

Unity Health Toronto Simulation Program Annual Report 2022-23



Introduction

Unity Health Toronto's St Michael's site is a pioneer in simulation, opening Canada's second simulation centre in 1996. The Royal College of Physicians and Surgeons of Canada (RCPSC) first accredited the Allan Waters Family Simulation Centre (AWFSC) in 2015, one of the first academic teaching hospitals to achieve this status. At that time, a 'Centre of Excellence for Interprofessional Simulation' was the descriptor used by the Royal College, in recognition of the Centre's goal of creating high-performing teams. Since accreditation in 2015 and the integration of St. Michael's, St. Joseph's, and Providence in 2016, the Simulation Program has trained more than 35 000 learners and held more than 3 200 simulation events, signifying the huge impact this program has had at Unity Health Toronto.

2022-23 was a busy year for the Simulation Program as we underwent a program review. This was the first time a review was undertaken since the integration of Unity Health Toronto, and the Covid-19 pandemic. For details of the program review, please email simulationprogram@unityhealth.to

In addition to our review, we expanded our reach, partnering with old and new groups to deliver simulation activities across our network and beyond. The following document highlights just some of the work completed this past year.

"Thank you to you and your team for supporting us in running this different type of sim....We've been huddling on the unit about the revised emergency boxes and when and how to use the equipment in them. It is so refreshing to be able to implement a change that will impact patient safety so quickly based off of one simulation"

- St Joseph's Clinical Educator – Nursing, post in situ Code Pink simulation



2022-23: A year in review

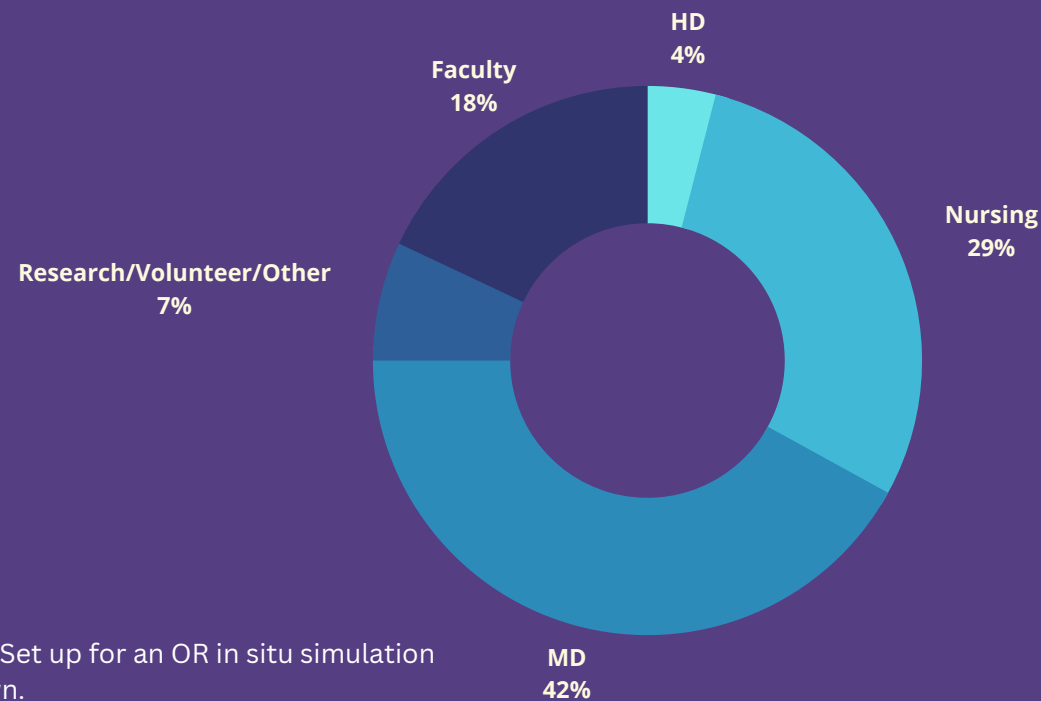
Across Unity Health, the Simulation Program ran over 2400 hours of simulations or 483 simulation events across the network. This included added virtual offerings to reach a broader audience while maintaining a safer simulation space for all.



Left, Set up for an OR in situ simulation shown.

Total
Participants:

4293



2022-23: A year in review

The relationship with the University of Toronto is of particular importance of Unity Health's Program. We support both formal, university based curriculum, as well as hospital site specific curriculum to train the next generation of physicians.

