Conference Abstracts
Résumés de la conférence

Trust, Growth, and Connection: The Path Forward in Residency Education

Confiance, croissance et relations humaines : l'avenir de la formation médicale durant la résidence

ROYAL COLLEGE
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Conference Research Abstracts

Résumés de recherche de la conference

Since 2012, the *Journal of Graduate Medical Education* (JGME) and the Royal College of Physicians and Surgeons of Canada have jointly selected the Top Research in Residency Education from abstracts submitted to the annual International Conference on Residency Education (ICRE).

The submitted research paper abstracts provide a forum for those who use systematic scholarly methods to evaluate educational programs, identify new phenomena, define aspects of training, and assess competence.

Each year, abstracts are submitted and undergo 2 rounds of peer review. Three abstracts are selected and announced prior to ICRE and are presented at a juried session during the conference. A Top Research in Medical Education Award is given out. Commencing with ICRE 2014, the selection of the Top Resident Research abstracts was included in the award process.

Winning abstracts are published in the December issue of JGME and are available online to readers via the journal's website (www.jgme.org).

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001

Assessment of Artificial Intelligence Chatbot Performance on the Canadian Otolaryngology and Head and Neck Surgery In-Training Examination: Insights From an Experimental Comparative Analysis

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Background: ChatGPT-4, a finely tuned supervised model, offers exceptional reasoning capabilities and visual analysis. The purpose of this study is to evaluate the performance of ChatGPT-4 in the field of otolaryngology–head and neck surgery (OTOHNS) residency training.

Methods: A total of 351 questions from the OTOHNS National In-Training Examination (NITE) for 2022 and 2023 were submitted to ChatGPT-4. Answers were graded by 2 reviewers using the official grading rubric and the average score was used. Intraclass correlation coefficient was used for interrater reliability. Mean examination results from residents who have taken this examination were obtained from lead faculty. Z-tests were used to compare ChatGPT-4's performance to that of residents. The questions were categorized by type (image or text), task (diagnosis, additional examinations, treatment, or guidelines), subspecialty, taxonomic level, and prompt length. A one-way ANOVA, independent *t* test and 2-tailed Pearson correlation was used to examine variations between question categories. IBM SPSS 29 was used.

Results: ChatGPT-4 scored 66% (350 of 529) and 65% (243 of 374) on the 2022 and 2023 examinations, respectively. Interrater reliability between the 2 raters was 99% (CI 99.1-99.4%), with a *P* value of <.001. For the 2022 examination, there were 105 total residents, and for the 2023 examination, there were 99 residents. ChatGPT-4 outperformed the residents on both examinations, among all training levels and within all subspecialties except for the general/pediatrics section of the 2023 examination (Z-test -2.54). ChatGPT-4 performed best on text-based questions (74%, *P*<.001) with an effect size of 1.27 (CI 0.99-1.55), level one taxonomic questions (75%, *P*<.001) with an effect size of 0.084 (CI 0.03-0.14) and guideline-based questions (70%, *P*=.048) with an effect size of 0.11 (CI 0-0.23).

Conclusions: ChatGPT-4 outperformed residents in an outstanding manner, underscoring a critical need to redesign residency assessment methods.

002

Automating Feedback: Analysis of Resident Radiologist Imaging Reports Using ChatGPT

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Background: Generating radiology reports is a key role of radiologists and a core entrustable professional activity in the era of competency-based medical education. Feedback on individual reports is difficult to perform in a comprehensive manner and is not practical due to its time-intensive nature. This project evaluates the possibility of automating this process by evaluating the ability of ChatGPT-4o to identify and provide feedback on the differences between radiology resident and staff reviewed final imaging reports.

Methods: This mixed-methods pilot study involved 3 radiology residents from the 5-year radiology residency program at Queen's University. Participants provided 2 draft and final reports for computed tomography (CT) and magnetic resonance imaging (MRI) cases. ChatGPT-4o was queried on a standardized list of questions comparing the similarities, diagnostic confidence, and structure of reports. Jaccard and Cosine similarity were calculated for the draft and final reports. Qualitative thematic analysis was employed to assess ChatGPT's feedback.

Results: Core diagnostic findings were largely consistent across draft and final reports. Final reports contained more detailed anatomical descriptions and measurements of image findings in addition to more definitive language. Final MRI cases underwent more change than CT cases. The average Jaccard and Cosine scores were 0.56 and 0.81 for MRI studies compared to 0.75 and 0.90 for CT studies.

Conclusions: ChatGPT's feedback identified that the major differences between draft and final imaging reports lay not in the core diagnostic conclusions, but in the level of detail and diagnostic confidence in which these findings are discussed. These findings are in line with existing literature on the subject. As this exploratory study only focused on the ability of ChatGPT to identify important differences between resident draft and final reports, further studies are required that evaluate the perceived usefulness of such feedback by radiology educators and learners.

003

Collaborative Learning in Postgraduate Medical Education

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Background: Postgraduate medical education often occurs in siloes with residents learning and practicing within their own disciplines. This lack of intradisciplinary collaboration can lead to suboptimal patient outcomes. We evaluated the impact of a novel multidisciplinary educational intervention on intraprofessional collaboration among residents of varying disciplines.

Methods: A resident-led multidisciplinary half-day workshop on the topic of diabetes was run in June 2024. A senior resident in each discipline prepared a 10- to 12-minute presentation on the topic of the management of patients with diabetes in their respective discipline. They were provided with several objectives with an emphasis on the transitions of care between disciplines and in particular primary care. No faculty were involved in the delivery of the content. Participating residents were invited to complete a knowledge test developed by the authors using a Qualtrics survey before, after, and 3 months following the intervention. The surveys also asked questions related to strengths, recommendations, collaboration, and application. The quantitative data were analyzed descriptively using Excel whereas the qualitative data were analyzed using NVivo software.

Results: Thirty residents from 8 disciplines (family medicine, cardiology, endocrinology, nephrology, orthopedic surgery, anesthesia, and ophthalmology) attended the workshop. The mean knowledge test score increased from 3.75 (out of 9) to 5.9 after the intervention and was 5.1 at the 3-month follow-up. Overall, the evaluation feedback was positive with residents reporting significant interest in attending a similar event in the future. Following the workshop, residents felt more comfortable assessing and managing patients and had greater appreciation and respect for colleagues in other disciplines. Recommendations centered around additional content and refining presentations.

Conclusions: Our findings were very positive and demonstrate the value of a resident-driven workshop in enhancing knowledge and understanding across disciplines. Future work will consider other topics that may be of broad interest across specialties.

004

Detecting the Chatbot: Differentiating Between GPT-Generated and Human-Written Narrative Feedback

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Background: Recent implementation of competency-based medical education (CBME) within Canadian radiology programs has required faculty to conduct more frequent assessments. This can be challenging, given the time constraints and variability between evaluators. This rise of narrative feedback, coinciding with the rise of large language models (LLMs), raises questions about the potential of these models to generate informative comments and the associated challenges. This study compares human-written feedback for radiology residents to artificial intelligence (AI)–generated feedback, and how well raters can differentiate between these 2 sources.

Methods: Assessments were completed by 28 faculty members for 10 residents within the Queen's Diagnostic Radiology program (2019-2023). Data were extracted from the Elentra platform, de-identified, and parsed into individual sentences, of which 110 were randomly selected for analysis. Eleven of these comments were randomly selected/entered into GPT-3.5, which generated 110 synthetic comments that were mixed with actual comments. Two faculty raters and GPT-3.5 read each comment to predict whether it was human-written or AI-generated. Accuracy metrics and Kappa scores for interrater agreement were calculated.

Results: Actual comments from humans were often longer (median of 16 vs 11 words) and more specific than synthetic comments, especially when describing clinical procedures and patient interactions. Source differentiation was more difficult when both types of feedback were similarly vague. Low agreement (k=-0.237) between responses provided by GPT-3.5 and human raters was observed. Human raters were also more accurate (80.5%) at identifying actual and synthetic comments than GPT-3.5 (50%).

Conclusions: Currently, GPT-3.5 cannot replace human experts in delivering specific, nuanced feedback for radiology residents. Compared to humans, GPT-3.5 also performs worse in distinguishing between actual comments and synthetic comments. These insights are useful for guiding the eventual development of more sophisticated algorithms to produce higher-quality feedback.

005

Can Diagnostic Excellence Be Measured?

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Background: There is no uniform definition of diagnostic excellence. Despite 80% of diagnoses coming to light in the history-taking part of a medical evaluation, this is the part of medical training that receives the least amount of attention, assessment, and feedback. To date, the teaching of clinical reasoning has hinged on the presence of an expert physician being present to supervise routine clinical care or clinical pathological conferences. Because it's difficult to scale these types of contextually rich learning environments, artificial intelligence has been one method suggested to automate the experience with multilayered assessment rubrics. We developed a ChatBot application programming interface (API) capable of providing learners with individualized, specific, and actionable feedback of their clinical interviewing skills. We explored the significance of various quantitative metrics of clinical reasoning, like entropy.

Methods: A self-selected sample of 10 medical students, 10 postgraduate residents, and 10 attending physicians were recruited to complete a single ChatBot case. Participants typed questions in a simulated patient interview with an API patient who presented to clinic with "chest pain." Participants placed a prioritized differential diagnosis and up to 3 orders. Transcripts were scored and analyzed using a consensus rubric. Key features of the case were assigned likelihood ratios from which entropy calculations were made. A 2-tailed, independent *t* test was performed to compare the 3 groups.

Results: Attending physicians asked fewer questions, captured a higher percentage of key features per question asked, and had a statistically significant reduction in entropy per question asked ($P<.05$).

Conclusions: Entropy reduction using a quintile system of Bayesian inference is a reproducible metric of diagnostic excellence that should be explored in the formative assessment of medical trainees. Limitations include the curated case content and self-selection of groups which are not generalizable.

006

Introducing STUAART: A Semiautomated Tool Using AI for Applications to Residency Training

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Background: Residency programs face the challenge of reviewing hundreds of applicant files for a limited number of positions. Many programs use behaviorally anchored scoring rubrics to improve reliability in the ranking of applicants, but there remain issues with more subjective components such as personal letter. Prior work has been done harnessing AI to assist applicant review. We created script utilizing large language models (LLMs) to assess applicants using the same rubric that humans used in file scoring.

Methods: Our selection committee uses a standardized rubric to score our Canadian medical graduate (CMG) and international medical graduate (IMG) applicant files, including various components in their curriculum vitae, letters of reference as well as personal letters. Each applicant's file is scored independently by a pair of physician raters. A Python script was written to automatically score candidate files for each element in the same rubric. Two LLMs were used (Llama3.1:8B and Gemma2:27B). LLM scores were compared against each other, and with scores assigned by humans.

Results: Reference letter scores were excluded from analysis due to technical challenges with fully automated scoring. Total scores (excluding reference letter scores) were compared between the LLMs and the average scores based on human ratings. In the IMG cohort (n=66), the Pearson correlation coefficients between humans versus Gemma2 and Llama3.1 were 0.67 and 0.58, respectively; correlation between Gemma2 and Llama3.1 was 0.57. In the CMG cohort (n=76), correlation between human versus Gemma2/Llama3.1 were 0.23 and 0.21, Gemma2 vs Llama3.1 was 0.42.

Conclusions: The correlation between humans and LLMs in the IMG cohort was good, but weaker in the CMG cohort. Using LLMs to prescreen candidates shows early promise, but further refinement in LLM script and human oversight are required.

007

Leveraging Big Data to Characterize Clinical Practice Variation Among Resident Physicians

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Background: Variation in clinical practice during residency coupled with diverse training environments influences patient outcomes. However, current assessment methods rarely measure in-training practice variation, leaving a gap in understanding how residency education could be optimized to improve patient care.

Methods: This retrospective cohort study focused on clinical practice variation among senior internal medicine (IM) residents. First, clinical practice guidelines were used to select resident-sensitive quality measures (RSQMs), defined as measures meaningful to patient care and attributable to residents. Second, RSQMs were used to analyze sources of practice variation. We used electronic health record "big data" from a novel clinical-educational database (GEMINI MedED), which linked 793 senior IM residents at the University of Toronto to clinical data from 132,291 overnight patient admissions (2010-2019). Ten RSQMs related to pneumonia and general IM care were selected by expert consensus, with variation characterized using descriptive statistics.

Results: During overnight call shifts, residents ordered first-line antibiotics for pneumonia in a median of 52% of eligible patients, with wide variation (interquartile range [IQR] 40%-65%), suggesting variable provision of evidence-based care. This increased to 76% within 24 hours after the call shift. Discretionary measures, whose appropriateness is influenced by clinical context, demonstrated variable patterns. For example, general use of broad-spectrum antibiotics was relatively low and invariable with a median of 6% (IQR 4%-7%). In contrast, serum protein electrophoresis tests were more frequent and variable, with a median of 17% (IQR 0%-27%), suggesting diverse decision-making patterns.

Conclusions: This study demonstrated significant clinical practice variation between senior IM residents for pneumonia and general IM care. However, the measurement process was nuanced, shaped by factors including time since admission and ordering providers. This study demonstrates the challenges of measuring resident practice variation and the potential to align approaches to resident growth and assessment with high-quality patient care.

008

Residents' Perceptions of Programmatic Assessment: How Do Residents Perceive Assessments and What Do They Learn?

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Background: Residency programs use various formal and informal methods to assess residents. Despite recognition that assessment drives learning, little is known about how residents perceive different assessment modalities and what they think they learn from them. In this study we explored how residents perceive the educational utility of assessments (multiple-choice questions [MCQs], In-Training Assessment Report [ITARS], objective structured clinical examinations [OSCEs], entrustable professional activities [EPAs], Royal College Examinations) and how they contribute to their growth as physicians.

Methods: We interviewed 20 residents enrolled in the internal medicine program (postgraduate year [PGY] 1-4) at the University of Toronto. Transcripts were analyzed using a constructivist grounded theory approach.

Results: Residents perceived various strengths and weaknesses of each assessment method. One major theme was a preference for frequent formative assessments with direct observation and immediate feedback. Despite this, there were near-unanimous concerns with EPAs, highlighting both the lack of observation and feedback. In contrast, residents praised OSCEs for their practicality and immediate feedback. MCQ-based assessments were not generally perceived as enhancing physician competence. Positive reinforcement through ITARs was raised as a powerful tool to combat imposter syndrome, particularly early in training. Resident perceptions differed by training level, with junior residents reporting frustration with a lack of dedicated study time, while PGY-4s noted the Royal College Examination as an impactful driver of physician growth and competency. Many residents acknowledged the need to take responsibility for their own growth as physicians, beyond assessments.

Conclusions: Our findings suggest a desire among residents for increased direct observation and one-to-one feedback during clinical activities and highlight a paucity of both observation and feedback within the current EPA structure. Specific recommendations were put forward to strengthen the utility of various assessment modalities, including more frequent OSCEs. These findings can help to inform pedagogical strategies to optimize resident physician growth through assessment.

009

Surgical Utilization of Performance Enhancing Routines: The SUPER Study

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Background: Outside the world of medicine, it is well understood that the day-to-day emotions of an individual will have an effect on how they perform their job. Performance enhancing routines (PER) are commonly utilized in professional sport. The aim of this study was to evaluate whether teaching PER to resident physicians can reduce cognitive load (CogL) and improve surgical performance.

Methods: Using a randomized control trial, resident physicians with an interest in surgery, but not yet on higher training program were recruited. All participants completed 3 laparoscopic operative tasks which were video recorded. The intervention arm then received PER training. The laparoscopic tasks were then repeated. Data were collected on the participants' subjective levels of CogL via SURG-TLX (scale 0-10), objective levels of CogL via physiological measurements, and surgical performance via blinded expert analysis of video recordings using a validated scoring system (GOALS; scale 0-20).

Results: Twenty-nine candidates were recruited and randomized into intervention (n=15) or control arm (n=14). Subjective CogL improved in both groups post-intervention (-2.15 scale points, 95% CI -7.09, 2.80), but further in the intervention group (data). Surgical performance improved post-intervention (overall change 1.91 points, 95% CI -2.22, 6.04), specifically improved depth perception, dexterity, efficiency, tissue handling, and autonomy. There was no change in objective CogL.

