



# 2021 Abstracts

University of Saskatchewan  
College of Medicine



UNIVERSITY OF SASKATCHEWAN

# College of Medicine

FACULTY DEVELOPMENT

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# *Oral Presentations*

## MSK Medical Education Videos and PDF Content Creation for Medical Students

Zach Oleynik, College of Medicine, Clerkship student

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**Purpose:** Our intention with this project was to create a series of up to date videos consisting of high yield learning concepts for medical students in the field of MSK and orthopedics. With the increasing demand for accessible, efficient online resources – we think these supplementary videos will be a useful resource for medical students preparing for clinical rotations. Additionally, PDF handouts were created and formatted for phones, tablets, or computer access and provide a condensed approach to the most common clinical exams and MSK presentations.

**Methods:** Working in conjunction with the Orthopedic surgeons at the University of Saskatchewan, we were able to identify the pertinent, high-yield examination techniques that should be reinforced in medical education. In some circumstances, we surveyed surgeons to better understand which examinations they use in their clinical practice. We then created demonstration videos for the knee, shoulder, hip, spine, and pediatric examinations. To support medical student learning we created supplementary 1-page PDF handouts that go with each video. Students rotating through MSK and orthopedic rotations can utilize these resources to improve clinical history and examination skills.

**Results:** The videos and handouts were completed and distributed as part of mandatory curricular learning for second year medical students. We received great feedback from course directors, clinical skills teachers, and students regarding the continued support for more similar learning resources.

**Conclusion:** In an evolving educational world – medical schools must continue to invest in creating digital medical education resources. We hope these videos and handouts can help with the MSK rotations for University of Saskatchewan medical students for many years to come.

## Virtual Visit Direct Observation Feedback Form

Christine Pask, College of Medicine, Department of Academic Family Medicine

Co-Author(s): Emily Sullivan, Faculty, Department of Academic Family Medicine; Cathy MacLean, Faculty, Department of Academic Family Medicine; Sean Polreis, Teaching & Learning Specialist, Faculty Development

**Purpose:** To create a novel virtual visit direct observation form to facilitate feedback when supervising learners

**Methods:** After reviewing the literature and CFPC resources evolving quickly after COVID with the pivot to virtual care, we created and piloted a direct observation form to assist in giving feedback to family medicine residents on virtual care best practices. Survey feedback obtained from family medicine residents and faculty at one family medicine teaching site was obtained and an iterative process was used to refine the direct observation feedback tool.

**Results:** To date we have created a standardized virtual visit direct observation form that can be used across sites and potentially programs; with detailed skills and competencies.

**Conclusion:** This form requires further study but is a start as a quick and ready tool for faculty to use when giving feedback to learners on their performance in virtual visits.

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

Sean Polreis, College of Medicine, Faculty Development

Co-Author(s): Udoka Okpalauwaekwe, PhD Candidate, Department of Academic Family Medicine; Marcel D'Eon, Medical College of Georgia, Augusta University, Georgia, USA

**Purpose:** An important element in each teaching workshop for resident doctors at the University of Saskatchewan is the microteaching sessions, including feedback. We set out to test our observations that one format for organizing the feedback increased the quality of feedback. In one format, residents provide and receive feedback in all areas listed on our feedback form; while in the other format, they provide and receive feedback in some areas.

**Methods:** Over 115 residents participated in the teaching workshop in the 2019-2020 academic year. Each resident experienced both formats for giving and receiving feedback—about half with one format first and the other half in the opposite order. We developed and tested a simple survey that asked about the usefulness of the feedback.

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

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

## Virtual Medical Escape Room Experience (V-MERGE)

Chantal Lecuyer, Clinical Learning Resource Centre

**Learning objectives:** 1) Identify the benefits of utilizing MERGE; 2) Identify key elements necessary for MERGE; 3) Explore the utilization of V-MERGE.

This presentation will introduce participants to the benefits of utilizing Medical Escape Room Game Experience (MERGE) by outlining skills learners are able to practice with the application of this learning modality. It will discuss important key concepts that are necessary when utilizing MERGE for a learning activity. Finally, participants will have the opportunity to view an original V-MERGE created by the presenter and learn how this experience can be tailored to fit their specialty. <https://sites.google.com/view/escaperoomtrial2020/home>

Please note that at this point, the V-MERGE demonstrated in this presentation is in its trial mode and is provided for reference only. This particular room has not been used for any Health Sciences group. It is a project that the presenter has developed over the last year after attending a webinar co-hosted by Jim Behme from the University of Connecticut on Getting Started with Simulation Escape Rooms. Chantal has since reached out to Jim to collaborate on physical escape room creations and because of this, this virtual space was provided as a COVID alternative for escape rooms at a US webinar in the fall of 2020.

## Enhancing faculty engagement among physicians/academics at the University of Saskatchewan: an urban-rural exploratory study

Udoka Okpalauwaekwe, College of Medicine, Department of Academic Family Medicine

Co-Author(s): Cathy MacLean, Faculty, Department of Academic Family Medicine; James Barton, Associate Dean, Continuing Medical Education; Tom Smith-Windsor, Associate Dean, Distributed Medical Education; Carla Holinaty, Faculty, Department of Academic Family Medicine

**Purpose:** Observations from Faculty Development (FD) over the past five years have recorded very low participation to their centrally organized programs. We designed this qualitative study to: 1) explore reasons why faculty physicians/academics choose to participate or not participate in FD and/or CME programs organized by the College of Medicine 2) learn how FD and CME can make their programs relevant to the needs of faculty members (i.e., physicians and PhDs).

**Methods:** We invited urban and rural physicians/academics affiliated with the University to participate in virtual focus group or individual key informant sessions exploring our research objectives. Data recorded was transcribed and is under-going analysis of content for themes by the research team which should be available by June 11th RISE event.

