RISE

RESEARCH INNOVATION AND SCHOLARSHIP IN EDUCATION

2023 Abstracts

University of Saskatchewan
College of Medicine

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Oral Presentations

Access, Reach and Engagement of Virtual STBBI Continuing Medical Education in Saskatchewan: What the Registration and Participation Data is Telling Us

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Purpose: Deliver accredited STBBI continuing medical education to enhance the ability of healthcare providers (HCPs) to treat and prevent HIV, Hepatitis C (HCV), and syphilis in response to Saskatchewan leading the country with record high incidence rates.

Approach: Between September and November 2022, the STBBI Treatment Education Program for Saskatchewan (STEPS) delivered a series of 7 live virtual presentations (1 HCV, 2 syphilis, 4 HIV). Presentations featured local medical experts who discussed clinical treatment, highlighted provincial resources, and answered questions. Recordings were provided to all registrants. Physicians and nurse practitioners who participated could request to be added as a Designated HIV and/or HCV Treatment Prescriber for Saskatchewan.

Methods: Registration data collected learners' professions, locations, and number of patients seen in the last 12 months with the STBBI being discussed. Program data tracked live attendance and the number of presentations each learner registered for.

Results: In total, STEPS received 1454 registrations across 434 unique HCP learners with varying experience treating STBBIs. 98% (426/434) of registrants were from Saskatchewan, with the program reaching HCPs in over 56 communities across the province. The 687 live attendees across the 7 presentations showed engagement of 297 unique learners. STEPS enrolled 9 new HIV and 5 new HCV Designated Treatment Prescribers for Saskatchewan during this period.

Conclusion: There is a demand for live virtual STBBI education by HCPs in Saskatchewan. The range of communities and experience alongside the number of attending and returning learners suggests that that this program is able to achieve access, reach and engagement towards meeting the STBBI educational needs of HCPs.

Coaching & Mentorship Program for Saskatchewan Physicians (CoMPAS): Update the Pilot Year

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Purpose: CoMPAS is a multistakeholder approach to change culture in Saskatchewan through a peer-support network that normalizes guidance and support through coaching & mentorship. Each stakeholder group identified individual but similar concerns and the need for mentorship resources. This is an educational innovation designed to reach early career physicians new to Saskatchewan and support their professional development.

Methods: In this pilot year CoMPAS is targeting physicians in their first 5 years of practice. Our target is 20 coach-mentee pairs (CMP). Regular evaluations are conducted. Application & evaluative data is reviewed to ensure the program is meeting the needs of participants.

Results: In 2022-23 CoMPAS opened with three iterations. CoMPAS yielded 46 coachee/mentee applicants and 41 coach/mentor applicants. Coaches were 56.0% Family Medicine (FM) and 43.9% Specialists; 51.2% urban and 48.8% rural primary practice locations. Coachees were 23.9% Specialists and 76.1% FM; 26.0% urban and 73.9% rural. International Medical Graduates self-identified during the application, they comprised 65.9% of coaches and 84.8% of coachees. Why did participants apply to CoMPAS? Applications of potential coachees indicated networking with peers, navigating health systems, and wanting guidance in clinical work & leadership as themes. Mentors applied to increase physician retention rates, provide guidance and encourage colleagues. Evaluative metrics will inform of the quality of CMP interactions, and longterm physician retention.

Conclusion: CoMPAS participants engage in peer-supported CMPs. Evaluative metrics & retention data will inform the direction of CoMPAS as we learn more about the quality of CMP interactions, and tailor educational supports to assist participants.

Development, Implementation and Evaluation of a Novel Quality Improvement and Patient Safety Curriculum in an Emergency Medicine Residency Training Program

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Purpose: Quality improvement and Patient Safety (QIPS) methodologies are included in the standards of residency training in the Royal College of Physicians and Surgeons Canadian Medical Education Directives for Specialists. Program directors and residents have indicated a desire for formal QIPS training but there is no consensus on how to best achieve this. We sought to develop, implement and subsequently evaluate a QIPS curriculum in an Emergency Medicine (EM) residency training program.

Methods: Kern's model of curriculum development was used to create an educational experience in QIPS for EM Transition to Practice (TTP) residents and faculty members. Literature review and focus groups with stakeholders informed the curriculum. It consisted of lectures, small group discussion and practical assignments. Participants completed pre- and post-curriculum surveys and the Quality Improvement Knowledge Assessment Tool- Revised (QIKAT-R). In one year, a third survey will be used to assess for knowledge retention and behavior change with respect to participation in QIPS activities.

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

Conclusion: Using Kern's model, we successfully implemented a QIPS curriculum which resulted in positive outcomes for all learners.

Development of a Transition to Practice Curriculum for Emergency Medicine Senior Residents

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Purpose: Emergency medicine (EM) residency programs have been utilizing competency-based medical education (CBME) for four years, meaning that final-year residents are for the first time entering their "transition to practice" (TTP) stage of training. Few training programs have established TTP curricula and recently a multi-site group completed a project which generated recommendations for an EM TTP curriculum; however, application of this information into practice had yet to be completed. By utilizing Kern's six-step model for curriculum development, we developed a TTP curriculum for the University of Saskatchewan's Royal College EM Residency Program based on these proposed recommendations.