Conclusions: There is a false narrative within medicine that to improve one's ability as a physician, one must either increase their technical knowledge or experience. This study shows that performance can be improved doing neither of these things and instead utilizing techniques to improve focus and control subjective cognitive load. PER can be used as an effective intervention to improve physicians' ability to carry out their work and ultimately improve patient care.

010

Creating a Holistic Assessment of Physician Competence: Developing and Validating a Meta-Competency Assessment for System Citizenship

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Background: In US graduate medical education (GME), programs continue to struggle assessing individual core competencies. Recently, system citizenship has been proposed as a new meta-competency that, if assessed, could serve as a more holistic measure of overarching physician competence. We aimed (1) to explore the use of Accreditation Council for Graduate Medical Education (ACGME) Milestone data to identify system citizens through the construct of system citizenship meta-competency, and (2) to determine the validity of a meta-competency tool that assesses holistic physician competence.

Methods: Authors reviewed the ACGME Harmonized Milestones and weighted each subcompetency for how well it aligned with system citizenship. Weighted subcompetencies were combined into a single index score for system citizenship. ACGME Milestone data for residents from 7 internal medicine programs who graduated between 2020 and 2022 was sampled. A system citizen index score was assigned to each resident. Residents in the 90th and 95th percentiles and above were considered system citizens. These results were compared to residents who had been identified as system citizens by their program leadership prior to the creation of their index score.

Results: At the 90th percentile, the specificity of the index score in identifying resident system citizens ranged from 88% to 100% and the negative predictive value was high (91.1%-100%). At the 95th percentile, the specificity of the index score in identifying resident system citizens ranged from 84.6% to 100% and the negative predictive value was high (97.4%-100%). Sensitivity and positive predicted value ranged widely at both the 90th and 95th percentiles.

Conclusions: Significant variation in the assessment of competency exists between US GME programs. A weighted index tool built on ACGME Milestone data was successful in identifying residents who are system citizens in some GME programs and could be used in those programs as a holistic measure of competence.

011

Adjusting for Patient Characteristics and Supervising Physician Eliminates Most of the Inter-Trainee Variability in Some Common Clinical Metrics

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Background: Despite momentum toward using resident clinical data for assessment, the degree to which metrics are attributable to individual residents remains unclear. Resident behaviors are influenced both by patient characteristics and by their supervisors, which may limit the extent to which metrics reflect an individual resident's practice pattern.

Methods: This retrospective database study included emergency medicine (EM) residents and all patient presentations to The Ottawa Hospital Emergency Department between July 1, 2022, and June 30, 2023. Patient visits were attributed to the first resident assigned where applicable. We calculated rates of opioid prescription, computed tomography (CT) head for primary complaint of headache, and CT or ultrasound (US) abdomen for primary complaint of abdominal pain for each resident (unadjusted rates). We then calculated adjusted resident rates for each metric using generalized linear mixed models. Separate random intercepts for resident and supervisor were included to account for clustering by supervising physician, while patient age, sex, Canadian Triage Acuity Score, and visit timing (time of day and weekday vs weekend) were included as fixed effects to adjust for patient visit characteristics.

Results: A total of 122,634 patient visits were included in the model, with 23,885 attributed to one of 49 EM residents (mean (SD)=487.4 (168.8) patient visits per resident). Unadjusted mean (SD) rates of opioid prescription, CT head, and CT or US abdomen were 5.8% (1.1), 56.0% (20.1), and 65.4% (8.4), respectively, while the adjusted mean (SD) rates were 4.0% (0.1), 51.8% (4.3), and 63.3% (2.3). Of note, adjusted rates demonstrated substantially lower inter-resident variability for each metric.

Conclusions: Adjusting for patient and visit characteristics and clustering of supervising physicians resulted in substantially lower inter-resident variability for all clinical metrics examined. This suggests that external factors may drive most variability in resident metrics, and that resident metrics should be adjusted for these factors.

012

Development and Validity of a Construct-Aligned Assessment Instrument for Internal Medicine Residents

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Background: Entrustment-supervision scales are now a key component of workplace-based assessment in postgraduate medical education because the scales have been found to better align with how supervisors conceptualize supervision. However, our recent research indicates that internal medicine (IM) supervisors describe entrusting senior residents using language that differs from currently used entrustment-supervision scales. The goal of this study was to develop an entrustment-supervision instrument that is construct-aligned for IM supervision.

Methods: Based on our recent finding that supervisors use the construct of "stepping-back" or "stepping-in" to provide support to senior residents on IM Clinical Teaching Units, we developed a scale referenced to the supervisor's own behavior (ie, "I had to step-in more/less than usual"). To evaluate its construct alignment, 10 supervisors reviewed the assessment form in interviews. The form was modified and then 7 supervisors used it under "no stakes" conditions to assess senior residents. Cognitive interviews captured their experiences, and thematic analysis was used to interpret the data.

Results: Supervisors reported that the assessment instrument aligned with how they naturally think about supervising senior residents. They said that using a scale comparing their current supervision to their "usual" practice made the rating feel less judgmental and the form easier to complete. In addition, they expressed willingness to use the full range of the scale and anticipated sharing specific examples as feedback. They speculated that the self-referring scale could help to control for interrater variability.

Conclusions: If conceptualizations of supervision are context-specific, then specialties will need to identify how their supervisors think about entrustment to inform construct-aligned scales. Designing a scale that is norm-referenced to the supervisor (and not the resident) holds promise and requires further validity studies.

013

Assessing Geriatric Competencies in Residents: Validating the 5Ms Dimensions

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Background: Despite undergraduate training in the care of older patients, gaps persist throughout residency, revealing the limitations of current methods for assessing residents' decision-making processes across all geriatric dimensions.

Methods: We gathered validity and feasibility data for using the Geriatric 5Ms framework (Mind, Mobility, Medications, Multicomplexity, Matters Most) to assess residents' clinical decision-making. An expert panel iteratively developed written case scenarios aligned with the 5Ms dimensions, undergraduate objectives, and ACGME/CanMEDS milestones for geriatric care. By design, the cases were aligned with undergraduate objectives and prior assessments, expecting residents to demonstrate proficiency. During a 1-hour assessment in 2023, 68 first- to third-year internal medicine residents wrote assessment and management plans for 3 out of 6 case scenarios presented in a randomized sequence. Two blinded educators independently assessed these plans as absent (0), partial (1), or complete (2), for each dimension and medical expertise.

Results: Residents (n=65, response rate=96%) scored 0.8 to 1.3 across the 5Ms dimensions, indicating recognition of geriatric dimensions but inadequate assessment or management. All 5Ms dimensions (mean=1.1, SD=0.3) scored significantly lower than medical expertise (mean=1.5, SD=0.3, t(64)=9.58, $P<.001$). Substantial to almost perfect interrater reliability (ICC=0.67-0.85, all $P<.001$) demonstrated consistency on all dimensions. Residents rated the case scenarios as sufficiently/very representative of clinical practice (88%, mean=4.4, SD=0.7) and their plans similarly (84%, mean=4.1, SD=0.7).

Conclusions: The Geriatric 5Ms framework offers a valid and feasible approach for assessing residents, with performance across all 5Ms dimensions reflecting the persistent gaps in geriatric care identified in the literature.

014

Pilot of a Virtual Simulation in Multi-Patient Care in Pediatric Emergency Medicine

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Background: Conventional approaches to medical education often focus on learning to manage patients one at a time. However, in busy clinical environments such as emergency departments, physicians must develop the ability to manage multiple patients simultaneously. Multi-patient care is a complex skill that requires efficient and accurate decision-making, as well as the ability to manage interruptions. Recent literature has only begun to explore the conceptualization and teaching of multi-patient care, and there is limited research on assessing learners' abilities in this area. Medical simulation offers a potential solution, serving as a platform for both teaching and evaluating the ability to function in multi-patient scenarios. This study aimed to conduct an exploratory feasibility assessment of a virtual hybrid simulation designed to evaluate multi-patient care skills among medical learners in pediatric emergency medicine (PEM).

Methods: A virtual hybrid platform, resembling a tabletop simulation, was developed with a facilitator guiding learners through an electronic emergency department tracker board. Patient assessment, diagnosis, and management were conducted using a Google Slide deck, simulating real-time, increasingly complex waves of patients with conceptual fidelity. The study measured diagnostic accuracy, efficiency, cognitive load, and subjective acceptability of the platform.

Results: Eleven participants (3 PEM faculty, 1 PEM fellow, and 7 pediatrics residents) completed the simulation. The strongest correlation with seniority was the total number of patients managed in 1 hour. Correct diagnoses, interventions, and time to orders or patient disposition showed a weak trend favoring senior participants. Cognitive load analysis indicated high mental demand and effort with low physical demand and frustration. Faculty reported cognitive experiences comparable to real clinical environments and did not feel constrained by the platform.

Conclusions: The multi-patient care simulation shows promise as a tool for teaching and assessment, with fidelity comparable to authentic clinical settings. Further research is needed to validate the platform.

015

Beyond Certification: Developing a Robust Theory for Understanding Readiness to Practice

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Background: Residents' readiness to practice (RTP) is an ill-defined concept in the medical education literature and is assumed upon completion of rotations and passing of certifying examinations. To evaluate the impact of major postgraduate educational innovations, such as Competence by Design, we require a clear understanding of RTP. Much of the current literature relies on self-assessment, which is subject to inaccuracies. Furthermore, it is unclear how inequities and biases can affect RTP judgements. The objective of this study was to develop a theory of what RTP means in medicine.

Methods: Medical education experts were identified and purposively sampled on the basis of their published literature and involvement in medical education. Experts participated in semistructured virtual interviews or focus groups and were asked to define the construct of RTP, identify potentially relevant existing theories, and explore factors influencing readiness judgements. Transcripts were analyzed using Charmaz's Constructivist Grounded Theory, while incorporating a critical inquiry lens to conduct a socially conscious exploration of structural inequities that can affect this judgement.

Results: Fourteen experts participated in the study. We identified numerous facets of "readiness," attributes of a ready learner, environmental factors, and biases which influence readiness judgements. RTP consists of 3 key vantage points in readiness judgements: the external judgements of the learner's perceived readiness, the learner's internal judgement of their own readiness, and the vantage point of "reality," meaning the true capabilities of the learner. Readiness judgements were highly nuanced and may differ depending on positionality of the "judge." The assessment of readiness is straightforward when all 3 judgements align. However, misalignment may be driven by a host of internal or external factors deemed relevant to the concept of RTP.

Conclusions: We describe a novel 3-part framework for understanding learner RTP. Educators and scholars can use this framework for better promotion and certification decision-making.

016

Entrustment Scores and Feedback in Faculty-Triggered Versus Learner-Triggered Workplace-Based Assessments

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Background: Workplace-based assessments (WBAs) are intended to provide both formative feedback and data for competence committees to make progression decisions. Concerns about learners selectively initiating WBAs for strong performances threaten their validity as an assessment tool and risk reducing feedback quality. Faculty-triggered assessments (FTAs) have been proposed as a potential remedy but have not been well-studied in comparison to learner-triggered assessments (LTAs). We sought to identify differences in entrustment scores and written comments between FTAs and LTAs.

Methods: WBAs for one entrustable professional activity from a Canadian internal medicine postgraduate training program were included. WBA entrustment scores (ES) on a 6-point scale were compared between FTAs and LTAs and analyzed using *t* tests. Comments from a subgroup of WBAs were analyzed for themes using content relational analysis.

Results: Among WBAs for learners with both FTAs and LTAs, 73 (11%) of 666 assessments were FTAs. Mean group ES was significantly lower among FTAs than LTAs (4.55 (σ=0.83) vs 4.93 (σ=0.78), $P<.001$). ES were also lower in FTAs compared to LTAs for third-year residents, point-of-care assessments, and assessments triggered within one day of the encounter. Comment analysis revealed constructive feedback in a greater percentage of FTAs than LTAs (67% vs 40%). Highly specific feedback was more common among FTAs, while generalized feedback was more common among LTAs. Unique themes found among FTAs included feedback for non-Medical Expert CanMEDS roles and comments defending constructive feedback.

Conclusions: This study is the first to identify differences between FTAs and LTAs in both ES and written comments. ES were lower among FTAs than LTAs. Feedback on FTAs was more constructive, specific, and discussed different clinical domains compared to LTAs. These differences should be considered when using WBAs for decision-making and designing assessment programs. Future studies should explore faculty and learner motivations behind WBA initiation.

017

Evaluation Without Representation? Pediatric Resident Perspectives on Competency-Based Medical Education

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Background: In 2021, Canadian pediatric residency programs transitioned to Competence by Design (CBD), replacing their time-based system with one based on competencies demonstrated through observations of trainee performance (eg, entrustable professional activities [EPAs]). Although intended to be learner-centered, resident voices have been underrepresented in CBD's design. We sought to (1) understand how pediatric residents perceived CBD as impacting their education and evaluation, and (2) solicit their ideas to improve its implementation.

Methods: We used the constructivist approach of qualitative instrumental case study to situate our exploration, investigating how pediatric residents described their experiences with CBD. We developed our interview framework by reviewing relevant program-specific and national CBD documents and interviewing program directors/education leads at 3 universities. We conducted semistructured interviews with 14 residents in 2 postgraduate programs and analyzed these with reflexive, inductive thematic analysis.

Results: While residents agreed with CBD's espoused purpose, they felt that its potential benefits are significantly hampered in 4 key ways. These included: (1) residents shoulder the administrative burden and responsibility of completing EPAs; (2) EPAs generate variably useful feedback; (3) staff physicians have struggled to embrace CBD; and (4) CBD has been focused on assessment of learning rather than assessment for learning.

Conclusions: To effectively adapt postgraduate educational systems to equip learners with the skills to meet the needs of societies, centering resident voices in curricular revision is paramount to maximize learner buy-in, minimize administrative burden, and guide the development of necessary institutional supports (eg, formal coaching) to ensure successful system transformation.

018

Integration of Simulation in Competence by Design in Postgraduate Medical Education: Challenges and Opportunities

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Background: Integrating simulation into postgraduate medical education (PGME) poses challenges such as time constraints, skepticism about its effectiveness and access to resources. Despite these issues, simulation offers significant potential for formative assessments like entrustable professional activities (EPAs). It enables direct observation and immediate feedback in a safe environment, supporting mastery learning and providing standardized scenarios for infrequent but critical tasks thereby complementing workplace evaluations. There is a dearth of literature exploring the uptake of simulation to complete EPAs. Using Competence Committee (CC) data, this study investigated simulation-based EPA (SB-EPA) integration across all disciplines at the University of Toronto to identify opportunities for further integration.

Methods: An environmental scan of all CBD specialties' Royal College EPA Guides (n=66) for EPAs that identify simulation as a method for attainment was conducted, followed by a thematic analysis. EPA data were analyzed to identify the EPAs completed via simulation in practice. Consultation with CC chairs to contextualize these results and identify opportunities for further integration is underway.

Results: A total of 310 SB-EPAs were identified in our environmental scan. There were 6 common themes: patient assessment and management, procedural skills, emergency and critical care, communication and consultation, ethical and legal considerations, and health promotion and disease prevention. Of the 90, 164 EPAs completed in the 2023-2024 academic year, 1911 (2.1%) were attainted through simulation, with variable rates by specialty.

Conclusions: The preliminary results indicate that simulation is underutilized. The low percentage of SB-EPA assessments does not necessarily reflect program interest in simulation but can be a means to identify potential opportunities for more effective simulation integration. Thematic analysis of EPAs relevant to multiple disciplines allows for more deliberate use of SB-EPAs in curriculum development. Continuous evaluation and refinement of these approaches will ensure it complements workplace-based EPAs in informing entrustment decisions.

019

A Crash Course in Internal Medicine: Implementation and Pilot Results of a PGY-1 Bootcamp

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Background: The transition from medical school to residency represents a steep learning curve, with greater clinical responsibility and autonomy. The Coalition for Physician Accountability recommends the implementation of bootcamps to facilitate the transition to residency; however, existing bootcamps vary greatly in their content, format, and effectiveness. Furthermore, the majority of literature surrounding bootcamps has been tailored toward surgical specialties. As such, the purpose of our project was to develop, implement, and evaluate a resident-led internal medicine bootcamp to improve resident preparedness and knowledge of core medicine topics. We sought to assess the impact of the bootcamp on residents' confidence levels, resource awareness, and medical knowledge.