**Results:** So far, 30 faculty members have been interviewed. Of the 30, 28 were physicians and 2 doctorate degree holders; 14 males and 16 females; 21 urban practising (Regina and Saskatoon) and 9 rural physicians. 20 were family physicians, while other specialists included anaesthetists, surgeons, internists, and pathologists. Results of content analysis revealed time restrictions to be the most common reason for non-participation in FD/CME programs. The next common reason areas included lack of interest and relevance of FD/CME topics to self and career advancement, distance from centralized location, and lack of recognition, remunerations or incentives for teaching. The most common reason provided by rural participants for non-participation was the feeling of disconnectedness from the University and a general under-appreciation for the roles rural physicians play as faculty. Rural and urban participants recommended creating local/regional or departmental champions that speak on their behalf regarding their needs, and relevant topics for FD/CME.

**Conclusion:** We will continue to explore ways to engage rural and urban faculty members to provide relevant programs starting with the recommendations from participants in this study.

## Need for Laboratory Medicine Stewardship Teaching in Medical Education based on Regional Thyroid Function Testing Patterns

Eva Karki, College of Medicine, Department of Pathology and Lab Medicine

Co-Author(s): Md Nazmul Hasan, Department of Mathematics and Statistics; Fang Wu, Department of Pathology and Lab Medicine; Pouneh Dokouhaki, Department of Pathology and Lab Medicine

**Purpose:** One important factor contributing to inappropriate test ordering practices is inadequate education about laboratory test stewardship in medical schools. We highlight here the importance of incorporating laboratory medicine utilization teaching into the current medical education curriculum in parallel to clinical guideline development based on local test utilization trends by focusing on thyroid function testing (TFT) as an example. We propose strategies to incorporate the available guidelines for development of clinical testing algorithms, which could be successfully used in medical school curriculum.

**Methods:** Our group analyzed various laboratory tests referred to Dynacare laboratories from 2016 to 2019 and TFT data retrieved from the Saskatoon Laboratory Information System which were referred to Saskatoon biochemistry laboratories from January 1, 2016 to March 7, 2018. Descriptive data were analyzed and visualized by PowerBi software.

**Results:** 561,246 TFT were ordered from 2016 to 2018, with an estimated total laboratory cost of \$2.8 million. There were 163,212 instances of bundle testing with simultaneous ordering of all 3 tests (TSH, T3, T4), and up to 62% had normal TSH levels. Additionally, 48,954 TFT, on average, are ordered as repeat testing annually, of which at least 75% have normal initial TSH values. According to these trends, overutilization of TFT is a problem in this region and may be attributed to inappropriate repeat testing, and unnecessary bundle testing.

**Conclusion:** There is an urgent need to address overutilization of laboratory testing in our region. Development of regional guidelines and its dissemination through educational sessions for practicing physicians, and undergraduate and postgraduate medical learners have been identified as key interventions for sustainable change. By proposing addition of sessions on principles of laboratory test utilization with a focus on local practices and guidelines in medical school curriculum, we hope to avoid undue patient harm and unnecessary burden to our healthcare system.

## Design & Implementation of a Simulated Patient Performance Assessment (SP-Pass)

Helen Chang, College of Medicine, Family Medicine

Co-Author(s): Kayla Trevena, Administrative Coordinator, College of Medicine, Regina; Holly Doell, Administrative Coordinator, College of Medicine, Regina

**Purpose:** Simulated Patients (SPs) are important members of the educational team in UGME. However, there is no formal assessment form currently in use at our medical school. Creating and implementing a performance assessment may be helpful in providing necessary feedback and improving the quality of our Simulated Patients performance and their role in educating medical learners.

**Methods:** Stage 1: Design assessment form with input from SP Coordinators and Trainers. Stage 2: Meet with SPs to onboard and get feedback for further development of SP-Pass. Stage 3: Implementation of SP-Pass in Regina (pilot) involving regular assessment at end of each term by SP coordinator/trainer and after each session by facilitators/faculty. Stage 4: Evaluation of SP-Pass by SP coordinator/trainers; was this useful in identifying problems or addressing concerns re: SP performance; giving feedback to SPs on their performance; improving overall quality of SP performance?

**Next Steps:** evaluate assessment validity and usefulness? Adjust/improve SP-Pass as a tool? Wider implementation if successful? Survey of SPs re: learning/educational value of regular assessment?

**Results/Conclusion:** Currently in Stage 1 - work in progress!

## **Dissecting Anatomy Laboratory Introductions: Adopting conversation analysis methodology to reveal the structure and functions of laboratory instructional methods**

Mu-Sen Kevin Chuang, College of Medicine, Medicine (Anatomy, Physiology and Pharmacology)

**Purpose:** Over the past 20 years anatomy education research has improved significantly in terms of the quantity, quality, and diversity of research methods. Early efforts focussed on establishing dissection as the gold standard of anatomy education against a backdrop of fiscal and curricula constraints. Much of this scholarly work has remained quantitative, which overlooks the social dimensions of teaching and learning. The present research addresses this issue by applying conversation analysis (CA), a qualitative methodology, to examine the social teaching-learning processes involved in the seemingly 'messy' introduction phase of anatomy laboratory sessions.

**Methods:** The CA method was applied to six audio-visual recordings of anatomy laboratory sessions made at pre-selected times in a first-year radiography program at an Australian university. They represent the interactions conducted by five different anatomy demonstrators and a group of students ( $n \leq 34$ ), who were recruited and voluntarily gave consents according to research procedures approved by the university's ethics committee. The participants' verbal and non-verbal actions were analysed using original footages and finely detailed CA transcripts.