Methods: By utilizing the identified recommendations for an EM TTP curriculum (generated using Kern's steps 1-3), we generated a curriculum by undertaking Kern's steps 4-6 (designing educational strategies, implementing the curriculum, and planning individual assessment and curriculum evaluation strategies) in a manner to ensure constructive alignment.

Results: We designed eight 90-minute modular teaching sessions covering various domains delivered throughout the academic year. Each session incorporated learning aims, learning outcomes, teaching methods and individual assessment methods that were constructively aligned. Individual assessment methods were linked to TTP entrustable professional activities and were completed by the EM faculty assigned to the session. Curriculum evaluation results are pending at the time of abstract submission.

Conclusion: This project outlines the appropriate use of Kern's curriculum development model in the development of an EM Residency Program TTP curriculum for future cohorts of residents as they transition to being staff emergency physicians.

Anti-Racist Transformation in Medical Education: A pilot project at the U of S

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Purpose: In August 2021, the College of Medicine applied for and was accepted into a three-year pilot project operated by the ICAHN School of Medicine at Mount Sinai. As one of 11 faculties of medicine from across North America and the only Canadian participant, the U of S is entering phase 4 of a 6 phase program. Over the three-year pilot, the program is designed to:
1. Develop the capacity of medical schools to dismantle systemic racism and bias in their work and learning environments.
2. Promote shared learning on how to dismantle racism within and across medical schools.

Methods: Thirteen staff and faculty from across the College of Medicine, as well as three student representatives committed to acting as the Guiding Cohort for this work and have completed the first three phases of the program.

Results: As the CoM enters Phase 4 of ART in Med Ed, the Cohort has established Spheres of Influence, which will be responsible for setting direction for anti-racism systems change. More specifically, they will oversee the change projects or actions, identify options and make decisions about where energy and resources should be focused, determine how to hold people accountable, and manage resistance, as well as muster support, buy-in and resources from stakeholders and other parts of our institution.

Conclusion: Members of the Leadership Cohort would like to share our learning regarding transformational change processes as it pertains to anti-racism and anti-oppression at the CoM. This work is particularly imperative as anti-Indigenous racism remains the most prevalent form of institutionalized racism and bias which manifests in dramatically different health outcomes for Indigenous people.

Implementation of a province-wide post-COVID condition educational program: Phase 1 - Conducting a Needs Assessment in the province of Saskatchewan

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Background: In August 2022, the Division of Continuing Medical Education (CME) at the College of Medicine, University of Saskatchewan, was contracted by the Saskatchewan Health Authority (SHA) to conduct a Needs Assessment of patients, families, and health care practitioners across the province, to inform and direct the development of an educational curriculum to form the basis of a Provincial Post-COVID Condition Education program.

Objective: To describe the challenges and processes in conducting an educational Needs Assessment to guide the development and implementation of a province wide Post-COVID Condition - Continuing Professional Development (CPD) program.

Methods: The process used different methods for data collection to identify perceived and unperceived learning needs including reviewing emerging data from medical departments, the Long COVID research group and Clinical Practice Guidelines among others.

Results: The most pressing learning needs included Identification of Post-COVID condition and common symptoms, use of diagnostic resources and management of post-COVID condition. Each one of the learning needs included related subcategory topics.

Conclusion: The Needs Assessment results identified the most common and pressing learning needs. These results will inform and direct the future steps of the project as it seeks to deliver clinically relevant education for health care providers and patients and families in the province wide Post-COVID Condition (CPD) program.

Bias in Observed Assessments in Medical Education: a Scoping Review

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Purpose: Observed assessments are integral to competency-based medical education (CBME) but may be biased against learners from structurally marginalized communities. Our understanding of assessment bias and its implications for CBME is limited because current studies focus on a single specialty, level of training, or social identity characteristic (SIDC).

Methods: We conducted a scoping review to map literature investigating bias in observed assessments in UGME, PGME, and CME arising from 7 observable SIDC: gender (binary), gender non-conformance, race/ethnicity, religious expression, physical disability, and age. Seven databases were searched for articles published between January 1, 2008 and March 19, 2023. Two authors independently reviewed the title/abstract and the full-text of articles that met the inclusion criteria. Conflicts were resolved by consensus or a third author.

Results: We found 2946 unique publications and included 67 Most evaluated gender bias, were conducted in PGME, and employed quantitative methodologies. None investigated gender non-conformance, physical disability, or religious expression. No articles evaluated intersectionality. General surgery and internal medicine were the most frequently studied specialties. Simulated assessments were studied more often than assessments in clinical environments. Intraoperative autonomy measures and clinical examinations were evaluated for bias most frequently. Bias favoring men was more common in assessments of intraoperative autonomy, whereas bias in clinical examinations favored women or was not present.

Conclusion: The literature on assessment bias related to observable SIDC is conflicting and has many gaps. Our results highlight understudied SIDC to facilitate equitable assessments in medical education.

Virtual Supervision of Clerkship Trainees using POCUS Handheld Devices and Cloud-based Image Archiving Provides Opportunity for Feedback and Skill Improvement

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Purpose: Clinicians use Point of Care Ultrasound (POCUS) at the bedside to improve diagnostic accuracy and procedural safety. Feedback on Point of Care Ultrasound (POCUS) performance is essential for skill development. Providing feedback can be difficult in a large province with several distributed medical education sites. Use of handheld POCUS devices and a cloud-based image archiving enables virtual supervision. We evaluated the quality of uploaded images as well as feedback provided to students.