Undergraduate Medicine Curriculum:

- Trauma TEAMS Course
- Prelude to Surgery
- Surgical Exploration & Discovery (SEAD)
- Trauma Seminar for Clerkship
- Clinical Clerks in ED

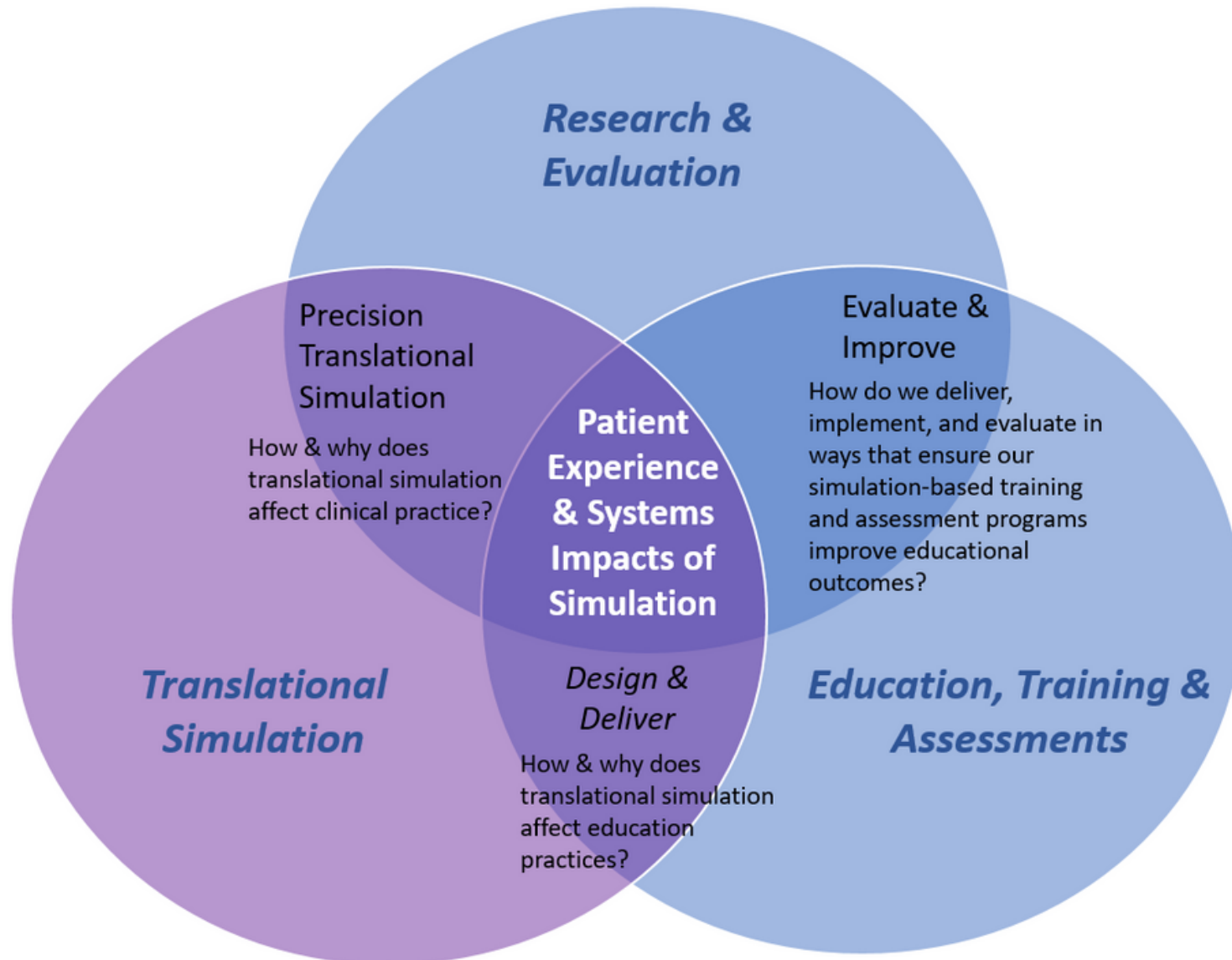
351 medical students participated in simulation in the past year.

