspectives on the impact of transitioning to virtual ambulatory care on clinical exposure, teaching, and assessment during the COVID-19 pandemic

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Introduction: The COVID-19 pandemic resulted in a rapid transition from in-person to virtual ambulatory care delivery for many medical specialties across Canada. This transition necessitated changes to clinical encounters for residents within the competency-based medical education model. The purpose of this study was to explore the lived experiences of residents and faculty related to teaching, learning, and assessment during the transition to virtual ambulatory care.

Methods: Residents (n=17) and faculty (n=17) were recruited from the Departments of Surgery and Medicine at Queen's University (Canada) to participate in this phenomenological study. Interviews and focus groups were conducted to delve into participants' experiences in relation to the transition to virtual ambulatory care. Interviews and focus groups were audio recorded and transcribed verbatim. Qualitative data were analyzed thematically.

Results: Four themes emerged from the data: 1) Teaching/Learning, 2) Assessment, 3) Logistical Considerations, and 4) Recommendations. Virtual care imposed significant barriers on both teaching and learning. Barriers to teaching were the lack of direct observation and time for teaching. Faculty addressed these barriers by increasing resident autonomy and identifying cases suitable for learning, while residents employed strategies such as reviewing cases in advance of the virtual visit. Barriers to assessment included an absence of specific EPAs and feedback focused on competencies related to virtual care, which limited the ability of faculty to assess the skills unique to virtual patients' interactions. Faculty and residents highlighted logistical challenges, such as lack of technological infrastructure, insufficient private office space, and additional administrative burdens. Recommendations included faculty development, improved access to technology and space, frameworks for conducting virtual care encounters, and development of virtual care-specific competencies and EPAs.

Conclusion: Faculty and residents highlighted many challenges related to teaching, learning, and assessment during virtual ambulatory care; however, they were optimistic about the incorporation of virtual care into medical education.

132. Geriatric oncology needs assessment: A national survey of hematology residents across Canada

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Introduction: With the aging population, the incorporation of a geriatric oncology curriculum into hematology and oncology residency training has been recognized as a priority to improve the care of older adults with cancer. A survey of Canadian radiation oncology residents reported that 49% of trainees lacked confidence in managing unique aspects of care of older patients.

There is a paucity of data on the inclusion of geriatric oncology into hematology training in Canada. The purpose of this study was to conduct a needs assessment to understand residents' views and needs for a geriatric oncology curriculum during hematology residency in Canada.

Methods: We conducted a cross-sectional study of Canadian hematology residents. Seventy residents were eligible to participate. The survey was developed in discussion with nurses, geriatricians, oncologists and hematologists. The survey was piloted with three non-hematology residents and revised. The survey used a combination of Likert scale, multiple-choice and open-ended questions. Outcome variables included current state of geriatric oncology training, interest in a geriatric oncology curriculum, and curriculum objectives. The survey, open June 2-30 2020, was distributed electronically via program directors. Descriptive statistics were used for data analysis. Ninety-five percent confidence intervals were calculated.

Results: Twenty-nine hematology residents participated (41.4% response rate). Most residents have not received geriatric oncology teaching (58.6%, CI:38.9%-76.5%, n=17) and have never been taught geriatric oncology assessment tools (72.4%, CI:52.8%-87.3%, n=21). Most residents felt their program should deliver a geriatric oncology curriculum (96.6%, CI:82.2%-99.9%, n=28). Topics most residents wished to learn: assessment prior to chemotherapy decision (86.2%, CI:68.3%-96.1%, n=25), assessment to predict chemotherapy toxicity (82.8%, CI:64.2%-94.2%, n=24), and ethical issues regarding treatment initiation, continuation or termination (79.3%, CI:60.3%-92.0%, n=23).

Conclusion: There is a lack of geriatric oncology training for Canadian hematology residents. This study highlights the need for a dedicated geriatric oncology curriculum integrated into hematology training.

133. Identifying learning needs in medical assistance in dying: From the perspective of internal medicine residents

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Introduction: Medical Assistance in Dying (MAiD) was legalized in Canada in 2016. There have been a total of 13,946 medically assisted deaths between 2016-2019. Integration of MAiD into the medical curriculum is important to provide trainees with the skills to care for patients requesting MAiD. The objective of this study was to determined the learning needs in MAiD for Internal Medicine (IM) residents.

Methods: At an academic session, residents were recruited and completed three patient cases created to test situational judgement and knowledge in MAiD. Cases were discussed and recorded in a group setting guided by a MAiD expert. Written responses and transcripts were analyzed manually to identify themes and key quotes of learners' perspective on MAiD.

Conclusion: Twenty-eight residents participated (44% response rate). Three high level categories were identified that outline the approach residents have to a MAiD request: Action, Reaction, and Decision Making. Residents are comfortable taking action in managing acute and chronic medical problems near end of life and create an environment for shared decision-making. However, they lack knowledge in basic MAiD eligibility criteria and struggle with the concept of "do no harm" in this context. When making decisions, residents prioritize a pragmatic approach to requests for MAiD and are limited in their discussion around managing personal reactions. IM residents require content based teaching on MAiD, but there is an additional need for an approach to end of life care discussions, specifically around addressing uncertainty and personal reactions. This is important because these emotions and personal reactions impact decision making, patient care, and resident wellbeing.

134. Improving junior pediatric resident satisfaction and confidence in clinical decision-making during admissions from the emergency department to the clinical teaching unit

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Introduction: Residency programs strive to provide adequate training opportunities that prepare their residents for independent practice. The University of Calgary Pediatrics Residency Program has a patient admission process from the emergency department (ED) to the clinical teaching unit (CTU) at the Alberta Children's Hospital (ACH) that is Senior Resident (SR) led. Safety and efficiency are maintained with this process, but Junior Residents (JR) are not optimally positioned to build their clinical decision-making skills. This study aims to assess if implementing changes to the ACH admission process can increase JR satisfaction with their role and confidence in clinical decision-making.

Methods: Using quality improvement methodology, interventions were implemented into the ACH ED to CTU admission process from August 2019 to June 2020. JRs completed online surveys to assess initial, midway and final time point levels of satisfaction with their role and confidence in performing tasks that develop their clinical decision-making skills during admissions. JRs completed Admission Tracking Sheets and SRs completed online surveys that provided data for process and balancing measures.

Results: JR satisfaction with their role in the admission process increased from 59% initially to 100% at the final time point. JR confidence in clinical decision-making during admissions increased from 27% to 44%. SR satisfaction with perceived safety increased from 60% to 70%. Duration of admission did not increase.

Conclusions: Through implementing changes to the ACH admission process, JR satisfaction with their role in the admission process and JR confidence in clinical decision-making were improved. These gains were achieved without negatively impacting SR perceived safety or duration of the admission process. The increase in confidence observed may be attributed not only to study interventions but also to time in residency. This study demonstrates how QI methodology can be applied to a complex training environment to enhance resident clinical decision-making opportunities.

135. LearnIM: Using an online learning platform to facilitate postgraduate Competency-based Medical Education

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Introduction: Competency-based medical education has increased the need for non-workplace learning opportunities to be optimized for the individual learner. Interactive e-learning environments provide learners flexibility and autonomy in their education while preparing them for clinical learning. We created a competency-based online learning program for junior internal medicine (IM) trainees with a particular focus on facilitating knowledge synthesis towards clinical decision-making.

Methods: LearnIM.ca was created to optimize independent learning taking place outside of the clinical setting, for common and clinically important IM presentations. This online curriculum was designed based on the Internal Medicine Royal College Objectives of Training. Content was targeted to IM trainees at the "Transition to Discipline" level, with a particular focus on clinical reasoning and decision-making. Learner interaction with LearnIM was through automated multiple-choice question-answer format. Immediate grading and explanations were provided following each question. Resources were provided for pre- and post-module reading. Data collected includes overall performance, performance by specialty, number of attempts, and time to completion.

Conclusion: Learner response was overwhelmingly positive. Trainees appreciated the flexibility of engaging with content on their own terms with virtual feedback and guidance through the decision-making process. Most trainees engaged with each module more than once, and often returned to review the content. Aggregate data allowed identification of existing gaps in knowledge. Future plans involve expanding into more subspecialty content appropriate to senior trainees. In addition, adaptation of this platform for assessment purposes is a strong consideration. Major limitations for growth are from a resource perspective due to upfront investment of educator time and effort for content creation. Once established, this model of education delivery is scalable and adaptable across Canadian institutions. This will help inform future training curriculums where learners can augment their clinical competence through interactions with online environments.

136. Learning needs of general internal medicine (GIM) subspecialty residents in ambulatory care education (ACE)

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Introduction: Due to increasing complexity of illness intersecting with rising pressures of a limited healthcare system, inpatient care continues to shift to the ambulatory setting in GIM. Despite the call for increased training here, many GIM training programs do not have a curriculum in ACE. There is a paucity of literature in GIM ACE. The purpose of this study is to understand the perceived learning needs of the GIM subspecialty resident in ACE.

Methods: Using a constructivist grounded theory approach, 8 semi-structured interviews were held with current GIM subspecialty residents at the University of Toronto. A constant comparative analysis was used to reach data saturation and generate themes and develop a framework to understand perceived learning needs in ACE.

Results: Major themes identified included role identity, need for education in non-medical expert roles, and desire for increased autonomy. Residents identified the importance of the ambulatory internist in shared management of complex patients, and in prevention of hospital admissions. Most plan to practice ambulatory after graduating. All residents wanted to learn about ambulatory practice management. All requested dedicated teaching time in clinic. They wanted more ownership of their patients, with ability to follow them longitudinally. Many wanted the same autonomy extended to them as when junior attending on a clinical teaching unit. No resident had had the opportunity to supervise another trainee within their clinic but felt the opportunity would be valuable.

Conclusion: GIM subspecialty residents value ambulatory medicine. They would like more formalized ACE, with increased autonomy in clinic and focus on non-medical expert roles. This information will be triangulated with recent graduates and faculty to inform new curriculum for GIM subspecialty residents in ambulatory care.

137. Learning up, teaching down: Psychiatry residents' perspectives on teaching

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Introduction: The prominence of teaching within medical curricula positions teaching as an important role for physicians. This has been met with curricular interventions that exists largely in the form of Resident as Teacher programs. While these programs vary in curricular content, a general theme is an emphasis on developing skills and strategies to employ when engaged in 'teaching'. However, teaching is more than a collection of skills and strategies, it is a theoretically grounded practice based upon epistemological assumptions. This research examined psychiatry residents assumptions about teaching.

Methods: Psychiatry residents participated in focus groups discussions about their teaching encounters over the course of their medical training. Sessions were transcribed and were analysed using a coding frame analysis to identify key concepts addressed in the focus group.

Results: Psychiatry residents describe two main categories of teaching: (1) formal teaching and (2) informal teaching, which can be described in terms of who is being taught, what is/how is it being taught and where/when the teaching occurs. Four key points emerged: (1) residents believe teaching is an important competency, (2) teaching occurs on a continuum, (3) teaching occurs within a hierarchy, (4) teaching is an extension of clinical practice.

Conclusion: Residents believe that teaching is an important competency of physicians and recognize teaching as occuring both formally and informally. While teaching is important it is conceptulzied as being different than clinical practice.

138. Lessons learned: An environmental scan to guide development of a national PGME pain and substance use curriculum

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Background: Opioid overdoses and surging death rates are a national public health crisis for Canada. In January 2021, the Association of the Faculties of Medicine of Canada (AFMC), launched an online pain management and opioid stewardship curriculum for integration into Canada's 17 medical school programs. To ground this initiative within the medical education continuum, the AFMC is extending this curriculum into postgraduate medical education (PGME) and continuing professional development (CPD).

Methods: To aid in the development of the PGME curriculum, we conducted an environmental scan. The environmental scan consisted of a scoping review of patient experiences with pain and opioid management, and document analyses of Canadian Pain Guidelines and Competency Frameworks, the Royal College of Physicians of Canada CanMEDS key and enabling competencies, the College of Family Physicians of Canada's 105 Priority Topics, and PGME pain-related curricula from Canada's 17 medical schools. We also surveyed key stakeholders in PGME and CPD offices and interviewed stakeholders from key partner associations.

Results: Current PGME curricular offerings have been praised for their value, interactive nature, and use of up-to-date evidence. The challenges of existing curricula included a lack of a developmental approach and formative assessments in PGME, a need to address issues of stigma and bias in opioid use and prescribing, and concerns about translating knowledge into practice. Future educational programs should ensure that curricula focus on person-centered approaches to care that prioritizes patients' lived experiences, stigma and bias around opioid use and prescribing, evidence-based guidelines, and developing competencies based on the full-range of CanMEDS and CFPC skill dimensions.

Conclusion: Through a collaborative approach, AFMC is currently working with experts in the field, and patient and family advocates to begin identifying the key topics and learning outcomes for the PGME curricula.

139. Leveraging the virtual classroom to deliver high caliber didactic teaching in small subspecialty programs: It can be done!

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Introduction: Small cohort sizes in some subspecialty training programs limit the ability to offer a seminar-based curriculum targeting medical expert and scholar CanMEDs roles appropriate to each stage of training. Technology can be leveraged to bring together residents at similar

stages of training on a national level through a virtual classroom. The purpose of this study was to evaluate the feasibility and acceptability of a Canadian National Seminar series designed for first year subspecialty Child and Adolescent Psychiatry (CAP) residents.

Method: CAP residents from all Canadian programs were invited to attend an interactive virtual seminar series between September 2020 and January 2021. The series topics (n=9) and format were developed in collaboration with the CAP Program Directors. The seminars were delivered via Zoom by CAP content experts (n=10) from Canadian academic centers. Recordings of the seminars and presentation slides were made available to the residents for later viewing. Upon completion of all 9 seminars, online surveys sent to residents (n=63), program directors (n=17) and seminar teachers (n=10) were analyzed using quantitative and qualitative methods to assess acceptability and feasibility of this pilot.

Conclusion: Survey responses from all stakeholders indicated that the seminar series was perceived to be a valuable educational experience, easily accessible and an acceptable medium for teaching. Barriers to engagement in the seminars were minimal. This study sets the stage for the development and further evaluation of a national seminar series to overcome the inherent challenges of delivering high caliber didactic teaching in small subspecialty programs.

140. Math club: Applying statistical knowledge to clinical care

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Introduction: Math Club is an educational series of enquiry-based workshops created to improve Psychiatry residents' confidence and ability to interpret and translate research findings and to support informed clinical decision-making. Through participation in Math Club, residents learned to: understand dichotomous and continuous variables; calculate various medical statistics and interpret quantitative data with contextual accuracy, based on excerpts of published psychiatric research.