**Results:** Analyses identified four essential phases that constitute anatomy laboratory introductions which differs from the three-part models previously proposed by CA researchers. Whilst introductions are primarily tutor-led, data strongly indicate that introductions are collaboratively co-constructed and organized by participants as they activate, renew, and negotiate a set of relevant micro-cultures. This process relies on significant contributions from participants' physical embodiment.

**Conclusions and Implications:** CA provides a systematic and detailed method for educators to study the seemingly 'messy' instructional interactions. It can facilitate methodical reflection for educators to consider the goals and purposes of the introductory phase that will help make explicit and establish a laboratory cultural norm for learners. By making these practices visible, university educators can gain a deeper and more nuanced understanding of the pedagogical interactions and be better prepared to manage classroom processes.

## Novel Virtual Case Learning Environment for Surgical Education

Amit Persad, College of Medicine, Medicine, Neurosurgery Resident

Co-Author(s): Regan Brownbridge, College of Medicine, Medical Student; Julia Radic, Faculty, University of Saskatchewan, Department of Surgery, Division of Neurosurgery

**Purpose:** To create a novel-case based virtual patient simulator for neurosurgical trainees and to determine the educational value of this tool.

**Background:** Case based learning through virtual patient (VP) simulators is an expanding field within medical education. Current VP simulators usually consist of linear patient cases and multiple-choice questions, which limits the fidelity and educational potential of these simulators. We attempt to address these limitations by integrating natural language interaction, allowing for branching case outcomes based on user actions, and building branching cases with ample opportunity for the trainees to explore various outcomes related to their clinical decisions. This type of innovation is sparsely mentioned in the literature (1), and not reported in either the surgical or neurosurgical education literature. As such, our VP simulator will represent a novel learning tool for neurosurgical trainees.

**Methods:** A case study platform (that has been previously published for cases in other fields) (1) will be revised for neurosurgical cases. The cases, prepared by the research team, and software will be independently validated by neurosurgery residents and faculty. Following the validation of the initial cases, neurosurgery residents and faculty will contribute to building a larger case library. We aim to trial the software at two centers, Saskatoon and Winnipeg, during weekly collaborative neurosurgery teaching rounds. The impressions of the platform will be measured through two validated medical education questionnaires (2,3) and a neurosurgery discipline specific survey, developed by the research team.

**Results:** Data collection will provide insight into research problems including (a) patterns of trainee interactions with VP cases, (b) the learning impact of VP cases of various formats, and (c) the longer-term impact of how these tools can be adopted as regular tools for learning.

**Conclusions:** This project could improve case-based surgical education and provide a resource for exam-style cases for surgical trainees.

## Thinking Outside the Box: Evaluating a virtual classroom model to deliver HIV primary care medical education to physicians & nurse practitioners across Saskatchewan, Canada

Siddharth Kogilwaimath, College of Medicine

Co-Author(s): Amanda Galambos, Kristoffor Stewart

**Background:** Addressing high rates of HIV and limited HIV specialists, the HIV Virtual Classroom (VC) was created by Saskatchewan Infectious Disease Care Network (SIDCN) in 2018 as a novel education model to increase the capacity of primary care providers (PCPs) to test, treat, and manage HIV in Saskatchewan, Canada. Using an online platform, it delivered accredited continuing medical education sessions to physicians and nurse practitioners seeking best practices for delivering HIV primary care. Presentations were facilitated by local Infectious Diseases and HIV experienced physicians. After attending four required presentations, graduates were encouraged to participate in HIV preceptorship opportunities coordinated by SIDCN and become approved ARV prescribers.

**Materials and methods:** Between May 2018 and March 2020, seven VC sessions were delivered to 62 PCPs from 14 communities. A post-participation survey was administered immediately post VC sessions to evaluate knowledge of HIV primary care. A follow-up survey was sent to VC graduates to assess the impact on their clinical practices.

**Results:** Twenty-one follow-up surveys were collected (34% response rate) and 90% of respondents indicated using knowledge from the VC to educate others and 81% of the respondents making changes to their clinical practices. The top five reported impacts were, increased: comfort in recognizing HIV and ARV therapy complications (85%); confidence in providing primary care to people living with HIV (81%); understanding of ARV therapy and HIV treatment (81%); comfort in recognizing a patient with an opportunistic infection (77%); comfort discussing the results of HIV testing (72%). After completing the VC, 24% participants became approved ARV prescribers in Saskatchewan. Twelve of the 21 respondents report increased comfort in managing primary care in PLWH but not initiating ARVs, while five of the 21 respondents are comfortable initiating ART and providing primary care for PLWH.

**Conclusions:** The VC education is a unique model that offers live interaction with HIV experts; provides Saskatchewan specific content and uses a curriculum that reflects local realities. Findings suggest the VC is an effective model for educating primary care providers and enrolling new ARV prescribers in Saskatchewan. Based on the positive response, six additional cohorts will occur, and the VC model will be adapted to create a HCV VC.

## Learning Medical Terminology in French with simulated patients

Anne Leis, College of Medicine, Community Health and Epidemiology

Co-Author(s): Isabelle Burnier, Directrice des cliniques simulées, Médecine, U of Ottawa; Kellie Mac Donald, 2nd year medical student; Frédérique Baudemont, executive director, Saskatchewan Network for Health Services in French

The Medical French Certificate, soon to be available in the College of Medicine, aims to develop French communication skills in a medical context for students with previous French immersion education.

**Purpose:** This presentation will describe simulated linguistic clinics, one of the components of the medical certificate training and share the evaluation.