Methods: A 2-day bootcamp was developed by residents, covering topics informed by literature review as well as feedback from faculty, and consisting of both didactic and interactive small group sessions. Our project had 2 components: a survey and a quiz. The 12-question survey used a 5-point Likert scale and assessed residents' confidence levels, resource awareness, and perceived medical knowledge. The quiz consisted of 20 multiple-choice questions and objectively assessed residents' medical knowledge. Residents were emailed the survey and quiz at 3 time points: 4 weeks prior to the bootcamp, 1 week following, and 3 months following the bootcamp.

Results: Thirty-one incoming residents to our internal medicine program attended our bootcamp course. Our analysis of "agreed" or "strongly agreed" responses to the survey questions show an increase in confidence levels, resource awareness, and perceived medical knowledge by 30.7%, 61.7%, and 20.6%, respectively. There was a 9% improvement in medical knowledge, reflected by correct quiz responses.

Conclusions: Our bootcamp helped to improve confidence levels, resource awareness, and medical knowledge. It also highlighted which areas require greater focus. Our project will guide how we improve our bootcamp's benefit and contribute to the current knowledge of effective bootcamp structure.

020

Growth Versus Performance-Orientation in Entrustable Professional Activity Assessment

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Background: Entrustable professional activity (EPA) assessments are often criticized as performance-focused tick-box exercises with limited value for trainee growth. This study examined real-time perceptions of EPA assessments in the emergency department, exploring how often and why assessments are perceived as growth-oriented (assessment *for* learning) or performance-focused (assessment *of* learning).

Methods: Convenience sampling was used to conduct brief (5-minute), semistructured, face-to-face interviews with emergency medicine faculty and residents from a single training program immediately following EPA assessment moments between November 2023 and January 2024. Participants categorized their interactions on a scale as growth-focused, performance-focused, or equally balanced, and provided narrative explanations for their perceptions. Transcripts of the recorded interviews were analyzed inductively to identify the perceived features of the assessment moments and themes influencing their perceptions of growth vs performance focus.

Results: A total of 92 interviews were conducted, representing 46 unique faculty-resident interactions. Residents and faculty perceived the interactions as performance-focused 30.4% and 34.8% of the time, growth-focused 41.3% and 34.8% of the time, and equally balanced 28.2% and 30.4% of the time, respectively. There was a positive correlation between their perceptions (Spearman's rank order, rs(44)=0.376, *P*=.001), with rare opposing perceptions (13.0%). Factors associated with assessment moments perceived as growth-focused included future-oriented discussions based on the case, challenging cases, low existing mastery, EPAs grounded in growth, preset objectives, and strong resident-attending rapport. Conversely, factors identified in assessment moments perceived as performance-focused were linked to brief discussions, straightforward cases, high resident mastery, high level of seniority, EPAs grounded in performance, and perceptions of EPAs as "check-boxing exercises."

Conclusions: Contrary to prevailing criticisms, this qualitative study of in-the-moment EPA-assessment interactions found balanced perceptions of growth and performance-focused interactions. The articulation of factors influencing these perceptions offers valuable insight for those designing and revising EPA assessment processes.

021

Early Burn: Medical Students and Burnout in the Pre-Clerkship Period

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Background: Burnout among medical students is common. The Uniformed Services University (USU) lacks a formal curriculum educating incoming students about burnout. Developing an orientation session to provide burnout prevention and management strategies may help students cultivate skills to sustain their well-being.

Methods: A needs assessment was developed to characterize the relationship between pre-clerkship students and burnout at USU, which was previously uninvestigated, and inform the session design. An anonymous survey with questions about demographics, level of concern, and confidence recognizing, preventing, and coping with burnout was disseminated to the respective MS1 and MS2 classes during 2023 and 2024 orientations. Concern and confidence were measured using a Likert scale of 1 to 5 (1=Not at all, 5=Extremely).

Results: Response rates were 88% (152 of 173) and 99% (173 of 174) for MS1s and 47% (77 of 164) and 44% (74 of 169) for MS2s in 2023 and 2024, respectively. Women (2.9, 3.1 and 3.4, 3.3) and non-White (2.9, 3.2 and 3.3, 3.1) respondents were generally more concerned about developing burnout than men (2.5, 2.8 and 3.1, 3.5). MS2s were less confident (2.5, 3) that they could prevent burnout than MS1s (2.7, 3.1), but more confident that they could recognize burnout in themselves (3.3, 3.7). Both classes had similar confidence to identify mitigating strategies (2.9, 2.8 and 3.5, 3.5). Exercise (85%, 92%) and spending time with friends/family (75%, 100%) were the most common burnout prevention techniques across 2023-2024. Most MS2s (81%, 65%) experience or possibly experience burnout during their first year of medical school. MS2s (60%) report a decreased frequency of implementing their burnout prevention techniques during difficult academic modules.

Conclusions: MS1/MS2 classes are concerned about burnout. Confidence in burnout prevention wanes over time and during difficult academic periods. Nonresponse bias for MS2s is a possible limitation of study design. Gaps in students' understanding of burnout and prevention strategies could be addressed during an orientation session.

022

Partnering With Patients and Families to Prioritize Competencies of Physicians Caring for Children With Medical Complexity

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Background: Essential competencies of pediatricians who care for children with medical complexity (CMC) are being defined by educational programs at present. Patients and families are key stakeholders in defining competencies. We describe a consensus methodology study design rooted in multi-level family partnership and identify high-priority competencies required of pediatricians caring for CMC.

Methods: Principal investigators (4) included 2 family leaders. At study outset, roles, expectations, and potential remuneration were discussed. Study conceptualization was supported by formation of steering committee with family leaders and engagement with the Research Family Advisory Committee. Study design included purposeful sampling of clinicians and family leaders, caregivers, and patients with lived experience in the care of CMC to form an expert panel that participated in 3 rounds. Round 1 involved responding to open-ended prompts about competencies of pediatricians caring for CMC. After refinement of responses by the steering committee, rounds 2 and 3 involved rating competencies, identifying 10 essential competencies.

Results: The expert panel consisted of 47 clinicians, 41 family caregivers, and 9 young adults with medical complexity. Round 1 results in 131 responses, synthesized into 94 competencies in 5 domains: medical expertise, collaborative care, patient- and family-centered care, partnership in advocacy, and reflective practice. Top identified competencies beyond medical expertise included valuing the whole child and demonstrating a humanistic approach to care. While consensus was achieved, there were subtle but important differences between stakeholders.

Conclusions: An international expert panel of clinicians, patients, and families identified high priority competencies for all pediatricians in the care of CMC, which can be used to advance a postgraduate education agenda. Family and patient participation in clinical education, including curriculum design and delivery is becoming more common. The codesign model adopted in this study provides a potential roadmap to others involved in medical education.

023

Navigating CBME Implementation and Development in Subspecialty Training Through Co-Design: A Design-Based Research Approach

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Background: While faculty and trainee engagement are essential for implementing Competence by Design (CBD), achieving this is challenging. Many programs report disengagement, stress, and burnout instead. Design-based research (DBR) addresses these issues through iterative cycles of designing, testing, and refining educational interventions with stakeholder collaboration to improve implementation. Using DBR in our subspecialty program, we worked to co-construct an ideal, contextual, and authentic way to implement CBD.

Methods: During the 2024-2025 academic year, a DBR approach was used to develop and implement a novel method of CBD delivery. All 13 faculty and 8 residents from the Division of Endocrinology with experience with CBD provided input in an iterative, contextual, and participatory manner. Consideration was given to the core components framework of CBD implementation with specific focus on assessment for learning and self-regulated learning.

Results: Two cycles of DBR were conducted and yielded several important insights and strategies that have now been implemented in our program. Highlights include purposeful scheduling, case tracking, and flexibility with electives which helped provide tailored learning experiences. Removing the entrustment scale from the daily workplace-based assessment form and moving the entrustment decisions strictly to the competency committee helped emphasize assessment for learning and formative feedback on daily interactions. Dedicated feedback time within clinic schedules and minimizing duplication of assessment methods helped with faculty workload and have led to improved narrative feedback quality. Contextual enablers included timing and size—being in the last stage of training was a motivator for resident engagement and personal growth; being a smaller program facilitated consensus-based decision-making and longitudinal relationships.

Conclusions: This iterative, collaborative program co-design helped identify specific ways to improve the implementation of CBD in our context. Having agency in the process increases engagement from all stakeholders. Ongoing cycles of redesign and evaluation of outcomes will be completed in the future.

024 This abstract has been withdrawn.

025

Incorporating Health Economics Curriculum in Residency Education in Alberta

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Background: With rising health care costs threatening the sustainability of Medicare, physicians must take a greater role as stewards of health care resources. Medical organizations and health care leaders have recommended incorporating health economics into medical training, but few Canadian residency programs have implemented such curricula. We evaluated the effectiveness of a newly introduced health economics curriculum in local residency programs. We hypothesized that residents' understanding of health economics concepts and perceptions of its importance would improve post-session.

Methods: One hundred two residents from pediatrics, internal medicine, family medicine, and general surgery participated in separate 3-hour sessions during academic half-days. Designed by health economists, each session included 4 lectures that were 15 minutes each and 2 interactive small-group workshops tailored to each specialty. Pre- and post-session surveys assessed participants' understanding of health economics concepts and views on its importance using a 5-point Likert scale. Open-ended comments were also collected. A sequential mixed-methods design was used, with McNemar's test to assess significant changes in understanding and perceptions. Qualitative comments were analyzed to explain observed trends.

Results: Forty-seven residents completed the survey (response rate: 46.1%). Post-session results showed a significant improvement in both understanding and perceptions of health economics. There was an increase in the proportion of residents comfortable explaining health economics principles of 62.5% (95% CI 0.390, 0.860; $P<.001$). Additionally, the proportion of residents who considered health economics important in residency education increased by 16.7% (95% CI 0.024, 0.357; $P=.046$). Ninety-five percent of respondents found the session valuable. Key themes from comments included the importance of resource stewardship and the benefit of early exposure to health economics.

Conclusions: Residents' understanding and perception of health economics improved significantly after the curriculum, demonstrating its effectiveness. These findings will help inform other institutions seeking to implement similar curricula.

026

Developing Inclusive Medical Education: Addressing Ableism Through a Community-Driven Interactive Resource

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Background: A significant contributor to disability-based discrimination in health care is rooted in clinician assumptions and limited knowledge surrounding disability. Gaps in formal medical education often fail to address ableist biases held by trainees, which negatively impacts care for disabled patients. We hypothesize that integrating an interactive resource into medical education can enhance trainees' understanding of ableism and foster more inclusive and equitable health care practices.

Methods: We collaborated with disability communities and advocates to develop an interactive book designed to address ableism in medical education. This resource emphasizes identifying and deconstructing biases, exploring the historical and systemic roots of ableism, and highlighting gaps in existing disability-related curricula. Data from prior presentations, as well as real-time audience feedback during interactive sessions, were collected to evaluate changes in trainees' understanding and attitudes toward ableism and disability advocacy.

Results: Our resource has been accessed by over 16,000 readers worldwide and integrated into health care education curricula across Canada. It has received regional, national, and international recognition, including multiple awards for curriculum innovation. Feedback from diverse health care learners and professionals consistently highlights its impact in reshaping perspectives on disability and fostering more inclusive practices. Preliminary audience data suggests that engagement with the resource significantly improves awareness of ableist biases and enhances understanding of disability-related concepts.

Conclusions: This community-driven resource has proven to be an effective tool for challenging ableist biases and enhancing disability inclusion in medical education. By equipping trainees with the knowledge and skills to identify and address ableism, this resource lays the groundwork for advancing equitable health care delivery for disabled patients.

027

Teaching Dynamics of Public Trust: Assessing the Impact of a Novel Public Health Education Intervention

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Background: Health systems rely on public trust for successful implementation of public health interventions. We sought to assess the impact of a novel public health education intervention on learners' understanding of dynamics of public trust and their capacity to develop trust-building strategies.

Methods: Purposeful recruiting of MD and non-MD learners enrolled in graduate- and doctorate-level public health curricula focusing on novel trust-building strategies was conducted and participants were invited to partake in an audio-recorded semistructured interview. Interviews were transcribed, coded, and analyzed using a qualitative descriptive approach.

Results: Public health students report benefiting from specific training on building trust with communities and are eager to apply trust-building principles and skillsets in their work. Students gained practical understanding of the dynamics of trust, and valuable experience in developing trust-building strategies. A notable finding was that this course encouraged perspective taking and resulted in broadened perspectives around polarizing topics. Students expressed fear of communication missteps, backlash, and external factors, limiting their ability to build trust with the public.

Conclusions: An educational intervention focused on trust building is a necessary and effective response to the ongoing lack of public trust in the public health system. Further training on operational practices to develop, implement, and evaluate trust-building strategies may be beneficial.

028

Making Dreams Come True: A Collaborative Approach to Redesigning the Surgical Rotation for Family Medicine Residents

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Background: Family medicine residents often face a challenging surgical rotation, which may not fully meet their educational needs or competency objectives. This project aimed to transform the traditional 4-week surgery rotation into a more versatile and impactful experience, designed to better equip family medicine residents with essential surgical skills relevant to their future practice.

Methods: Through a multiyear, iterative process involving key stakeholders—including family medicine residents, surgical faculty, and accreditation bodies—our team reimagined the surgical rotation. Feedback from residents via annual surveys and town halls and surgical rotation evaluations, insights from surgical faculty, including one-on-one consultations with education leads and chiefs, and reviews of accreditation reports and CanMEDS competencies all contributed to the development of a new surgery selective rotation.

Results: This enhanced rotation now offers 2 weeks in general surgery outpatient clinics and 2 weeks in subspecialty clinics such as orthopedics, urology, and plastics, with the option for residents to rotate through trauma care or the operating room for advanced surgical training. The changes to the surgical rotation have led to a significant improvement in resident satisfaction and competency achievement, as evidenced by pre- and post-transformation surgical rotation evaluation scores, from 3.08 (2020-2021) to 3.49 (2022-2023), and responses on resident town hall surveys where 70% indicated a positive experience on general surgery in 2023 vs 66% indicating a negative experience on general surgery in 2021.

Conclusions: Redesigning the surgical rotation for family medicine benefited from a collaborative, iterative approach. Continuous engagement of all stakeholders, including learners, faculty, and administrators through surveys, consultations, and iterative prototyping, have resulted in building a rotation that aligns with competency objectives and resident preferences and continues to improve the quality of the rotation and educational outcomes.

029

Exploring the Intended and Unintended Consequences of Competence by Design Implementation on the Experiences of Trainees in a Pediatric Residency Program: Adapting or Apathetic?

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Background: Reports from Canadian academic institutions following the implementation of Competence by Design (CBD) have suggested important unintended consequences, such as an increased administrative burden. Since pediatric residency programs transitioned to CBD in July 2021, McMaster University's Pediatrics Residency Program had residents in both CBD and non-CBD streams at the time of data collection. Our objective was to compare the resident experiences in these 2 streams.

Methods: In June 2024, we studied the McMaster Pediatrics Residency Program resident physicians in both CBD and non-CBD streams. This abstract represents the third and final phase of a sequential exploratory mixed-methods study. Focus groups of 4 to 6 trainees were used to delineate findings from the previous phases of the study and to explore observation, feedback, assessment, and burnout. The CBD groups ranged from postgraduate year (PGY) 1-3, and the non-CBD cohort comprised only residents in PGY-4. The transcripts and field notes then underwent reflexive thematic analysis.

Results: Four focus groups were completed in this study: 3 CBD groups (n=15) and 1 non-CBD group (n=6). Preliminary findings support data from previous phases, suggesting additional administrative burdens in the CBD cohorts and concerns about potential implications for resident well-being. The stage of training impacts how CBD influences the resident experience as more senior CBD residents perceived less time spent on elements of CBD, reported a less pronounced impact on well-being, and described an apathetic shift in attitude toward assessments throughout training.

Conclusions: Given the heightened assessment demands in CBD, particularly for junior residents, examining how administrative burdens impact resident well-being is essential. As our work suggests a shift toward apathy in senior CBD residents, future work should explore how attitudes evolve throughout training and how this impacts the educational experience within CBD.