Methods: Program evaluation data included pre-test and post-test worksheets, which were completed during the workshop, and standardized course-evaluation forms, which were completed after the workshop. Pre- tests and post-tests assessed learner confidence and ability to (1) calculate and (2) interpret quantitative data. Course

evaluation forms assessed participant perception of course content, presenter effectiveness and invited participants to comment on areas for improvement.

Results: Confidence in calculating and interpreting quantitative data significantly increased before and after the workshop series (p <0.0001). This was validated by substantially improved abilities in calculating and improving quantitative data. Ability to calculate significantly improved (p <0.05 or p <0.01) across all three sessions where ability to calculate was assessed. Ability to interpret significantly improved (p <0.01). across all three sessions where ability to calculate was assessed.

Standardized course feedback indicated the workshops met or exceeded expectations.

Conclusion: Improvements in confidence and ability to calculate and interpret quantitative data, derived from relevant psychiatric research, is expected to improve resident motivation for using evidence to inform clinical decisions and share information with contextual accuracy with patients and colleagues. Math Club series was an effective curricular intervention to improve both learner confidence and ability in using quantitative data and was received positively by participants. It will be introduced as part of the regular postgraduate psychiatry education curriculum and expanded to six workshops, following the same interactive format.

141. Medical education during the COVID-19 pandemic: Perspectives from internal medicine trainees from University of Toronto

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Introduction: The pandemic forced immediate changes to the delivery of medical education globally. Schools made quick transitions to new models of education - including virtual teaching replacing more traditional methods like bedside teaching. We sought to explore the impact of COVID-19 on the training of residents in Internal Medicine (IM) at the University of Toronto.

Methods: Semi-structured interviews were conducted with senior IM residents using a constructivist grounded theory approach. To date, five residents have been interviewed and recruitment is ongoing.

Results: Residents discussed the pandemic's effect on their learning and although residents liked the convenience of virtual sometimes asynchronous learning,

they were concerned about their workplace-based learning due to loss of bedside teaching, procedural opportunities, direct observation, and cancellation of electives for career exploration. Moreover, residents acknowledged how stressors like personal and family safety, loneliness, lack of social supports and loss of normal coping strategies affected their wellness and mental health, and felt inconsistent messaging from the program and different infection prevention polices across training sites added to this stress. Finally, residents were also worried about the pandemic negatively impacting patient care due to limited visitation by families and reduced access to in-person care and struggled to care for patients who were often facing illness alone.

Conclusion: The pandemic has impacted both the personal and professional lives of Internal Medicine residents who bore a large clinical and emotional burden of COVID-19 care. It is important to recognize this and learn from it. However, COVID was also a catalyst to make disruptive and necessary changes to medical education. Limitations of this qualitative study include generalizability as it captures only the experience of internal medicine trainees at the University of Toronto. Moving forward, the forced change of providing virtual care may be beneficial to learners.

142. Micro-journal-club: Size isn't everything!
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Introduction: Micro-Journal-Club was developed as an alternative peer-to-peer teaching format, replacing traditional resident-delivered teaching. Micro-Journal-Club involves succinct, structured presentations of key papers delivered in a consistent format. The objectives of Micro-Journal-Club include: facilitating resident-centred learning; engaging participants with teaching; summarising key papers to facilitate exam preparation; and familiarising residents with critical appraisal.

Methods: Residents were given 10 minutes to follow a prescribed presentation format and encouraged to engage a 'less-is-more' approach. Trainees had 1 slide outlining key findings, 1 summarising methods, and 3 running through an appraisal checklist. Trainees completed questionnaires before and after a term Micro-Journal-Club term, comparing how set objectives were met.

Conclusion: Previous journal-clubs occurred outside working hours, indirectly discriminating against those with caring responsibilities. Accordingly, just half of residents had evidence of journal-club attendance. Integrating Micro-Journal-Club into regular teaching eliminated this barrier. Regular application of appraisal checklists improved trainee familiarity with critical appraisal. The short, sharp format also lent itself well to COViD-necessitated remote learning, maintaining learner concentration.

Qualitative feedback described Micro-Journal-Club as "concise and effective" and "an excellent recap…for the exams", highlighting improved trainee engagement. The overall response was overwhelmingly positive, with 80% finding it beneficial to exam preparation, a good addition to teaching and 90% recommending it to others.

Micro-Journal-Club encourages learner-centred teaching, engaging residents. It provides concise summaries of key papers to help with exam preparation, develops critical appraisal skills, and facilitates residents in fulfilling training requirements. The teaching format was incredibly well received and comes highly recommended to other regions and specialities.

143. Money, rights, and legalities: Some of the most important things to address during a PGME boot camp
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Introduction: All applicants matched to RCPSC and CFPC residency training programs at the University of Saskatchewan must attend a mandatory PGME Resident Boot Camp, which is designed to provide foundational onboarding to trainees as they transition to residency. The purpose of this project was to review the trends in evaluations across multiple years to establish best practices and training for incoming residents.

Methods: The resident boot camp consists of didactic, interactive case-based sessions, and hands-on simulated clinical practice. Each year, PGME employs a rigorous evaluation of the sessions to gage participants' perceptions of the event, learning experiences, and learning outcomes. In this project, both qualitative and quantitative data from evaluation reports (2015 to 2019) were reviewed. Ratings on sessions across years were calculated and compared, qualitative statements on learning experiences and outcomes were analyzed for themes across years.

Results: Descriptive statistics demonstrated consistently higher ratings for the interactive vs. the didactic sessions over the course of five years (2015-2019). During this time, resident learning experiences trended to increase in satisfaction and positive learning outcomes. Residents across years expressed the most useful information provided were sessions on financial management and their collective rights and legal responsibilities as a learner and employee within the college, simulation sessions were also highly regarded.

Conclusion: The boot camp has evolved from a purely didactic lecture series to an interactive and social event. Engaging in on-going evaluation of this event has enabled us to focus on the most relevant needs of learners transitioning to residency.

144. Online residency training change: The perspective of otolaryngology program directors on the COVID-19 pandemic

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Introduction: The COVID-19 pandemic crisis has deeply impacted healthcare and education systems, including resident education. Surveys have been conducted among trainees and program directors in different medical specialties. These focused predominantly on redeployment, resident wellness, and clinical exposure. The impact of the pandemic on the different types of pedagogical activities, and the displacement of pedagogical activities to online modalities have not yet been quantified. We sought to evaluate the impact of the COVID-19 pandemic on formal pedagogic components of otorhinolaryngology–head and neck surgery (ORL-HNS) residency, the switch to distance learning and program director's perceptions of the future of teaching and learning.

Methods: A nationwide online survey was conducted on the 13 Canadian ORL-HNS program directors. The use of standard didactic activities was rated with an 11-point Likert scale, in person and online, before and during the pandemic. Perceptions of the pandemic were described with open-ended questions. Nonparametric analyses were conducted, using Wilcoxon tests.

Results: A total of 11 out of 13 solicited program directors responded (85% response rate). There was a significant drop in overall didactic activities during the pandemic, regardless of the teaching format (3.5 ± 0.2 to 3.1 ± 0.3,

$p<.05$). The most affected activities were simulation and in-house lectures. Online activities increased dramatically (0.5 ± 0.2 to 5.0 ± 0.5, $p<.001$), including attendance to lectures made by other programs (0.5 ± 0.3 to 4.0 ± 0.8, $p<.05$). Respondents stated their intention to maintain the hybrid online and in-person teaching model.

Conclusion: Hybrid online and in-person teaching is determined to persist in the post-pandemic setting. A balanced residency curriculum requires diversity in academic activities. The pandemic can have positive consequences if higher education institutions work to better support distance teaching and learning.

145. Prepped for practice: Providing Canadian residents with consistent medical-legal essentials to enhance communication for safe medical care

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Introduction: Effective communication with patients and healthcare professionals is paramount to delivering safe care. Despite its significance as a core competency for practicing physicians, variation in the quality and extent of postgraduate education on communication serves as a barrier to adequately preparing Canadian residents for practice following their residency training. To overcome this barrier, we designed a national, standardized blended learning program focused on communication skills and their role in delivering safe care.

Method: A CanMEDS focused curriculum was developed with input from Canadian residents, program directors and University Deans. The needs assessment was supplemented with data from CMPA medical-legal experience to create program objectives. Core content was delivered asynchronously via eLearning activities. A facilitated session followed where residents practiced using the knowledge and adapted concepts to variations in practice. The evaluation used a 360-degree approach to measure reach, reaction, learning, behavior and spread by soliciting feedback from facilitators, observers and participants.

Results: 99% of residents rated the session as relevant and applicable. Additionally: 100% agreed the learning objectives were met. 99% completed the pre-work (average utility rating 7.2/10). Self-reported knowledge increased pre to post by 12-32 % for all topics. 96% agreed virtual delivery satisfied learning needs. 98% committed

to making changes in their practice. 94% intended to share information learned.

Conclusion: The program successfully achieved the goals and learning objectives. Future direction will explore integration of commitment to change into pre and post session components of the program.

146. Radiology residency education addressing the management of "incidentalomas": Are we doing enough and is it time for a change? A needs assessment

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Introduction: Incidentalomas remain a source of anxiety among radiologists and a field not explicitly addressed in residency education. Although there are multiple imaging societies that issue and update incidentaloma guidelines, most radiology residency programs don't have a dedicated rotation or curriculum to train residents on the management of Incidentalomas. Instead, this is addressed on case by case basis during daily rotations, if it is addressed at all. This makes the training in this field heterogonous and incomprehensive. Is this current approach enough or is it time for a change?

Methods: A single residency program dual needs assessment was performed. The first phase was a general needs assessment through informal discussion with select program leaders. The second phase was a targeted needs assessment of all the radiology residents using a digital survey [23 questions]. The survey was created by the first author, revised based on expert opinion from an education curriculum expert and a research expert. It was piloted to a junior radiologist and underwent cognitive task analysis before distribution. The survey domains included assessment of existing training, desire for more structured training, preferred modality of training, perceived barriers and suggestions for future maintenance of knowledge. It also included a retrospective pre and post-analysis section. Google forms and excel were used to obtain descriptive analysis and graphs of the survey results.

Results: Between May 3 to 13, 22 participants completed the survey [88% response]. 72.7% of participant indicated that they "always" faced incidentalomas in daily work. 100% of the participants indicated that the current teaching on incidentalomas is "heterogenous and not consistent among different teachers". 81.8% found it to be "unclear and not easy to independently reproduce". 77.3% of participants found incidentalomas a source of stress in their daily work, 90.9% expressed desire for formal training in incidentaloma management and 86% preferred a combination of instructional modalities. 77% identified continuous guideline update as a barrier to learning, 41% identified time as a barrier, while 27% felt that accessibility to resources is a barrier.

Conclusion: This needs assessments proves that the current teaching practice isn't sufficient in preparing residents for the management of incidentalomas. It is time residency programs addressed this through a dedicated curriculum model that can be reproduced for future residency iteration and updated with the change in guidelines. Besides confirming this educational gap, our study explores how we approached needs assessment in a residency setting and highlights appropriate methodology.

147. Rules of engagement: Developing a code of "netiquette" for PM&R residents transitioning to a virtual learning environment

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Introduction: The COVID-19 pandemic has necessitated a rapid shift to "emergency" online teaching, with limited preparation of teachers and learners on best practices, particularly in synchronous environments. From an early age, learners have been socialized to accepted norms within a classroom setting; but online, the rules of engagement are less established. Best practice in synchronous environments, and arguably an important element of the CanMEDS Communicator role, includes developing "netiquette", or online learning rules, with a learner group.

Methods: A cohort of Physical Medicine & Rehabilitation (PM&R) residents (n=15) participated in a peer-led focus group where they were presented with netiquette considerations pertaining to weekly Academic Half Day (AHD) virtual learning experiences, followed by discussion, online voting, and consensus-building. The results helped inform the development of a mutually-accepted code of netiquette and an instructional guide for standardizing communications with presenters. A multiple-choice/short answer survey (n=10) was used to capture learner impressions six months following implementation.

Results: The focus group indicated that 69% of residents felt that a reasonable percentage of face-time (i.e. webcam on) to strive for during synchronous sessions was greater than 50% of the allotted time. 69% indicated that an ideal virtual break was 10 minutes. Polling questions and breakout rooms were the preferred methods of utilizing interactivity to maintain engagement. The six month post-implementation survey (n=10) along with narrative feedback suggested a trend toward more positively-rated learning experiences, with 60% indicating a high/very high quality experience following netiquette implementation. 30% of respondents indicated that implementation of these guidelines increased their likelihood of attending AHD, and 90% agreed that breaks helped them to maintain focus.

Conclusion: The feasibility, acceptance and impact of this approach within a cohort of PM&R trainees suggests a promising framework for the establishment of netiquette within other small- to moderate-sized learner groups meeting longitudinally online.

148. Senior psychiatry residents' perceived competence in evidence-based treatments for major depressive disorder

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Introduction: Numerous clinical practice guidelines (CPGs) exist to guide evidence-based treatment of major depressive disorder (MDD), but implementation is impeded by factors including deficiencies in residency training. A survey of psychiatry program directors revealed few programs assess for concordance between guidelines and care delivery. The authors were not able to identify any reports regarding psychiatry residents' perceived competence (or not) to provide guideline-recommended treatments. Examining the pattern of concordances and gaps between CPGs and senior residents' self-efficacy in evidence-based treatments for MDD can reveal needs for curricular development.

Methods: Senior psychiatry residents (210) from across Canada participating in a 2019 national review course in London, Ontario to prepare for their licensing exams were anonymously surveyed regarding their self-reported experience and competence in pharmacotherapies and psychotherapies recommended by the 2016 Canadian Network for Mood and Anxiety Treatments (CANMAT)

guidelines for MDD. Percentages with 95% confidence intervals in square brackets are reported.

Results: Of 210 residents, 162 (77%) responded; data from 146 who attended Canadian residencies were analyzed. Most (89% [83-93%]) reported competence in 5 or more medication monotherapies (e.g. selective serotonin/norepinephrine reuptake inhibitors, bupropion, mirtazapine) and 2 or more adjuncts (e.g. mirtazapine, atypical antipsychotics). Only 42% [34-50%] reported such pharmacological competence along with competence in 2 or more psychotherapies (e.g. cognitive behaviour therapy, behavioural activation). Just 9% [5-15%] reported competence in medication, psychotherapy, and electroconvulsive therapy (ECT). Less than two-thirds endorsed sufficient teaching (58% [55-66%]) or supervision (50% [42-58%]) regarding treatment-resistant MDD.

