SIM-one Simulation Research & Innovation Grant

2012 Recipients
Radiation Medicine Simulation in Learning Interprofessional Collaborative Experience (RM-SLICE)

Jean-Pierre Bissonnette  
*Princess Margaret Cancer Centre; Stronach Regional Cancer Centre*

$24,594

Radiation Medicine (RM) is inherently interprofessional, but the nature of the interprofessional collaboration (IPC) is unique. It is often disparate in time and location, with decisions and handoffs of patient care occurring virtually through asynchronous electronic communications and independent but interdependent tasks.

IPC is increasingly being touted in RM trainee competency profiles, yet it is difficult to teach in the clinical environment. We propose to develop and pilot a high fidelity simulation experience for RM trainees in radiation oncology, medical physics and radiation therapy, allowing them to explore professional roles and identities within the team. Through the “Radiation Medicine Simulation in Learning Interprofessional Collaborative Experience (RM SLICE)”, learners will navigate the interprofessional interactions, tasks and decisions necessary to deliver quality RM care through exploration of a single, complex patient case. Evaluation of learner outcomes can inform future evolution of this simulation initiative.
Development of a Listening Skill Simulation Intervention for Pediatric Rehabilitation Therapists

Gillian King
Holland Bloorview Kids Rehabilitation Hospital; Thames Valley Children’s Centre; University of Western Ontario

$24,855

Listening and communication skills are core competency areas for all health professionals. Although pediatric rehabilitation therapists’ listening skills are essential to children’s and parents’ satisfaction with services, and the quality of children’s outcomes, few simulation interventions have targeted training of listening skills in rehabilitation. The project objectives are: (1) to develop a DVD of simulated therapist-client interactions exemplifying problematic listening-related situations in the pediatric intervention context; and (2) to conduct a pilot study using these simulations in a comprehensive, state-of-the-art intervention that includes repeated exposure to a series of listening skill simulations, guided debriefing in interprofessional discussion groups, and individualized coaching designed to move skills into practice. This pilot study will enable the research team to conduct a randomized controlled trial of the simulation intervention. The outcomes of the present project also include the development of a series of listening skill simulations ready for dissemination and use in educational interventions.
Simulation Team Training and Critical Event Checklist Use for Optimizing the Management of Critical Perioperative Events in an Ambulatory Surgical Facility

Pamela Morgan
Women’s College Hospital; York University; The Wilson Centre; University Health Network; University of Toronto; Hospital for Sick Children

$24,940

Surgery in the ambulatory care setting is becoming more common, yet understanding how educational innovation such as simulation is best facilitated in this context is not clearly understood. This study will determine the effectiveness of high fidelity simulation team training and Critical Event Checklist use in the management of eight high fidelity simulation scenarios designed for use in an ambulatory surgery setting. This study will determine if operating room teams manage a simulated event more effectively using a critical event checklist. Performance will be evaluated using a score based on how closely they follow a protocol for critical event management: a “team” score and a score based on clinical recovery of the simulated patient. All teams will receive a debriefing session after managing four scenarios. Teams will return and manage four further scenarios after a period of 6-9 months.
Realistic Simulation of Medical Ultrasound System

David Steinman  
*University of Toronto; SonoPhysics*

$25,000

The project consists of the development of a prototype of a realistic diagnostic ultrasound simulator system with the purpose of teaching, training and research. It will be capable of behaving as a real ultrasound system, showing information of the whole human anatomy. The simulator will be able to display to the person in training, realistic scenarios of common, but more important, uncommon pathology cases.

Among the advantages of the simulator is its ability to show B-mode images as well as dynamic information of the blood velocity field (Doppler and colour mode) using the same representation usually found on real ultrasound systems. Later on, it will be possible to include other ultrasound modes like power Doppler and elastography.
Engaging the Stage: Using Theatre to Enhance Interprofessional Competencies in Long-Term Care

Raquel Meyer  
*Baycrest Centre for Geriatric Care; McMaster University*

$24,839

Applied theatre techniques, where theatre is utilized as a tool for personal or social development, have been successful in helping to explore themes such as professionalism, empathy and communication in the context of healthcare and education. Applied theatre offers an embodied and experiential learning forum, which has been associated with increased engagement and enhanced learning outcomes. This innovation project will facilitate capacity building for healthcare teams in long-term care related to the interprofessional competencies of communication, collaboration, values and ethics. Through facilitated theatre-based exercises, participants will have the opportunity to examine and reflect on these competencies and how these influence interprofessional team functioning.
Mastery Learning Versus Time-based Education: Skill Acquisition and Retention of Basic Life Support in Laypeople

Sylvain Boet
University of Ottawa; The Ottawa Hospital; Children’s Hospital of Eastern Ontario

$24,975

Teaching basic life support (BLS) to laypeople is integral to improving survival after out-of-hospital cardiac arrest. However, retention of these skills is poor. We aim to compare the effectiveness of two distinct learning strategies for the retention of BLS skills—a traditional time-based learning approach versus mastery learning. Forty laypeople will be enrolled in either a time-based BLS group (TB) or mastery learning group (ML). Both groups will undergo a six-station BLS course. In the ML group, subjects will deliberately practice and receive feedback at each station until a pre-set target level of performance is reached. Subjects will proceed to the next station only when they achieve this target level. In the TB group, the same six stations will be taught in two hours, as is standard for BLS teaching. All subjects will be assessed for skills and knowledge immediately after teaching (immediate post-test) and at four months (retention post-test).
Simulation-Based Training for Enhancing Primary Care Providers’ Competence in Computerized Settings

Aviv Shachak & Sharon Domb
University of Toronto, Sunnybrook Health Sciences Centre,
Tel-Aviv University, University of Victoria

$25,000

Electronic medical records (EMRs) can help improve quality, safety and efficiency in health care. However, using EMRs also has unintended consequences such as new types of errors and changes to the patient-provider interaction. Education and training can mitigate some of these issues, but interventions that go beyond technical aspects of EMR use are rare. The purpose of this project is to design a prototype interactive computer-based simulation to enhance family medicine residents’ integration of EMRs into their practice. Scenarios, storyboards and prototype modules will be designed based on existing knowledge: previous research findings, scenarios developed for actors, user manual, and team members’ experience. Design evaluation will involve a combination of usability inspection (heuristic evaluation and cognitive walkthrough performed by the research team) and usability testing (‘think aloud’ observation) methods, as well as before-after survey of self-reported skills, attitudes toward using the EMR in the clinic and acceptability of the simulation.
Sepsis Module—An Educational Tool for the Management of Sepsis

Alison Fox-Robichaud
McMaster University
$20,610

Our proposed ‘Sepsis Module’ serves to address the need for non-critical care physicians and allied health personnel to improve early recognition and management of patients with life-threatening infections. By using a combination of small group lecture-based teaching, computer-based simulated scenarios and advanced patient simulators combined with knowledge acquisition through testing, it is hoped that participants within the module will improve their knowledge-base and collaborative skills. This would translate into more timely delivery of care for patients. Ultimately, this will lead to less death and disability from severe infections in hospital, and will provide an ongoing interactive curriculum for future healthcare practitioners on the front line.