**Methods:** Through the Saskatchewan Network for health services in French, 6 Francophone volunteers were recruited and trained as simulated patients by a physician expert from the University of Ottawa medical school. Their training occurred in 2 x 2 sessions. First and second year UGME students were invited to participate in the simulated patients' sessions in order to practice their linguistic skills and pilot test the activity. For each session, the simulated patients received a scenario in advance while the students got a short script with a list of French medical expressions related to the case. The session's first 25 minutes were devoted to rehearsing with the group of simulated patients, and to reviewing the French language skills necessary for the upcoming interview with the student group. Then each student had a chance to practice with a simulated patient at least twice. The debriefing time with a short evaluation always wrapped up the session.

**Results:** Three sessions took place in person and four others were organized through Zoom in 2020-21. A total of 7 students attended at least one of the sessions. Virtual sessions facilitated the attendance and were found to be more flexible. Evaluation showed that this type of medical language training was engaging and a great learning experience for medical students. It nevertheless required a minimum knowledge of French to be able to fully benefit.

**Conclusion:** This type of hands-on learning works to develop French language skills in medicine and is fun for both students and simulated patients.

## Transforming the Undergraduate Radiology Elective Experience: Introduction of Active Learning

Yuhao Wu, College of Medicine, Department of Medicine, Medical Imaging, Resident-in-training

Co-Author(s): Christina Theoret, Faculty, Department of Medical Imaging; Dr. Brent Burbridge, Faculty, Department of Medical Imaging

**Purpose:** Exposure to radiology in undergraduate medical education is often restricted by other curriculum demands. Designing an effective radiology elective for medical students who choose to supplement their education can be challenging as it is often a passive observership-style elective. In this study, we examined the impact of incorporating an online learning platform and electronic book into radiology electives to stimulate active learning.

**Methods:** We enrolled 23 students who pursued a two-week diagnostic radiology elective. Their radiology knowledge prior to the elective was assessed using two pretests. Students had opportunities to work with radiologists to review clinical imaging, attend academic rounds, and learn from the online learning resources. Their knowledge after the elective was assessed by re-administering the tests as "posttests." Students also ranked their perception of the elective experience and educational resources on a Likert scale from 1 to 5.

**Results:** There were statistically significant increases of 13.4% ( $P < .0001$ ) in mean test 1 scores and 6.8% in mean test 2 scores ( $P = .001$ ). Students also had favorable perceptions of the radiology elective experience and rated the electronic book (median score: 5 of 5) and online learning platform (4.5 of 5) as valuable educational resources.

**Conclusion:** The implementation of an electronic book and online learning platform improved knowledge in radiology and resulted in positive student perceptions of the elective experience. This supports the use of online resources to facilitate independent self-learning for future radiology electives.

## Building validity evidence for the QuAL (Quality of Assessment for Learning) score as a measure of the quality of narrative comments in Competency Based Medical Education

Rob Woods, College of Medicine, Emergency Medicine

Co-Author(s): Sim Singh, College of Medicine (medical student), University of Saskatchewan; Brent Thoma, Emergency Medicine, University of Saskatchewan; Catherine Patocka, Emergency Medicine, University of Calgary; Warren Cheung, Emergency Medicine, University of Ottawa; Sandra Monteiro, Education Scientist, McMaster University; Teresa Chan, Emergency Medicine, McMaster University

**Purpose:** Competency based medical education (CBME) relies heavily on narrative comments from entrustable professional activities (EPA) for programmatic assessment, but the quality of these comments is usually left unassessed. There is validity evidence supporting the QuAL (Quality of Assessment for Learning) score for rating narrative comments within workplace-based assessments, but its utility for rating EPAs has not been evaluated. We sought to establish validity evidence for the QuAL score in the context of EPAs by investigating the perspectives of residents, academic advisors, and competence committee members.

**Methods:** The authors randomly selected 52 de-identified narrative comments from two emergency medicine EPA databases using purposeful sampling. Six collaborators (two residents, two academic advisors, and two competence committee members) were recruited from each of four EM Residency Programs (Saskatchewan, McMaster, Ottawa, and Calgary) to rate these comments with a utility score and the QuAL score. Correlation between utility and QuAL score were calculated using Pearson's correlation coefficient. Sources of variance and reliability were calculated using a generalizability study.

**Results:** All collaborators (n=24) completed the full study. The QuAL score had a high positive correlation with the utility score amongst the residents (r=0.80) and academic advisors (r=0.75) and a moderately high correlation amongst competence committee members (r=0.68). The generalizability study revealed the major source of variance was the narrative comment. The QuAL score inter-rater reliability ranged from 0.72-0.94 among the cohorts of raters.

**Conclusion:** The QuAL score is a simple tool that demonstrates acceptable reliability and correlates well with utility for narrative comments in EPA assessments for residents, academic advisors, and competence committee members. The QuAL score may serve as an outcome measure for program evaluation and as a resource for faculty development.

## Lessons, learning, and leadership: A storytelling intervention for promoting transformational change and innovation in healthcare

Michael Epstein, University of Saskatchewan, Community Health and Epidemiology

Co-Author(s): Donelda Gowan, Faculty, University of Saskatchewan, Community Health and Epidemiology; Anne Leis, Faculty, University of Saskatchewan, Community Health and Epidemiology

**Purpose:** Review the cognitive, emotional, and organizational factors that tend to prevent us from acknowledging, accepting, embracing, and learning from our so-called failures. Pilot test a model involving the use of storytelling and facilitated dialogue to elicit the deep lessons that can be learned through individual and collective reflection on unsuccessful experiences in organizational change. Explore the role of iterative pilot testing, low-risk experimentation, and learning from repeated failures in fostering a culture of organizational learning.

**Methods:** Participants included a diverse inter-professional group of educators, practitioners, and researchers. Four nationally-recognized leaders in healthcare transformation were invited to tell a real-life story describing a failed attempt at creating change in healthcare systems and/or medical education. Each story was followed by facilitated group discussion to reflect on the story and to identify lessons that could be drawn from the experience. Storytellers and participants were also asked to formulate change leadership competencies on the basis of the reflections and collective dialogue of the group. This was followed by a concluding discussion of the potential for using this methodology to help build capacity for change leadership within various healthcare communities in Canada.