Conclusion: Senior residents in Canada report competence in many first-line medications in keeping with national guidelines for MDD but few also report competence in psychotherapies or ECT. Residency programs may benefit trainees by providing a mood disorders track to enrich residents' experience and competence in the sequencing and combination of multiple therapeutic options for MDD, particularly for treatment-resistant cases.

149. Supporting the transition from junior to senior pediatric resident: Implementation of an online case-based interactive educational resource

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Introduction: The transition from the role of junior to senior resident is an important milestone in pediatric residency training. A needs assessment survey of University of Alberta pediatric residents suggested that the junior to senior transition is a significant source of anxiety for pediatric trainees. There is a paucity of formal educational resources for helping residents to develop skills and foster confidence as they prepare for overnight and daytime senior responsibilities.

Method: We developed an asynchronous online interactive case-based resource to support pediatric residents transitioning to the senior role. Six modules were developed in an online learning platform, each focused on a transition-related skill identified as important in the needs assessment. Modules addressed

triaging and prioritization, time management and efficiency, handling acute situations, working with learners, acting autonomously, and managing personal stress.

Results: The resource presented realistic, non-prescriptive clinical scenarios where residents assumed the role of senior. Scenarios allowed trainees to experience common demands and challenges faced by senior residents in a simulated virtual setting, and encouraged critical thinking and self-reflection. 80% of residents accessed at least part of the voluntary resource.

Conclusion: A retrospective pre-post survey of pre-transition pediatric residents demonstrated reduction in self-reported transition-related anxiety after use of the resource (n=7, survey response rate 70%). Residents also reported increased confidence in the six transition-related skills addressed suggesting that an online case-based interactive educational resource can be effective in helping pediatric trainees to feel more confident and less anxious about this key transitional stage.

150. The fast five: Multidisciplinary development of learning objectives for a pediatric resident code curriculum

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Introduction: Out-of-ICU codes are among the most high-stakes events for medical providers and patients, requiring quick action and interdisciplinary collaboration. Currently, there are no standard expectations for pediatric residents in the initial five minutes of a code prior to arrival of the ICU team. The Fast Five Curriculum establishes educational content informed by expert opinion from a multidisciplinary group of code team responders via focus groups and surveys.

Methods: Focus groups were conducted with pediatric critical care respiratory therapists, nurses and physicians. Participants were asked about their experiences regarding code responses, and tasks they wished to be performed by the floor team in the first five minutes of various code scenarios, (i.e. asystole, status epilepticus). Responses were recorded and analyzed for themes.

Results: Initial findings were collected across four focus groups with 12 total respondents. Unsuccessful codes were noted to have an increased degree of disorganization characterized by extraneous providers and undefined roles. Residents were also unable to succinctly describe the patient and reason for calling the code. Focus groups did not agree on skills that all residents should have, with responses ranging from closed-loop communication to bag-mask ventilation. Discussion of specific code scenarios also resulted in variable answers, but groups emphasized optimal setup of the environment and equipment over medical management.

Conclusion: Despite diverse responses, groups agreed on the importance of concise communication regarding the decompensating patient and appropriate setup of the room for successful transition of care to the code team. To better establish consensus regarding key skills, surveys based on focus group responses will be administered using a modified Delphi method. These skills will ultimately be integrated into a future mock code curriculum for pediatric residents aimed at improvingteam performance and patient outcomes in the first five minutes of out-of-ICU codes.

151. The impact of the Covid-19 pandemic on famiy medicine residency training at the University of Toronto: A mixed methods study

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Introduction: The COVID-19 pandemic (C-19p) has posed severe disruption to medical education globally. There has been growing concern in the literature regarding its impact on undergraduate and postgraduate clinical training. To date, publications have largely included commentaries and opinion pieces. Few empirical studies have examined impacts on specialty trainees and none have focused on primary care. Our objective was to examine how residents at various stages of training experienced changes to their education during C-19p.

Methods: We modified a previously validated questionnaire (The Family Medicine Longitudinal Survey) to query C-19p related impact on the clinical training experience of family medicine residents (FMR) at the University of Toronto between June and September 2020. All 167 graduating and 162 incoming FMR were invited to participate. Likert-scale and MCQ's were reported as summary statistics. Short answer responses underwent thematic analysis.

Results: Survey response rate was 81% overall and included 124/167 (74%) graduating FMR and 142/162

(87%) incoming FMR. Sixty-seven% of incoming FMR felt the C-19p impacted their readiness to start residency. Eighty-eight% of graduating FMR indicated it had limited their attainment of clinical skills to some degree. Over 100 short answer responses revealed the following significant themes: 1. both cohorts described reduced access to clinical environments, patient volumes, and procedural skills. 2. graduating FMR described the loss of a tailored learning environment, including cancelled electives. 3. incoming FMR reported the loss of core physical exam skills as well as loss of relationship building with peers, patients and teachers. 4. both cohorts endorsed gaining new skills including conducting telemedicine, pandemic planning, and interfacing with public health.

Conclusion: Residents perceived that the C-19p impacted their exposure to and acquisition of clinical skills and experiences. This varied based on their stage of training. Future work will examine the impact on transition to practice.

152. The pandemic as a game changer: Transforming a mentoring program for medical residents

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Introduction: The objective of this study was to design, implement and, amid the pandemic, transform the Mentoring Program for Medical Residents in a Multicentric Program of postgraduate medical education in northern Mexico. The purpose of the Program is to improve residents' educational outcomes and support their personal wellbeing and future career plans.

Methods: The participants in this study include six training centers, 290 medical residents and 122 clinical professors of 17 Residency Programs certified as mentors in a specific Faculty Development Program for Mentors. The implementation began in August 2018, Residents of 16 medical specialties participated in the selection of their mentor and had 2 meetings per semester. In December 2019, feedback surveys were applied to residents of 5 programs (n=54), 59.2% (n=32) answered the survey, 21.9% had more than two mentoring sessions; 31.3% two sessions; 19.4% one session, and 25.8% none; 84.4% of the residents were satisfied with their mentor and 75% considered the program relevant in their training and future career decisions. Due to the pandemic in May 2020, an online format was implemented to register mentoring sessions, to date 169 residents participated, 27.9% (n=48)

reporting 1 session, 22.1% (n=38) reporting 2, 47.9% (n=81) reporting 3 or more, and 1.18% (n=2) none or other. A virtual meeting was the most common (47.3%, n=80), followed by a face-to-face meeting (30.2%, n=51), and the main topics addressed were support networks, personal and academic goals, and responsibilities as resident.

Conclusion: This strategy aims to strengthen the processes of clinical training, professionalism and humanism in medicine, and to highlight the social responsibility of the profession in order to contribute to the well-being of health professionals in training and patient care.

153. The reading of the week: A medical education project using an e-journal club (that Osler would have liked)

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Introduction: Sir William Osler started the first journal club more than a century ago. Though technology has advanced, in our day as in Osler's, continuing professional development (CPD) is challenging to deliver. This presentation discusses the Reading of the Week (ROTW), an innovative education program, aimed at Canadian psychiatrists and residents of psychiatry, and the contribution of this program to their CPD. ROTW summarizes the latest literature and is emailed out weekly through formal partnerships with 12 Canadian post-graduate programs; Readings are also available online. The selections cover everything from public policy to practice, including studies from the British Journal of Psychiatry and Lancet Psychiatry. Readings include commentary, providing a larger context. Like Osler's journal club, there is the opportunity to exchange ideas, with "letters to the editor."

Methods: In the spring of 2019, we aimed to assess outcomes for ROTW using continuing medical education (CME) evaluation framework (Moore's framework).

Results: 332 responded to the online survey (a third of subscribers). 90% reported they "always or usually" read the summary. 97% were satisfied with ROTW; 93% agreed that ROTW had improved their understanding of the current psychiatry research; 60% shared ROTW with someone else at least once. "I have used the summaries to make better informed clinical decisions."

Conclusion: This presentation outlines the practical implementation and impact of a unique CPD intervention aimed at addressing challenges related to remaining "up-to-date" amidst the vast amount of resources available in print and online. ROTW provides a boundless CPD option for trainees and providers.

154. "You're just a voice": Examining internal medicine residents' experience completing goals of care conversations during the COVID-19 pandemic

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Introduction: Understanding a patient's goals of care (GOC) is a standard component of an internal medicine consultation. The COVID-19 pandemic has resulted in systemic pressures that might affect GOC conversations. This qualitative study examines how the COVID-19 pandemic has affected internal medicine residents' GOC conversations.

Methods: Semi-structured interviews were completed with internal medicine residents (n=11) during the COVID-19 pandemic until thematic saturation was reached. Interviews were recorded, transcribed and coded by two researchers. We used constructivist grounded theory to perform our analysis.

Results: Residents self-described their GOC conversations in five steps: normalization of the conversation, introduction of expected clinical course, discussion of possible care plans, exploration of the patient's values and occasionally providing a recommendation. Residents described limited structured teaching around GOC conversations during the pandemic and instead relied on lived experience and role modeling to hone their skillset. Residents' ability to anticipate a patient's clinical course depended on their own medical and experiential knowledge as well as local outcome data. However, due to the uncertainty of clinical course and potential for rapid deterioration of patients with COVID-19, residents described an increased sense of urgency to have GOC conversations. Residents identified restrictive visitor policies and instruction to limit contact with potential or confirmed COVID positive patients as significant barriers that contributed to dehumanization. Residents felt that poorly completed GOC conversations and resultant care plans contributed to moral injury.

Conclusion: Residents holistically consider a patient's clinical presentation when having GOC conversations. The COVID-19 pandemic has constrained residents' ability to predict illness course and understand patient values, resulting in more urgent but potentially less effective conversations. GOC conversations were identified as one component of residents' COVID-19 experience that contributed to moral injury. Future research should examine how challenging GOC conversations and subsequent outcomes contribute to moral injury beyond the COVID-19 pandemic.

155. Why do residents create? Using a podcast project to explore resident motivation and engagement during creation of teaching presentations

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Introduction: Teaching presentations such as journal clubs, grand rounds or other educational formats are commonly mandated within internal medicine training programs. Despite this, there is a lack of data exploring the resident experience during the creation process. This qualitative study examines the creation experiences of residents who voluntarily developed a podcast for "The Intern at Work," a learner-generated podcast series, in comparison to mandated teaching presentations.

Methods: Purposive sampling was used to recruit residents who wrote a podcast for "The Intern at Work." Focus groups were completed using semi-structured interviews and were recorded, transcribed, and coded by two researchers. Using constructivist grounded theory, a schema explaining the key factors leading to learner motivation and engagement in teaching presentations was developed.

Results: Three focus groups were conducted. Residents (n=12) described three key factors of the podcast project that fostered learner motivation and engagement: (1) Intrinsic Motivator: Residents were excited to use a novel, creative outlet to teach near peers. (2) Self-Directed Process: The opportunity to collaborate with attending physicians, flexibility in topic selection and production timeline were cited as favourable aspects of the podcast process. (3) Tangible Benefit: Residents described appreciable self-gains, including strengthening their teaching skills, direct mentorship and a widely-disseminated product. Some factors were paralleled in the residents' experiences creating mandated teaching

presentations, but most were unique to this novel initiative.

Conclusion: Our framework of intrinsic motivator, self-directed process and tangible benefit represents key factors that increase learner motivation and engagement when creating a podcast for "The Intern at Work." Future research should be directed to see whether this framework applies to existing or new teaching presentations.

156. A process for reporting and addressing resident harassment and discrimination by patients and families
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Introduction: Despite the high prevalence of incidents of resident harassment by patients and families in the clinical environment, as few as 4% of incidents are formally reported. Barriers to reporting include lack of knowledge of whom to report to, concerns about confidentiality, and perceived lack of institutional support. Existing hospital policies to protect hospital employees are often ambiguous in their wording and application to residents. We developed a Harassment Working Group comprised of engaged faculty and trainees in the University of Toronto Department of Medicine (DoM) and representing various hospitals. We sought to develop harmonized user-friendly processes for reporting and addressing incidents of harassment of Internal Medicine residents by patients and their families.

Method: We undertook an iterative process to policy development. Steps included reviewing existing policies, consulting lawyers and human resource specialists, and achieving widespread stakeholder engagement in adapting all existing procedures into a streamlined DoM policy. The DoM policy contains a clear reporting structure and process involving the resident supervisor ("incident manager") and site manager ("trainee manager") and ensures accountability and confidentiality. The policy outlines resolution procedures focused on 1) resident support 2) resident safety and 3) filing an incident report through existing hospital mechanisms. Resident and faculty education has been implemented as we pilot the policy in the internal medicine inpatient ward. Interviews with end-users of the process is ongoing along with review of reports being made.

Conclusion: Through an iterative approach to policy development, we updated and instituted a new policy for reporting and addressing resident harassment from patients and families. This process has the potential to increase the ability of hospitals to appropriately identify and manage these harmful incidents and early results are encouraging. Future work will be done to adapt and implement the process for use across the institution.

157. Dual hashtags to improve the global radiation oncology journal club (#RadOnc #JC)
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Introduction: Online journal clubs (JCs) democratize collaborative conversations for learning and knowledge translation. Many Twitter JCs use a single distinct hashtag to filter. The "#RadOnc" JC started in 2014 with specified times, free article access, a blog, author participation, moderation, and asynchronous features for inclusivity. "#RadOnc" has grown into a thriving community for all radiation oncology, limiting its ability to filter JC content. We hypothesized that dual hashtags permit a focused discussion while accessible to the "#RadOnc" community.

Methods: Balancing key parameters we selected "#RadOnc #JC" for dual hashtags. Relevant tweets without dual hashtags were tagged and retweeted by moderators. Using JCs in January and February 2020 we analyzed "#RadOnc" and "#RadOnc #JC" with Symplur for metrics and demographics. We compared tweets/user with a t-test and reviewed the transcripts to determine if content was appropriately filtered.

Results: We identified 1853 "#RadOnc" tweets of which 1256 (68%) used "#RadOnc #JC". Dual hashtags were used by 122/558 (22%) users. JC participation spanned 13 countries and 15 states. Most were radiation oncologists (54/122, 44%), trainees (15/122, 12%), other physicians (9/122, 7%), patients (5/122, 4%), physicists (2/122, 2%), and therapists (1/122, 1%). Chats averaged 19 dual hashtag tweets/hr versus 9 other "#RadOnc" tweets/hr (p=0.036). Most dual hashtag content was related to the JC topic for January (542/542, 100%) and February (713/714, 99.8%).

