

The Ontario Medical Students Association (OMSA) is pleased to recognize the winners of the 2017 Medical Student Education Research Grant (MSERG). Eight grants valued at \$5,000 each were awarded to medical students across Ontario’s six medical schools, including four Compassionate Care MSERG awards for projects with a specific focus on patient-centred care or health care provider wellness and resilience, and four Open MSERG awards. The MSERG program was created to provide Ontario medical students with an opportunity for recognition and financial support when completing research projects in the field of medical education. A summary of each winning MSERG project is provided below.

Project: Getting to Know Patients’ System of Care (GPS-Care) Pilot Program

*by Aatif Qureshi
University of Toronto, Med Class 2019*

Integrated care models have emerged as a solution for achieving improved patient satisfaction and efficiency in patient care, especially for patients with co-occurring physical and mental health needs. Developing these systems requires undergraduate medical education to develop key communication and inter-professional competencies and patient perspectives.

The Getting to Know Patients’ System of Care (GPS-Care) program is a novel simulation, patient role-play experience for pre-clinical medical students. After a successful pilot, the experience was expanded to all first-year medical students at the University of Toronto MD program. The GPS-Care pilot demonstrated that, through patient role play, medical students gained a stronger understanding of patients’ experience of navigating chronic disease management through interactions with other health care professionals, including nurses, physiotherapists, dietitians, social workers, occupational therapists, and more. GPS-Care represents early exposure for medical students to the practical challenges of co-ordinating and navigating interprofessional care.

With the generous support of the Open MSERG, we explored existing perceptions of interprofessional collaboration and the educational opportunities provided by GPS-Care. Our findings show that the formal interprofessional education (IPE) curriculum primarily focuses on theoretical definitions of inter-

professional roles. Students are seeking opportunities beyond this and want to experience these roles in action. GPS-Care presents students with the opportunity to engage with real inter-professional health care providers and experience the care and scope of practice each provides.

GPS-Care, as a potential core IPE experience, functioned on two levels to showcase the current reality of integrated care: first, the patient experience illustrates the logistical and functional challenges of achieving individualized care through collaboration; second, system-level questions arise regarding access and best approaches to caring for co-occurring physical and mental health needs.

At each level, students began to question practices, establish learning goals, and challenge existing health care structures to work toward a more successful integrated care model that adapts to the ever-changing health care landscape.

Project: Effects of Concurrent Versus Terminal Feedback in Lumbar Puncture Skill Learning in Pre-Clerks

*by Anna Liu
University of Ottawa, Med Class 2019*

During clerkship, medical students are expected to perform many invasive procedures, such as lumbar puncture (LP) and paracentesis. The traditional teaching method of “see one, do one, teach one” has become less accepted due to the risk of harm to patients.¹ Instead, simulation-based medical education (SBME) allows students to learn and practise these

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procedures in advance. Crucial to the efficacy of SBME is feedback, but it is unclear if feedback should be concurrent (i.e., given as learners perform a task) or terminal (i.e., provided upon completion of a task) in novice learners.^{2,3}

We looked specifically at the effects of timing of feedback in LP skill learning in pre-clerks. We ran a pilot study structured as a randomized control trial with blinded participants randomized into receiving either concurrent or terminal feedback. Learners underwent pre- and post-acquisition tests, as well as retention and transfer tests, scored by two blinded assessors.

Interestingly, preliminary findings involving five students show that terminal feedback may be superior to concurrent feedback in teaching LP to novices. This may be due to the guidance hypothesis, which posits that learners come to overly rely on concurrent feedback such that performance suffers when it is withdrawn.²

We are in the process of recruiting 40 participants to expand our sample size, as well as adding questionnaires to capture underlying cognitive processes that may explain why timing of feedback affects performance. Implications include possible improvements to SBME, leading to greater learner competency in clinical practice.

As a medical student, I never expected to be able to conceptualize a project and gather the support of qualified health care and research professionals. However, after I proposed the idea for this project, the team has grown to include seven other authors: Drs. Sandy Tse, Melissa Duffy, Anita Lau, Marc Zucker, Hugh McMillan, Patrick Weldon, and Michelle Long. I extend my gratitude to my amazing team, and hope to continue to be involved in medical education research in the future.

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Project: Studying the Experiences of Trans, Two Spirit, and Gender Non-Conforming Medical Students in Canadian Universities

by Kat Butler

McMaster University, Med Class 2019

The study on the experiences of trans, two spirit, and gender non-conforming medical students (T2SMDs) in Canadian universities entered its final phase last fall. The project, which was inspired by the call for proposals by the Ontario Medical Students Association (OMSA) Education Research Grant, successfully recruited

trans and gender non-conforming medical students and recent graduates from across the country. Participants from faculties in the Maritimes, Quebec, Ontario, and Western regions of Canada shared their experiences with the team through semi-structured interviews, for a total of seven interviews and more than 150 pages of transcripts. Alongside this qualitative research, we contacted faculties of medicine across the country to assess the policies and practices currently in place that might affect trans, two spirit, and gender non-conforming students.