**Results:** Of 16 evaluations completed, 8 were excellent, 5 were good, and 3 were neutral, resulting in overall favourability of 81.2%.

Themes emerging from the dialogue included enthusiastic participation, energizing experiences, desire to repeat the experience, valuable lessons learned, and interest in creating a pan-Canadian change leadership learning community.

**Conclusion:** Results highlighted the benefits of sharing unsuccessful change leadership experiences in a psychologically-safe group setting. Dialogue also revealed the value of sharing our failures, regrets, vulnerabilities, shortcomings, and broken dreams as part of the process of building an effective leadership development learning community. Differences between planning-based strategies and evolutionary strategies for change leadership were also identified.

## From Student to Researcher: Revealing the CURE

Harold Bull, College of Medicine, Department of Medicine (Biochemistry, Microbiology and Immunology)

Co-Author(s): Dawn Giesbrecht, College of Medicine, Biochemistry Microbiology and Immunology; Hanna Braun, Biochemistry; Michele Gerber, Microbiology and Immunology; Justin Hall, Medicine Year 1; Rahul Parekh, Medicine Year 2; Sheryl Mills, Associate Director, Academic Programs and Professional Skills

After three offerings of our Course-based Undergraduate Research Experience (CURE, BMI 380.3) course we have noted a consistent robust transition of our learners from "thinking and acting like students" to "thinking and acting like researchers". Our 3 cu research course is completed over one term. The course is unique, employing a 'team-based' research project. Learner teams choose and design their own projects within the scope of the course. Teams (1) define their research question; (2) write a research proposal (timelines, deliverables and outcomes, protocols, materials required, budget); (3) do their experimental work, often with multiple iterations and troubleshooting, and (4) write and submit their work in the form of a science journal article. Instructors work alongside each team through weekly lab meetings, providing just-in-time support (but not guiding) and feedback in the lab setting.

**Purpose:** To define which components of the CURE experience are supporting a transition from 'thinking and acting like a student' to 'thinking and acting like a researcher'.

**Methods:** We have convened a team of learners from each of the three offerings (Winters 2019-2021). This team will address questions on what aspects influenced their transitions. The live-panel discussion, facilitated by course instructors and answered by learners, will comprise the presentation. This arrangement best reflects the pedagogical paradigm practiced in this course.

**Results:** Each offering of the course was concluded with a reflective exercise asking learners to think about the changes in their learning that the CURE experience had generated. Given the strong self-reports of a student-to-researcher shift among students completing the CURE course at the course end, we look forward to learning whether that assessment remains as strong in our course alumni as expressed initially.

**Conclusion:** Immersive self-directed team research projects with collaborative facilitation from faculty learner-colleagues can foster thinking/acting transition from student to researcher.

## ePosters as an active learning strategy in Health Professions Education

Harini Aiyer, College of Medicine, Community Health and Epidemiology

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**Purpose:** e-Posters, a modification of traditional paper-based posters have gained popularity in medical education conferences since 2011. e-Posters differ from the traditional poster in that it allows the e-Poster creator to focus on the learning process rather than reporting scientific outcomes. However, there is limited literature comparing e-posters to traditional paper-based posters and their impact on the student learning experience.

**Methods:** The “Technology and Simulation in Teaching and Learning” course was delivered remotely by the University of Saskatchewan in the Fall 2020 term. The course used e-poster presentations as an innovative active learning strategy and a component of student assessments. This study aims to assess the effectiveness of e-posters as an assessment method and identify effective strategies for engaging students in the class using a concurrent mixed methods study design. A short online questionnaire to understand the overall engagement with e-posters was followed by virtual in-depth semi-structured interviews to gain a deeper understanding of the attitudes of the students towards e-posters and their experience with creating, presenting, and engaging with e-posters.

**Results:** The students showed an appreciation for e-posters and a clear preference for e-posters over traditional paper-based posters. Emerging themes show an appreciation for the interactive nature of e-posters, and the potential to incorporate non-traditional sources of information (such as videos, podcasts, audiobooks, etc.).

**Conclusion:** e-Posters were well-received as a classroom assessment tool by students. Students appreciated the potential of e-posters to go beyond that of traditional posters to include varied sources of information in an interactive manner. An important limitation of the e-poster was identified to be its reliance on an internet connection, as this may prevent the presenter from streaming content during a presentation. Take-home messages: e-Posters as an assessment tool are well suited for online learning. Students will benefit from an orientation session introducing eposters, a tutorial on their creation, and a discussion board for learners for learners to peer review and share resources.

## **Using the Curriculum Densitometer to measure the impact of curricular workload on students' mental health: A pilot study.**

Jeremiah Acharibasam, College of Medicine, Department of Community Health and Epidemiology

Co-Author(s): Kalyani Premkumar, Professor, College of Medicine, Department of Community Health and Epidemiology

Curriculum overload (CO) is major health professional education problem, partly, due to ongoing curriculum reforms. Evidence shows CO can adversely impact students' mental health, and there is little evidence on how to effectively mitigate CO. In my thesis, the aim was to explore the acceptability and feasibility of a new web application (Curriculum Densitometer - CD app.) developed by the research team for measuring curriculum load and student perceived stress.

A total sample of 16 students of enrolled in spring and summer 2020 courses (from the Colleges of Nursing and Medicine, U of S) were used in a convergent mixed methods pre- and post-test design. Participants were administered two pre - and post-test surveys (demographics questionnaire, Kessler's Psychological Distress Scale – K10), and piloted the CD app parallel to completing academic course assignments in-between the pre- and post-test surveys. An Exit individual interview was conducted using 8 volunteers from the 16 participants, followed by both quantitative and qualitative analysis of the collected data.