030

Breaking Out of Silos: A Multi-Stakeholder Needs Assessment on Key Characteristics of Interdisciplinary Training for Collaborative Practice

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Background: Needs assessments are a fundamental part of curriculum design to identify gaps and align educational priorities with current health care needs. Perioperative medicine is an example of specialized medical fields that have become increasingly complex and dependent on close collaboration between specialists of different backgrounds. Despite the highly interdisciplinary nature of perioperative management, existing curricula does not appropriately address this collaborative interdependence, and postgraduate training of perioperative medicine for surgical, anesthesia, and medical specialty trainees remains relatively independent from one another. This study aimed to explore the key characteristics that would enable specialized training programs in perioperative medicine to specifically foster interdisciplinary collaborative care.

Methods: Using a constructivist lens, we conducted a directed needs assessment using semistructured interviews with 13 participants, comprising perioperative medical experts, perioperative medicine trainees, surgeons, and anesthesiologists from 3 Canadian universities. We analyzed the interview transcripts using inductive thematic analysis following the interpretive description methodology.

Results: Our participants suggested that the key to promoting interdisciplinary training is to build an adaptive and flexible program with both purposeful program design and inclusion of training objectives that align with this overarching objective. Important considerations for program design included the purposeful incorporation of trainees from different specialties, built-in cross-disciplinary training experiences, and promotion of explicitly shared management models between specialties. Key training objectives included development of team-based problem-solving skills, interdisciplinary communication skills, and optimal scope of practice and cross-disciplinary knowledge base that are background adapted.

Conclusions: Purposeful program and curriculum designs are fundamental to high-quality interdisciplinary training, which has become indispensable for many specialized medical fields, such as perioperative medicine. Our findings highlight key design features that can help optimize such training and may be applicable to other specialized areas with high cross-disciplinary interdependency.

031 This abstract has been withdrawn.

032

Evaluating Changes in the Consultation-Liaison Psychiatry Curriculum Using a Self-Assessment Tool

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Background: Postgraduate year (PGY) 4 residents complete a 4-month consultation/liaison psychiatry (CLP) core clinical rotation during either July to October (cohort 1), November to February (cohort 2), or March to June (cohort 3). In response to the shift to an earlier Royal College Examination for psychiatry residents, the CLP academic half-day (ie, didactic teaching) is now delivered asynchronously from the 4-month clinical rotation. The objective of this project was to evaluate the impact (if any) of the timing of CLP didactic teaching relative to clinical rotations by comparing 3 cohorts of psychiatry residents in terms of their CL knowledge and self-perceived confidence via a self-assessment tool.

Methods: An online knowledge self-assessment (with 34 knowledge questions on 17 CLP topics) was administered to PGY-4 residents pre- and post-didactic curriculum. We analyzed the overall and per-topic changes pre- and post-curriculum regarding residents' CLP knowledge and self-perceived confidence. The Kruskal-Wallis test was used to analyze the pre- and post-curriculum changes among the 3 clinical cohorts.

Results: Overall, residents' CLP knowledge scores and self-perceived confidence increased by 24.7% and 25.1%, respectively. Of the 35 participants and 27 pre-curriculum self-assessment responses, there were 22 pairs of matching pre- and-post-curriculum responses where clinical-cohort comparisons could be made. There was no statistically significant difference observed among the 3 clinical cohorts.

Conclusions: Offering CLP didactic teaching asynchronous to residents' clinical rotations had no statistically significant impact on their learning outcomes and self-perceived confidence. Going forward, curricular changes where didactic teaching might not be aligned with clinical or experiential learning could be considered.

033

Pediatric Residents' Preparedness to Care for Indigenous Patients and Families: A Needs Assessment Survey to Inform Clinical Curriculum Development

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Background: There continues to be gaps in care for Indigenous children in Canada, stemming from historical acts of colonialism and racism. The TRC call-to-action #24 implicates medical training programs to require skills-based training in Indigenous health to begin to counteract these inequalities. Despite this, Canadian medical training may not be meeting the needs for educating physicians on Indigenous health and wellness. A recent review of Canadian residencies has highlighted a need for community-driven Indigenous partnerships. The purpose of our study was to explore residents' comfort levels in providing care for Indigenous patients. The results will inform clinical curriculum development.

Methods: We conducted a survey-based needs assessment of pediatric residents at the University of Calgary. Survey questions explored residents' knowledge, experience, and skills related to culturally safe care (understanding of Indigenous health practices, identifying medical mistrust, incorporating Indigenous ways of knowing in management plans, clinical exposure, mentorship, and advocacy). Quantitative data were analyzed using descriptive statistics. Thematic analysis was used to analyze written responses.

Results: Survey response rate was 26 of 53 (49%). All participants strongly agreed on the value of learning this topic (M=5/5, SD=0). Participants reported lower comfort levels in incorporating Indigenous ways knowing into practice (M=2.6/5, SD=0.8), but higher levels of confidence in advocacy (M=3.8/5, SD=0.6). Overall, participants reported low scores for confidence working with Indigenous populations in a culturally safe way (M=3.0/5, SD=1.0). Thematic analysis revealed limited learning opportunities and barriers to learning.

Conclusions: While residents see the importance of culturally safe care, most still feel unprepared and report low comfort levels in incorporating Indigenous ways knowing into their practice. The results from this survey highlight the need for improved Indigenous health training in pediatric residency programs. The next phase will involve partnering with local Indigenous communities to better understand how we can provide holistic and culturally safe care.

034

Assessment Burden by Design: Exploring the Variability in Competence by Design Assessment Forms

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Background: Competence by Design (CBD) has been criticized for increasing assessment burden though the high number of required entrustable professional activity (EPA) assessments. However, poor form design and institution-specific assessment interfaces may also be contributing factors. We developed a form design that aimed to reduce assessment burden.

Methods: Assessment Template 1 for the "Core 1" emergency medicine (EM) EPA was used to compare assessment forms used at 14 EM residency programs. Program directors (n=7), attending physicians (n=8), and residents (n=8) from 11 institutions were interviewed from May to August 2023 for their perspectives on the usability of the forms' components. Interview transcripts were analyzed using the Five Elements of User Experience design framework. A refined assessment form was synthesized in the Figma design application and piloted by interviewees. Further modifications were made to the form design based on user feedback.

Results: Thematic analysis demonstrated misconceptions about CBD including achievement of entrustment, scope of EPA, and relative importance of form elements, which compromised quality and effectiveness of residents' formative and summative assessments. Certain form features such as the addition of a line in the entrustment scale denoting "competency" enforced misconceptions and introduced biases toward higher entrustment scores while undervaluing positive feedback. Optimal form design reduced biases of attending physicians in completing assessments of residents and facilitated efficient navigation. This included an aesthetic appearance with adequate white space; selection controls with reduced clicks; removal of redundant or unnecessary components; descriptive entrustment scale criterion and prompts for narrative feedback textboxes; and reorganization of the form components with emphasis on narrative feedback.

Conclusions: Design of EPA assessment forms demonstrate considerable variability. Misunderstanding of CBD objectives likely influenced conception of institution-specific form designs and drives inadequate form completion. The efficacy of the refined form design in producing high-quality assessments and reducing assessment burden requires further characterization.

035

Effectiveness of a Novel Consent and Capacity Board Simulation Training

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Background: Psychiatrists and psychiatric residents who work with involuntary and/or incapable patients in Ontario are required to partake in Consent and Capacity Board (CCB) hearings, often without any training or orientation to the proceedings. This simulation training addresses the lack of familiarity psychiatric residents have with the structure of hearings and aims to increase their knowledge and confidence in making their case.

Methods: Nineteen psychiatry residents participated in a CCB simulation, which involved a mock CCB hearing broken down into stages with a standardized patient, and experienced psychiatrists playing the roles of patient counsel and the CCB chair. Residents participated in a debrief following the PEARLS and plus/delta model to enhance reflection and self-assessment. Pre- and post-surveys based on Moore's (2009) framework were completed, measuring confidence in topics related to the learning objectives and overall experience. Descriptive statistics and a paired sample *t* test were used to analyze the data.

Results: Eighteen psychiatry residents completed the pre- and post-surveys (94.7% response rate). There were statistically significant improvements in residents' confidence across the learning objectives from pre- to post-training: presenting evidence at a CCB hearing (Mean=2.33, SD=1.03 pre-intervention vs Mean=3.50, SD=0.62 post-intervention; t(17)=4.75; *P*<.001); responding to questions from the panel (Mean=2.17, SD=0.79 pre-intervention vs Mean=3.22, SD=0.65 post-intervention; t(17)=5.13; *P*<.001); responding to cross-examination from the council (Mean=1.89, SD=0.83 pre-intervention vs Mean=3.28, SD=0.67 post-intervention; t(17)=5.40; *P*<.001); maintaining therapeutic rapport with the client during cross-examination (Mean=1.94, SD=0.99 pre-intervention vs Mean=3.28, SD=0.96 post-intervention; t(17)=4.12; *P*<.001; and presenting closing submission in a succinct/thorough manner (Mean=2.17, SD=0.99 pre-intervention vs Mean=3.33, SD=0.16 post-intervention; t(17)=4.51; *P*<.001).

Conclusions: These results demonstrate the significant impact this simulation training had on residents' confidence in participating in CCB hearings. Future directions include offerings to psychiatrists and psychiatric residents outside of a mental health hospital and collaborating with legal departments to include law students and allow for interdisciplinary training.

036

Revised Canadian Medical Education Directives for Specialists (CanMEDS) Roles Framework: Suggestions and Recommendations From a Modified Delphi Study

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Background: In 1996, the Royal College of Physicians and Surgeons of Canada (RCPSC), in collaboration with the College of Family Physicians of Canada (CFPC), introduced the CanMEDS roles framework to define physician roles for the modern era. Updated in 2005 and 2015, it identifies 7 key roles: medical expert, communicator, collaborator, leader, scholar, health advocate, and professional. This study, guided by the question, "What improvements would you like to see in the CanMEDS roles framework in the future?" recommends the framework evolve to address the needs of the population served and future physicians.

Methods: Using a modified Delphi study, this research achieved consensus on potential improvements to the CanMEDS framework. A panel of 30 experts, including faculty, residents, deans, competency-based medical education leads, and officials from RCPSC and CFPC, were recruited via purposive and snowball sampling methods. Data collection involved 3 rounds, beginning with qualitative interviews, followed by 2 rounds of questionnaires via Qualtrics. Consensus was defined as 75% agreement. Thematic analysis of round 1 responses informed questionnaire development for subsequent rounds.

Results: Participants recommended 3 changes: Digital Health Literacy-DHL (AI and Telemedicine), Indigenization–Equity, Diversity, Inclusion, Anti-Racism, and Accessibility (I-EDIAA), and Physician as a person/human. When I asked participants to rank/prioritize these recommendations through the questionnaire in rounds 2 and 3, I received the following results: 54% of the participants (n=14) ranked I-EDIAA as #1 priority. They suggested employing I-EDIAA as the lens role through which we envision all other roles. Forty-two percent of the participants (n=11) ranked DHL as priority #2 to make it to the Roles level, and 66% (n=17) agreed that physician as a person/human is priority #3 for any upcoming change.

Conclusions: The panel reached consensus to incorporate I-EDIAA and DHL into the CanMEDS framework. The revised framework emphasizes interconnected roles, with I-EDIAA and digital skills essential for addressing social justice and post-COVID-19 resilience.

037

Evaluating Medical Residents' Opinions on Adding Formal Curriculum Content on the Social Determinants of Health

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Background: The social determinants of health (SDOH) play a key role in influencing patient outcomes. Medical curriculum and training often lack emphasis on the impact of SDOH, and it does not adequately prepare trainees to address health disparities. Incorporating SDOH into medical education has the potential to enhance residents' abilities to advocate for their patients and provide holistic care.

Methods: A new approach to SDOH curriculum was introduced at Dalhousie University, New Brunswick campus in 2021, focusing on aspects of socially accountable medicine and engagement with community providers. This study is a questionnaire-based study collecting both qualitative and quantitative data. Medical residents at Dalhousie University New Brunswick campus from 2021 to 2024 were asked to participate in a voluntary anonymous questionnaire. Questions were asked about their perceived importance of SDOH in clinical practice, opinions on the addition of SDOH content to the curriculum, and the impact on their preparedness for patient care.

Results: Sixty-five residents received the survey link via email. Sixty residents responded to the survey for a 92% survey response rate. Thirty-three residents both agreed to participate in the survey and had attended at least one session. After completing one or more of these sessions, 91% of respondents agreed that SDOH should be a formal part of residency curriculum and 100% felt the sessions were overall helpful to their learning. Moreover, 91% of respondents felt confident in their ability to recognize a SDOH and when a patient may be at risk. In addition to this, 100% of respondents agreed they are more likely to access some of the community services that their patient may benefit from.

Conclusions: We present a unique way to deliver curriculum addressing SDOH. Results have shown that this curriculum is an effective way to intervene in the sense of preparedness among residents to address health disparities and to advocate for patients.

038

Driving Change: Empowering Health Optimization Leaders in Medical Education

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Background: A focus on health equity is crucial in medical education, yet many educators face challenges in facilitating interventions to teach this material. Despite resources like the AAMC MedEdPORTAL, hesitancy to address topics like bias and racism often stems from limited experience navigating these sensitive conversations. At our institution, this barrier was addressed by mentoring future educators to be well-equipped to teach about health equity. Following the implementation of a comprehensive health equity curriculum at our institution, interest from other military training hospitals spurred the development of a training program for facilitators. The purpose of this program was to develop a community of health equity educators able to implement our curricula at their institutions by teaching them how to facilitate sensitive conversations and teach health equity concepts.

Methods: We hosted a 5-day seminar in June 2024 that trained 22 representatives from 11 internal medicine programs. The seminar included modules/workshops, case-based discussions, journal clubs, and practice facilitation sessions. To evaluate the effectiveness of our training, we conducted pre- and post-surveys of the overall training and individual components. Data were analyzed using paired-samples *t* tests. We also completed informal content analysis of open-answer responses related to survey questions.

Results: Twenty-two of 22 participants reported statistically significant increases in confidence in Health Equity Teaching (pre-average: 1.47/5, post-average: 3.90/5; $P \leq .001$; d=2.62). Qualitative data highlighted training benefits as understanding concepts, facilitation skills, and cultural humility, with curriculum implementation barriers identified as institutional buy-in and time constraints.

Conclusions: The program successfully enhanced participants' confidence and skills in health equity teaching. Future steps of this project will involve monitoring and assessing the implementation of the curricula at participating training hospitals, considering approaches to expand and maintain this community of practice, and providing continued support for facilitators to ensure the program's sustainability.

039

Changing Standards to Accommodate Religious Attire in Health Care Settings: A Case Study of Policy Advocacy and Change

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Background: In 2022, the Toronto Academic Health Science Network (TAHSN) approved a set of standards to accommodate religious attire for all health care workers, learners, and volunteers in hospital areas with sterile procedures (eg, operating rooms) across all of its affiliated hospitals (n=15). This research project studied the process of policy advocacy from 2013 to 2022 to ascertain the barriers and facilitators to the process of policy advocacy and change.

Methods: The study was designed as single case study with 2 embedded units examining the advocacy periods between phase 1 (2013-2020) and phase 2 (2021-2022). Using a combined theoretical approach of policy windows (Kingdon 1984/2011) and interest convergence (Derrick Bell 1980), semistructured interviews were conducted with 17 participants, including authors of the Standards document, subject experts, and key stakeholders. Transcribed interviews were analyzed iteratively for emergent themes related to barriers and facilitators during the policy advocacy and change process.

Results: In Phase 1, there were more barriers than facilitators. In Phase 2, there were more facilitators. Phase 1 barriers included learner mistreatment, unpaid equity work, and a complicated institutional hierarchy that did not sufficiently support champions. Phase 2 facilitators included sufficient institutional support for champions and allies, prioritization of advocacy work, and external factors (eg, COVID-19 pandemic, enhanced societal awareness around racism) that transformed equity into a public health priority.

Conclusions: These findings give insight into how policy advocacy and change occurred in a large academic institutional network with a diverse population. The ongoing challenges to policy implementation are also identified. This research may serve as best practice for other health systems addressing similar issues around accommodating religious attire in areas with sterile procedures.