Methods: Volunteer MS3 (n=11) students were given access to POCUS devices at various training sites. Trainees were encouraged to upload POCUS scans to their accounts where they would then receive feedback from faculty. Subsequently, images that met inclusion criteria (91 images by 9 students) were randomized and reviewed by a blinded expert using a global rating scale. Feedback previously provided to the students was also analyzed. Finally, students completed a questionnaire on their technology-enhanced POCUS learning experience.

Results: An independent-sampled t-test comparing mean ratings for initial images submitted prior to any feedback with those submitted after three rounds of feedback showed significant effect on image scores (2.60 vs 3.50, p = .040, d=.93). Feedback included 4 performance domains (indications, image generation, interpretation, integration) and was provided to students within 3 days of image upload. Students found the technology easy to use and felt feedback was tailored to their learning needs.

Conclusions: We observed that virtual feedback provided to medical students through a cloud-based work platform can be effective for enhancing POCUS skills. This is important for POCUS training in the context of a distributed medical education program.

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The Impact of Individual Factors on Learning Environment Evaluations

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Purpose: The learning environment (LE) contributes to student academic success and general well-being This project explored the impact of various individual factors (age, gender, postgraduate year (PGY), racialized identity, experiencing or witnessing intimidation/harassment (I&H), and health status) on resident perceptions of their LE.

Methods: In November of 2022, medical residents (n=142) completed the Scan of Postgraduate Educational Environmental domains (SPEED) survey, which explores LE perceptions across three domains: (1) Content (2) Atmosphere, and (3) Organization. One-way ANOVAS were used to explore differences between groups on LE domain ratings.

Results: No significant effects were observed across LE domains for age, gender, or identifying as racialized (ps>.05). There were however significant impacts between groups for PGY, I&H, and personal health status (ps<.05). Post hoc comparisons showed lower LE ratings for residents in later years of training (PGY 4+) when compared to earlier years across all three domains. Residents who experienced I&H had lower LE ratings for content and organization domains when compared to those who did not witness or experience I&H; experiencing or witnessing I&H resulted in significantly lower LE atmosphere ratings when compared to residents who did not. Finally, those residents who identified their health as poor/fair showed significantly lower LE ratings across all domains.

Conclusion: These results demonstrate the negative effects of I&H and individual health, as well as year of training on residents' reporting of their LE. Explicit attention and deliberate improvement efforts to reduce I&H and improve individual health would have immediate benefits to resident learning.

The advancement of collaborative care in Saskatchewan to serve children/youth with psychiatric disorders

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Purpose: Saskatchewan (SK) has a pediatric mental health crisis. The limited number of child/adolescent psychiatrists and lack of confidence of primary healthcare providers' (PCPs) to independently engage in assessment and treatment of childhood psychiatric illness contributes to extended waiting times for assessment and treatment. The Canadian Research and Education for the Advancement of Child Health program (CanREACH-SK) developed a PCP training program to improve pediatric mental health capacity in SK through enhanced education.

Methods: We evaluated the impact of this provincial training program on (i) referral patterns to child/adolescent psychiatrists, (ii) psychiatric care provided by PCPs, and (iii) PCPs' knowledge and comfort (2018-2022) utilizing data from Electronic Medical Record (EMR), Medical Services Branch (MSB), and PCPs' self-report surveys (n=146) using a year pre/post and trained versus untrained PCPs comparisons.

Results: The majority of participants were family physicians (63%). The number of referrals (NOF) by trained PCPs was reduced from 119 to 87 and per PCP from 1.22 to 0.91. The NOFs were lower in trained versus untrained PCPs (87 vs. 105) and per PCP (0.91 vs. 1.27). The surveys indicate participants acquired immediate and sustainable improvement ($p<0.05$) in knowledge and confidence to assess, diagnose, treat, and manage psychiatric conditions.

Conclusion: The CanREACH-SK training program fosters the capacity of PCPs to provide pediatric psychiatric care for those with mild to moderate illness more quickly and with reduced subspecialist consultations. Further in-depth analysis will address diagnostic and health region disparity to improve access and care for patients who would otherwise spend years on waiting lists to see a psychiatrist.

'Your comment is not as helpful as it could be…do you still want to submit?' Using Natural Language Processing to Identify the Quality of Supervisor Narrative Comments in Competency Based Medical Education

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Purpose: Trainee development relies on narrative comments from front line supervisor assessments, yet these comments are not routinely measured for quality. The Quality of Assessment for Learning (QuAL) score has validity evidence for measuring quality in this context but it is time intensive to score the large volume of these comments generated in medical education assessment programs. Natural language processing (NLP) models have the ability to rapidly analyze and categorize human text. We set out to develop an NLP model for applying the QuAL score to narrative supervisor comments.

Methods: 1250 EPA assessments were randomly extracted and de-identified from both McMaster and Saskatchewan's Emergency Medicine (EM) residency training programs. These comments were put into 25 unique 100 comment surveys for rating. 25 EM faculty members and 25 EM residents each filled out a survey rating comments with the QuAL score. 80% of the data were used as the training data set and 20% for the validation set. A transformer model technique was used to determine overall QuAL score as well as QuAL score sub-components.