Majority of the 16 participants were female international postgraduate students over the age of 30 years from the College of Nursing. The qualitative findings showed an acceptability and feasibility among participants, although a number of important implementation factors remain to be addressed to gain broader adoption of the technology. These findings were supported by the high technical feasibility and moderate associations found between the CD app's perceived stress rating scale and the scores obtained from the quantitative analysis. The conclusion was that the CD app is acceptable and feasible to implement. It provides curriculum developers a medium to monitor and calibrate curriculum load. It also provides instructors with a tool to evaluate course load and to identify and support academically struggling students and gives students academic planning, advocacy, and self-care tool for promoting appropriate curriculum load distribution.

## **Incorporating Longitudinal ePortfolios into a Health Professions Education Program**

Julie Maier, University of Saskatchewan, Centre for Continuing and Distance Education

Co-Author(s): Kalyani Premkumar, Professor, Department of Community Health and Epidemiology, College of Medicine, University of Saskatchewan

In the Fall of 2020, a fully-online Health Professions Education (HPE) program was launched by the University of Saskatchewan's College of Education, in collaboration with representative stakeholders from the various USask Health Science colleges and schools. Designed to be highly flexible and cross-disciplinary, this program offers a Masters of Education (M.Ed) and two related graduate certificates. A major assessment strategy targeted at the program proposal stage was the use of longitudinal ePortfolios (electronic portfolios), in which students collect, annotate, and share real projects and learning products in order to demonstrate their achievement of program-level, cross-curricular competencies. In a collaboration between program administrators, support staff from the Distance Education Unit, and individual instructors, a collection of support materials and templates were designed, developed, and implemented in each course to support the pedagogical goals of ePortfolio assessment, and guide students and instructors through technological navigation of the specific ePortfolio platform Portfolium (a.k.a., Canvas Folio).

This oral presentation will include an overview of the benefits of ePortfolio assessment and some basic best practices, how the ePortfolio assessment strategy has been aligned with the HPE program competencies, what specific pedagogical and technological supports have been provided for both students and for instructors, and what instructional design strategies and edtech tools have been applied to support the consistent deploying of those materials across the program. In addition, reflections will be shared from program instructors on the learning benefits and student feedback that they have observed through the use of ePortfolios in their courses, and the importance of program-level instructional design supports in developing effective shared assessment strategies.

*ePosters*

## Trans Research and Navigation Saskatchewan: A Project in Progress to Improve Health for People who are Trans and Gender Diverse in Saskatchewan

Megan Clark, College of Medicine, Family Medicine

Co-Author(s): Stéphanie Madill, Faculty, School of Rehabilitation Science; Lori Schramm, Faculty, Department of Family Medicine; Reann Legge, community member

**Purpose:** People who are trans and gender diverse (PTGD) have some unique healthcare needs and also face barriers to healthcare. The Trans Research And Navigation Saskatchewan (TRANS) project, a 2020-21 Saskatchewan Centre for Patient-Oriented Research and Saskatchewan Health Research Foundation Sprout grant recipient, is a project in progress. It aims to improve healthcare experiences in Saskatchewan by implementing and assessing a client navigator for PTGD. Our team includes PTGD, community-based organization service providers, decision-makers, researchers, and healthcare providers. Similar navigator programs exist in other Canadian provinces.

**Methods:** There are two phases to the project. Initially, we will conduct focus groups with PTGD on their experiences accessing or trying to access healthcare. This will provide a baseline and inform the navigators' duties. Two navigators, one each in Saskatoon and Regina, will work for a year, starting in April 2021. The effect of the navigators will be assessed through a brief online satisfaction survey, post-service interviews with PTGD and healthcare providers, and thematic analysis of the navigators' journals.

**Results:** This is a work in progress. Data have not yet been collected.

**Conclusion (Projected):** We hope that this community-driven project, which is the first to implement a navigator program for PTGD in Saskatchewan, will provide useful insights into how to improve healthcare for PTGD in our province and may lead to long-term funding for the navigator positions. The results will also be used to refine the job description. The project will also provide research training and experience for PTGD, improve research capacity in the community, and foster productive relationships among PTGD, researchers and healthcare providers. In addition to community knowledge mobilization events, the results will inform a policy paper for the Saskatchewan Health Authority and Ministry of Health.

## Long Term Care Outreach; Service Learning During COVID-19

Jamie Vander Ende, College of Medicine, Medical Student

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**Purpose:** Service-learning has become a requirement for Canadian Medical Schools to encourage students to be involved in the community, recognize social determinants of health (SDOH), and appreciate their importance in the physical and emotional well-being of the community. However, during COVID-19 service-learning projects in the clinical setting became difficult due to physical distancing requirements. Novel non-clinical service-learning projects via virtual platforms was essential for medical students to participate in service-learning and address the needs of the Saskatchewan older adults isolating in long term care (LTC) homes.

**Methods:** Brainstorming was used to develop the idea of a virtual talent show for LTC homes in Regina via Zoom. 9 medical students were recruited by the University of Saskatchewan College of Medicine Facebook. A LTC home in Regina was recruited by email. Community older adults were invited via twitter, email, and through a student organization called SSIPP. A hour long video containing introductions and 10 pre-recorded performances was delivered live via Zoom. These performances included piano, guitar, opera, tap dancing, and voice. The two top performers were vote by those in attendance via a Zoom poll. Feedback was informally received from the LTC home, older adults from the community, students, and faculty.

**Results:** Positive feedback from the older adults indicated that the event filled a need for interaction during a time of isolation. This community feedback ignited self-reflection in the students involved in the organization of the initiative, resulting in the recognition of the impact of isolation on SDOH and their potential to better the well-being of a community through novel non-clinical initiatives.