Conclusion: Using dual hashtags to filter is feasible and enables an active global JC to occur within an active community for improved communication. Since, this enabled discussions on practice-changing COVID

Guidelines, new techniques, and best practices for research and mentorship that have been shared globally. This suggests a growing role for higher order learning at scale while building professional authenticity. Next steps include new methods for implementing, assessing, and improving online learning activities for online oncology learning systems and beyond.

158. Perceived advantages and challenges in virtualized education amongst psychiatric postgraduate learners

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Introduction: COVID restrictions to gathering sizes have dictated changes to medical education delivery. In-classroom teaching has been largely replaced with technological solutions. Both challenges and advantages have been identified in virtualized medical education. We seek to ascertain those identified by our learners in the postgraduate program, and poll them for potential solutions.

Methods: Residents in the postgraduate psychiatry program at the University of Toronto were polled via surveymonkey with the following questions:

•What are the TOP THREE challenges that you face as learners when receiving virtualized teaching sessions?

•What are some ways we can ameliorate/rectify these challenges?

•What are the TOP THREE advantages that you face as learners when receiving virtualized teaching sessions?

•What PGY year are you?

Results: Responses were codified by similar descriptive categories. Most frequently mentioned coded advantages, challenges and potential corrective factors were collated. Greater convenience ('reduced commute between sites') was the most widely cited advantage of virtualized education. Other advantages identified include flexibility ('able to multitask'), increased comfort, and technological advantages ('slides clearer; polling'). Fatigue ('Zoom exhaustion') was the most widely cited challenge of virtualized education. Other challenges identified include low engagement, isolation ('less social interaction with peers'), and technological problems.Reduced teaching duration was the most widely cited suggestion for improvement. Other suggestions identified include educator training, allow learner camera to be off, and facilitate asynchronous learning.

Conclusion: The convenience of accessing e-learning is appealing to learners,as it mitigates need for travel. A large number of residents reported 'Zoom fatigue'. The volume of information disseminated should not be different to in-class teaching. This may imply an inherent challenge that is present in the medium. Strategic scheduling of teaching, with more breaks, may improve learner satisfaction. Residents appear to dislike the relative isolation of post-COVID learning. This should be further investigated as it may have implications for learner mental health.

159. Replace, amplify, transform: How postgraduate fellows and attendings experience and use telehealth for educational activities

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Introduction: In response to the COVID-19 pandemic, health systems have exponentially increased telehealth visit utilization. The use of telehealth to deliver patient care has been explored extensively in the literature. In contrast, little is known about using telehealth as an educational tool in postgraduate medical education; accordingly, telehealth has been rapidly implementated without understanding how to optimize it for education, potentially impacting learning. We therefore sought to identify how pediatric postgraduate fellows and attending physicians used telehealth for educational activities to optimize trainees' educational experiences.

Methods: In May-June 2020, we emailed 41 postgraduate fellows and 17 attending physicians affiliated with 6 fellowship training programs at an urban U.S. academic children's hospital, asking them to participate in semi-structured interviews. We conducted data collection and analysis iteratively. Using thematic analysis, we created codes and constructed themes. We organized themes using the Replace-Amplify-Transform model, which proposes that technology can replace, amplify or transform in-person learning.

Results: 11 Fellows (27%) and 6 attendings (35%) participated. They reported initially using telehealth to replace in-person clinical learning. Skills that could be practiced in telehealth visits differed from in-person activities (e.g. feedback, physical examinations) felt rushed or awkward. Fellows and attendings adapted and used telehealth to amplify learning by increasing

autonomy and direct observation. Fellows and attendings also transformed learning, using telehealth to enhance autonomy and develop new skills (e.g. telehealth triage, pre-clinic learning huddles).

Conclusion: Telehealth is seldom a sufficient replacement for in-person clinical learning, but can be used to amplify and transform in-person learning.

160. Residents as moderators in emergency medicine clerkship case based asynchronous learning (CBAL) during Covid-19

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Introduction: The Covid-19 pandemic forced medical students from their core Emergency Medicine rotation in March 2020. An urgent need for virtual medical education emerged due to the uncertainty of when and how medical trainees could return to clinical environments. This innovation examined the role of residents in a virtual, case based asynchronous learning module.

Methods: We developed clinical cases based on sentinel ED presentations. These cases were released in an episodic manner three days a week on Slack for McMaster University medical students on their emergency medicine core rotation (n=23). The prompting questions guided students through clinical decision making from assessing the patient, ordering tests and starting treatments. Moderators (faculty (n=6) and residents(n=5)) responded in an asynchronous manner. Asynchronous participation was chosen as the clinicians still had active duties limiting faculty resources.

We conducted descriptive statistics including familiarity with slack using cohen's d, number of messages sent, number of characters in each message, number of times checking slack. We also conducted a social networking map to analyze online interactions.

Results: Students and faculty rapidly took up the Slack interface despite a lack of familiarity. Student and faculty engagement was high with a total of 2,548 messages sent during the online sessions were written by students (45%), faculty members (27%), clerkship administrators (20%), and residents (8%). We compared participants' Slack familiarity before (mean ± SD = 2.41 ± 1.84) and after (mean ± SD = 5.00 ± 1.07) the intervention and found significant increase in their familiarity with Slack

$(t(28)=8.74, p < 0.001)$ with a large effect of Cohen's d = 1.62.

Conclusion: This innovation is easy to deploy, scales rapidly, requires little prior technical knowledge and engages residents and students without impacting their clinical responsibilities. It is difficult to draw conclusions around learning and further analysis could elucidate the impact on resident-student mentorship relationships.

161. Slack as a virtual undergraduate dermatology community: A pilot

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Introduction: With a diagnostic and educational toolkit based heavily on face-to-face clinical examination, dermatology education has been disproportionately affected by the coronavirus pandemic. Online channel-based messaging apps such as Slack offer an opportunity to engage students and teachers in remote, multi-modal collaborative learning by reproducing a classroom environment in the virtual space. This project aimed to determine feasibility, acceptability and proof of concept for an online Slack community in dermatology education.

Methods: 64 undergraduate medical students from 27 universities across the United Kingdom participated in an online classroom for a six-week programme encompassing case-based discussions, seminars and journal clubs. The platform was facilitated by junior doctors (n=10) and patient educators (n=6). Students and faculty completed a post-course evaluation including Likert scales and free-text responses. Students additionally completed a pre- and post-intervention dermatology quiz. Mixed-methods analyses included quantitative analyses to explore data trends and qualitative phenomenographic analyses to assimilate key underlying themes.

Results: The evaluation was completed by 52 students (response rate = 81%). The majority (n=27) interacted with the platform as passive observers, with a small group of "super-users" (n=4). 96% of participants and 100% of

faculty described the overall quality of the course as excellent.

Conclusion: A community-based online classroom can act as an enjoyable, acceptable and collaborative means of delivering dermatology education to medical students. This initiative could be easily adapted to provide for postgraduate learners and those from other specialties. Such advances may provide vital safeguards against the reduction in face-to-face learning that has accompanied the pandemic.

162. This week on #orthotwitter: Putting the world in your classroom

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Introduction: Social media is becoming an increasingly popular medium for clinicians to discuss their work. Never before has such an assortment of clinical cases from such geographically and disciplinarily diverse backgrounds been so easily accessible, providing us with insights into conditions and practices seldom encountered in daily practice. The aim of "This week on #orthotwitter" was to harness clinical cases presented on Twitter, utilising them as a basis for case-based-discussions as part of regional teaching.

Methods: A number of prominent orthopaedic twitter accounts were identified. A weekly case was selected and distributed via the regional residents' Whatsapp group. Cases were selected based on educational value, quality of imaging, and clinical details provided. Questions were asked concerning diagnosis, classification, and management of the conditions. Residents were encouraged to engage with the cases in an informal, no-pressure environment. Over one term 13 cases were presented. Cases included rare but 'exam-classic' conditions such as Parsonage-Turner Syndrome, trauma cases seldom encountered locally such as gun-shot injuries, and more amusing anecdotes including the patella-pubic-percussion test.

Conclusions: Feedback was very positive. The vast majority found the teaching interesting (83%), relevant to exams (70%), enjoyable (73%) and a beneficial addition to regular teaching.

#Orthotwitter is an incredible resource for clinical cases that, when utilised correctly, provides an outstanding focus for case-based-discussions. Beyond this, engaging with #orthotwitter enables trainees to participate in high-level clinical discussions involving experts with a wealth of international experience and diverse range of practices beyond the scope of our own regular caseload and practice.

163. "Choose your own adventure" learning: Developing an asynchronous pediatric DKA curriculum using an online chatbot

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Introduction: Diabetic ketoacidosis (DKA) is a common condition that pediatric trainees must learn how to manage skillfully and safely. One of the challenges of teaching learners about DKA is that it is difficult to capture the practical nuances of management with traditional didactic teaching methods. Trainees may not have an opportunity to experience different cases or receive feedback on their decision-making before managing these patients independently as a senior resident. Web-based curricula may pose an opportunity to address learning gaps and allow residents to acquire knowledge and skills in an asynchronous, low resource environment. We developed a pediatric DKA curriculum using an online ChatBot. The purpose of our study is to evaluate its acceptability among pediatric trainees, and impact on resident's knowledge and self-rated confidence with DKA management.

Methods: This is a before and after study. The study was considered exempt from review by the Hamilton Integrated Research Ethics Board. This study includes pediatric residents and pediatric endocrine fellows training at McMaster Children's Hospital. Based on a general and targeted needs assessment, we developed our curriculum objectives. Our curriculum includes an initial didactic module and three case-based modules using the IBM Watson Assistant Chat Bot. This chatbot is accessible by phone or web browser and allows residents to engage with a virtual case, make management decisions and receive immediate feedback on the progress of their virtual patient. Assessment tools were adapted from previously published studies. Paired t tests will be used to compare outcomes pre- and post-intervention.

Conclusion: Our next steps are to review the curriculum with knowledge experts and pilot the curriculum with 15-20 first and second year pediatric and pediatric endocrine trainees. Based on results we plan to modify the

curriculum in an iterative process, and potentially adapt it to other core competencies in residency education.

164. A comprehensive audiovisual specimen grossing tool for pathology education

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Introduction: Specimen handling and grossing are critical steps for achieving accurate diagnosis. However, despite the existence of published specimen grossing manuals, the standardized operating procedures for grossing surgical specimens still varies among institutions and even among different sites of the same institution. Our goal is to develop a set of specimen grossing videos for commonly encountered surgical specimens to educate our residents and pathologist assistants, which will eventually benefit our patients.

Methods: Based on service volume and specimen complexity, we selected commonly encountered surgical specimens in each pathology subspecialty at McGill University Health Centre. For each specimen, the script for the video was edited by a staff pathologist and the grossing procedure was performed by an experienced resident. We utilized high-definition cameras, appropriate lighting and voice-over technology to make fine adjustments of the recorded film.

Results: We produced nine high-quality grossing videos covering subspecialties such as dermatology, gastrointestinal, hepatobiliary, and genitourinary systems. Each video was followed by a quiz style discussion on the differential diagnoses and the associated syndromes of the entities, such as renal cell carcinoma, gastric adenocarcinoma, germ cell tumors, colon carcinomas, hepatic tumors, and dermatological neoplasm. These videos were made available to all our residents and pathologist assistants within our multi-site department.

Conclusion: Based on the comprehensive outcome of this project, these videos have proven to be a great teaching tool and component of residency training in our institution. This was used to increase junior residents' exposure to specimens during the lockdown period in COVID-19 pandemic. Future videos will expand on other systems including gynecology, breast and endocrine systems with eventual goal of making 15-20 videos in total. We plan to make these videos available to other pathology institutions as well.

165. A framework for the delivery of postgraduate medical education during the COVID-19 pandemic: Principles from a Canadian internal medicine residency program

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Introduction: The delivery of high-quality postgraduate medical education was challenged in the early phases of the COVID-19 pandemic due to changes in the clinical environment, social distancing requirements and evolving psychological and educational needs of our trainees providing front-line care. Yet, there are few established frameworks to address this. As such, we sought to develop a framework to adapt the delivery of postgraduate medical education in a time of crisis.

Methods: As Chief Medical Residents in the University of Toronto Internal Medicine Program, we worked alongside program leadership to iteratively adapt curricula and create new educational and wellness initiatives for over 200 residents. Lessons learned from the Severe Acute Respiratory Syndrome epidemic in 2003 also shaped our approach. Adaptations included creating a virtual centralized curriculum using local experts, facilitating dialogic reflection rounds for near-peer support, advocating for system-level changes, and leading virtual and in-person simulation. Based on our experiences, we created a conceptual framework of five core principles that supported the delivery and adaptation of postgraduate medical education during the COVID-19 pandemic. These principles are: 1) Centralize program-wide education for efficient virtual delivery 2) Provide pandemic-relevant teaching to supplement existing curricula 3) Provide virtual and in-person simulation to support physical and psychological safety 4) Ensure curricula address wellness concerns and create a community of support, and 5) Use innovative methods to teach and assess clinical skills.

Conclusion: The framework and adapted curriculum responded to the needs of trainees to support residency education during this time of uncertainty and change. It served to enhance knowledge, enable collaborative learning despite social distancing measures, and to create a near-peer and faculty-engaged community of support. These principles will be a resource for future crises that impact the delivery of postgraduate medical education and may have implications for future educational strategies for years to come.

166. A resident-led webinar: A new initiative to aid communication and support during the COVID-19 pandemic

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Introduction: Rapid and widespread changes in healthcare provision due to the COVID-19 pandemic brought significant barriers and disruption to the ongoing training of doctors and dentists. This uncertainty created concern for residents on their ability to achieve training competencies in order to successfully progress; and for the wellbeing of themselves, their families and colleagues. In response a regional resident-led webinar has been developed in Yorkshire and the Humber to facilitate a dialogue between the regional postgraduate training body (HEEYH) and its residents.

Methods: The webinar provided a platform for residents to take leadership roles and to disseminate information on a variety of key trainee issues. A particular focus was on promotion and support of resident wellbeing. Residents were invited to submit anonymised questions prior to each webinar and were surveyed to obtain feedback at key points in the progression of the pandemic. Engaging trainees in this manner allowed the agenda to be iteratively refined in response to trainee need. The webinar created a two-way dialogue between the residents and HEEYH, which allowed salient issues to be identified, escalated and acted upon in a timely manner. The approach provides an inclusive and compassionate face to HEEYH during this uncertain time and ongoing survey evaluation may aid with further understanding of the trainee perspective of the usefulness of this tool.