Results: All 50 raters completed the rating exercise. Comments with imperfect agreement on QuAL score were resolved by two study authors. The QuAL score sub-components had a balanced accuracy of 0.615 (devidence), 0.85 (suggestion) and 0.902 (connection). The NLP model can be viewed at www.commentquality.ca.

Conclusion: We have developed an NLP model for rating the quality of narrative supervisor comments in Competency Based Medical Education (CBME) using the QuAL score. This can serve as a tool for nudging in real time, audit and feedback in faculty development initiatives and an outcome measure for overall program evaluation in CBME.

ePosters

Virtual Follow-up Appointments by Medical Students and Residents in Developmental Pediatrics: Expediting Clinical Care and Enriching the Learning Experience

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Purpose: Extended wait times is a long-standing concern in Canadian healthcare, leaving patients without clinical guidance and unfavourable patient outcomes (1,2). Resident-run clinics is gaining recognition in decreasing wait times without compromise to patient satisfaction (3). We aimed to evaluate a novel model of resident clinics for follow-up care in Developmental-Behavioural Pediatrics and Child Psychiatry to expedite access to specialist guidance.

Methods: This mixed methods (interviews and surveys) study was conducted from Child and Youth Services Clinic in Regina, Saskatchewan. Resident follow-up clinic was piloted in October 2021. Descriptive statistics was computed using R software (version 4.0.3). Thematic analysis of qualitative data for the survey and semi-structured interviews was conducted to identify recurring concepts.

Results: High acceptance (Caregivers: n=81, 75%, Residents: n=8, 34.8%) and satisfaction (Caregiver: n=14, 60.9%, p=0.018) from the resident clinic model was noted among caregivers and residents. Caregivers mentioned benefits in faster and ease of access with this model. Residents viewed this as a valuable learning tool. Lack of care continuity and guided supervision were common disadvantages for caregivers and residents respectively.

Conclusion: Resident clinics can be advantageous in pediatrics, family medicine, and psychiatry residency programs, and may assist in resident education and increasing patient satisfaction. This is a preliminary analysis of a novel model of resident clinics for follow-up appointments developmental pediatrics to decrease wait timeGiven the acceptance of the resident clinic model for follow- up appointments, further efforts will focus on implementing this model in clinical teaching rotations and electives.

The OSCE Training Module: developing skilled examiners in undergraduate medical education

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Purpose: The OSCE (Objective Structured Clinical Examination) is used in undergraduate medical education (UGME) for formative and summative assessment. Examiners may have experienced OSCEs as learners, but how do they learn to be an examiner?

Methods: The OSCE Training module in the Skilled Academic Generalist Educator (SAGE) online course was created in 2022 to provide training for OSCE examiners at the University of Saskatchewan. Needs assessment involved discussion with UGME stakeholders (Assessment Subcommittee and Faculty Development). The module's objectives: learners will demonstrate the ability to accurately mark an OSCE exam rubric, and reflect on how their marking compares to the standard and how this affects future practice as an examiner. Learning material included videos of a mock OSCE station with associated rubrics, debriefing videos discussing appropriate marking, information on the use of the Global Rating Scale (GRS), and unconscious bias. Finally, learners post a self-reflection on the Canvas discussion board, for continuing medical education (Mainpro or MOC) credit.

Results: 58 faculty viewed the training videos and 5 faculty completed the self-discussion. Preliminary thematic analysis of their reflections shows rubric marking tends to improve with practice, and reflecting on bias was important to examiners.

Conclusion: The results of this work-in-progress show providing training for OSCE examiners can be helpful in improving marking of rubrics, and encouraging reflexivity in faculty who participate in student assessment. Future directions include developing additional training materials on grading of GRS, expanding module access to OSCE writers, and evaluation – do "trained" examiners perform well in real-life grading situations?

Developing a Model of Excellence for Psychiatry Residency Training in Northern Indigenous Health: Step 1

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Purpose: Indigenous peoples are 17 % of Saskatchewan's population, with suicide rates 3-9 times that of the general population. Many differences exist in psychiatric care in Northern Indigenous populations, from different cultures, to generations of colonial trauma, to minimal resources. Despite this, the University of Saskatchewan has little explicit education on providing this care. Developing a curriculum on Northern Indigenous psychiatry for residency training begins by exploring the previous work on this topic, and developing new questions to help define this work in a Saskatchewan context.

Methods: Medline OVID and exploded MESH terms were used for four separate searches. In all searches the keywords INDIGENOUS PEOPLES or RURAL POPULATION and MEDICAL EDUCATION were used. In the first search CANADA and PSYCHIATRY were also used, but provided few results, and was expanded in the 2nd search to remove PSYCHIATRY. Given the robust research around Indigenous Health in New Zealand and Australia, in the 3rd and 4th searches CANADA was substituted for AUSTRALIA and then NEW ZEALAND. Our results provided 79 articles to be mined for common principles of medical education working with Indigenous populations, and identify gaps in research relevant to Saskatchewan and Psychiatry.