**Conclusion:** Novel non-clinical service-learning initiatives developed by medical students and delivered to the community results in medical students' development of empathy, ability to recognize SDOH in a vulnerable population, and motivation to continue to engage in these types of initiatives

## Ethics Teaching and Learning at the University of Saskatchewan Postgraduate Family Medicine Program: A Quality Improvement Project

Christine Pask, College of Medicine, Department of Academic Family Medicine

**Purpose:** The aim of this quality improvement project was to evaluate the current ethics teaching in the postgraduate Family Medicine program at the University of Saskatchewan. It also aimed to capture the residents' ethics learning needs. There is significant variation within the literature about how best to incorporate medical ethics into the curriculum. As medical educators, we have a duty to meet the educational needs of the residents and to produce competent physicians who are able to navigate ethical dilemmas.

**Methods:** Surveys were developed for site directors and current residents. The two surveys were based on literature about ethics teaching and learning objectives from the College of Family Physicians of Canada. The site directors' survey assessed current ethics teaching methods, topics, resources, personnel, and perceived barriers. The residents' survey assessed the same topics as the site directors' survey, but also inquired about preferred teaching methods and comfortability with core and specialized ethics topics. The data is presented in aggregate and uses descriptive statistics.

**Results:** The majority of residents felt encouraged to reflect on ethical issues, but half of residents reported wanting more opportunities. Some residents did not yet feel comfortable with some core ethics topics. Preferred teaching methods included discussion at the bedside and in small groups. A variety of barriers were identified by both site directors and residents, including a lack of teaching resources, lack of time, and competing learning needs.

**Conclusion:** There are multiple possibilities for integrating ethics learning into the postgraduate curricula. Faculty development sessions would facilitate ethics teaching during regular clinic days and decrease barriers to ethics teaching. A database of resources, ethical decision-making approaches, and theoretical and real cases would benefit both faculty and residents. Opportunities to discuss specialized or emerging ethical dilemmas should be encouraged with residents.

## Virtual Clinical Teaching sessions in Developmental-Behavioural Pediatrics: Examining and learning from students' experiences

Susan Petryk, College of Medicine, Pediatrics

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**Background:** The pandemic prompted widespread adoption of virtual clinical care (VCC). Discovering the advantages (cost, convenience, comfort, safety etc), patients may expect VCC post-pandemic. Medical students should add VCC to their skill set. Physicians acknowledge the medical history as paramount. In VCC, diagnosis/management relies solely on a detailed history and observation. Medical student opinions provide valuable insights for optimizing virtual clinical teaching and even VCC.

**Methods:** An anonymous cross-sectional survey was sent to medical students following their video-based patient encounter observed by a physician teacher. Open and closed ended questions explored their experiences, concerns and suggestions regarding virtual clinical learning. Descriptive statistics were computed and qualitative data were analyzed thematically.

**Results:** Of about 20 second year medical students who had VCC sessions, 17 completed the survey. Comparing VCC to in-person clinical sessions, most students found taking the history (11), forming a problem list and plan (15), giving advice and getting teacher feedback (13+) was “the same”. Most students found observing the child (14) and doing hands off physical exam (15) was “worse” or “much worse”. Overall, they felt video sessions were worse (12) or the same (5). Asked if med school was the right time to learn VCC, about 30% answered yes/ no / not sure. Anecdotal comments were even more intriguing.

**Conclusion:** Medical students see the need to learn VCC but a minority felt med school is the right time to learn this. For history taking and debriefing, most felt VCC sessions are the same as in person. Although recognizing some advantages to VCC, medical students feel VCC learning is inferior to in-person at their stage of training. They expressed great unease at not practising the physical exam. The valuable insights from medical students stimulate deeper thought on the place for VCC teaching and how to optimize it.

## Learning and Teaching through Social Media for Health Professions

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**Purpose:** Over the last decade, social media (SoMe) has emerged as a valuable learning and teaching tool. It is defined as “websites, applications, and online tools that are primarily used by individuals to facilitate connections with other users and to present a managed public profile of themselves.”

**Methods:** The following key questions were explored by way of literature search using Google Scholar and PubMed databases.

**Results:** Classification: 1) Social networking sites and applications (Facebook, Twitter, LinkedIn); 2) Medial sharing platforms (Instagram, YouTube); 3) Web 2.0 application. (Blogs, Wikis); 4) Video and text messaging application. (WhatsApp, Skype); 5) Other applications (Learning Management Systems, Virtual Learning Environments). SoMe can impact the learning and teaching experience in three main areas of education: engagement, utility, and sharing. It can ease communication and information-sharing between instructors, learners, and patients. If implemented carefully, it bolsters active interaction that results in collaborative learning and easy dissemination of information. However, reduced student attention span and breach of professionalism are a few concerns of using SoMe. Meticulous planning and implementation through blended learning are a must for SoMe platforms to generate the intended impact on teaching and learning outcomes.

**Conclusion:** SoMe can be an effective enhancement tool for health profession education courses that are carefully designed, with appropriate goals, SMART objectives, meaningful learning activities that lead to achieving the learning objectives. Educators should be wary of employing SoMe if the Learning Management Systems are deemed sufficient for the job. All the pros and cons should be thoroughly weighed before deciding to include SoMe as a learning and teaching tool in the curriculum.

## Evaluation of Competency Based Education (CBE) Methods Applied to Internal Medicine Resident Handovers

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**Purpose:** Competency-Based Education (CBE) is increasingly being adopted as a framework for residency training. This study aimed to evaluate whether implementation of a CBE intervention results in a change in handover competence and achievement of resident learning goals.