Conclusion: Early feedback was positive of this mechanism for communicating training changes. Resident-led webinars may provide a useful, comprehensive and easy access method for delivery of up-to-date and accurate information to residents. They also facilitate an approachable route for dialogue between trainees and those responsible for training. The fluid nature of this model may be adaptable in a variety of contexts in postgraduate medical training.

167. Academic continuity and clinical training on residency education amid the pandemic

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Introduction: The pandemic has posed many challenges for the academic continuity and clinical training for medical residents. The social responsibility of universities and the professionalism of physicians inspired residents on taking the leadership in the front line of COVID-19. The objective of this study was to design a comprehensive strategy to transform the Multicentric Program of postgraduate medical education in northern Mexico to continue clinical training amid the pandemic.

Methods: The participants in this study were 290 residents in 17 programs at six training centers. The results of the designed strategy focus on three specific activities: 1) offering formal curricular elements through online platforms and mobile devices, all programs achieved academic continuity by the use of digital platforms and simulation exercises; 2) adaptative clinical training for the residents, including those participating directly in SARS-Cov2 patient care, and 3) specific training on COVID-19 on patient safety protocols and providing residents personal protection equipment (PPE, 6520 N95 masks and 443 face shields), performing periodical PCR testing (1119 tests) and COVID-19 vaccination strategy (272 residents). Residents were offered mentoring and support services, such as counseling and mental health services, as strategies for self-care, well-being, mental health care, and burnout syndrome prevention. Among the virtual strategies we implemented an online website and an electronic form in which, from April 2020 to January 2021, 148 residents registered their wellbeing and mentoring follow-up.

Conclusion: The responsibility and responsiveness of educational institutions to address the challenges to continue the clinical training during the health crisis will significantly affect the educational results and preparedness of the next generation of health professionals. The commitment of universities should be beyond academic continuity or sharing content online, it should address self-care and wellbeing strategies that could provide graduates with the skills that are essential to thrive in the current pandemic.

168. Adaptations to neurology medical education in preparation for CaRMS during the COVID-19 pandemic

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Introduction: With physical distancing recommendations due to COVID-19 enforced since March 2020, the 2020-2021 CaRMS application cycle will be a unique experience for final-year Canadian medical students. In this study, we aimed to describe the breadth of adaptations (virtual and non-virtual modalities) made by adult and pediatric neurology residency programs across Canada for the purpose of CaRMS, in response to the COVID-19 pandemic. Our secondary objectives were to 1) evaluate the usefulness of such modalities for medical students applying to Canadian neurology residency programs, and 2) assess the perceived usefulness of such modalities from a residency program perspective. This may help to inform how applicant assessment by residency programs and residency program selection by medical students can be further supported and optimized in the future.

Methods: We will administer a nationwide survey to stakeholders participating in the CaRMS selection process at all Canadian neurology residency programs (i.e. program directors and chief residents), along with a concomitant survey distributed to all Canadian medical students who applied to at least 1 neurology residency program in the 2020-2021 CaRMS application cycle.

Conclusion: To be determined pending survey data collection and analysis after the CaRMS interview period. The surveys will be deployed to every Canadian neurology residency program and every accredited Canadian medical school after the 2020-2021 CaRMS interview period is complete (March 8 – 28, 2021). Information collected will fall under three general themes: demographic information, pre-CaRMS period adaptations, and CaRMS interview period adaptations. The utility of such adaptations will be measured using a Likert scale. Comparisons will be made after statistical analysis using non-parametric methods. We plan to have data collection and analysis completed prior to October 2021.

169. An international leadership workshop for chief residents in times of the pandemic

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Introduction: A leadership workshop was held for chief residents of the Multicenter Program of Medical Residencies of the School of Medicine of the Tecnológico de Monterrey in international collaboration with the Royal College of Physicians and Surgeons of Canada.

Methods: In 2020 the workshop was designed and implemented integrating the recommendations of the feedback from 2 previous Workshops and the results of a pre-workshop survey applied to the chief residents. 22 chief residents and co-chiefs from 17 programs selected as the topics of greatest interest in the pre-workshop survey: effective communication skills and feedback (81.82%, n = 18), Burnout prevention 81.82%, resilience and personal health 77.27% (n = 17) and conflict resolution 77.27%.

The workshop was held in February 2020 in face-to-face mode, with 2 international and 3 national teachers as facilitators, attended by chief residents and co-chiefs of 17 programs, with 3 days of sessions and 11 topics: leadership, functions as head of residents, group management, negotiation, feedback, action plan, leaders for change, self-management, well-being, mentoring and support services.

The methodology of the workshop was plenary presentation, individual work, group discussion and a simulation session of cases of peer interviews with simulated residents to identify problems and refer to support services.

As a final product of the Workshop, each chief and co-chief of specialty carried out their personal and professional well-being project, as well as the annual work plan, specifying the area of impact, activities and deadlines for follow-up. Follow-up meetings with chief residents and co-chiefs were held virtually due to the environment of the pandemic through Zoom platform and face-to-face when possible with the program directors, as well as permanent communication by instant messaging, phone and video calls.

Conclusion: Chief Residents are essential for the leadership, mentoring, accompaniment and referral of their fellow residents to support services.

170. Beyond the examination score: Raising the bar for residency admission in Vietnam

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Introduction: Residency training is the most competitive pathway for Vietnamese medical graduates to pursue independent practice in a clinical specialty. Most residency programs in Vietnam rely on a single assessment tool for selection of applicants: a residency entrance examination that is institution-specific and neither standardized nor externally validated. In 2020, VinUniversity launched new competency-based residency training programs. In an effort to recruit the best-suited candidates, an innovative and multi-dimensional residency admission process was developed.

Methods: Through a strategic collaboration between VinUniversity and the University of Pennsylvania, the Graduate Medical Education (GME) Admissions Guideline was designed with 3 consecutive steps: (1) web-based application form, (2) standardized residency entrance exam, and (3) interviews with program faculty. Compared to existing programs in Vietnam, the web-based application form included several unique components such as short-answer essays and a formal letter of recommendation. For the residency entrance exam, VinUniversity chose the International Foundation of Medicine Clinical Sciences Exam (IFOM® CSE) developed by the National Board of Medical Examiners (NBME). VinUniversity sponsored the translation of this exam into Vietnamese and administered the IFOM® CSE for the first time in Vietnam in July 2020. Candidates who progressed to the next phase were scheduled for interviews with 3 faculty members. This allowed for further evaluation of key attributes such as professionalism, organizational skills, and English fluency. The final rank list for each residency program was drafted using a weighted approach incorporating key components from the 3 steps detailed above.

Conclusion: The GME Admissions Guideline at VinUniversity is a first of its kind in Vietnam and was developed with the aim of recruiting the best suited candidates for competency-based residency programs. In the future, this rubric can be studied and compared to resident performance and outcomes which will better inform procedures and strategy for residency admission.

171. Bridging the gap: A core clinical skills course to prepare residents for Competency-based clinical training

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Introduction: The VinUniversity Graduate Medical Education (GME) programs were established with curricula based on international standards of Competency-Based Medical Education (CBME). Vietnam is in early stages of medical education reform and currently lacks a national accreditation standard for medical school curricula and graduate medical education programs. This presented a unique challenge as medical school graduates from universities throughout Vietnam were recruited to join newly-designed residency training programs at VinUniversity. The VinUniversity GME Programs aimed to exceed the standard of existing programs in Vietnam through incorporation of robust assessment and evaluation based on milestones and competency domains. In order to bridge gaps in competency for first-year residents and to promote resident success in clinical rotations, a comprehensive 6-month Core Clinical Skills Course was designed.

Methods: Through a strategic alliance between VinUniversity and University of Pennsylvania, the Core Clinical Skills Course was developed for first-year residents as a pre-requisite for clinical rotations in Internal Medicine, Pediatrics, and General Surgery. The main objectives were to harmonize background medical knowledge, instill an evidence-based approach to clinical care, and to utilize simulation training to teach a variety of common skills and procedures.

Course topics were organized in 4 major domains. (1) The Practice of Medicine Module, (2) The Medical Knowledge Module, (3) The Simulation Training Module and (4) The Longitudinal Clinical Preceptorship.

The course incorporated multiple teaching modalities with an emphasis on active learning methods. These included real-time learner response systems, group projects, clinical case discussions, simulation training, immersion in the clinical learning environment, and community service learning.

Conclusion: The Core Clinical Skills Course is a first of its kind in Vietnam designed for an inter-disciplinary group of first-year residents. The course topics were high-yield, relevant, trainee-oriented, and served as a valuable foundational experience for residents prior to starting a CBME training program.

172. Can a pathology virtual/augmented reality library improve gross examination and dissection skills of anatomical pathology residents?

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Introduction: Anatomical examination and dissection ("grossing") of surgical specimens are essential for microscopic diagnosis. Pathology residents learn these skills via traditional in-person training. COVID-19 restrictions severely limited this experience and innovative ways to continue are lacking. Our program created instructional grossing videos as a solution, but residents felt that these cannot replicate the hands-on learning gained from three-dimensional (3D) specimens.

Methods: We started a virtual/augmented reality (VR/AR) library using common pathology specimens with normal and diseased anatomy counterparts: i) femoral head (osteoarthritis), ii) uterus and ovaries (ovarian cancer), iii) thyroid (multinodular goiter), iv) prostate (cancer), and v) breast tissue (cancer). These specimens were 3D-scanned via photogrammetry and rendered in an immersive virtual environment, where they can be manipulated (side-by-side comparisons, rotation, and scaling). The specimens are also augmented with additional educational material. The library can be accessed through immersive (VR goggles) and web-based interface. The second part of this pilot study will assess the VR/AR library as an intervention to supplement traditional learning at a single pathology department over a 6-month period. For the first 2 weeks of a rotation, residents will gross various specimens by using traditional educational material and for the latter 2 weeks, their learning will be supplemented with the library. Impact will be assessed using three metrics before and after the intervention: a feedback survey, a gross anatomy examination, and quality of dissections.

Conclusion: Our study aims to assess the educational value of a pathology VR/AR library. We are limited by the number of specimens that can be 3D-scanned because photogrammetry is laborious and time-consuming, and this limitation may blunt the effect in our study. Our goal is to grow a community with other training programs where we can teach all learners interested in anatomy and pathology, in an immersive, interactive, and safe environment.

173. Capturing the fundamentals of quality improvement and patient safety: A customizable curriculum for all postgraduate specialties

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Introduction: Principles of quality improvement and patient safety (QIPS) are increasingly recognized as core competencies for all physicians. New accreditation standards from the Royal College of Physicians and Surgeons of Canada highlight the need for training programs across Canada to ensure they deliver high quality QIPS curriculum to all trainees, helping to better prepare residents for safe practice and participation in health care systems improvement.

Even with a multitude of resources available for University of British Columbia postgraduate medical education programs to build their own curriculums, capacity and expertise on QIPS remains unevenly distributed across training programs. In response, we developed a foundational curriculum that can be tailored to each specialty program's needs with the goal of introducing QIPS topics in a meaningful way.

Methods: A needs assessment survey of 63 postgraduate program directors, including representation from family medicine, resulted in a 43% response rate and informed curricular design and prioritization. The customizable curriculum, developed with the BC Patient Safety & Quality Council, includes an asynchronous online module, synchronous workshops, and a QI project-guide for resident self-study. We involved academic leadership, program directors, faculty, and residents during development and evaluation.

Conclusion: Takeaways from 20 residents during the pilot reflected meaningful participation with the content. Faculty feedback noted the quality and convenience of the teaching resources. By providing a centralized curriculum developed with QIPS experts, programs can focus on customizing their teaching with impactful narrative anecdotes from their own QIPS experiences instead of searching and consolidating external QIPS resources. The

curriculum intentionally empowers faculty with knowledge and facilitation support to teach QIPS.

We aim to collect further data on the impact the curriculum has made on increasing capacity for programs to teach QIPS, and for residents to make a meaningful connection to QIPS in their residency.

174. Collaboration, communication, and counselling: Incorporating allied health professionals into curriculum development in a medical genetics residency training program

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Introduction: Team-based care is known to be integral to improving patient outcomes and safety. Many studies outline the importance of interprofessional education in training collaborative care providers, but there are few formalized curricula that incorporate allied health professionals in longitudinal residency training. There are no such curricula in Medical Genetics programs in Canada, despite there being extensive overlap between objectives of training for Genetics residents and the scope of practise of Genetic Counsellors (GCs). In Ottawa, residents work closely with GCs but not all trainees have equal experiences. As such, our program sought to augment resident education and develop new evaluation methods.

Results: Pre-existing GC-led educational opportunities were identified. Information was solicited about similar opportunities across Canada. Residents, Geneticists, and GCs helped create level-of-training-based expectations. We designed a novel GC-led longitudinal curriculum to improve resident counselling skills, foster positive professional relationships between Geneticists and GCs via a mentorship program, and introduced novel evaluation methods transferable to a CBD model of training. The curriculum aligns with the six interprofessional competencies developed by the Canadian Interprofessional Health Collaborative and with the CANMeds competencies. In July 2019, it was implemented with the current resident cohort. Feedback to date from educators and trainees is overwhelmingly positive and we have already seen the benefits of a more collaborative environment.

Conclusion: As CBD is implemented, contributions of allied health professionals as resident educators will be essential. This project has shown that it is appropriate and feasible to use our colleagues' skills to maximize resident education and train collaborative care providers.

175. Competency-based medical education: Towards the development of a standardized musculoskeletal radiology testing module

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Introduction: The Radiology residency program at Queen's University is currently the only Radiology program to have implemented CBME (Competency Based Medical Education), the new medical curriculum introduced by the Royal College. CBME is organized around four stages of training; at each stage, residents are evaluated on entrustable professional activities (EPAs), which are units of work/responsibilities that physicians entrust to a trainee to perform independently. CBME necessitates robust and multifaceted EPAs to determine competence and progression through the four stages of training. The purpose of this study is to develop a standardized competency based testing module to act as an EPA for Radiology residents during their CBME training in Musculoskeletal (MSK) Radiology.