Results: Our goal is to develop an evidence-based model from the pre-existing literature, and use this to inform future Saskatchewan specific community-based research.

Conclusion: This model must be developed both to become a center of excellence in psychiatric care to the Northern Indigenous populations, and for ongoing recruitment and retention of psychiatrists and trainees passionate about care to these under-served populations.

The use of virtual branching scenarios for decision-making and performance assessment

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Purpose: Providing learners with safe, experiential opportunities to make decisions regarding emergency veterinary care that are not instructor, time or financially taxing can be difficult. Innovative computer-based programs like H5P can produce branching scenarios where learners must think critically about the information and decide the next action. The first branching scenario developed was a CPR scenario where the learners had to make correct decisions to obtain the return of spontaneous circulation. Additional scenarios are currently in design.

Methods/Approach: A content expert (JL) and instructional designers from the Distance Education Unit (JRD, JM) collaborated to develop the final product. Scenario development began in Twine, providing a visual representation of the decision pathways before developing the scenario in H5P. Virtual characters (registered veterinary technicians) were used throughout the narrative to provide in-the-moment feedback, nudging learners back to the correct path, assuming a terminal decision was not made.

Results/Impact: In groups, ~20 learners in a second-year student lab participated in the computer-based scenario simultaneously. During the scenario, they received feedback from the program itself. Afterwards, during a group debriefing, the learners reflected on their decisions and asked clarifying questions. Learners have continuous access to the scenario for self-directed practice in the future.

Conclusion: Using branching scenarios promotes critical thinking and decision-making, allowing immediate feedback. They are an innovative tool for large group participation, continued deliberate practice, and self-assessment.

Use of an Escape Room Experience in Emergency Veterinary Medicine Education

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Purpose: Escape rooms are an innovative educational tool that encourage learners to practice team skills and solve puzzles within a specified time limit. These elements are similar to a clinical environment in that they may stress learners. Veterinary emergency medicine can be very stressful as decisions often need to be made quickly and can be difficult for learners to apply and retain information in a stressful environment.

The purpose of this presentation is to discuss the development, execution, and feedback from the veterinary emergency medicine escape room.

Methods: An escape room experience in emergency veterinary medicine was used for third year students at the Western College of Veterinary Medicine. The development of the experience included puzzle alignment with objectives, a diverse development team, a pilot run, and creating a blueprint for future interactions. Following the delivery of the experience, learner feedback was collected.

Results: In a post experience survey, learners indicated they enjoyed participating in the learning activity as well as feeling that it encouraged the use of communication, collaboration and leadership skills which have been identified as core competencies in veterinary education. While on average the learners would disagree with the experience being stressful, several commented it was a "good stress".

Conclusion: Participants are able to apply clinical and professional skills, and reflect on their actions. Future studies evaluating escape room experiences could consider assessing the type of stress experienced by learners (dis- or eu-stress) as this was identified but not qualitatively assessed for this project. Additionally, developing a virtual version may allow for additional learner engagement without supervision.

Development and Evaluation of the Quality Referral and Consultation Education (QRCE) Curriculum at the University of Saskatchewan

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Purpose: The "Quality Referral and Consult Education" program (QRCE) was developed at the University of Saskatchewan to facilitate effective communication and collaboration during referrals and consults, to enhance safe patient care. This study reports on the curriculum development and evaluations to determine its effectiveness.

Methods: The curriculum was developed using Kern's 6-step approach. A multi-phased evaluation plan based on Kirkpatrick's four levels is being performed. This study reports level 1 and level 2 findings. Descriptive statistics were used for reporting of quantitative data.

Results: Description of the curriculum: The QRCE curriculum consists of an introductory session at the Boot Camp for incoming residents, two online modules, and an interdisciplinary workshop co-facilitated by senior residents from Family Medicine and Royal College programs.

Evaluation: Residents were highly satisfied (M = 4.13/5.00) with all curricular components (level 1 - reaction), reported a higher awareness of available resources (M = 3.97/5.00), an increased knowledge level of how to complete a quality referral/consult (M = 4.04/5.00), and felt better prepared for future referrals/consults (M = 3.99/5.00) (level 2 - learning). The modules have been modified based upon evaluation findings.

Conclusion: Ongoing work on level 3 and 4 evaluations will inform curricular changes and help determine the impact. Future directions include adapting the curriculum for other health care professionals. These activities will help to ensure success of the curriculum and further help to standardize and improve the referral/consult process across various health care professionals.

Improving the Quality of Point-of-Care Ultrasound Use by Internal Medicine Residents: A Focus on Image Archiving

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Purpose: A key component of a successful Point-of-Care Ultrasound (POCUS) program is image archiving which facilitates image review and feedback. Internal Medicine (IM) residents use POCUS for procedures and clinical assessment, but few residents archive their images. This quality improvement initiative was developed to increase the number of POCUS images archived by IM residents. Our goals were to have >75% of all non-procedural scans performed by PGY1 IM residents saved and to have > 50% of PGY1 IM residents save at least one scan over the study period.