040

Transition Tensions: Program Directors' Perspectives on the Impact of Selection on the Transition to Residency

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Background: Competency-based education is designed to facilitate a growth-oriented continuum of training from undergraduate medical education (UME) to graduate medical education (GME); however, residency selection often fosters an achievement orientation and lack of transparency given the need to compare applicants. We sought to gain a deeper understanding of program directors' (PDs') perspectives on the current UME-GME transition, their desired outcomes for the selection process, and the interaction between the two.

Methods: Using semistructured interviews of 18 emergency medicine PDs, we conducted a deductive template analysis and expanded thematic analysis to explore PDs' views on how the current residency selection process aligns or creates tensions with the UME-GME transition. We utilized the problem framings identified from a recent scoping review performed by this author team as well as several identified barriers to the UME-GME transition as an initial template to guide the thematic analysis.

Results: PDs felt that the unstated goal of UME was selection and not preparation for GME. PDs described their goals in selection to be matching applicants who align with their program and what they can support; however, they do not trust medical schools to tell the truth about the students and their performance. PDs proposed solutions aimed at refocusing attention for students during the transition toward tasks that will aid in their preparation for residency: (1) adapting to the health systems in which they will work; (2) working as a member of an interprofessional team; (3) engaging in reflective practice; and (4) planning for how to maintain their well-being in residency.

Conclusions: PDs point to the residency selection process as inhibiting preparedness for residency. This is largely due to the dual purposing of assessments for selection, which is a competitive process, and residency preparedness, which is a competency-driven construct. Given this tension, PDs focused on alternative competencies that they felt would be beneficial for preparedness for residency.

041

Outsourcing Admissions Decisions: Entrusting Third Party Agencies in International Medical Credential Verification in Canada

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Background: International medical graduates (IMGs) are recognized as a channel for exchange of knowledge as well as a viable solution for Canada's beleaguered family medicine industry. However, the increase in international learners and their diverse experiences has proven difficult for Canadian residency program admissions, which are resourced primarily for evaluating Canadian medical graduates. Growing reliance on external agencies as gatekeepers of international credential verification may be obscuring unintended impacts on the learner and program.

Methods: Our study uses the concept of trust as heuristic for making decisions as a framework to analyze the process of credential evaluation by third party agencies. By entrusting decisions about medical credentials to the Medical Council of Canada (MCC) and its related evaluation agencies, the actual process of checking credentials is black boxed. We examine the inter-relationships between the MCC and related agencies as well as their processes to elucidate how outsourcing may be both positively and negatively impacting IMGs and programs.

Results: Findings show that while entrusting credential verification to external agencies allows for faster and more efficient decision-making for institutions dealing with growing IMG numbers, the actual costs of the processes in terms of resources are shifted to the individual IMG as well as to the program in a number of ways, from financial to emotional. We find that the inter-relationship of a few agencies obscures this shifting through self-referential policies and processes. We also find that this obscuring can undermine the program-learner relationship in terms of building trust themselves.

Conclusions: We discuss other models of international education evaluation and verification that can recalibrate the relationships between IMGs and programs, while considering a role for third party agencies in facilitating these relationships in more constructive ways that benefit all.

042

Sex Representation on Social Media Accounts of Surgical Residency Programs

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Background: Enrollment of female-identifying individuals in Canadian medical schools has outpaced that of male-identifying ones for decades. Despite this, gender inequality in medicine persists, especially in surgical specialties. Social media is playing an increasingly prominent role in how residency programs portray themselves and interact with prospective applicants. A better understanding of sex representation patterns on these social media accounts is therefore imperative.

Methods: All Canadian surgical residency programs and corresponding Instagram pages were identified. Posts between July 1, 2021, and June 30, 2024, were classified as depicting an individual or a group in either a social or professional setting. The presenting sex of those depicted was classified as male or female. Group photos were classified as all male or all female, predominantly male or predominantly female based on the number of individuals of each sex. Posts with equal numbers were deemed neutral and excluded from the analysis. Classifications were completed by 2 independent reviewers, acknowledging limitations of binary sex classification. The sex composition of the 2022-2024 postgraduate year 1 cohorts was determined as a reference. Statistical comparisons were done with the one-proportion *Z* test.

Results: From 103 Instagram pages across 10 surgical specialties, 5469 posts were included. When compared to the proportion of males in the reference group (41%), the proportion of posts depicting male individuals in either social (48%, $P<.01$) or professional (58%, $P<.00001$) settings was higher. This proportional difference was present in group posts as well (social 50%, $P<.0001$; professional 57%, $P<.00001$). When excluding obstetrics and gynecology programs from the analysis, the proportion of males in the reference group increased (51%). The proportion of posts depicting males disproportionally increased, especially in professional settings (individual 62%, $P<.0001$; group 66%, $P<.00001$).

Conclusions: Surgical residency programs disproportionally overrepresent male-presenting individuals on social media, especially in professional settings.

043

Motivational Factors Influencing the Recruitment of Primary Care Physicians to a Rural Canadian Region

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Background: Physician shortages have long been a challenge experienced in rural Canadian regions. Physician recruitment in these regions is vital; thus, we aimed to identify factors that motivate rural practice to help guide future recruitment strategies. This study investigates key motivational factors and their perceived influence on the decision to practice in a rural Canadian region.

Methods: A survey was sent to 55 family physicians practicing in a rural Canadian region. Respondents identified motivational factors from a predefined list and were also invited to add other factors. Additionally, they rated the effectiveness of these recruitment factors using a 5-point Likert scale (1=strongly disagree, 5=strongly agree). Data were analyzed through descriptive statistics.

Results: Personal and family considerations were the chief motivational factor ranked by 45% of physicians, followed by professional autonomy (40%) and community integration (35%). With regards to recruitment strategies, financial incentives were the most strongly considered (mean score 4.5, SD 0.7), followed by mentorship programs (4.2/5, SD 0.8) and enhancing work-life balance (3.9/5, SD 0.9). Open-ended responses emphasized the influence of satellite campuses and rural rotations during training as a means of exposure and preparedness to tackle unique health care challenges in rural regions.

Conclusions: Motivational factors such as personal and family considerations, professional autonomy, and community integration were shown to encourage rural practice. Additionally, financial and work-life incentivization appear to be effective. As a result, provincially or regionally implemented recruitment strategies targeted toward\ new primary care graduates should emphasize these aspects.

044

Matching Harms: Indigenous Medical Learners' Experiences With the Canadian Residency Matching Service (CaRMS)

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Background: Medical education and training systems remain fundamentally colonial in nature. The Canadian Residency Matching Service (CaRMS) matches medical trainees to residency training programs and is one such system. As an inherently colonial and structurally racist process, CaRMS' impact on Indigenous applicants is neither acknowledged in literature nor adequately considered throughout admissions.

Methods: We invited 12 residents from University of British Columbia's Indigenous Family Practice Site to participate in 2 audio-recorded sharing circles led by an Elder. During the first they reflected on: What are Indigenous learners' experiences with the CaRMS application process? From the first sharing circle emerged the guiding reflection for the second: What would a caring system look like? Sharing circles were the primary means of data collection and narrative inquiry shaped data analysis. Grounded in Indigenous ways of knowing, principles of respect, relationship, and reciprocity, an Elder guided each step of this process, and participants were invited to participate in analysis of their own stories.

Results: Multiple close readings of transcripts grounded an iterative analysis resulting in both common themes from participants' stories and preservation of each unique story's integrity. An overarching theme of caring (or lack thereof) was present, with subthemes of safety, respect, representation, and relationality. Participants wanted to feel safe in their Indigenous identity without concerns of discrimination and racism. Suggestions for improvement of the CaRMS system included offering a separate application process for Indigenous applicants, including Indigenous faculty at all stages of the application process, and prioritizing Indigenous applicants' right to match to their communities.

Conclusions: Within the CaRMS system, Indigenous identifying applicants are unable to hide their identity, while settlers can speak without experiencing bias and/or racism. Rather than revising the current CaRMS approach, we challenge our community to envision a new, inclusive process that serves all learners equitably.

045

Gendered Experiences of Medical Training and Their Impact on Career Progression and Specialty Choice: A Scoping Review

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Background: Gender imbalances are evident throughout the trajectory of medical careers, from medical school entry through to senior leadership positions. As culture has changed over time, more women pursue historically male-dominated specialties such as surgery, and a lower proportion of men are entering medical school. Due to the inflexibility of formal medical curricula and the presence of the hidden curriculum, gender norms in medical careers may change at a different rate to the general culture around them. It has been suggested that curricula remain androcentric, both in their knowledge content and how they interact with learners. We sought to explore to what extent this is true.

Methods: We conducted a scoping review using Arksey & O'Malley's methodology to explore how a doctor's gender shapes experiences of medical training and impact on specialty decisions. A PubMed search of studies in English from 2000 to February 2023 was conducted using search terms devised with a university librarian, including all specialties and countries from day one of medical school to completion of training. A grey literature search was also conducted. After double screening, abstracts were qualitatively summarized to establish a narrative of recent research and discussion.

Results: Of the 2514 abstracts screened, there were 686 relevant papers and articles. Key themes included the prevalence of female doctors, recruitment and retention in specialties, bias in assessment, sexual harassment, family life, flexible training, and issues for men, nonbinary, and transgender doctors. Results indicated an increasing prevalence of female doctors, but that recruitment and assessment remain androcentric.

Conclusions: Gendered experiences of medical training persist despite an increasing proportion of female doctors worldwide. Awareness of this is important for ongoing recruitment and assessment of all genders.

046

Association of Positive Deviant ACGME Milestones Ratings With Internal Medicine Residents' Academic Medicine Careers

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Background: Academic career pathways are highly competitive for physicians-in-training, with persistent underrepresentation from historically marginalized groups. Competency-based ratings during critical resident training periods may be influenced by racial-ethnic bias, potentially limiting future career opportunities. This study examined the association between positive deviant Accreditation Council for Graduate Medical Education (ACGME) Milestone ratings for second-year (PGY-2) resident physicians in US internal medicine (IM) residency programs and their characteristics, and associations with subsequent academic career placements.

Methods: Using data from the Association of American Medical Colleges and ACGME (2014-2017), positive deviance analysis identified high-performing residents. Multivariable logistic regression calculated associations between UIM status, gender, Step 2 Clinical Knowledge (CK) scores, and PGY-2 Milestone ratings. Ratings were log-transformed, categorized into 80th and 90th percentiles (representing positive deviance), and analyzed for their association to academic careers. Statistical significance was set at $P<.05$.

Results: Among 14362 PGY-2 residents across 393 IM programs, positive deviance in Milestone ratings was identified in 2838 (19.8%) at the 80th percentile and 1390 (9.7%) at the 90th percentile. At the 80th percentile, women had increased odds (1.22 [1.06-1.41], $P<.01$), while decreased odds were observed for Asian residents (0.84 [0.72-0.98], $P<.05$) and UIM women (0.67 [0.48-0.93], $P<.05$). At the 90th percentile, positive deviance was associated with women (1.25 [1.031.50], $P<.05$) and higher Step 2 CK scores (1.01 [1.01-1.02], $P<.001$). Positive deviant residents had higher odds of postgraduate academic medicine positions ($P<.001$).

Conclusions: This study identifies factors associated with positive deviant Milestone ratings during a critical career planning phase for IM residents and their association with academic medicine positions. Our findings are limited by cross-sectional data and focus on a single specialty, calling for further research to explore the temporal relationships between competency-based ratings and post-residency career trajectories, particularly for competitive academic roles.

047

Examining Equity, Diversity and Inclusion in the Residency Selection Process: A Scoping Review

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Background: Misalignment between physician demographics and patient communities has generated a call to action for strategies to recruit and retain individuals underrepresented in medicine (UIM) into medical schools, residency programs, and staff physician positions. Residency selection, as part of this pipeline, determines admission into specialties; inequities at this stage can exclude UIM candidates. The purpose of this scoping review was to examine literature on equity, diversity, and inclusion (EDI) principles with respect to resident selection.

Methods: This review was developed with the Arksey and O'Malley framework and adhered to the Preferred Reporting Items for Systematic reviews and Meta-Analyses Extension for Scoping Reviews guidelines. A research librarian conducted a search of peer-reviewed literature in several databases identifying 7673 articles. Following removal of duplicates (2633), 2 reviewers screened titles and abstracts (5025) and full texts (1067). Articles addressing residency/fellowship selection, and any EDI principle were included. Data were extracted and synthesized from 4 perspectives: evolving trends in literature, the magnitude of the issue, targets for process change, and effective strategies to impact change.

Results: Seven hundred thirty-one papers were synthesized, demonstrating increasing publications over time, but without increasing the proportion of studies examining mitigation strategies. Studies repeatedly describe inequities across all medical specialties with varying degree—outlining bias and discrimination in the interview and application process, letters of reference, file review, and proportional representation. All studied interventions had positive results on UIM representation. Holistic applicant review (with implicit bias training), targeted recruitment strategies (pipeline initiatives, advertising, and applicant engagement in application/selection processes), and retention strategies (cultural shifts, mentorship, representation in leadership) are the most described strategies.

Conclusions: The extent of this problem is well described; however, there is a relative paucity of literature regarding tested mitigation strategies despite an apparent increase in overall literature. Future research should focus on developing equity enhancing strategies.

048

Exploring the Relationship Between Casper Scores, CaRMS Rankings, and Medical Education Outcomes

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Background: Selections in postgraduate medical education (PGME) admissions evaluate both cognitive and non-cognitive attributes (CAs and NCAs). NCAs are often assessed using situational judgment tests, such as the online computerized assessment of personal attributes (Casper). This study aimed to assess the relationship between admissions data (Casper scores), Canadian Resident Matching Service (CaRMS) rank order data, and academic outcomes.

Methods: A total of 24856 applications from 6443 applicants to University of Saskatchewan PGME programs from 2017 to 2020 were included in this study. Casper Z-scores from all applicants, rank order data (normalized to percentiles), and several academic outcomes for applicants accepted into residency training (n=473), including national examination results for family medicine (FM) residents, residents in difficulty (eg, on remediation or learning plans), and 6-month evaluation data, were analyzed. *T* tests compared Casper scores between groups (eg, matched vs unmatched applicants), while correlations assessed relationships between Casper scores and continuous variables (eg, rank order).

Results: Matched or ranked applicants resulted in significantly higher ($P<.001$) Casper scores compared to non-matched or non-ranked applicants. A significant ($P<.001$), but weak positive relationship was shown between Casper and rank order data across programs. Among applicant groups, international medical graduates (IMGs) exhibited significant ($P<.001$) moderate positive correlations between Casper scores and ranking. For applicants accepted into residency programs, Casper scores did not significantly correlate with FM residents' performance on SOO and SAMP National examinations, resulting in differences for residents placed on remediation or learning plans, or in 6-month academic evaluations.

Conclusions: Moderate associations were found between Casper scores and admissions outcomes, particularly within the IMG stream and between ranked and unranked applicants. Casper scores may be useful for ranking and placement decisions in some groups. However, in a resident group where all applicant Casper scores were considered in admissions, it is not predictive of academic performance or remediation needs overall.

049

The Relational Structure Between Medical and Surgical Specialties in Canada: Using Statistical Network Analysis for Insights on the Educational Role and Expertise of Small Specialties

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Background: The relational structure of expertise between Canada's 87 specialties has not been described. Understanding this structure can lead to new insights, particularly for smaller specialties. We used network science to research how specialty expertise is interconnected.

Methods: We used mandatory off-service residency training time to represent the strength of the relationship between 2 specialties. This reflects how a sending specialty perceives the receiving specialty's expertise as relevant. We obtained data from the Canadian Resident Matching Service (CaRMS), the Canadian Post-MD Education Registry (CAPER), and university websites. We quantified off-service time for all Royal College specialties and family medicine. We then constructed a sender-receiver network that was weighted by the strength of the relationship between specialties. We described the structure of this network and applied Granovetter's Strength of Weak Ties Theory to identify specialties that bridge the expertise between other specialties.

Results: Canadian specialties are highly connected to each other in education. Physiatry, public health and preventive medicine, and diagnostic radiology have the most off-service training time. Both generalist specialties (eg, internal medicine, emergency medicine) and narrower subspecialties (eg, adult critical care medicine, adult cardiology) receive a significant number of off-service residents. Physiatry, adult palliative medicine, radiation oncology, occupational medicine, and psychiatry act as the main bridges connecting every other specialty, despite receiving few off-service residents themselves.