The research team finished its last qualitative interviews, and completed the quantitative component with participating faculties of medicine, at the end of October 2017. Participants reported a wide variety of experiences. Themes that have been prominent thus far include the role participants felt they played in advocating for trans and gender non-conforming patients, the work needed to balance authentic self-presentation with the normative expectations of “professionalism” during the admissions and interview process, and varying degrees of social support and perceived belonging within their cohorts.

As principle investigator, I had the opportunity to present our literature review and study design at Public Health Ontario’s 2017 Pride Grand Rounds, and am looking forward to presenting our findings at the upcoming Rainbow Health Ontario Conference.

Thanks to the support of the Ontario Medical Students Association (OMSA)/Associated Medical Services (AMS) Compassionate Care Grant, I have had the opportunity to study an important topic that is currently absent from the literature. Leading this study has reinforced my passion for qualitative approaches, and given me a solid foundation on which to build what I hope will be a long-term involvement in medical education research.

Project: Exploring How Attending Physicians Characterize the Purpose of a Hospital Admission

by Katherina Baranova

Western University, Med Class 2020

As health care costs rise, trainees must learn to provide safe, effective, patient-centred care while also balancing the need for resource stewardship. This is layered onto a health care context where patients increasingly have multiple co-morbidities and chronic illnesses. Our qualitative research study focused on attending physician variability and how they role-model patient care on the clinical teaching unit (CTU). We wanted to explore how attending physicians characterize the purpose of a hospital admission.

Over the course of 150+ hours of observation and field interviews, we followed attending physicians, residents, and clerks on the CTU at two different hospitals. The experiences I had observing the teams gave me insight into providing care to patients with co-morbidities. One teaching moment that stuck with me was a PGY5 who said that rather than “zoning out” for the medications list, she wanted the team to think about the major co-morbidities the patient had, and ask ourselves “are they on the right meds?” This is

a simple but effective strategy, and one that I hadn't heard before.

As well, it became clear to me that more debate is needed to determine best practice for management of chronic conditions in hospital. For instance, the way patients with addictions are treated is variable. Some attendings take a strict approach and even avoid consulting addiction services, while others look at the hospital stay as a good opportunity to work on addiction. Trainees are learning competing ways of treating patients with substance abuse issues, and it can cause tension if the trainee's and attending's views conflict.

We presented our research at our local CERI annual research symposium, and at the CSIM annual meeting. We have also been accepted to present at the Canadian Conference on Medical Education in the spring.

Project: Workplace-Based Patient Feedback of Clerk Communication Skills in Inpatient and Outpatient Settings

*by Sachin Pasricha
Queen's University, Med Class 2020*

Compassion among medical students has unfortunately been shown to decline during clerkship. While compassion itself is difficult to evaluate, the communication skills that convey compassion can be assessed. However, most systems of assessing clerk communication skills seek feedback from faculty, residents, and nurses, but lack patient input.

Since becoming involved with this research in 2015, we have conducted a systematic review and targeted needs assessment that demonstrate how the ideal method of implementing patient feedback differs across clinical settings. This past summer, we sought to implement workplace-based patient feedback of clerk communication skills in inpatient and outpatient settings, and evaluate its utility and feasibility.

Students solicited feedback directly from patients in inpatient settings, while clinic nurses did so in ambulatory clinics. Of 114 patients who provided feedback, 111 did so in outpatient settings. The reason as to why this disparity in feedback existed between the settings was explored by conducting interviews with students, and by having students, clinic nurses, and faculty complete questionnaires on the subject.

Results of the interviews and questionnaires revealed that conditions such as cognitive impairments, acute pain, and time constraints often prevented students from soliciting feedback directly from inpatients. As for the feedback solicited in ambulatory clinics, while faculty felt it was useful, specific and tangible, students felt streamlining the form and obtaining feedback from patients they had seen multiple times could improve the utility.

Our next steps are to act on the insight provided by students. In addition to presenting our work at the 2017 Canadian Undergraduate Surgical Education Committee meeting in Vancouver, we will also be presenting at the 2018 Canadian Conference on Medical Education to be held in Halifax this spring.

This research has developed my understanding of the continuous evolution that medical education curriculums undergo, and sparked my desire to pursue medical education research after graduation.

The author gratefully acknowledges the work of team member Juliana Sunavsky, Queen's University, Med Class 2021, and Adam Mosa, Queen's University, Med Class 2018 for their valuable contributions to this project.

Project: Development of Appropriate Tools for Measuring Medical Student Competency in an Undergraduate Setting

*by Victoria McKinnon
McMaster University, Med Class 2019*

Competency-based medical education (CBME) has become a prevalent phrase in residency education over the past two decades. The motivation behind CBME is to ensure competency upon residency completion. As CBME is being increasingly implemented following initiatives in Canada, the United States, and the United Kingdom, there is a growing discussion surrounding its usefulness in undergraduate medical education.