Methods: This Quality Improvement project was conducted on a clinical teaching unit (CTU) with approval from the IM Training Program. Three Plan-Do-Study-Act (PDSA) cycles were carried out over the academic year including: a presentation to PGY1 IM residents highlighting how and why to save POCUS images, the creation and distribution of educational resources for use during clinical work, and finally contacting residents who have not saved scans and asking them to identify barriers they have faced. Outcomes include percentage of non-procedural scans saved by PGY1 IM residents and rate of image archiving amongst these trainees. Data was collected from the creation of an ultrasound sign out sheet located on department machines.

Results: Over 36 weeks, 38 non-procedural scans were performed by PGY1 IM residents on our CTU. The percentage of scans saved was 47%. At least one scan was saved by 75% of residents who used the ultrasound machine.

Conclusion: Prior to this project we have estimated that <10% of all scans performed on our CTU were saved. Though not yet at target, we were able to increase the number of non-procedural scans saved by PGY1 IM residents as well as the number of residents saving scans.

A Review of Admissions Standards for Masters Programs in Health Professions Education

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Purpose: There is a pressing need for health professionals to receive specialized training in education, particularly to perform duties in leadership roles during their careers. There is limited scope for these competencies– such as curricular design, program development, and assessment methods– to be included in their routine professional training, where they are already subjected to a high curricular load. Master's programs in Health Professions Education prepare health professionals as academic leaders with a strong grasp over teaching and learning.

There has been an increase in Master of Health Professions Education programs offered worldwide over the past 50 years, with a reported 150 programs as of 2018. However, there is considerable ambiguity in the admission standards for the various programs offered globally. The purpose of this study is to review the admission criteria for different Master of HPE programs and report on the current standards for admission.

Methods: A review of admission criteria and accreditation standards will be conducted using the information available on program websites. Institutions offering the programs will be contacted if any clarification is required. A protocol will be designed and piloted to chart the data procured through grey literature searches.

Expected outcomes and Impact: There is an urgent need for consistent standards in admission criteria with the growing number of graduate programs in HPE. Findings from this study will reveal current standards and highlight areas for improvement.

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Bridging the Gap: A Pocket Resource to Assist Students Transition into Their Psychiatry Clerkship

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Purpose: The quality of the introduction to a new rotation, including providing helpful learning resources, greatly influences the overall success for students. The aim of this study was to design a Psychiatry Information Card (PIC) for the core psychiatry rotation in Saskatoon to assess its impact on students' confidence and comfort. The objectives include survey participants' perceived benefits of the PIC during rotation, analyze the changes in participants' self-assessed knowledge before and after the rotation, compare the changes in participants' perceived level of comfort in their clinical skills, and determine utility of integrating the PIC in formal educational practice.

Methods: This study employs a quasi-experimental (pre-test post-test control group) design. We aimed to enroll all eligible 3rd year medical students (estimated 59 students) in our study. The first 3 cohorts were the control group (without the card), and the last 4 cohorts were the experimental (with card) group. Students in both groups were required to complete the same set of questionnaires at two time points: first and last week of the rotation. The post rotation questionnaire included additional four questions related to the card for the experimental group and two questions for the control group. Questions were developed in accordance with the 4-level Kirkpatrick's 'Model of Learning' Framework.

Results: This study is in progress. The control data is complete and there were 21 and 19 respondents for the pre and post rotation, respectively. 50-60% of students felt very little or moderately comfortable with almost all aspects of the psychiatry rotation. 90% felt a resource would have been helpful. Data collection from the experimental group is in progress.

Conclusion: In progress.

Improving medical student well-being and connectedness through mentorship

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Purpose: Peers United in Leadership & Skills Enhancement (PULSE) is a near-peer mentorship program for USask medical students. PULSE goes beyond traditional faculty-student pairings and incorporates both clinical and teaching skills, which are critical but often under-represented aspects in medical education. Grounded in Self-Determination Theory (SDT), PULSE allows students to choose their learning goals and work with different classmates each week. The aim of this research is to evaluate how supportive PULSE's learning climate is to students' psychological needs for self-determination and well-being (autonomy, relatedness, and competence), and how this influences students' perceived competence in clinical learning/teaching, autonomous motivation, and wellbeing.

Methods: PULSE participants completed anonymous online surveys containing author-created quality improvement questions, as well as SDT-based scales. We used correlation and regression to study the above-mentioned constructs, and incorporated mentee and mentor feedback to improve the program over time.

Results: Mentors and mentees rated PULSE's learning climate as highly needs-satisfying. This related to a greater perceived competence in learning of clinical material for mentors, and in teaching of this material for mentors. Autonomous motivation to mentor in PULSE was associated, in turn, with greater psychological well-being in medical school.

Conclusion: Findings from this research suggest that near-peer mentorship programs like PULSE, which promote students' self-determination, will help support students' sense of connectedness, skills development, and well-being. Limitations and future directions for this research will also be discussed.

The Use of Ultrasound for Teaching and Research in Primary Care: A Preliminary Assessment

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Purpose: To investigate ongoing use and potential interests in incorporating ultrasonography into graduate and postgraduate primary care teaching and research at the University of Saskatchewan.

Methods: A prospective qualitative study was conducted in the Department of Academic Family Medicine at the University of Saskatchewan. A survey was sent to all family physicians at 8 academic sites in Saskatchewan; faculty with and without formal teaching appointments were included.