Methods: A one year audit of all MSK imaging requests throughout Kingston Health Sciences Centre will be performed to determine which diagnoses encompass greater than 90% of all requests. A literature search will be used to establish which MSK diagnoses a Radiology resident should be familiar with during their residency, which will then be distributed amongst four folders (one for each MSK rotation of residency) by a focus group involving three radiologists. The top 10 diagnoses from the audit that are in folder one will be used for the pilot trial, where each Radiology resident in the program will report the 10 cases using a structured template.

Conclusion: The results of this pilot trial will demonstrate the appropriateness of the cases selected and its ability to assess a resident's competence after completing one MSK rotation. This will allow for objective assessment of a resident's competence and their ability to progress to the next stage of training. Eventually, this module may act as a standard EPA in Radiology programs nationwide and used as a template for the development of competency based assessment modules in Orthopedic Surgery and Emergency training programs.

176. Design sprint: An approach to engaging your team in QI

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University of British Columbia, Vancouver, BC

Introduction: How do we elicit our community's thoughts and ideas about the design of medical education? How has the pandemic shifted our learning experience for teachers, residents, and patients? How do we walk backwards into the future of delivering care? Our versatility, adaptation, and ability to fail fast and forward have emerged as important traits in this quickly changing landscape. In this session, we will address these questions and experiment through the design thinking paradigm.

Methods: Design thinking, a method of co-evolution of problem and solution, has gained traction in healthcare and medical education as a way to promote a greater understanding of users' experience and to help unpack the challenges and opportunities that we are confronting in our educational journey and delivery of care. Teams are guided through five highly collaborative phases of user empathy, defining the problem, ideation, prototyping, and testing. The ultimate goal is to create a product that can then be implemented by team members. We will provide examples of how design thinking has been used within UBC's Department of Family Practice to rethink our curriculum and develop meaningful relationships with our surrounding healthcare community.

Conclusion: Design thinking provided the opportunity for our faculty, administration, and students to voice their concerns and more importantly create solutions that address their environment's contextual and temporal constraints and affordances. Participants of our design thinking sessions described the experience as highly collaborative and thought-provoking. Furthermore, during COVID-19 pandemic, this paradigm has allowed us to continue to find new ways to bridge our divide and connect our UBC family.

177. Divorcing from block rotations: How a Canadian hematology residency training program and a longitudinal integrated curriculum tied the knot.

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Introduction: Whether traditional block rotation models achieve the desired educational outcomes, promote professional growth and reflect independent practice has come into question in the Competency Based Medical Education (CBME) era. Longitudinal integrated curricula are increasingly implemented in clerkship but remain rare in postgraduate medical education. Evidence for such curricula in residency suggests more meaningful learning, feedback, engagement, trust-building relationships and professional development. Our purpose is to design, implement and evaluate an innovative longitudinal integrated curriculum for the University of Ottawa hematology residency training program that integrates the foundational principles of CBME.

Methods: Using Thomas and Kern's 6-step approach to curriculum development, we have designed a longitudinal integrated curriculum for our hematology program. The curriculum will be implemented in July 2022 as we transition to a Competence By Design (CBD) framework. We will perform formative Rapid Evaluation Cycle evaluations at 3 and 9 months with a focus on improving performance of our program. At the 2-year mark, a summative evaluation will be planned to judge the program's performance and success. A logic model was constructed to provide shared insight of how our program is intended to be delivered, evaluated and disseminated.

Conclusion: Our needs assessment flagged fragmentation in training as a major concern. Practising physicians work by integrating a combination of clinical, laboratory, academic, and administrative duties that they learn to juggle and balance along with their personal lives. Ideally, residents should be able to experience and learn to adapt and thrive in a curriculum and work environment that represent real-world practice. Our longitudinal integrated curriculum aims to minimize fragmentation in educational experiences and truly embrace CBME's principles. Following the presentation of our curriculum to members of the Division of Hematology, initial feedback was positive. We believe that such models are transferable to other specialties.

178. Enhancing CBME knowledge and engagement of program administrators through a targeted workshop series

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Introduction: Program Administrators (PAs) are crucial for the successful implementation of CBME. To date, there is no literature addressing PA knowledge and engagement in

CBME. In our department few PAs report comfort with CBME. With the upcoming transition of many pediatric programs, there is urgency for PAs to gain comfort with the basics.

Methods: In January 2020 we disseminated a survey to all PAs in the department. On average they reported their comfort with CBME at 2.57 on a 5-point Likert scale. They noted that sessions offered within or outside of the university are too advanced or not specific to their role. With these results, we created a workshop series specific to the PA role aimed at improving knowledge and enhancing engagement. Sessions are created and presented by PAs making them highly specific. Topics include: introduction to CBME, competence committee, curriculum mapping, academic coaching, assessment and EPAs, education plans, and resident supports. Thus far, we delivered 3 highly attended workshops which received positive evaluations. Through sharing of experiences and resources at these sessions, a PA community of practice emerged. Archived recordings and practical resources are easily accessible for future reference and for PAs who were unable to attend. We plan to re-send the original survey at the end of the series in order to assess impact on knowledge and engagement. With the feedback we will modify the workshops to meet evolving needs. As PAs gain knowledge and expertise we will actively engage them in creating additional series for PAs of differing levels of CBME experience. With this "train the trainer" approach we will ensure sustainability of PA development while strengthening community building.

Conclusion: A PA specific CBME workshop series created and delivered by PAs is a novel approach for enhancing PA knowledge and engagement.

179. Enhancing physician handover effectiveness in the inpatient rehabilitation units at Hamilton Health Sciences: A local quality improvement initiative

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Introduction: Effective physician handover is critical for ensuring patient safety, and is part of the CanMEDS Framework for residency training. At Hamilton Health Sciences, there is currently a lack of standardized handover practices for the inpatient rehabilitation units, making handover inconsistent in its format and level of detail. Multiple physicians at different sites routinely transfer care for over 100 inpatients to the after-hours on-call physician, making conventional handover models challenging. Currently, there are no known guidelines for handover best practices in inpatient rehabilitation care.

Methods: Ongoing data collection through use of an online form shows an average of two incidents per month identified by the on-call residents where there was a patient safety concern (17%), excessive time spent gathering information (58%), or both (25%) due to ineffective handover. Semi-structured interviews and mixed-methods surveys of faculty and residents are being used to capture the breadth of current handover practices, perceived barriers to effective handover, and ideas for improvement. Initial root cause analysis identified barriers including lack of specific policies, lack of formal handover training, and failure to use standardized communication tools. Proposed change interventions include introducing institutional handover policies, delivering a formal handover curriculum in the residency program, and implementing a standardized handover format based on the Royal College Handover Toolkit.

Conclusion: Results from this initiative may inform the development of recommendations for improving handover practices in inpatient rehabilitation units at other residency programs. Future directions include connecting with other inpatient rehabilitation units to understand their practices and share local successes.

180. Establishing a shared mental model during COVID-19 using simulation and real-time interdisciplinary knowledge translation

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Introduction: During the COVID-19 pandemic there has been a gap between protocol development and dissemination to the healthcare provider (HCP) team. Simulation can address this gap via education, team-based training, and fostering a shared mental model (SMM). SMMs in the emergency department (ED) enable members of high-performing teams to collaborate and predict their teammates' resource needs and next steps, and must be prioritized and developed in residency education. The key innovation was the combination of in-situ simulation with parallel, real-time knowledge translation (KT) to an interdisciplinary team via infographics (IGs). The objective was to design IGs to

facilitate the rapid establishment of an SMM amongst interdisciplinary resuscitation teams in the ED.

Methods: Five simulation sessions were performed at an academic, tertiary care centre in Toronto, Ontario. In parallel with these sessions, two IGs were created, updated iteratively, and disseminated to the interdisciplinary ED team over 6 weeks from January to March 2020. IGs evolved according to real-time feedback from the simulation sessions, institutional COVID-19 guidelines, and the scientific understanding of COVID-19.

Results: Two IGs were iteratively developed and designed for use during resuscitations. These IGs aided in establishing an SMM by serving as a comprehensive point-of-care reference of key resuscitative principles, treatment considerations, and a systematic approach to collaborative teamwork. The IGs expanded the reach of the COVID-19 in-situ simulation findings well beyond the original simulation participants through broad distribution.

Conclusion: The combination of interdisciplinary in-situ simulation with parallel KT enabled the rapid establishment of an SMM within the institution's ED. Implementation of IGs subjectively augmented coordination and collaboration within ED teams, and improved patient care, and this innovation can be adapted across institutions. Although qualitative feedback has been positive, future research will involve objectively evaluating the IGs to inform future forms of KT.

181. Evaluating the impact of interim testing in radiology
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Introduction: Medical curricula are often dense and require the integration of multiple related concepts. This is likely to promote proactive interference (PI) because it is difficult to learn new content that is highly similar to other recently learned content. One strategy to mitigate PI involves dispersing testing throughout learning—i.e., interim testing—but this strategy has typically been studied using artificial stimuli. Here we studied interim testing in the more realistic context of interpreting chest radiographs.

Methods: Medical students completed an online module on interpretation of chest radiographs. The first block explained three diagnoses. Afterward, the 'interim test' group received new images and categorized them (with feedback) based on the three diagnoses they had just learned, whereas the control 'additional study' group received the same images in a worked-example fashion such that feedback was always present. Next, the second block explained three new diagnoses. All participants then took a final test in which they categorized new images based on the diagnoses they had just learned in the second block. For this final test, we were chiefly interested in whether the interim test group would outperform the additional study group, which would suggest interim testing helped overcome PI.

Conclusion: Testing is said to enhance learning, but the underlying theory remains obscure in applied settings. The present work examines testing more specifically as a way to overcome PI. A limitation is that only one content domain (chest radiographs) was examined. In future work we hope to examine other content domains and manipulate content similarly across blocks.

182. This abstract has been withdrawn.

183. From needs assessment to action: Design of the mentorship circles program to support early career faculty and mentor development
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McMaster University, Hamilton, ON

Introduction: Mentorship is recognized as essential for career development, but formal program designs may be difficult to implement or variably helpful. New approaches that account for impediments such as insufficient time and mentor development are needed to maximize effectiveness and sustainability. Accordingly, we used a systematic process to identify the needs of both mentees and mentors to guide the establishment of a departmental mentorship program.

Methods: All 139 faculty members of the Department of Pediatrics at McMaster University were invited to complete a needs assessment survey (57% response rate). Survey development was informed by mentorship literature and a diverse committee that included individuals with experience in leadership, administration, mentorship, research, education, and a broad range of career styles and durations. The survey aimed to elicit faculty perspectives on enablers, challenges, and goals of participating in mentorship. Based on survey results and stakeholder consultation, a mentorship circle (MC) design

was created. Each MC was facilitated by 2-3 faculty mentors that were matched based on complementary areas of expertise and differing career stages. Mentees were then asked to select a MC that aligned with their needs and preferences. MCs were provided with guiding principles, but each circle autonomously established discussion topics and schedules. Mentor development included: workshops and on-line modules, MC guide, peer observation, on-line community of practice and quarterly workshops guided by mentors' needs. A program evaluation assessing perceived benefits of both mentors and mentees at 6 and 12 months by survey and interviews respectively is planned.

Conclusion: Our MC program, built purposefully on patterns of needs of both mentees and mentors alike aims to provide an innovative, efficient and effective strategy to foster professional development of early career faculty while supporting mentors in building their competency, engagement, and joy in mentorship.

184. This abstract has been withdrawn.

185. Improving civility in the medical training environment: The workplace charter approach
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Introduction: Multiple international surveys have demonstrated that bullying and other acts of incivility are common experiences for medical residents. Such negative workplace behaviours can create a toxic culture and a greater risk of adverse events. However, there is an absence of evidence-based methods to reduce and resolve such issues in the clinical training environment. The workplace training charter is a multi-stage intervention aiming to address this by improvement of communication within a training department.

Methods: Two departments in different hospitals in Yorkshire and the Humber were approached for the study: one surgical and one medical. All residents and those acting in educator roles within the teams were invited to participate. The intervention was carried out with each team separately and consisted of a baseline questionnaire, multi-stage focus groups to design the charter and a follow-up questionnaire. The primary outcome measure was to identify from the questionnaires

the acceptability of this process and perceived benefit from the perspective of residents and their educators.

Conclusion: The workplace training charter approach has the potential to facilitate an open dialogue between residents and those who support their clinical training. Whilst a charter has been used by some hospitals and institutions to top-down communicate their values, this does not actively engage with the team to create a shared vision. In contrast, this workplace training charter takes a collaborative approach and focuses on the charter development process being as vital as the document itself in changing culture. This model has been purposely tested and designed for use in different specialties to ensure it is adaptable and gives shared ownership to those involved.

186. In situ thoracic surgery crisis simulation enhances postgraduate trainees communication skills
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Introduction: Interprofessional communication and teamwork abilities are essential nontechnical skills that need to be taught and assessed objectively during surgical training. Particularly, crises in Thoracic Surgery can lead to dramatic patient outcomes. Simulation curricula can be developed to provide rigorous and systematic education for thoracic surgery trainees.

Methods: Mandatory in situ simulations in our thoracic surgery operating room are performed 3 to 4 times per year at our training program. Senior surgical residents, anesthesia residents and nurses are involved. The three scenarios comprise crises in Thoracic Surgery (massive hemoptysis, acute airway obstruction). A modified Laerdal airway mannequin (Shavanger, Norway) was used. Simulations are video recorded and scored with the use of Non-Technical Skills for Surgeons (NOTSS) and TeamSTEPPS2. Feedback from participants was captured with the Method Material Member Overall (MMMO) questionnaire. Proper use of Personal Protective Equipment (PPE) was assessed by video-recording and scored by 2 independent surgeons, evaluating adequate PPE donning and doffing. Debriefing is performed after each scenario.

Conclusion: Inexpensive in situ intraoperative crisis simulation models for thoracic surgical emergencies can be created and should be implemented in Thoracic Surgery residency training programs. Our three scenarios

have high fidelity and received good engagement from trainees and staff. This curriculum has the potential to improve patient outcomes by identifying latent patient safety threats locally and to enhance both Communicator and Medical Expert roles of the CanMEDS framework. Significant gaps in PPE adherence were demonstrated. Simulation training successfully increased confidence in PPE use and received positive feedback.

187. Increasing paediatric resident involvement in morbidity and mortality (M&M) rounds

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Introduction: Over several years, UofT Paediatric residents have identified a lack of involvement in M&M rounds as a curricular gap (including discussions about medical errors, patient safety, and system improvement, and involving residents in discussions when part of the case). It is an important competency required by accreditation standards, with relevant Royal College competencies, Entrustable Professional Activities, milestones, and training experiences. This initiative aims to increase UofT Paediatric resident involvement in M&M rounds.