Conclusions: Several small specialties bridge the expertise between every other specialty. We highlight a paradox where their expertise is relevant to a wide variety of other specialties, and yet few off-service residents and medical students will ever train with them. Whether coincidental, the confluence of occupational medicine, physiatry, and psychiatry holding these network positions but also having prominent scopes in disability care might reflect the general lack of medical education in disability. Their role of their expertise in Canada deserves further exploration.

050

Three Years' Experience of a New Selection Test for Family Medicine

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Background: Selection for family medicine (FM) residency training in Canada is high-stakes and current applicant assessment methods have low evidence supporting their use, especially for non-academic attributes. Situational judgement tests (SJTs) are an increasingly popular methodology in health care selection to assess non-academic attributes, with a wealth of validity evidence supporting their use.

Methods: A new, online SJT was piloted for FM in Canada before being used in selection by 6 FM residency programs in 2022, 13 in 2023, and 15 in 2024. All those applying for FM residency training at participating programs were required to sit this test. Candidates were also invited to complete an anonymous demographic survey and a posttest evaluation.

Results: In 2022, 1835 candidates completed the examination (English n=1309, French n=526). Test reliability was good (Cronbach's alpha=0.78), with a test difficulty of 73.5%. English test takers performed better than French test takers (Cohen's d=0.32, $P<.001$) and females performed better than males (d=0.2, $P<.5$). In 2023, 3478 candidates completed the examination (English n=2959, French n=519). Test reliability was excellent (alpha=0.82), with test difficulty of 77%. There was no significant difference in scores based on test language ($P>.05$), and females scored better than males (d=0.16, $P<.5$). In 2024, 3667 candidates completed the test (English n=3083, French n=516). Test reliability was excellent (alpha=0.83), with test difficulty of 79.5%. Test language and gender had no significant effect on test score. In all years, Canadian medical graduates (CMGs) scored better than international medical graduates (IMGs) (2022: d=0.6, $P<.001$; 2023: d=0.33, $P<.001$; 2024: d=.53, $P<.001$). Candidate evaluations of the test were positive.

Conclusions: Overall, there is good evidence that this new SJT can differentiate between individuals, indicating the methodology is effective for selection into FM programs in Canada. A moderate effect size was observed between CMGs and IMGs.

051

Behind the Shield: Grief and the Emotional Armor Among Medical Residents

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Background: Residency brings unique emotional challenges, including encounters with different forms of loss. While some residency programs offer grief management training, gaps remain. One key gap is the limited research on the cultural aspects within medicine that influence how residents process grief. This presentation explores the concept of "emotional armor," a term we use to describe the strategies that residents employ to manage their grief in the clinical environment.

Methods: This qualitative study centered on physicians' experiences with loss and grief across diverse practice backgrounds and career stages. Here, we focus specifically on the stories shared with us by residents (n=5) during one-on-one interviews. Using a critical discourse analysis approach, we remained sensitive to how prominent discourses in medical education, such as competence and professionalism, shape when and to what extent residents adopt emotional armor during their training.

Results: The formation of residents' emotional armor was a complex, often subconscious process beginning early in training. Residents described the armor as essential for maintaining composure in high-stress environments, serving as a shield against the suffering and loss they regularly encountered. Many felt pressured to "tuck" away their grief to avoid being seen as "emotional" or "incompetent." However, overreliance on this armor often led to emotional detachment, leaving residents' grief unacknowledged.

Conclusions: Grief significantly impacts residents' emotional well-being. While emotional armor may be necessary in certain clinical situations, overuse can lead residents to experience emotional turmoil, social isolation, and loneliness. These findings underscore the need for more nuanced grief management training in postgraduate medical education.

052

Lateral View X-Ray Theory: A New Theory of Sexual Misconduct in the Surgical Workplace

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Background: In 2023 our team demonstrated a high prevalence of sexual misconduct in the UK surgical workplace and suggested from quantitative data that women and men exist in different realities regarding whether they perceive sexual misconduct in the workplace. This study sought to further explain this phenomenon by exploring the large qualitative dataset gathered by the study.

Methods: We developed an explanatory theory using a subjectivist inductive approach. We adopted a constructionist paradigm to analyze responses from 1704 individuals. Data underwent inductive thematic coding, which was then refined after team discussion into a common visual concept to aid education in the surgical community.

Results: We identified that responses fell into 2 categories: those who were aware of sexual misconduct in their workplace, and those who were unaware. We liken this to an anteroposterior X-ray, where at first glance a bone may not appear to be broken. Once a lateral X-ray has been viewed it may become clear that the bone is indeed broken. Once you have seen the lateral X-ray (and in this model are aware of sexual misconduct), you cannot unsee the problem. Women and junior staff were more likely to have seen the “Lateral View,” and those previously affected by sexual misconduct are more likely to be hyperaware of its existence.

Conclusions: The Lateral View X-ray is a simple theory to illustrate how people can have differing perceptions of surgical culture based on their viewpoint. As in radiology, we should encourage all employees to seek out a Lateral View X-ray to challenge their perceptions.

053

Transitioning Program for New International Fellows

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Background: International clinical fellows experience social, cultural, communication, and personal challenges as they transition and acculturate to new training in a different country, affecting their learning experience and wellness. We report on the outcome of the generic preparatory program "Transitions" introduced to support the needs of all new international fellows who come to train in Toronto, Canada.

Methods: Transitions is a hybrid program with asynchronous online modules and synchronous live sessions. The program covered different topics of interest, including settlement in Canada, the health care system, ethics and laws, patient safety, communication skills, working with the interprofessional team, social determinants of health, advanced care planning, onboarding, and wellness. In addition to sharing knowledge, the program was designed to provide a platform for networking and peer mentorship. The authors conducted quantitative and qualitative pre- and post-program surveys, followed by qualitative focus groups after the start of the fellowship.

Results: Three hundred twelve new fellows from 12 specialties and 6 continents registered for the program. Two hundred seventy-eight and 136 fellows completed pre- and post-evaluation surveys, respectively, which showed significant improvement in confidence levels of all program topics. Most respondents (95%) agreed or strongly agreed that Transitions enhanced their overall learning experience, and felt it reduced their anxiety about the change and their new roles (82%). The program eased the transition of new fellows (83%), with 85% recommending it to their peers and 87% feeling it enhanced their readiness to learn.

Conclusions: International fellows from different backgrounds and specialties experienced many challenges and stressors during the transition. The program's outcome suggests that a generic hybrid program with networking and mentorship abilities offers a flexible, practical, and more cost-effective learning alternative. The Transition program successfully reduced anxiety and improved the confidence and wellness of the incoming international fellows.

054

Learning How to Listen: A Collaborative Approach to Understanding and Addressing the Residency Learning Environment

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Background: Many residency programs in Canada are facing external review in accreditation and have identified challenges in the learning environment. The learning environment can be defined as the physical, social, and psychological contexts in which students learn; interactions among faculty, staff, and peers; and the formal, informal, and hidden curricula. The objective of this project was to understand and address resident feedback concerning the learning environment and to recommend and implement strategies for ongoing quality improvement of residency education.

Methods: The University of Toronto Psychiatry Residency Program Learning Environment Working Group (LEWG) was co-led by residents and faculty. LEWG members included residents of different training levels and faculty members representing various sites and roles in the program. The LEWG collected resident feedback using surveys and focus groups, where responses were analyzed thematically to elicit further feedback from and engage conversations with important portfolios in the residency program, including assessment, wellness, and program evaluation.

Results: Key themes identified by residents included (1) psychological safety, trust, and feedback; (2) supervision and teaching; and (3) service-to-education ratio. In response, the LEWG developed a series of program-level recommendations to clarify expectations for faculty supervisors and created an accessible guide to the resident feedback process to foster transparency and resident trust.

Conclusions: The Psychiatry Residency Program LEWG collaborative approach has facilitated an iterative program evaluation strategy, in which a flexible feedback mechanism would invite further conversations within a teaching-and-learning community, enhancing a program's capacity to better understand and address the residency learning environment. This LEWG initiative may also serve as a model for other residency programs.

055

Frequency of Daytime Sleepiness Among Medical Professionals: A Cross-Sectional Study

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Background: Daytime sleepiness (DS) is a critical concern for medical professionals, as it can impair cognitive function, compromise patient safety, and reduce quality of life. This study evaluates the prevalence of DS among residents and faculty members, identifying differences between these groups to guide targeted interventions.

Methods: A cross-sectional study was conducted at a university hospital in December 2024, including 100 residents and 100 faculty members. Participants completed the Turkish Version of the Epworth Sleepiness Scale (ESS), which defines DS as an ESS score ≥10, alongside a questionnaire on sociodemographic and sleep-related characteristics. Recruitment was done via email, and statistical analysis was performed using independent *t* tests and chi-square tests to assess group differences, with a significance threshold of $P<.05$.

Results: A total of 50 participants completed the survey (15 residents, 35 faculty members; response rate 25%). The mean age was 38.5±9 years, with a male-to-female ratio of 19:31. Residents had a mean residency duration of 2.4±1.3 years, while faculty members had a mean professional career duration of 18±8 years. Residents exhibited a significantly higher prevalence of DS (60%, n=9) compared to faculty members (31.4%, n=11; $P=.03$). Residents also reported shorter sleep durations (5.8±0.9 hours) and higher time-to-fall-asleep values (16.7±12.3 minutes) than faculty members. On average, participants reported a mean sleep duration of 6.4±1 hours and time-to-fall-asleep of 14.2±11 minutes.

Conclusions: This study highlights a significant burden of DS among medical professionals, particularly residents. These findings underscore the need for targeted interventions, such as optimizing shift schedules, promoting sleep hygiene, and implementing institutional policies to improve sleep quality and mitigate DS's impact on health care delivery and professional well-being.

056

Evaluating Quality of Debriefing Following Critical Events for Surgical Residents

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Background: "Second victim syndrome" refers to the negative impact of intraoperative adverse events (iAEs) on physicians and is now becoming increasingly recognized. Studies have shown that iAEs cause sadness and shame, leading some to seek formal psychological counseling. Unfortunately, surgical culture discourages acknowledging the impact of iAEs. Additionally, there is no literature on trainees who are potentially more affected. Current literature recommends establishing a second victim peer support program or debriefing post-operatively. This project seeks to explore the current state of debriefing and provide recommendations for trainees and staff.

Methods: This survey was adapted from Tan et al (2005) and was distributed to all 380 surgical residents and staff in Calgary, Alberta, Canada. The survey included questions about the frequency, quality and types of debriefs performed after scenarios with poor outcomes defined as "critical events." A comparison of staff and resident responses were made using Fisher's exact test.

Results: We had 77 responses, 47 residents and 30 staff. Eighty-three percent of respondents had experienced an iAE with 75% having experienced 3 or more. Only 54% had been involved in a formal debriefing process, and 42% of respondents felt that neither medical nor psychological issues were adequately addressed. There was a significant difference in leader preference during the debrief process with residents preferring the attending surgeon (81%), and staff preferring a hospital debriefing team (63%). Nearly 30% of respondents had to step away from work and 62% had trouble concentrating for days to weeks. There was also a significant difference between staff's (75%) and residents' (15%) awareness of hospital peer support programs.

Conclusions: This study highlights the need for standardized hospital peer support programs targeted to address medical and psychological aspects of iAEs. Finally, residents feel the least supported and are the least aware of debrief protocols in their hospitals.

057

Behind the Screen: Exploring Trainee Experiences With Consultant-Involved Conflicts Through Reddit Narratives

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Background: Conflict in medical education is common. Implications include moral distress, low psychological safety, and undesirable learning environments. Studies have indicated that the learner-consultant relationship is a source of conflict during training; however, we lack insight into the nature of these conflicts. Reddit is a popular social media platform granting users anonymity, thus reducing repercussions for honesty. Specific online groups ("subreddits") have developed as communities for medical learners; these have been used to study less-discussed aspects of the trainee experience, such as prejudice and failure. We conducted an analysis of Reddit to explore trainees' experiences of conflict and the role the consultant plays in it.

Methods: We searched the *r/medicalschool* and *r/residency* subreddits for posts published in 2023 written by a trainee and focused on conflict involving a consultant(s). We conducted a content analysis (ie, what was written) and a narrative analysis (ie, how it was written) of the posts to understand trainees' experiences.

Results: We identified 208 posts. The majority were written as laments and testimonies, with fewer soliciting advice from trainees and consultants in the Reddit community. Most posts portrayed the consultant as an antagonist, with fewer portraying the consultant as a deuteragonist or witness. Common types of conflicts involved communication, medical culture, technical aspects of medicine, and hierarchy. Responses to conflict were often anger and expressing awareness of conflict-inducing issues. Trainees also responded by asking for help in resolving conflict.

Conclusions: Trainees are turning to anonymous Reddit communities to disclose unresolved conflicts in which the consultant is seen as an antagonist. Given this pattern and given that these conflicts have not been addressed within formal conflict resolution paths, our results suggest a lack of "safe spaces" for conflict resolution within medical training programs and highlight the need for enhanced safe dialogue to discuss conflict involving supervisors and assessors.

058

Lived Experiences of Trauma in Residency Education

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Background: Many postgraduate medical trainees (residents) are exposed to psychologically traumatic experiences in their personal and professional lives, with impact on learning, patient care, relationships, mental health, and well-being. Residents' experiences of carrying trauma while in training have not been well-characterized. We sought to explore residents' lived experiences of traumatic injury as an essential step in guiding trauma-informed approaches to medical education and support.

Methods: We applied a combined phenomenologic and phenomenographic methodology. All residents at a single Canadian university and select support professionals were invited to participate. Semistructured interviews explored residents' experiences of trauma and support professionals' experiences in supporting residents with carried trauma. Audio transcripts were transcribed and analyzed by the 3 investigators through iterative immersion, understanding, abstraction, synthesis, illumination, and integration of the data.

Results: Thirteen residents from diverse training programs and 3 support professionals participated. We identified 5 core domains of the lived experience of traumatic injury, each with multiple subdomains (in parentheses): the experience of trauma (internal reactions, layered judgments), the impact of trauma (unfavorable, favorable, tensions), adaptations to trauma (cognitive, behavioral), healing from trauma (acknowledging, triggering and re-traumatization, finding meaning, spectrum of healing), and moderators of trauma (previous life experiences, personal resources, environmental factors). We also identified 3 metanarratives intersecting these domains: the complexity of the experience of traumatic injury, the dependence on many sociocultural factors, and existential tensions.

Conclusions: Our findings draw attention to the individuality and complexity of experiences of traumatic injury, that healing can also be complex and unpredictable, and that identity, loss, stigma, and vocational and equity issues are tightly bound within these experiences. This research emphasizes the need to address problematic aspects of the learning environment that contribute to trauma and re-traumatization, and the pressing need for resources and understanding to better support residents with carried trauma.

059

The Impact of Accreditation on Medical Residents' Learning Environment: Insights Across 3 Years of Evaluations

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Background: The learning environment (LE) plays a critical role in fostering student academic success and overall well-being. This study examined the impact of individual factors—age, gender, postgraduate year (PGY), racialized identity, training location, and experiences of intimidation/harassment (I&H)—on residents' perceptions of their LE.

Methods: Over a 3-year period (2022-2024), coinciding with organizational improvements tied to accreditation, 377 medical residents completed the Scan of Postgraduate Educational Environmental Domains (SPEED) survey, which assesses LE across 3 domains: (1) Content (eg, teaching style, appraisal and feedback, independence and responsibility); (2) Atmosphere (eg, respect, relations, support); and (3) Organization (eg, task clarity, teaching, learning, supervision). One-way ANOVAs and *t* tests were used to analyze group differences in LE domain ratings.

Results: LE ratings showed significant improvement ($P<.05$) in the organization domain from 2022 to both 2023 and 2024. However, disparities persisted within subgroups. In 2022, urban training sites had lower organization ratings compared to distributed sites, and PGY-5+ residents reported lower satisfaction across all domains ($P<.05$). Similarly, in 2022, residents with disabilities rated both organization and atmosphere lower than those without disabilities; these disparities disappeared in 2023 but reemerged in 2024. Across all years, residents in poor/fair health or those who experienced or witnessed I&H consistently reported significantly lower LE ratings across all domains. No significant differences were observed by gender, age, or racialized identity.