Post Graduate Medicine Curriculum:

- Anesthesia Crisis Resource Management
- Obstetrics and Gynaecology
- Emergency Medicine
- Respiriology
- Cardiology
- Internal Medicine
- Critical Care
- Family Medicine
- Pediatrics

1290 residents and fellows participated in Unity Health simulations last year.

Integrating Education, Research and Translational Simulation



Research

The Unity Health Simulation Program is dedicated to conducting research and scholarship that produces innovative and evidence-informed simulation and technology-enabled education. Our four research pillars are listed below. While pillars build on our existing strengths and identity, growth cannot happen without being open to new ideas – we encourage innovative thinking outside these pillars.

Simulation for Quality Improvement & Patient Safety:

Optimizing our use of simulation as a modality for improving the quality and safety of our patient care.

Integration of Simulation-based and Workplace-based Education:

To determine how simulation-based and workplace-based practices can be combined to enhance the training and/or assessment of healthcare professionals.

Precision Translational Simulation:

To establish how and why translational simulation affects clinical and educational practice; studying translational simulation as the object of research.

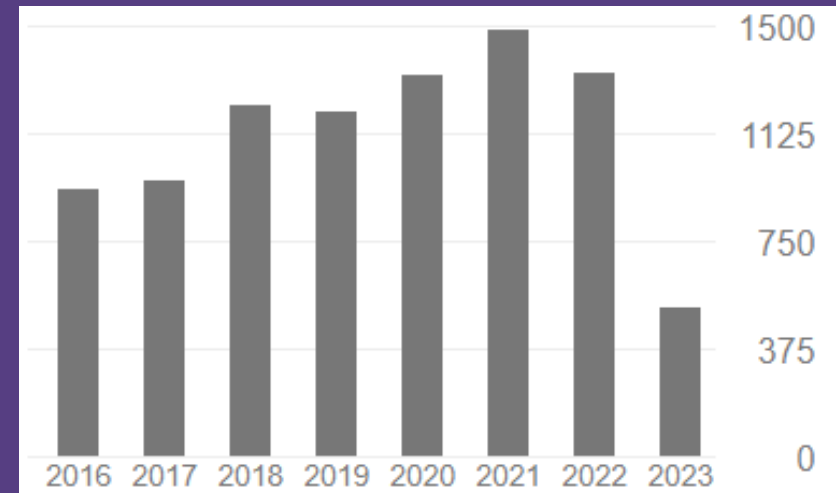
Evaluating & Improving Design & Delivery of Simulation:

To optimize how we deliver, implement, and evaluate in ways that ensure our simulation-based training and assessment programs improve educational outcomes.

Research Highlights

Having our five research pillars guide us, there were 18 research papers published by Unity Health Simulation Team members this past year.

- Petrosoniak A, Gabriel J, Purdy E. Stop asking if it works, start making it happen: exploring barriers to clinical event debriefing in the ED. Canadian Journal of Emergency Medicine. 2022 Oct 24;1-2. (link: <https://link.springer.com/article/10.1007/s43678-022-00396-9>)
- Jeyalingam T, Walsh CM, Tavares W, Mylopoulos M, Hodwitz K, Liu LW, Heitman SJ, Brydges R. Variable or Fixed? Exploring Entrustment Decision Making in Workplace-and Simulation-Based Assessments. Academic Medicine. 2022 Jun 23;97(7):1057-64. (Link: <https://doi.org/10.1097/ACM.0000000000004661>)
- Brydges R, Fiume A, Grierson L. Mastery versus invention learning: Impacts on future learning of simulated procedural skills. Advances in Health Sciences Education. 2022 May;27(2):441-56. (link: <https://link.springer.com/article/10.1007/s10459-022-10094-x>)
- Petrosoniak A, Welsher A, Hicks C. Tubes, lines, and videotape: a new era for quality and safety in trauma resuscitation. Canadian Journal of Emergency Medicine. 2022 Jun;24(4):351-2. (link: <https://link.springer.com/article/10.1007/s43678-022-00323-y>)



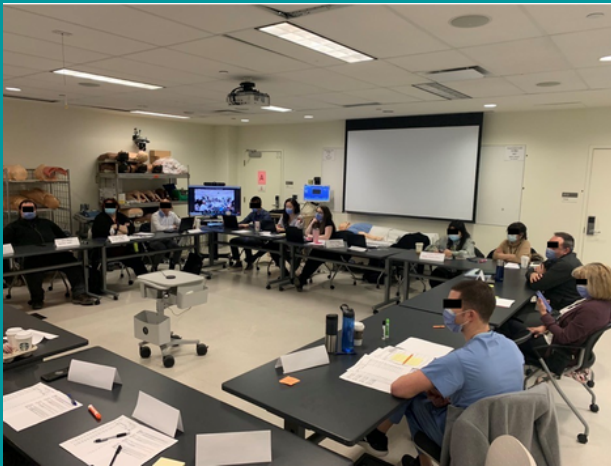
Unity Health Simulation Program Citations, 2010-May 2023

Translational Simulation Program

Unity Health's Translational Simulation Program strives to improve the patient experience using simulation to make processes, spaces, and policies more effective.