Methods: Using QI methodology, including PDSA (Plan-Do-Study-Act) cycles, a working group has been tackling this issue by engaging relevant stakeholders. The issue was brought to the UofT Paediatrics RPC Committee, who expressed full support. A survey soliciting contextual information was sent to core Paediatrics residents. Following result analysis, the team reached out to subspecialty Chief residents/fellows to elucidate possible barriers limiting resident involvement. This prompted engagement of the SickKids' M&M Leads, as our team presented the background and work thus far at their annual review.

Conclusion: The resident survey demonstrated that only 20% of respondents perceived adequate opportunities for M&M rounds exposure, and 53% involved in a case were asked to participate. M&M rounds vary between divisions, including frequency, invitations, platforms, and presenter support. It is clear that a single strategy will be ineffective. Recently, there has been some anecdotal improvement in resident involvement in M&M rounds from residents and faculty. Next steps include recruiting resident leads to work with five initial divisions – Oncology, Emergency Medicine, Cardiology, Infectious Disease, and Gastroenterology. The team will work with rotation leadership, M&M Leads, and Chief residents/fellows to identify specific barriers and design division specific processes to enhance resident involvement. The resident survey will be repeated, and the team will continue working with stakeholders to further improve Paediatric resident involvement in M&M rounds.

188. This abstract has been withdrawn.

189. Just in time teaching (JiTT) infographics teaching tools: App development to support technologically assisted faculty development

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Introduction: Teaching in the clinical environment mostly originates from trainees or clinicians who are not formally trained or naturally skilled in teaching. Clearly defined and geographically accessible structured postgraduate trainee/faculty teaching resources are very limited. Access of evidence-based content is limited with teaching time constraints, delivery of relevant content at a point in time, and lack of knowledge where to find the resources in the moment.

Methods: We will describe an innovation that applies to faculty and trainee development as a clinician educator. An electronic infographic teaching program utilizing technology-assisted modalities prepares trainees and faculty on how to teach and foster learning in busy clinical environments. The innovation will describe transition from an automated email software distribution platform to a phone App that re-sizes evidence-based infographics for distribution on mobile devices to trainee/clinician teachers to assure true 'just in time" accessibly, not bound by any geographic, institutional or financial barriers across the world.

Results: We will share the Infographics as designed for clinical education. We will share all the intricate steps to create and maintain an innovative teaching application available to the public via a phone App. We will share preliminary implementation data, based on an internal satisfaction survey and analytics on usage and geographic distribution. All challenges will be shared as well as opportunities for partnership and collaboration. Future enhancement ideas will be explored.

Conclusion: JiTTs are effective resource to deliver timely relevant information to trainee and faculty. Based on lessons learned in App development, delivery and feedback from end users, future iterations will be shared to enhance content delivered and accessed. Faculty developers must expand their creativity for delivery of content and develop systems using technology-assisted modalities. Faculty and trainees must partner to reinforce the use of JiTTs in their clinical learning environment.

190. Leadership in education: Engaging residents in the process of accreditation

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Introduction: Accreditation is a peer-reviewed quality improvement process that plays a fundamental role in promoting and maintaining the ongoing high-quality of post-graduate medical education in Canada. Set forth by the Royal College of Physicians and Surgeons of Canada and the College of Family Physicians of Canada, these accreditation standards guide residency training programs across the country.

Residents are an integral part of the accreditation process in Canada. Residents participate in the process of accreditation both as trainees within a program undergoing review, and as resident surveyors of other programs. Residents' perspectives of the program organization, the educational program and training environment, available resources and personnel provide essential information on the status of the program.

Despite their essential part in accreditation, residents are given little training on their roles and responsibilities, both as program trainees and as resident surveyors. This was identified, by residents, as an educational need through the Resident Doctors of Canada accreditation project team.

Methods: To meet this curricular gap, Resident Doctors of Canada has developed a series of interactive and engaging resources to support residents in contributing to the accreditation process. These resources foreground the leadership skills of collaborating with others, engaging with other learners in peer-to-peer mentorship and contributing towards the ongoing process of promoting and maintaining high-quality of post-graduate medical education.

Conclusion: These resources will help residents to participate effectively in the review process. For trainees, this 'crash course' will help them develop the understanding and skills needed to participate fully and meaningfully in the review process. For resident reviewers, it will support their crucial involvement in understanding the resident perspective within the program they are reviewing.

These resources will be piloted in the Spring 2021. Evaluation of these programs will be completed through exit-surveys, following the workshop, and focus group sessions following the accreditation review process.

191. Medical education during a pandemic: Is virtual simulation the answer?

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Introduction: High-fidelity simulation is an integral component of medical residency training. Emerging challenges in providing in-person simulation during the COVID-19 pandemic, including exposures and social-distancing restrictions, means this is often the first area of medical education affected. The Royal College of Physicians and Surgeons of Canada (RCPSC) have developed Facilitated Acute Events Simulation (F-ACES), a virtual simulation platform, to supplement postgraduate training programs' simulation curriculum. We believe this platform is an effective alternative to high-fidelity simulation when it cannot be provided and an adjunct when social distancing restrictions are lifted or to educate residents training at remote sites.

Methods: Dalhousie University Internal Medicine (IM) residents have undergone low-fidelity or high-fidelity simulations in small groups due to local social distancing guidelines. We plan to provide virtual simulation to IM residents (48 total) using F-ACES as a supplement to current curriculum. Groups of six residents will undergo one hour-long session with 3 scenarios after completing a pre-session questionnaire for qualitative assessment of their approach to acutely ill patients. Throughout the scenarios, residents will provide feedback through the embedded case evaluation in F-ACES, available for instructor review after the sessions. Small group discussions will be held virtually after the session for open-ended questions. This, in addition to a post-session questionnaire, will be used for qualitative and quantitative assessment of the platform's usefulness and impact on resident competency in managing acutely ill patients with

a COVID nuance. A pilot session demonstrated the feasibility of the project and feedback indicated that use of the platform created an open learning environment with increased resident interaction.

Conclusion: Results will be generalizable to other residency programs nationwide. Virtual simulation has previously been used for surgical procedures and end-of-life conversations; Protecting resident safety and ensuring medical education can still be provided is a natural extension of its known utility.

192. Medical humanities and professional identity formation in critical care clinicians

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Introduction: A growing acknowledgment of the reality and consequences of burnout in medicine, in particular within Critical Care, has brought a new focus upon moral resilience and professional values. Medical humanities are understood to promote meaning-making, wellness, and personal growth, but are inconsistently utilized or studied as a sustainable path towards clinicians' professional identity formation

Methods: Our group created a Medical Humanities Curriculum, where trainee and faculty meet in small groups to create a space for them to reflect on, explore and integrate their experiences, to draw on their own and others' unique perspectives while negotiating "who they are and who they wish to be".

The features of the curriculum are: small groups (for more personal context that makes it easy for participants to explore experiences and accept their vulnerability while developing a rich and multifaceted understanding of their evolving identity); longitudinal evenings (provide a scheduled time for guided reflection on clinical and nonclinical experiences); a range of evening themes (to allow more clinicians to attend and reflect through art and humanities); trainee and faculty participation (faculty serve dual roles as mentors that help guide reflections and illuminate future clinician roles while themselves reflecting on their life-long professional identity transformation, trainee reflect on key experiences while forming relationships that strengthen shared interests and values that preceded our profession); a varied group of facilitators (educator, ethicist, art historian and anthropologist). Although the evenings have varied

themes, the focus of the curriculum is not how different humanities contribute, but the ability of each evening and medium of art to allow reflection.

Conclusion: Reflection through medical humanities impacts and guides the process of professional identity formation and illuminates how humanities can contribute in a sustainable way towards clinicians' moral resilience and wellness.

193. Medical improv in psychiatry: A novel approach to enhancing residents' communication, conflict resolution, and teamwork skills

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Introduction: Communication is a foundational skill in medicine, underpinning many other CanMEDs roles including medical expert, collaborator, leader, advocate, and professional. Exceptional communication is especially important in psychiatry. Teaching communication skills transcends the role of didactic pedagogy in post-graduate medical education, and necessitates innovative educational design. Medical improv is a form of experiential learning that adapts applied improvisation principles and techniques to the healthcare setting. By engaging in serious play, participants have a unique opportunity to connect and reflect on their work, which may benefit communication, teamwork, and cognitive abilities (Watson & Fu, 2016).

Psychiatry Education through Play and Talk ("PEP Talks") is a novel medical improv curriculum developed for psychiatry residents, with the goal of enhancing communication skills, teamwork, conflict resolution, and capacity for self-reflection. Secondary outcomes include benefits to resident wellness and quality of patient care.

Methods: PEP Talks is a 5-week extra-curricular program offered to psychiatry residents at McMaster University. Ten participants are enrolled to date. Sessions are held virtually due to the pandemic and facilitated by a medical improv expert. Participants complete weekly session evaluations, final exit surveys, and participate in a focus group. Stufflebeam's Context-Input-Process-Product (CIPP) model is used as an organizing framework for program evaluation, and outcomes include learner satisfaction, learning, and self-reported behaviour change (Kirkpatrick's level 1-3, respectively).

Conclusion: Communication is a fundamental skill for psychiatrists and medical improv may provide a novel tool

to enhance its practice, along with other CanMEDS competencies such as medical expert, advocate, leader, collaborator, and professional. PEP Talks contributes to a small but growing body of literature about the utility of medical improv, and is the first program designed specifically for postgraduate psychiatry trainees.

194. Mixed-methods analysis of resident-led quality improvement rounds in Regina, Saskatchewan

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Introduction: The COVID-19 pandemic brought significant strain to our healthcare system, leading to system-wide reorganizations, increasing patient volume and acuity. Additionally, gathering restrictions limited the opportunities for health care workers to discuss patient care. Even pre-pandemic, Regina General Hospital had yet to develop quality improvement (QI) rounds to help residents reflect on challenging patient cases. We sought to improve the quality of patient care and learning resources for the Internal Medicine (IM) residents through developing a case-based QI rounds, and subsequently assess its efficacy through a mixed-methods review.

Methods: We successfully completed our first resident-led QI round following the guidelines set by the Ottawa M&M Model. Anecdotally, we received overall encouraging and positive feedbacks from the participants including IM residents and academically affiliated physicians. We plan to continue with quarterly QI rounds adhering to social distancing guidelines, with invitations extending to IM residents and selected attending physicians involved in resident education. We plan to administer anonymous post-event surveys to the participants as well as presenters to assess safety, perceived utility and learning outcomes from each QI round using a mix of 5-point Likert scale and free-form questions. Furthermore, system changes proposed from the rounds will be summarized and delivered to faculty leadership and followed for potential implementation.

Conclusion: As leaders in healthcare, we need to continuously reflect and evaluate the quality of care we deliver. This is especially pertinent with COVID-19-related increased healthcare demand, where residents face increased stress and risk of burnout. We implemented a resident-led QI rounds in Regina, with the aim of enhancing medical education opportunities while building avenues to productively discuss error and minimize risk for our patients. We plan to continue with these QI rounds

and obtain objective measurements to evaluate future iterations.

195. Online forum on residency education and medical fellowship training programs: Uncertainty, challenges and the future beyond the pandemic

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Introduction: A space for dialogue and support was needed in order to share the experiences, challenges and opportunities that have arisen related to academic continuity, clinical training, well-being and development of the professional identity of medical residents and fellows in hospitals and academic medical centers at the local, national and international level in the face of the contingency of the COVID-19 pandemic. The purpose of the study is to describe the challenge to develop a virtual, periodic, academic session for the dissemination, deliberation and analysis of education in Medical Residences and Fellowships in the environment of the COVID-19 pandemic, with local, national and international guests.

Methods: A periodic session of 1 hour duration was held on the Zoom platform for dialogue and reflection by a panel of leaders from academic medical centers, health institutions, resident doctors and fellows in the event of the pandemic contingency, in order to contribute to the analysis of the impact on the training of medical residents and fellows in North America, South America and Europe. 19 sessions were held in virtual mode from May to December 2020, more than 40 guests and more than 25 medical residents and fellows participated as well as national and international speakers from Mexico, Chile, Canada and Spain. Attendance per session was variable in the range from 680 to 81, with a cumulative audience of 3,800 participants.

Conclusion: Innovative approach proposals were shared on the challenges that arise in the education of resident doctors and fellows, their impact on educational results, their well-being and patient care, as well as on individual, social and professional responsibility and commitment that our new reality requires with leaders and doctors in training considering the impact of the COVID-19 pandemic in 2020 and towards 2021.

196. Optimization of electronic clinical handover to improve clinical efficiency and patient safety

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Introduction: Quality clinical handover is an important skill for learners and teachers to reduce the risk of medical error. We experienced challenges with data integrity (i.e., outdated information), security (as email was used for dissemination) and determining the appropriate level of detail required. The aim of this project was to review evidence-based guidelines at a local, regional, and national level and incorporate findings to create revamped electronic handover procedure which better protects patient safety and to improve satisfaction of clinical staff and learners.

Methods: We reviewed guidelines of clinical handover from the CMPA (Canadian Medical Protective Association), The College of Physicians and Surgeons of Nova Scotia, and Nova Scotia Health (NSH). When not readily available online we contacted the involved governing bodies to gain direct access. Data integrity was discussed with the NSH Information Communication Technology (ICT) managers and exploration of an encrypted electronic handover portal was executed. A proposal was created and presented to staff and residents within our department for feedback.

Conclusion: We developed a time stamped encrypted electronic handover program within the existing Electronic Medical Record. With support of stakeholders, we mandated the use of an evidence-based handover tool for verbal and written handover. Implementation is anticipated in the coming 1-2 months. Our evaluation plan is for user evaluation with a focus on patient safety and efficiency after 3 months of use.

197. Rapid curriculum implementation for risk stratification and examination of PUIs

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Introduction: Medicine trainees provide direct care to Persons Under Investigation for COVID-19 (PUIs). Trainee cognitive overload, and incomplete patient assessment has led to misdiagnosis through premature diagnostic closure. This has been a well-described clinical phenomenon during the pandemic, and further supports the need for thorough assessment, including evidence-based physical examination.