Conclusions: Findings highlight the complex interplay between accreditation-driven changes and the perceptions of the LE among residents. While some overall improvements were observed, persistent challenges remain for specific subgroups, including residents in poor health, those experiencing or witnessing I&H, and residents with disabilities. The temporary narrowing of disparities during the accreditation year suggests that interventions can have positive effects, but the reemergence of disparities afterward underscore the need for sustainable, systemic changes.

060

Cultivating Psychologically Safe Learning Environments: Residents' Experiences of Interpersonal Risk-Taking in Training

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Background: Psychological safety is a belief that the work environment is safe for interpersonal risk-taking. Residents work and learn in environments that necessitate interpersonal risks, such as admitting knowledge gaps, asking for help, and disclosing errors. If learning and growth hinge on the ability to take interpersonal risks, educators must understand what is required for residents to feel safe taking risks during their training. This study explores residents' experiences of interpersonal risk-taking to better understand how to foster psychologically safe learning environments.

Methods: This qualitative study employed constructivist grounded theory methodology. Data were collected through semistructured interviews with 14 residents from various specialties and postgraduate years at one Canadian institution. Transcripts were analyzed using a constant comparative approach to develop a theoretical framework.

Results: Participants identified interpersonal risks that they took regularly, including speaking up, making mistakes, and asking for help. Three main factors influenced their risk tolerance: individual factors (eg, experience, fearing negative consequences, well-being), relational factors (eg, connection and trust, feeling supported), and learning environment factors (eg, organizational culture, hidden curriculum, belonging, role modeling). Patient safety was consistently cited as the most important consideration in risk-taking. However, there were notable examples of behaviors contrary to this principle, highlighting that the line between interpersonal risks and patient safety risks can be blurry.

Conclusions: This study highlights the complexity of the clinical learning environment, including the tensions between psychological safety and patient safety. Interpersonal risk-taking in residents is influenced by multiple dynamic factors at the individual and interpersonal levels, and within the learning environment. To foster psychologically safe learning environments, educators should focus on building supportive relationships, modeling vulnerability, and addressing systemic issues that hinder interpersonal risk-taking.

061

Lessons From the Hijabi Docs Podcast: A Thematic Analysis of Muslim Women's Experiences in Medicine

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Background: Cultural diversity is pivotal in medical education for fostering trust and effective patient care. Muslim women in medicine, identifiable by their hijab, often face unique biases and stereotypes that can hinder their professional growth and connection within health care settings. However, empirical research on these specific experiences among Muslim medical learners and professionals is limited. *Hijabi Docs*, a podcast project at the University of Toronto's Temerty Faculty of Medicine, documents personal and professional narratives of visibly identifiable Muslim women in medicine. This study addresses the knowledge gap by analyzing these narratives to promote inclusivity and inform residency education strategies.

Methods: Interviews with 6 visibly identifiable Muslim women wearing hijab were conducted as part of the *Hijabi Docs* podcast series, comprised of residents and medical students. A questionnaire designed to capture insights into the mental health impacts, challenges, and triumphs of navigating the medical field was administered. Qualitative grounded thematic analysis was conducted on transcripts. Systematic coding identified emergent themes related to trust, growth, and connection in medical education.

Results: Key themes include the importance of representation and mentorship in fostering trust, challenges of integrating hijab-wearing practices in clinical environments impacting professional growth, and strategies for resilience and connection amid stereotypes. These themes offer insights into the lived experiences of Hijabi physicians and suggest areas for enhancing inclusivity and support within residency programs.

Conclusions: *Hijabi Docs* provides valuable perspectives on the experiences of visibly identifiable Muslim women in medicine, emphasizing the role of representation, mentorship, and inclusive practices in fostering trust, growth, and connection. This thematic analysis highlights the need for systematic research to inform policies and educational strategies that support diverse medical professionals and enhance residency education environments.

062

Enhancing Social Determinants of Health Education in Pediatric Residency: A Quality Improvement Initiative

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Background: Social Determinants of Health (SDOH) account for 30% to 55% of health outcomes, yet medical curricula often provide limited formal education on SDOH. We conducted a quality improvement initiative within the social pediatrics rotation at the University of British Columbia pediatric residency program, to enhance residents' capacity to assess and address SDOH.

Methods: We performed an environmental scan of resident SDOH literacy to inform our interventions. Over 12 months, we introduced 3 curricular interventions to the social pediatrics rotation: an orientation module teaching the IT-HELLPS framework; a case workbook on common psychosocial issues in general pediatrics; and structured observations of attending pediatricians conducting social histories. Residents completed pre-rotation (n=37) and post-rotation (n=18) surveys anonymously, rating their self-assessed proficiency at assessing and addressing SDOH as outcome measures. Frequency and degree of moral distress relating to SDOH were balancing measures.

Results: A baseline audit of 20 resident continuity clinic consultation notes revealed significant gaps: none documented screening for food insecurity, housing instability, or transportation needs. Focus groups revealed barriers, including curricular gaps and hierarchies of learning that prioritize medical knowledge. Before the rotation, only 38% of residents rated themselves as proficient in assessing SDOH. Following participation in any intervention during the rotation, this number rose to 77% (P=.04). Similarly, proficiency in addressing SDOH increased from 27% pre-rotation to 69% after participation in any intervention (P=.02). Moral distress measures remained stable pre- and post-rotation.

Conclusions: Targeted curricular interventions on SDOH significantly improved pediatric residents' confidence in evaluating and addressing SDOH, without increasing moral distress. These findings underscore the importance of explicit, structured SDOH education, as residents prepare to manage the growing social complexity of the pediatric patient population. Future work will refine these interventions and explore their impact on resident behaviors and attitudes.

063

Using Quality Improvement to Reduce Learner Workload on General Internal Medicine Clinical Teaching Units

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Background: A mounting concern among graduate medical education training programs relates to increased workload contributing to high rates of learner burnout. We used quality improvement (QI) methods to design, test, implement, and evaluate a multifaceted intervention to reduce learner workload and improve staffing stability on general internal medicine (GIM) clinical teaching units (CTUs).

Methods: We used Deming's System of Profound Knowledge as our QI framework for our project, situated on GIM CTUs at a teaching hospital in Toronto, Canada, from 2022 to 2024. We studied baseline variation and education and clinical care systems to implement a multifaceted intervention that included: (1) expanding capacity of and prioritizing admissions to resident-independent units (RIUs); (2) allocating elective students to balance learner staffing across CTUs; and (3) designating active patient flow management to a GIM staff physician. The main outcome measure was learner workload, defined as the number of patients per learner (medical student or resident). Secondary outcome measures were CTU census, RIU census, and overall GIM census.

Results: Comparing study outcomes before and after implementation, there was a significant reduction in learner workload from 5.7 to 5.3 patients per learner (P=.004) associated with a decrease in CTU census (19.4 patients vs. 18.9 patients, P=.001). RIU census increased significantly from 39.9 to 44.8 patients (P<.001), indicative of intervention fidelity. These improvements occurred despite overall GIM census increasing from 117 (SD 7.7) to 120.4 (SD 10.8) patients.

Conclusions: QI methods facilitated the design, testing, and implementation of a multifaceted intervention that led to significant improvements in learner workload. This educational QI project demonstrates the advantage of using robust QI methodology to address educational issues and meet learner needs. We encourage others to consider how QI could be used in their own educational contexts.

064 This abstract has been withdrawn.

065

Medical Improv as an Effective and Innovative Tool for Teaching Non-Technical Skills to Surgical Foundations Residents at the University of British Columbia

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Background: Non-Technical Skills for Surgeons (NOTSS) have been identified as an integral component of surgical training; however, there is a significant gap in research on effective teaching models. Medical improv is an innovative educational technique known to enhance interpersonal and intrapersonal skills, including communication, collaboration, and leadership among health care professionals, but remains underutilized in surgical education. This pilot project explores how medical improv can be used to effectively teach NOTSS to surgical residents compared to a didactic model.

Methods: University of British Columbia first-year surgical residents participated in both a medical improv and didactic workshop during designed class time. Eighteen participants completed 3 surveys in our crossover survey study with a baseline survey and 1 following each intervention. The surveys assessed participants' knowledge of NOTSS and their confidence in performing the skills described after each intervention. Basic descriptive statistics were performed for preliminary analysis; further analysis is currently in progress.

Results: For both sessions, participants' confidence in explaining NOTSS improved following each session. In addition, mean scores of participants indicated both interventions improved teamwork and would positively impact their clinical work. Medical improv was rated higher in engagement and enjoyment, while the didactic session was perceived to be more likely to increase patient care and safety but rated less enjoyable.

Conclusions: Medical improv appears to be an effective addition to the surgical educators' armamentarium, showing potential to increase engagement and enjoyment of the material, which is associated with long-term retention. This study is limited by sample size. A future study could explore how medical improv improves NOTSS skills via simulation-based assessment following such workshop.

066

Exploring the Impact of Organizational Structures Within Physician Education on Postgraduate Informal Interprofessional Learning

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Background: Informal interprofessional learning (IPL) plays a vital role in preparing residents for collaborative practice. However, tensions between the uniprofessional orientation of physician education and the interprofessional orientation required for informal IPL may hinder its potential. The organizational structures underlying postgraduate training are a crucial unexplored factor impacting informal IPL in residency education. If these structures devalue IPL, it will remain at risk even if interprofessional workplace conditions are optimized. The hidden curriculum provides a helpful conceptual lens to explore the covert effects of organizational structures on informal IPL, defining organizational structures as the policies, evaluations, resource allocation, and institutional slang within physician education. We aimed to explore, using the conceptual lens of the hidden curriculum, how the organizational structures within physician education facilitate and constrain informal IPL among postgraduate trainees.

Methods: We took a qualitative approach using semistructured interviews sensitized by the 4 areas of the institutional-organizational domain of the hidden curriculum. Participants were recruited from core and subspecialty internal medicine residents of all year levels at a Canadian institution. Fifteen residents were interviewed. Transcripts were analyzed by an interprofessional team using reflexive thematic analysis.

Results: Three themes were identified: (1) evaluation and assessment approaches restrict constructive conflict and authentic collaboration; (2) trainees perceive a lack of clarity and consistency about expectations for IPL; and (3) a physician-centric orientation hinders reciprocal interprofessional relationship building. Trainees universally felt pressure to perform rather than develop interprofessional competencies due to the conflation of professionalism with interprofessionalism and a pervasive checkbox approach to IPL within objectives, evaluations, and institutional language.

Conclusions: Postgraduate organizational structures hinder workplace IPL across the full trajectory of residency training. Existing approaches to evaluation and assessment and choice of institutional language about IPL are potential modifiable targets that can be addressed to better facilitate informal workplace IPL in residency.

067

Approaches to the Doctor-Patient Relationship When the Patient Is a Physician

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Background: All physicians need to access health care for themselves; however, complexities can arise when a patient is a physician. For example, due to their professional identity, physician-patients can be over- and under-investigated in health care interactions, resulting in suboptimal outcomes. Despite this, training programs offer learners little guidance on how to negotiate the doctor-patient relationship when the patient is a physician. Moreover, there is a paucity of evidence on how physicians navigate these types of relationships. Such evidence is integral to ensure that learners are adequately prepared to provide care to and receive care from other physicians.

Methods: During interviews, 23 family medicine and internal medicine physicians practicing in Toronto shared their experiences with providing care to and receiving care from other physicians. Following constructivist grounded theory, data collection was iterative with constant comparison analysis to build a conceptual model of the unique doctor-patient relationship.

Results: Three approaches for accessing medical care were identified, each differing in how the physician-patient's professional identity was excluded, included, or leveraged within the doctor-patient relationship. Participants described trying to exclude their professional identity from the relationship when they wanted to be treated as a "regular patient" when accessing care. Participants included their professional identity by entering the doctor-patient relationship as a "medically savvy patient" in order to promote a more efficient interaction. Participants sometimes leveraged their professional identity to access medical care as a "colleague with medical needs" outside a formal doctor-patient relationship. Participants used different approaches in different situations, and each approach could be supported or undermined by the practitioner's expectation for the physician-patient.

Conclusions: Physician-patients have professional identities that complicate the doctor-patient relationship. A better understanding of how these professional identities are excluded, included, or leveraged when accessing medical care could help prepare learners to identify and navigate the complexities of this patient population.

068

Foundational Experiences of Early Pathology Trainees: An Argument for Structured Transitional Initiatives for Non-Core Residencies

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Background: The foundational skillsets of certain residency programs are not well represented in undergraduate medical education, resulting in large knowledge gaps when transitioning from medical school to these "non-core" residency programs. We conducted a realist case study to explore the experiences of pathology residents who had varying levels of transitional support. We wanted to understand the transitional issues that pathology trainees face by comparing the experiences of learners prior to and after the introduction of a structured foundational program.

Methods: A realist approach focuses on what works, for whom, in what circumstances, how, and why. Data were collected from pathology residents at the University of Calgary through an anonymous survey (n=14) and follow-up semistructured interviews (n=8). Data were analyzed by reading the data and identifying multiple "context-mechanism-outcome" configurations (in this context, this mechanism led to this outcome) from which middle range theories were developed.

Results: Challenges that our non-core pathology residents faced reflected the volume of new information, the lack of orientation to core concepts and terms, and the rapid skill acquisition and responsibility required in early training. Minimal structured transitional supports can leave trainees feeling significantly overwhelmed, feeling incompetent and fearing making serious medical errors. Structured transitional supports significantly mitigated feelings of stress and contributed to increased morale and perceived competence. Semi-guided non-service educational activities in concert with graduated, supervised workplace-based training were key components of the foundational program.

Conclusions: The transitional challenges that non-core pathology residents face are serious and often overlooked. These challenges can be addressed through structured transitional and foundational initiatives, involving a variety of interventions (teaching, mentorship, and self-directed study). It is recommended that all non-core specialties examine the transitional issues experienced by new residents and put in place the means to make transitioning to residency less problematic.

069

The Social Identity Approach as a Framework for Understanding Interprofessional Socialization During Patient Agitation Encounters

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Background: Interprofessional collaboration (IPC) enhances team function, efficiency, and patient care. Medical education curricula typically follow "uni-professional" models with limited interprofessional education competencies. Interprofessional socialization (IPS) suggests that adopting a "dual-professional" model can facilitate IPC, but there is a lack of research on how IPS develops among novice medical learners. Our study aims to use patient agitation encounter workshops as case examples to understand the development of interprofessional socialization in novice medical learners.

Methods: We conducted 10 semistructured interviews with occupational therapy, physical therapy, physician assistant, and nursing student participants of patient agitation workshops. Transcripts were analyzed qualitatively in an iterative process, informed by social identity theory and intergroup contact theory and using directed content analysis methodology. Data collection and analysis were continued until themes emerged with adequate conceptual depth, relevance, and plausibility.

Results: Three themes emerged: (1) perceived hierarchical model of teams, (2) interprofessional connections, and (3) early dual-professional transition. In-group thinking develops prior to entering clinical practice, and is perpetuated by negative team interactions, self-doubt, and lack of informal social interactions. This contributes to limited IPC and explicit hierarchical health care professional models. However, early student-based IPC experiences enable learners to engage in meaningful interactions, priming learners to a "dual-professional" model and building in-group and out-group collaboration.

Conclusions: IPS develops early in medical learners, often preceding clinical experiences. Limited or negative interactions among learners from different fields perpetuates a uni-professional learning model limiting IPC. Early workshops and student-based interactions prime learners to a "dual-professional" learning model and can positively influence their future clinical experiences.

070

A Systematic Scoping Review of Professional Identity Formation Among Surgical Residents

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Background: To allow residents to grow as physicians, developing one's professional identity through socialization has become a centerpiece of medical education. Surgical residency education, known for its vigorous and uncompromising training program, has the unique challenge of redressing long working hours and stressful training practices without compromising professional identity development.

Methods: This Systematic Evidence-Based Approach (SEBA)-guided systematic scoping review (SSR) included articles published between January 1, 2000, and April 1, 2024, in PubMed, Embase, PsycINFO, ERIC, and Scopus databases. Concurrent thematic and content analysis allowed the domain creation that guides synthesis of our discussion.