Results: More than 40% of family medicine faculty conduct ultrasonography as part of their clinical practice. The proportion of physicians conducting ultrasound was similar between those with and without teaching appointments. There is strong interest for continued and future use of ultrasonography for primary care teaching and research, from faculty with and without teaching appointments. Common themes from faculty to support the use of ultrasonography included using ultrasound imaging as an adjunct to the physical exam, to guide clinical reasoning, and to guide procedures. Family physicians in rural locations felt the use of ultrasonography for teaching and research would improve patient access to imaging. Challenges in implementing ultrasonography included having inadequate time and resources to acquire training, lack of time for teaching, and confusion around billing.

Conclusion: Family physicians in Saskatchewan see a strong role for incorporating ultrasonography into graduate and/or postgraduate teaching and research. These findings provide evidence so support ultrasonographic training for faculty and residents in primary care across Saskatchewan.

Evaluation of Learning for Medical Residents following Cultural Responsiveness Training in Indigenous Wellness

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Purpose: To examine Kirkpatrick's stages of learning model in postgraduate medical education resident learners following cultural responsiveness training.

Methods: The Role of Practitioners in Indigenous Wellness is a cultural responsiveness learning program developed by Indigenous scholars, community members and Elders in partnership with Continuing Medical Education and Continuing Education in Rehabilitation Science. Medical residents completed the course over a six-month period from 2018 to 2020. Participants completed a satisfaction survey, pre- and post-testing on a case study vignette and a communication strategy.

Results: 52 PGME residents completed the Role of Practitioners in Indigenous Wellness online learning program from 2018-2020. Satisfaction surveys and communication strategies were completed by every participant. 15 pre-course and 7 post-course vignette cases were completed.

Conclusion: Most residents felt this training was relevant to their clinical practice. Recommendations for course enhancements were received. Themes identified in communication strategies included self-reflecting, continued learning, cultural responsiveness, patient-centred care, advocacy, and open communication.

Factors influencing International Medical Graduate (IMG) physician retention in rural practice: recommendations for policy and practice from a systematic review

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Purpose: To learn from literature what factors influence international medical graduates (IMGs) retention in rural practice and recommendations in literature to address these factors.

Methods: A systematic review using Joanna Briggs Institute (JBI) guideline for systematic scoping reviews.

Results: 20 out of 1002 articles were selected for inclusion. Included articles were set in Canada and Australia. Factors identified were categorized as personal, family, professional, community and structural. Structural factors such as, overall lack of support, limited access to tertiary care centers, unsustainable models of care and poor infrastructure/innovative drive, physician burnout, limited mobility/scope of practice, and a lack of opportunity for professional development, were tied as the most common identified barriers to IMG retention. Conversely, community integration, opportunities for spousal employment, accessible schools for children, and opportunities for entertainment were common facilitators to IMG retention. Key recommendations to enhance IMG retention included: 1) having community-directed recruitment models where communities match expectations for income level, workload, amenities for rural physicians, spousal employment and children education, 2) providing funding support, fair contracts, moving and retention allowances, supports for self-care, continued professional development, balanced workloads, innovation, leadership, and 3) having physician-led retention support groups in community to figure how best to help physicians settle in adequately.

Conclusion: Engaging rural community and IMG physicians would improve IMG retention which could further enhance rural healthcare delivery, quality and sustainability.

Developmental readiness and organizational factors: impact on leader development, practice, and effectiveness

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Purpose: This project explored individual and organizational factors shaping leader developmental readiness (LDR), and the relationship between leader readiness, efficacy, practice, and effectiveness.

Methods: An online survey (98 residents) measured two constructs of LDR (ability and motivation) and organizational supports for leader development (LD), personal leadership efficacy, and leadership effectiveness. Separate one-way ANOVAs and correlations were run to explore the relationships. Interviews (12 residents) were held exploring the impact of factors contributing to LD and success. Thematic analysis was carried out to explore emergent themes.

Results: No differences were observed (ps>.05) between groups on ability and motivation for gender, PGY year, or past leadership training. Significant effects (ps<.05) were observed for, age and ability, perceived organizational support for leadership development, ability and motivation. High levels of support from other residents and faculty resulted in significantly increased development for motivation, but not ability. Finally, ability and motivation to develop were positively associated with transformational leadership behaviours, leader efficacy, and leader effectiveness (ps<.05). Thematic analysis revealed three major areas contributing to leadership development and success, including: (1) effective mentorship, (2) formal leadership education and experiences, and (3) support and promotion of resident wellness.

Conclusion: Understanding learners' developmental readiness, impact of individual and organizational factors on this development, and how leader development interacts with learner readiness is informative for leader and leadership development programs for individuals and organizations.

Perceptions of Canadian Radiology Residents Regarding Competence by Design: A Western Canadian Survey

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Purpose: This study sought to evaluate the perceptions of Canadian Radiology residents on Competence by Design (CBD) and to identify areas in which further information and guidance is required.

Methods: Radiology residents at five Western Canadian Radiology programs were eligible to participate in this online survey. The survey contained an assortment of question formats, including 5-point Likert-scale responses, multiple-choice questions, and free text response. The questions assessed understanding of resident perspectives on feedback and coaching, learning and gaps in knowledge, and quality of training and preparedness within the CBD model.