Methods: In recognition of this learning need, we have rapidly implemented a curriculum using Design Thinking by leveraging the Cognitive Load Theory in development of a schema that stratifies the PUI, in order to appropriately examine. Using a case-based format, we aim to reduce cognitive overload through review of probabilistic reasoning to assign low, intermediate or high probability of COVID-19. This is achieved through review of clinical presentation, interpretation of percent positivity, and discussion heuristic mitigation. When risk is assigned to a PUI, a discussion of safe and appropriate evidence-based examination maneuvers ensues. There is focus on maneuvers that have a high degree of inter-observer agreement and would change management. Design principles are selected to manage the intrinsic load (performing the task), minimize the extraneous load (nonessential aspects of the task), and optimize the germane load (deliberate strategies facilitating learning) of the medicine trainee, for future application of the schema during a busy call shift.

Conclusion: Prior to this curriculum, we postulate that a trainee's intrinsic and extraneous loads were high due to element interactivity and poor instructional design. A trainee previously relied on independent trial and error methods. We are currently in the Testing phase of the Design Thinking framework. This curriculum is delivered to our trainees during onboarding at local hospitals, with iterative revisions based on feedback. Initial feedback has been positive. We are next interested in determining curriculum impact on care of PUIs and retention of knowledge.

198. Rounds challenges: Evaluating learner perception of teaching using a novel bedside rounding teaching tool

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Introduction: Family-centered rounding is a beneficial model for patients, but its role in trainee education is less well understood on Pediatric Clinical Teaching Units (pCTUs). Identified challenges, including limits to the number of learners entering a room and increased idle time, compromise the educational experience. Currently, there is no literature on educational tools used during bedside rounding. A novel teaching tool, "Rounds

Challenges" was developed and implemented on the pCTU at McMaster University. This paper or electronic tool includes case-based 'challenges' that engage learners at all levels and can be facilitated by any member of the CTU team. Our project evaluated CTU learners' perception of the effectiveness of the tool in enhancing their learning.

Methods: A realist evaluation approach guided our methodology and informed our survey. We focused on learners' perceptions of teaching and understanding the context and mechanism that may or may not encourage use of the tool. A total of twenty-eight of seventy learners (medical students, off-service and Pediatric residents) completed the survey at the end of their rotation. Surveys were administered over four CTU blocks spanning November 2020 to March 2021. 46% reported some use of the tool, which was universally associated with greater achievement of learning goals (70% achieving 1-2 learning objectives, 30% achieving 3-4) and enhanced perception of learning while bedside rounding. Time constraints was the most reported barrier (60%) in those that did not use the tool. Over the course of survey distribution, CTUs pivoted to virtual rounding due to the COVID-19 pandemic, which resulted in a decline in the use of the tool by almost half.

Conclusion: Balancing education with efficiency during bedside rounding is a nationwide problem. The teaching tool shows promise in promoting teaching during bedside rounds. We plan to adopt our tool to optimize accessibility and utilization in bedside rounding.

199. Selfcare and wellbeing as professional competence in the Covid-19 pandemic: Hybrid residents´ wellbeing program

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Introduction: International studies have reported that quality in patient care and safety, as well as the personal well-being of resident doctors, may suffer a detriment if a highly demanding or hostile clinical training environment is present. The objective of the Professionalism and Wellbeing Program for Medical Residents implemented is to integrate strategies for the development of wellbeing as a professional competence, and to contribute to strengthening clinical training environments, with the intention of improving personal selfcare, wellbeing, and patient care.

Methods: The program was implemented with the 290 medical residents of the 17 specialty programs from March 2019 and, additionally, an hybrid model was implemented due to the COVID-19 pandemic from April 2020 to date. In February 2019 and 2020, medical residents participated in the induction sessions of the Professionalism and Wellbeing Program and at least in 3 sessions through the semester, in 2019 face-to-face and in 2020 virtually. The chiefs and co-chiefs of residents were trained in a Workshop so they could help other residents in adverse situations. Residents were offered mentoring and support services, such as counseling and mental health services, as strategies for self-care, well-being, mental health care, and burnout syndrome prevention. Among the virtual strategies, we implemented an online website, an electronic form for residents´ wellbeing and mentoring follow-up, individual virtual counseling and Balint groups in Zoom. From April 2020 to January 2021, 148 residents registered their wellbeing and mentoring follow-up on the electronic form. The topics of greatest interest for discussion selected by the participants (n= 51) in the Balint groups were: emotional well-being (94.1%) and burnout syndrome (94.1%).

Conclusion: These initiatives aim to strengthen the training processes of education, professionalism, and humanism, with the residents as an expression of the social responsibility of the profession to contribute to selfcare, wellbeing, and patient's care.

200. SPARK: The delivery of faculty development through a podcast

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Introduction: Continual demands on faculty members can make ongoing delivery of meaningful faculty development difficult. In 2019, the Program for Faculty Development (PFD) at McMaster's Faculty of Health Sciences introduced Spark, a faculty development podcast. Spark podcast topics fall into themes aligned with the PFD's four content pillars: inspired teaching, leadership and management, scholarly practice, and creativity and humanism. Although podcasts created for faculty development exist, the research to support their efficacy is limited.

Methods: By capitalizing on the sociomateriality of podcasts, we created a regional faculty development podcast that sought to connect faculty members across geography and professions to provide new insights on

how to become academically successful. Its purpose was to bring listeners insightful and inspiring interviews, while building a sense of community in the Faculty of Health Sciences, and deliver thoughtful, curated, easily accessible content. Since its inception, 13 episodes have been published on the McMaster PFD (MacPFD) website and on a number of other podcast syndication applications. Topics discussed include: academic leadership, sponsorship, mentorship, indigenous health, narrative medicine, working with efficiency, and navigating the pandemic. Faculty were informed about the podcast availability through links on the MacPFD website, and via monthly newsletters, social media, and word of mouth. In total, 13 podcasts have been consumed 1,776 times. Episodes averaged 120 (+/- 15) listens with an overall 57% of those originating from McMaster-affiliated regions.

Conclusion: The uptake of the Spark podcast amongst faculty members demonstrated that delivery of faculty development via this medium is well received. Launching a podcast in our community resulted in an uptake of content that supports professional development of faculty and complements other MacPFD programming. Future goals include conducting a robust program evaluation, as well as weaving podcast content into the emerging inquiry-based faculty development training program.

201. Teleteaching and assessment for clinical procedural skills

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Introduction: Adaption in medical education has been prompted by the COVID-19 pandemic. The most urgent area that needs innovation is transferring motoric skills in simulation as well as clinical setting. We developed a model of teleteaching and teleassessment for teaching procedural skills, especially in residency programs.

Methods: This study consisted of two steps. Firstly, a set of configuration of the multicamera layout consists of 3 different angles of view, which includes 1st, 2nd or 3rd person view and overhead view. This multicamera layout was connected to an online platform. Secondly, a session of procedural skill setting was conducted, in which two groups of resident participants were assigned. A group served as participants who learned the skills from the instructor on site. Another group was on a distance which connected through an online teleconference platform. Several basic clinical skills including knotting, suturing and

basic laparoscopic skills were chosen as topics of teaching. Comparison in regards to the teaching effectiveness between the two groups were made. Confidence scale of the participants as well as their knowledge before and after the session were also assessed.

Conclusion: Teleteaching and assessment shows promising results and may serve not just as an alternative for clinical skill teaching, but also replace the traditional method. It also gives privilege to the learner and the instructor to watch and evaluate the first person view vividly. This may potentially facilitate the learner to perceive and imitate the skills better; and the instructor to guide, provide feedback and assess the learner's performance.

202. The master clinical educator academy: An innovative 3-part approach to faculty development in Vietnam

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Introduction: Medical education has undergone substantive change over the past several decades with an emphasis toward educational models that are competency-based and trainee-centered. However, competency-based medical education (CBME) remains both a novel concept and challenge in many countries around the world including Vietnam. There is motivation to transform medical training in Vietnam to align with CBME models that are evidenced-based, but insufficient faculty development is a major hurdle in the widespread implementation of CBME. In 2020, the VinUniversity College of Health Sciences welcomed its first cohort of medical students and residents and launched training programs based on international standards and CBME curricula. This required an innovative approach to address gaps in the knowledge, skills, and awareness of clinical faculty. The Master Clinical Educator Academy (MCEA) was designed as a cornerstone for faculty training and development at VinUniversity through a strategic collaboration with the Perelman School of Medicine at the University of Pennsylvania.

Methods: The MCEA is a 3-part series of faculty development training. Part 1 explores foundational concepts in competency-based education, evaluation, assessment, and teaching pedagogies for various learning environments (e.g., bedside, simulation, small groups). Part 2 builds on these themes through intermediate-level topics and an opportunity for direct observation of

teaching skills in the clinical learning environment by MCEA course faculty. Part 3 supports a select group of core faculty from VinUniversity to participate in further professional development through an immersive observational experience at the University of Pennsylvania.

Conclusion: The MCEA faculty development program was designed to disseminate key concepts and best practices in CBME in order to equip faculty with skills to be highly effective clinical educators. In the future, we plan to expand course topics and scope as feedback is gathered from both trainees and faculty in the clinical training programs at VinUniversity.

203. The role of spirituality in patient-centered care: An elective for pediatric residents
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Introduction: Research demonstrates psychological and health benefits in patients with spiritual beliefs/practices. Barnard and colleagues(1) suggest it is the experience of having one's sacred beliefs and sources of hope taken seriously by physicians that is critical. Social support, sacred rituals, prayer, and other manifestations of spirituality are significant dimensions in health/healing. Thus, the ability to recognize and mobilize these resources on patients' behalf is a vital and largely untapped part of the physician's healing role.

Methods: A review of our pediatric residency core curriculum/electives revealed gaps in training on spirituality. The development of these skills have been mapped to CANMed Role as Communicator - competency 1, Collaborator - competency 2, and Professional - competency 4. Using a modified Experience-based Learning Model conceptual framework(2), a 4-week pediatric resident elective was developed. It consists of small-group discussions, asynchronous self-directed readings, resident self-care, chaplain shadowing, a Verbatim assignment, and an unprompted reflection essay.   Residents processed shadowing visits using Verbatims, a training tool used by chaplains to reveal non-verbal communication during visits. Per one resident, "…this elective has broadened my understanding of spirituality, empowered me to better serve my patients and their families…". An IRB is proposed to qualitatively analyze de-identified reflective essays to understand perceived benefits or deficits of this elective.

Conclusion: The curriculum offered to 17 residents since 2016 now requires a waitlist since 2019. This curriculum has been well received by our pediatric residents and is easily implemented at any institution with chaplains and an agreeable training program.

204. Transforming learning about underserved/ marginalized populations: A qualitative evaluation of postgraduate psychiatry selective experiences
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Introduction: Work with underserved/marginalized populations includes attunement to structural factors and health advocacy — which is considered one of the most difficult CanMEDS roles to teach and assess (Poulton & Rose 2015) — and there has been limited research addressing postgraduate psychiatric education related to these populations (Doobay-Persaud et al 2019; Klein & Beck 2018). Our project will address this gap by evaluating a selective implemented in our residency program to see if it is meeting its goals of changing resident knowledge and attitudes in working with underserved populations, to better understand the processes by which changes might (or might not) occur, and to inform future curricular development.

Methods: The selective provides residents with the opportunity to work with populations experiencing intersecting socio-economic-political marginalizations through a one-month PGY1 and two-month PGY3 clinical rotation accompanied by four half-days of interactive seminars. This qualitative study, informed by Jack Mezirow's transformative learning theory and a constructivist paradigm, will evaluate the experiences of residents completing their PGY3 selective from July 1, 2021 to June 30, 2022 (total sample 12-24 participants, representing the majority of residents completing the selective). Participants will complete a questionnaire (demographic information and attitude changes) and participate in semi-structured focus groups to explore their attitudinal changes (or lack of changes) related to the care of underserved populations. Recordings will be transcribed, with coding and thematic analysis occurring through an iterative process until thematic saturation is reached.

Conclusion: This selective is a unique educational experience for psychiatry residents. We expect this study will help inform our understanding of the potential impact of such selectives on psychiatry trainees' attitudes and beliefs regarding these populations. Through this evaluation we will fine-tune the selective, then share our experiences more broadly so other residency programs can adapt their curricula to foster similar opportunities for trainees.

205. Micro-teaching: Great things come in small packages

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Introduction: Residents need to critically appraise research, keep up to date with literature and change their clinical practice accordingly. They also need to share this vision, communicating critical information in a succinct fashion with colleagues and patients. (CanMEDS domains: Expert, Communicator, Leader, Professional, Scholar). The SARS-CoV-2 pandemic led to rapid changes to teaching and learning, and the widespread adoption of online platforms for teaching. This has required adaptations of traditional teaching methods. We developed a package of time limited focused teaching sessions using standardised methodology to suit these changes; Micro-Journal-Club, 'This week on orthotwitter' and Micro-Basic-Sciences. These sessions target a number of skills – critical appraisal of literature using defined methodologies (CASP), peer-to-peer teaching skills, and presenting a clear educational message in a time limited format.

Methods: Micro-Journal-Club was the initial pilot project. Distilled summaries of key papers were presented, allowing junior trainees to present using a set structure to help familiarise learners with critical appraisal techniques.

'This Week on Orthotwitter' was then developed as an informal teaching modality hosted on digital media accessible on a smartphone. Worldwide clinical cases are chosen allowing for comparison of different healthcare models and informal discussions are held between residents to help replicate face-to-face interactions. Micro-Basic-Sciences was added for senior residents to introduce critical concepts that underpin orthopaedic treatment principles in the same time-limited fashion.

Results: The feedback for micro-teaching was overwhelmingly positive. 97% found it beneficial to learning, 94% enjoyed the teaching format and 95% wanted micro-teaching to continue. Qualitative feedback highlighted how it provides 'relevant and concise information' to 'enable focus on a topic' whilst also reinforcing key points and concepts in a fashion that facilitates retention. Trainees found basic sciences a 'useful introduction to a tricky subject, kickstarting reading around the topic'. Those delivering presentations said it was a 'great opportunity to get...confidence in presenting' and the format helped 'develop presentation skills'. After the initial pilot the format has been adopted by other surgical training programmes and can easily be adapted to any clinical specialty.

Conclusion: Micro teaching in this format allows trainees to develop their teaching skills, working from simple to advanced theoretical concepts, while developing confidence and skills in presentation delivery and appraising and assimilating advances in scientific evidence. It is also suited to the virtual teaching environment. The use of standardised templates makes it easily translatable to other specialties to promote the development of these core skills.

Keyword Index

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Author Index – 18-plus

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