Implementing CBME in undergraduate medicine would encourage a focus on knowledge application and could ease the transition from medical school to residency. However, there are multiple barriers to implementation, one of which is the development of appropriate tools for measuring medical student competency.

Thanks to the generous support from the OMSA MSERG award, I was able to complete a systematic review uncovering and analyzing tools that have already been developed for measuring competency in an undergraduate setting.

We identified 51 different tools measuring multiple undergraduate medical education competencies. The tools were used in both simulation and non-simulation environments, and both technical and non-technical skills were measured.

Going forward, development of existing tools (e.g., determining transferability of simulation tools), and creation of additional tools (e.g., tools measuring procedural skill) will be necessary.

With these results I am drafting two manuscripts: the first is an in-depth review of the tools; the second will expand upon the review to further explore the potential role of CBME in undergraduate medicine.

I have been interested in residency education research since my undergraduate studies, and it was an enlightening experience to shift my research to the realm of undergraduate medicine, especially from my perspective as a current student.

Medical education is a field where real change can be enacted that can improve the training of future doctors, which in turn improves patient care and satisfaction, thus it is a critical area for research and development.

Project: Educational Videos for Patients in Northern Ontario

by *Brittanie LaBelle*

Northern Ontario School of Medicine, Med Class 2019

Over the past summer, I collaborated with one of my classmates, Kian Madjedi, to help build a small team of NOSM students geared to develop preceptor-validated whiteboard patient educational videos. These videos would serve as a tool to address the common presenting concerns and questions raised by patients in communities in Northern Ontario.

Students who are doing their Integrated Community Clerkship in various communities across Northern Ontario have been recruited to create animated educational videos for patients. Over the coming months, we hope to launch a publicly accessible website to host these videos.

Our main task has been completing videos related to health promotion to improve knowledge accessibility of certain medical conditions. These videos will be hosted on a website which has been developed. One major challenge we faced was in regard to the development of a survey for patients.

Initially, we intended to measure the impact on patient behaviour or knowledge about their disease. However, we had difficulty obtaining approval from the Research Ethics Board (REB) due to certain methodological challenges. For this reason, the REB recommended that our survey be geared toward a type of program evaluation in which we would be evaluating patient impressions on the videos we created (i.e., asking patients if they found the videos useful). Therefore, we adjusted our project and survey toward quality improvement and education evaluation.

A secondary challenge occurred in identifying, and subsequently learning the technology required to develop the videos. Testing various software programs, balancing current versus future needs, and securing a license designed to allow future cohorts of students to continue working on this project proved extremely demanding.

Our next steps are to engage more students on this project, create more videos, and begin sharing them with members of the communities. These goals are to be achieved over the coming academic year.

When we, as medical learners, reflect on the most common conditions encountered in a community, we are forced to think more about the social determinants of health, community resources, and patient education needs. By developing videos to address these needs, it reaffirms our commitment to the communities we serve as medical learners and future physicians.

This project helped us better understand the challenges of building a project from the ground up. In addition, it helped us to better understand the CanMEDS role of communicator and scholar, which we will carry forward into our careers as future physicians.

Project: Improving Medical Students' Knowledge of, and Comfort with, Early Goals-of-Care Discussions with Seriously Ill Patients

by *Vivian Tam*

McMaster University, Med Class 2018

Having early goals-of-care (GoC) discussions with seriously ill patients enables more goal-concordant care, decreases non-beneficial medical intervention near death, and improves patient peace of mind and family outcomes during bereavement. Currently, physicians and medical students report feeling under-trained and under-prepared to hold such discussions.

Researchers at Harvard Medical School developed the Serious Illness Care Program (SICP) to train clinicians to use a conversation guide in structuring GoC discussions. The goal of our project was to determine if an adapted SICP model could improve medical students' knowledge of, comfort with, and confidence in holding GoC conversations.

To date, we have held two of three planned workshops, both of which were extremely well-received.

Participants emphasized in qualitative feedback the need for GoC conversation training to be integrated into the curriculum, and all commented that they had acquired new skills and greater confidence in participating in goals-of-care conversations. One participant later contacted our research team to express that our training equipped her to have a GoC conversation that enabled her patient to comfortably express his goals and fears.

Our main difficulty was participant recruitment. Many students reported conflicting schedules or unpredictable clinical hours as barriers to attendance, restricting expected participant turnout. To reconcile this, we extended our target population from final-year medical students to include penultimate-year medical students.

Completing this project has been personally and professionally rewarding. Working with Dr. John You, as well as the students and facilitators in each workshop, demonstrated my peers' commitment to offer care to seriously ill patients that is compassionate, person-centred, and above all, in line with their values and wishes.

Nurturing this confidence and capability was the focus of our project, and our results have exceeded my expectations. As a rigorous research study, this project has fostered my own deep sense of professional responsibility and accountability, and I feel well-equipped to continue leveraging my experiences and resources to advocate for serious illness care that is consistent with best practices. ■

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