Results: Twenty-one residents from each of the five radiology residency programs and across each year of training participated in the survey. The majority of residents reported they disagreed (43%) or strongly disagreed (19%) that the CBD model will be more beneficial compared to the traditional training model. 90% reported their overall perspective of CBD as indifferent or negative. Entrustable professional activities (EPAs), milestones and promotions decisions and committee review were the top 3 areas residents require further information on. Residents identified timely and direct feedback as a positive aspect of CBD but expressed concern over time management within the new curriculum.

Conclusion: This study identified specific areas of concern that may attribute to the overall negative or indifferent perception towards CBD by residents. Addressing resident concerns and gaps in knowledge during the early stages of CBD implementation may encourage long term engagement and provide an opportunity to address the overall negative or indifferent perception of CBD.

Transition to virtual care: a comparative study of family medicine residents' experience during the early and late periods of the COVID-19 pandemic

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Purpose: Virtual care (VC) was implemented to accommodate restrictions imposed because of the coronavirus 2019 (COVID-19) pandemic. To understand the impacts of the transition to VC and residency training, we investigated the experiences of family medicine (FM) residents providing VC, during the early and late pandemic periods.

Methods: Residents from 8 USask FM postgraduate sites were surveyed at the early (June 2020) and late (July 2022) pandemic periods. Survey questions using Likert rating scales evaluated residents' experiences providing VC, satisfaction levels, educational preparedness, impacts to training, and mental health. Data were analyzed descriptively and comparatively between groups using chi-square and Mann Whitney U tests at a 5% alpha.

Results: 45 trainees (26 early and 19 late) from 6 sites responded to the survey. 37% from Saskatoon and Regina each, 5% each from Prince Albert, La Ronge, Swift Current and Northwest region. Overall, residents were satisfied with the transition, irrespective of the early vs late periods (84% and 73%, p=0.457). Residents felt their undergraduate medical education did not adequately prepare them for a pandemic, (42% and 39%; p= 0.358); hence, felt they needed more training on VC. Residents at both periods reported negative impacts of COVID-19 on their training (74% and 58%; p=0.337) and mental health (58% vs 42%; p=0.479), which were strongly correlated to their perception of self-preparedness to use VC (r =0.822; p<0.0001).

Conclusion: Family medicine residents in Saskatchewan transitioned well to the implementation of VC during the pandemic, despite noting negative impact of VC mental health. Increased undergraduate medical training on VC is likely to optimize the impact of VC on mental health during residency training

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University of Saskatchewan indigenous medical graduates and their location of practice in Saskatchewan

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Purpose: The discrepancy between the number of rural & urban practicing physicians is an ongoing issue in Saskatchewan. This gap becomes even more evident in rural indigenous communities. While many financial incentives are temporarily filling in the gap, we wonder if there is a more sustainable method of addressing this issue. As part of an effort to provide more equitable entry for indigenous applicants, the UofS Medicine admission process has been allocating seats for indigenous applicants for many years now. Our goal for this study is to determine if Indigenous medical graduates are more likely to practice in rural Saskatchewan compared to non-indigenous medical graduates.

Methods: We used admissions data of medical graduates from the University of Saskatchewan College of Medicine within the admission year of 2004 – 2014 inclusive & public data on current location of practice to run a retrospective comparison study of indigenous & non-indigenous graduates and their location of practice.

Results: 31.6% of Indigenous medical graduates are currently practicing in a rural location compared to 14.5% of their non-indigenous counterparts.

Conclusion: There is a higher propensity of Indigenous medical graduates, from the University of Saskatchewan, to end up practicing in rural Saskatchewan compared to their non-Indigenous counterpart. These results reassure us the importance of incorporating indigenous seats into our admission process not only to provide equity but also can potentially help address the shortage of rural medicine physicians in Saskatchewan

Transformational Learning in medical residents and students: A Disorienting Dilemma

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Purpose: Using a transformative learning (TL) perspective, we explored the impact of organizational changes that resulted from COVID-19 on residents' (R) and undergraduate medical students' (U) learning and provision of care.

Methods: A two-part survey was distributed, exploring the impact on participants in their role as a learner, health professional, and in their healthcare delivery (Part A); and, in part B how TL impacted learning and healthcare provision. Data were analyzed using descriptive statistics, one-way ANOVAs and content analysis for emergent disorienting dilemma themes.

Results: In Part A (N=234), over 30% of participants in both groups reported questioning their roles and how they normally act, and feeling discomfort with traditional social expectations. Participants reported a negative impact on their current (R 67%, U 78%) and future (R 40%, U 48%) learning, while their perspective as a healthcare provider was either not changed (R 46%, U 40%) or had changed positively (R 36%, U 45%).

In part B (N=138), emergent themes included changes in how medical learners think, feel, and behave. Participants also reported changes to healthcare provision, describing changes to the system, negative impacts on wellbeing, and changes to self-perception. These experiences resulted in TL outcome changes in actions, self-awareness, and openness, and process changes in cognitive/rational and social critique. No differences were observed between R and U groups on TL subscales (ps>.05), however within-group factors of gender revealed an increase in dialogue and emotion (ps<.05) for females.

Conclusion: Results demonstrate how an externally imposed disorienting dilemma can have a transformative impact on learning and healthcare provision

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