Results: A total of 4634 articles were identified, 3691 abstracts reviewed, 906 full-text articles evaluated, and 12 articles included. The 3 domains identified were: socialization, identity work, and assessments. This SSR seeks to evaluate the effectiveness of various curricula design, framework, pedagogy, and assessment methods adopted by health care institutions in fostering professional identity formation (PIF) of residents in surgical and procedural specialties.

Conclusions: To nurture PIF, understanding, assessing, and preserving the structures and cultures within the communities of practice that frame training and practice is important. This must be followed by continued use of mentoring support that scaffolds developing competencies, guides graduated immersion into the practice environment and embeds shared belief systems and identity. Yet development of these rooted belief systems and shepherding of a maturing *internal compass* that guides PIF do not appear to be time-sensitive or adversity-based but dependent upon purposeful instruction and learner-centric concern. Hence, proper evaluation and research of current and potential interventions are essential to guide health care institutions in the path forward in residency education.

071

Assessing the Impact of an OSCE-Style Workshop on an Internal Medicine Resident's Ability to Manage Hematologic Emergencies: A Pilot Study

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Background: We recently conducted a survey of Canadian internal medicine (IM) residents which identified significant gaps in hematology education. Of 208 residents surveyed, 84.4% expressed a need for more hematology education in their residency program. A simulation/workshop was perceived to be the most beneficial intervention for learning. This pilot study was designed to assess the impact of an objective structured clinical examination (OSCE)-style workshop on residents' medical knowledge and competence/confidence in managing hematologic emergencies.

Methods: We designed an interactive virtual 1-hour teaching session in an OSCE format for IM residents (PGY-1-3) at the University of Toronto (UofT). The study was approved by the UofT Research and Ethics Board and took place over 3 months (1 session per month) involving 19 trainees. The workshop included 2 cases based on knowledge gaps identified in the resident survey: microangiopathic hemolytic anemia (MAHA) and acute chest syndrome (ACS). Residents independently completed the cases, followed by a group debrief to review performance and key teaching points. Residents' competence/confidence and medical knowledge were assessed through pre-/post-quizzes, retrospective pre-/post-surveys, and debrief feedback. Wilcoxon signed rank tests were used to compare responses before and after the intervention, and $P<.05$ was considered statistically significant.

Results: All participants (19/19) felt that the intervention improved their competence in hematology and provided a unique learning opportunity in a format not otherwise available in their training. Trainees reported improved confidence in diagnosing and managing MAHA and ACS, with *P* values of <.05 across all pre-/post-Likert scores. With respect to medical knowledge, the pre-quiz average score was 6.9/10, with a median of 7/10 (interquartile range [IQR] 6-8). The post-quiz average score was 9.37/10, with a median of 10/10 (IQR 10-10) ($P<.001$).

Conclusions: This pilot study showed that an OSCE-style virtual workshop is an effective way to improve residents' medical knowledge and competence/confidence in managing hematologic emergencies.

072

How Exploring Social Structures Can Shape the Training of Physician-Physician Collaboration in Outpatient Workplace Settings

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Background: Intraprofessional collaboration (intraPC) between family physicians (FPs) and specialist physicians (SPs) is posited to improve patient outcomes but is hindered by power dynamics. Research informing intraprofessional training on hospital wards often conceptualizes power at an interactional level. However, less is known about how social structures that shape how care is provided in outpatient settings make these power dynamics possible. This study explores how structural forms of power shape how FP and SP supervisors engage with and teach intraPC in outpatient settings and to what effect.

Methods: Using diabetes as a case study of intraPC, we conducted a discourse analysis of formal documents (written to guide how collaboration should be practiced) and interview transcripts with 15 FP and SP supervisors. Informed by governmentality and the sociology of professions, we analyzed how discourses governing clinical care shape FPs' and SPs' collaborative and teaching behaviors in outpatient settings and the implications for their collaborative working relationships.

Results: Discourses of evidence-based medicine construct a hierarchical social structure in medicine that permeates how physicians engage with and teach intraPC. FPs and SPs enact and teach these hierarchical roles when collaborating in the referral-consultation process in ways that establish and reinforce jurisdictional boundaries. The interactions at the intersection of these boundaries foster a form of collaboration characterized by SPs surveilling and regulating FPs' practices.

Conclusions: As currently constructed, intraPC in outpatient settings may be practiced and taught in ways that reinforce asymmetric power dynamics between FPs and SPs. Outlining the processes by which social structures shape FPs' and SPs' collaborative behaviors open space to acknowledge broader considerations of power. Pragmatic strategies will be presented to mitigate these effects in intraprofessional collaborative training initiatives.

073

How Do Trainers Think They Should Train? A Qualitative Study Investigating the Training Practices That General Surgical Consultants Value

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Background: The role of the surgical trainer is critical in the development and training of surgeons of the future. Despite this, the majority of research in this area focuses on the views of the trainees. There is very little, or in some cases no research, into which practices make a good surgical training, or what good modern surgical training looks like according to the trainers. The study looks to answer this question.

Methods: General surgery consultants who self-identified as trainers from Yorkshire and Humber School of Surgery in England were recruited on a voluntary basis for semistructured interviews recorded on Microsoft Teams. Interviews continued until it was felt that sufficient information power had been achieved. Reflective thematic analysis was then applied using Braun and Clark's 6-step technique.

Results: Four main themes were identified, "Trainees are responsible for their own training," "The best training happens in positive relationships," "Learning to operate is the easy bit," and "Trainers are not empowered to train."

Conclusions: There is a dichotomy between the responsibilities of the trainee and trainer according to the trainers interviewed. This leads to an outlook that surgical training, and by extension trainees, are decreasing in quality, but the reasons for this (such as funding) are outside of the trainer's control. If a trainee was to "take responsibility" and demand training opportunities, however, they are likely to be seen as "whistleblowers" and treated punitively as so dictated by current culture. Change will not occur until trainers make the same demands for improvements in training that current trainees make. Professionalizing the role of trainers within the National Health Service would help to empower the trainers.

074

Self-Regulated Learning in a Postgraduate Emergency Medicine Curriculum

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Background: Emergency medicine (EM) residents are responsible for learning a large breadth of material. A strong academic curriculum is essential for learners to succeed clinically. Our Canadian EM residency program, including Fellows of the Royal College of Physicians of Canada (FRCPC) and Certification in the College of Family Physicians of Canada (CCFP-EM) streams, recently changed the delivery of certain core topics from didactic to self-regulated learning (SRL). SRL is a process in which the student sets goals, develops learning strategies, and self-monitors their progress. The goal-setting phase of SRL includes self-efficacy, which is the learner's belief that they are able to perform a certain task. We sought to evaluate learner self-efficacy throughout one SRL session on a core EM topic. Residents were given reading materials and study time to review it. Based on resident feedback, the FRCPC group had small groups to discuss the content, but the CCFP-EM group did not.

Methods: A 10-point Likert scale rating self-efficacy was provided after the residents received the SRL material, post dedicated study time, and following a nonevaluative oral examination. We also conducted semistructured interviews with 6 residents from various years and used realist theory to construct context-mechanism-outcome statements of what worked and what didn't with the new curriculum.

Results: Self-efficacy did improve throughout the SRL process. However, based on the semistructured interviews, learners perceived the scales as somewhat arbitrary. Learners appeared to need a "catalyst" to enter the SRL cycle. For example, the small groups for the FRCPC stream were seen as a motivator to review the material.

Conclusions: In order for SRL to be successful in our EM academic program, learners must have some degree of orientation to the SRL cycle, as well as some external drivers to ensure prioritization and engagement with the material.

075

Validité et appréciation des tests de concordance de script comme outil pédagogique dans l'unité de soins intensifs néonataux

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Introduction: Les erreurs de raisonnement clinique représentent environ 10% des décès hospitaliers, en particulier en néonatologie où des décisions rapides et rigoureuses sont essentielles. Le Test de Concordance des Scripts (TCS), un outil conçu pour évaluer le raisonnement clinique, a montré des résultats prometteurs dans divers domaines pédiatriques, mais n'a pas encore été pleinement validé en néonatologie. Cette étude vise à évaluer la validité du TCS dans l'évaluation des compétences en raisonnement clinique des résidents en pédiatrie, en se concentrant sur l'apnée néonatale, la bradycardie et la détresse respiratoire.

Méthodes: L'étude est prospective et observationnelle. Elle implique des résidents en pédiatrie (R1 à R4) et des néonatologistes experts. Les participants suivront deux modules TCS en ligne portant sur les sujets d'apnée/bradycardie et de détresse respiratoire. Les variables mesurées incluent la validité consécutive (évolution des compétences à 3, 6 et 12 mois), la validité concurrente (comparaison entre résidents juniors et seniors), et la fiabilité (consistance des résultats entre résidents ayant un niveau similaire). La validité de contenu sera évaluée en fonction de la pertinence des scénarios, et la validité de face via des questionnaires de satisfaction.

Résultats: (attendus - disponibles à l'automne 2025). Nous anticipons une amélioration des scores des résidents sur les évaluations CRAT au fil du temps, validant ainsi la validité consécutive. Les résidents de niveau supérieur (R3/R4) devraient obtenir de meilleurs résultats que les R1/R2, confirmant la validité concurrente. Les experts jugeront les scénarios comme pertinents, validant la validité de contenu. Les résidents rapporteront également une augmentation de leur confiance en gestion des cas néonatals après avoir complété les modules.

Conclusion: Cette étude fournira des preuves de la validité du TCS en tant qu'outil pédagogique pour améliorer le raisonnement clinique des résidents en néonatologie, et contribuera à une formation plus efficace des professionnels en soins intensifs néonataux.

076

Methods for Teaching Resuscitation of Critically Ill Patients in the Clinical Setting: A Scoping Review

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Background: Managing critically ill patients is essential for learners across numerous specialties, yet the acuity of resuscitation poses challenges to teaching. Comprehensive data on teaching methods used during resuscitations is lacking. This scoping review aims to summarize the literature on methods for teaching during real-time in-hospital resuscitation-based encounters.

Methods: We searched Ovid MEDLINE, Embase, and Evidence-Based Medicine Reviews for Cochrane Central Register of Controlled Trials, Web of Science Core Collection, ProQuest Dissertations and Theses, EBSCO Education Source, and medRxiv from inception to January 2023. Grey literature from 10 conferences (2018-2023) was searched. Reference lists of selected studies were screened, and a forward citation analysis was carried out. Inclusion criteria were (1) mention of a teaching method involving medical learners, (2) acutely ill patients, and (3) in-hospital environment. The following data were extracted: setting, level of learner and specialty, teaching methods, and supervisor behaviors and their efficiency.

Results: From 21194 titles screened, full-text review of 225 articles yielded 16 studies, with 3 additional studies included through reference screening, forward searching, and grey literature review. From these 19 studies, we identified 23 teaching methods and 7 supervisor behaviors. Common methods used to teach learners across levels and settings—including the emergency department, adult and pediatric intensive care units, and wards—were found to include observation, role modeling, hands-on learning, cognitive aids, and practicing on dying patients. Identified supervisor behaviors were coaching, dialogue about patient care, facilitating hands-off or hands-on care, providing support on action, influencing perceived risk and value of learner participation, and fostering engagement. Although learners' and teachers' preferences were examined, no data on the teaching methods' effectiveness were found.

Conclusions: This review highlights teaching methods and supervisor behaviors that may optimize teaching in real-time acute care settings. However, the lack of evidence on their measured effectiveness underscores the need for further research.

077

Assessing Lifestyle Habits in Medical Residents: Insights From the SMILE Study at Koç University Hospital

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Background: Physician well-being is crucial in medical residency, where demanding schedules and high stress levels often prevail. Lifestyle habits across 6 domains—nutrition, physical activity, sleep, stress management, substance use, and social connections—are vital for maintaining resident health and fostering a safe learning environment. This study evaluates lifestyle habits among residents and educators at Koç University Hospital using a multidimensional approach.

Methods: An online survey using the validated Short Multidimensional Inventory on Lifestyle Evaluation (SMILE) was conducted among residents and educators at Koç University Hospital. The survey assessed 6 key domains of lifestyle habits. Participants included 92 individuals, comprising 51.1% (n=47) of residents and 48.9% (n=45) of educators. Statistical analyses, including independent sample *t* tests, were performed to compare total SMILE scores and subscale scores (nutrition, physical activity, sleep, stress management, substance use, and social connections) between the 2 groups. Assumptions of normality were checked prior to analysis to ensure appropriate statistical application.

Results: Residents had significantly lower total SMILE scores (104.05±12.93) than educators (111.29±9.75, *P*=.007). Differences were most notable in the nutrition subscale, where residents scored 18.17±2.32 compared to educators' 19.56±1.96 (*P*=.003), and in the sleep subscale, with residents scoring 7.33±1.13 versus 7.88±0.99 for educators (*P*=.02). No significant differences were observed in physical activity, stress management, substance use, or social connections. These findings highlight disparities in key lifestyle habits among residents.

Conclusions: The results underscore significant gaps in nutrition and sleep habits among residents compared to educators, necessitating targeted interventions to support resident health. Addressing these disparities could enhance overall well-being and improve the postgraduate medical education environment. Future studies should investigate systemic contributors to these differences and explore longitudinal interventions for sustainable improvement.

078

Exploring Preceptor Perspectives on Advancing Professional Responsibilities for Family Medicine Residents

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Background: The transition of family medicine residents to independent practice requires an intentional progression of increased professional responsibilities. However, preceptor perspectives and typical practices in granting autonomy in clinical settings remain underexplored. This study aims to examine the variability in preceptors' expectations of competency and their practices in allowing resident independence across various clinical tasks.

Methods: A survey was distributed to family medicine preceptors at the University of Alberta focusing on 7 specific clinical responsibilities, including patient management, documentation, and sensitive examinations. Preceptors were asked about the timing of residents' expected competency and when they would allow residents to act independently in performing these tasks. Preceptors also provided qualitative comments surrounding their chosen timeline for residents' independence. Ethical approval was obtained (U of A REB Ethics ID: Pro00145715).

Results: Out of 948 preceptors contacted, 63 responded. Differences trending toward significance were observed between the timing of expected competence and the granting of autonomy for all 7 clinical tasks. When examining preceptor demographic factors that impacted timing of increased professional responsibilities, rural and remote preceptors allowed residents to independently manage uncomplicated patients and a half-day of booked patients earlier than their urban counterparts. However, no differences were observed between fee-for-service and alternate remuneration plan preceptors in the timing of autonomy. Note, that the sample size of this study was not large enough to confirm statistical significance.

Conclusions: This study reveals variability in preceptors' practices regarding granting autonomy to family medicine residents. A discrepancy was identified between when residents are expected to achieve competency and when they are typically allowed to perform tasks independently (later than expected or not at all while in training). These findings underscore the need for guidance on appropriate timeframes for increasing professional responsibilities, which could enhance training consistency, and better prepare residents for independent practice.

079

Physician Health Advocacy in the 21st Century: A Grounded Theory Analysis of Barriers and Enablers

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Background: Advocacy is a professional competency for Canadian physicians, yet the experience of physicians who take on significant advocacy-related roles is poorly understood. This study explored the perspectives of physicians in advocacy roles, seeking to understand their motivations, professional development, barriers and enablers, and integration of advocacy work into clinical practice.

Methods: This qualitative study employed a concept-driven and emergent qualitative coding approach. Using convenience sampling, 18 semistructured interviews were conducted with physician advocates of diverse career stages, clinical specialties, and advocacy backgrounds. Grounded theory was used to identify emergent themes, and major themes were organized into a theoretical framework detailing the experiences of physician advocates.

Results: Personal experience, identity, and patient interactions lead physicians to identify advocacy needs. Physicians are motivated to become advocates by a variety of personal and clinical experiences, a desire to mitigate societal and health care injustices, and a sense of professional responsibility to leverage perceived privilege and authority. Multiple barriers to advocating were identified including institutional/political constraints and insufficient training. Mentorship, peer and institutional support, and hands-on learning experiences enable advocacy. Domains of the framework include: (1) synergy of clinical and advocate roles; (2) career development for advocates; (3) barriers to acts of advocacy; (4) facilitators of acts of advocacy; and (5) intrinsic and extrinsic pressures on advocates.

Conclusions: Physicians who engage in advocacy are influenced by personal and professional experiences and empowered by training and mentorship yet are constrained by perceived political and institutional barriers. Formal curricula and professional support mechanisms are needed to support physicians in their role as advocate.

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