**Methods:** We applied CBE methods to improve handovers among internal medicine senior residents. A pre-intervention survey determined residents' prior handover training and established their learning goals. Residents engaged in a direct observation and feedback session during Week 1 of their CTU block, then had an opportunity to practice and reflect on their learning during ongoing handovers. A repeat direct observation and feedback session occurred during the final week of their CTU blocks, with competency scores analysed using paired t-tests. A follow-up survey determined whether learning goals were met.

**Results:** Eight participants completed all aspects of the study for inclusion in data analysis. Mean overall competence score improved from baseline 6.000 (SD 0) to follow-up 7.375 (SD 0.484;  $p = 0.0001$ ). There was no significant difference between ratings of postgraduate year (PGY)-2 and PGY-3 residents in their overall handover competence at baseline ( $p = 0.489$ ) or at follow-up ( $p = 0.244$ ). The follow-up self-assessment survey indicated that 100% of respondents' individual learning goals were met as a result of the CBE intervention.

**Conclusion:** This CBE intervention involving self-assessment, setting learning goals and engaging in direct observation and feedback provided an effective educational approach to handover communication.

## Stroke Care and Neurological Emergency Response Simulation (SCaNERS): Creation and Implementation into a Resident Curriculum

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Co-Author(s): Brett Graham, Faculty, Department of Medicine, Neurology

**Purpose:** Stroke is a leading cause of mortality and morbidity worldwide. Approximately 62,000 people present to Canadian hospitals with stroke annually, making stroke the fourth most common cause of death in Canada. Acute stroke alerts require rapid clinical and radiological assessment to determine if patients are candidates for reperfusion therapies, such as intravenous tissue-type plasminogen activator and/or mechanical thrombectomy. Reperfusion therapies greatly increase chances of improved clinical outcomes but must be administered in a timely matter. As such, acute stroke care is a high acuity, time sensitive, high-risk interaction.

Residents often observe stroke alerts before managing them alone. However, this practice exposes patients to potential harm from trainees' lack of experience. To address this, we created stroke simulation cases. Simulation training offers a low-risk environment for skill acquisition, complimenting the Royal College's recent transition away from a time-based to competency-based learning curriculum.

The purpose of this project was to develop and implement a stroke simulation training program into resident neurology rotations at the University of Saskatchewan.

**Methods:** We identified objectives corresponding to Royal College Entrustable Professional Activities for Adult Neurology. With the aid of a Simulation Operation Specialist and reviewing relevant literature, we developed six high-fidelity simulation cases to meet objectives encompassing several diagnostic and therapeutic goals of acute stroke care. To increase fidelity, a standardized patient was recruited and trained on how to respond to neurologic exams given a specific stroke syndrome. A standardized debrief will be had after every simulation session in a safe, non-judgemental environment.

**Results:** An initial 'dry run' was held January 21st, 2021. The first simulation session is to be held March 25th, 2021.

**Conclusion:** The creation and implementation of high-fidelity simulation training into a resident curriculum is feasible. Ongoing data will be collected surrounding residents' experiences, knowledge improvement, and local reductions in treatment delays.

## Assessment of the combined undergraduate MD/graduate degree (MSc, PhD) program at the UofS

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**Purpose:** Diversity in skill set is a characteristic of excellence in a college of medicine (CoM) program. In addition to practicing physicians, the CoM, Saskatchewan and its constituents would benefit greatly by training, recruiting and retaining physician scientists (MD/MSc or MD/PhD). The Royal College of Physicians and Surgeons has identified physician scientists as crucial for Canada to lead in medical innovation. Historically, the MD/graduate degree program at the UofS was incompletely organized and only offered to medical students on an ad lib basis. The purpose of this work is to report on the first steps taken to assess the MD/graduate degree program in the CoM at the UofS.

**Methods:** A group of senior research, medical and administrative leaders met to evaluate the current status of the combined MD/graduate degree program and to make recommendations about its value to the CoM. Websites of the other U15 Group of Canadian Research Universities were searched for their combined MD/graduate degree programs and leaders of some of these programs were contacted.

**Results:** A combined MD/graduate degree program was deemed a valuable component of medical education by all stakeholders. A number of logistical issues were raised including admissions, structure/timing of the two degrees, funding (tuition and stipends), number of participants (per year and total portfolio), and research and clinical mentorship. Analyses of the other U15 programs showed that flexibility in program structure and funding were crucial to the success of a combined degree program. Some members of the committee were invited to attend the Canadian Society for Clinical Investigation MD/PhD directors meeting.

**Conclusion:** There was enthusiasm for developing a more well-defined MD/graduate degree program at the UofS. A combined MD/graduate degree program was found to be an important contributor to excellence in medical research and to a diverse work force within SK and across Canada.

## **Interprofessional Education Competency Tracker (IPECT) App: An Innovative Tool for Delivering Interprofessional Education (IPE) at USask Health Sciences**

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**Background:** The healthcare system is filled with “individually competent” professionals who are not necessarily “collectively competent” when put together. Thus, the need to cultivate “collective competence” amongst health professionals is vital to improve patient outcomes. Interprofessional Education (IPE) has been described as a necessary link that bridges fragmented health systems/services to stronger collaborative practice-based health systems, which then leads to improved health outcomes to the community. WHO defines IPE as an educational experience that “occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes.”

**Purpose:** Recognizing the importance IPE in promoting collaborative practice, the University of Saskatchewan (USask) Health Sciences office has been making changes to enhance IPE learning experiences for our health profession learners. One of these changes is the introduction a web-based online tool, called IPECT– Interprofessional Education Competency Tracker, dedicated to the delivery of IPE at USask Health Sciences since September 2019. In this e-poster, we describe the IPECT application as an educational tool and how it is being used to facilitate IPE experiences for health profession learners at the USask Health Sciences. We also highlight the results/benefits and or limitations what we learned as result of utilizing the tool over the last one year and half.



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