A highlight of this year's translational simulation projects was the cybersecurity IT tabletop simulation. Working with our IT and Emergency Preparedness colleagues, we hosted two tabletop simulations. One focused on the clinical response to a network-wide Code Grey, and the second focused on our executive response.

Through this process, the IT department, Emergency Preparedness, and the Executive team were able to identify both quick wins and strategic areas of focus and investment to increase our business continuity.



There were many lessons learned from the cybersecurity tabletops, and both Emergency Preparedness and IT are creating operational plans based on the simulation outputs.

'Quick wins' included documenting at risk departments/services, leveraging device management software on corporate phones, purchasing communication alternatives and working with external vendors to create redundancy for key infrastructure.

Above, picture from the cybersecurity clinical tabletop in skills lab of St. Michael's Simulation Centre.

Translational Simulation Projects

Translational Simulation Projects at Unity Health fall into three categories with the end goal being to enhance healthcare delivery and patient outcomes.

Space Testing: simulation to test new clinical infrastructure prior to clinical care commencing.

Space Design: simulation to inform the development and iterative design of new clinical infrastructure.

Protocol and Systems: simulation to test and improve institutional systems and processes.

Our mantra: *'No patient should be the first test of a new [clinical] space.'*

2022-23 Translational Simulation Projects

Code Grey Cybersecurity, Incident Management Team, Unity Health (Protocol/Systems)

Code Grey Cybersecurity, Clinical, Unity Health (Protocol/Systems)

PACE Clinic, SJHC (Space Testing)

Code Silver, PHC (Protocol/Systems)

Surge Planning, PHC (Protocol/Systems)

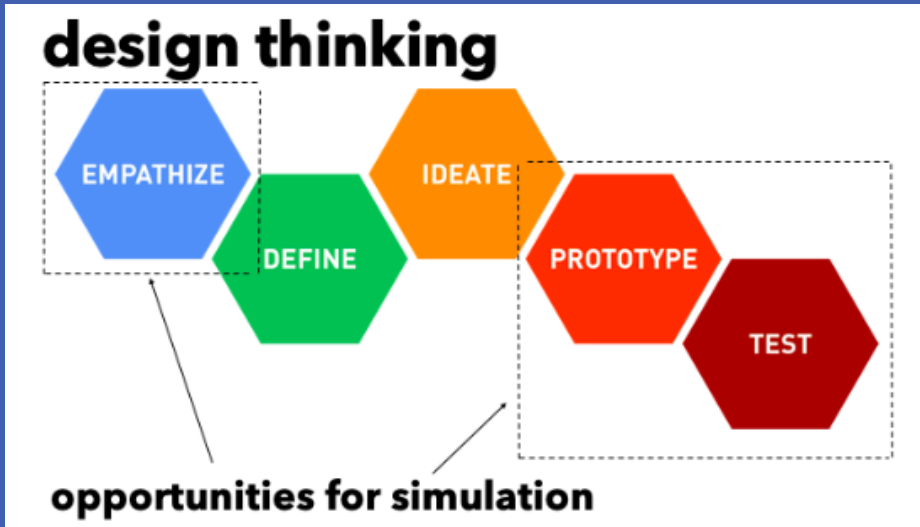
Code Orange, ED, SMH (Protocol/Systems)

Code Stroke, ED, SMH (Protocol/Systems)

Paediatric Resus Cart Re-design, ED, SMH (Protocol/Systems)

ED triage space, SMH (Space Design & Testing)

Translational Simulation Program



Above, a design thinking framework used to inform the Translational Simulation Program work, from Dr. Andrew Petrosniak, Translational Simulation Lead.



Above, using tabletop simulation to imagine the impact of a surge at Providence. Solutions identified included distribution of workload and communication pathways to reduce potential staff burnout or anxiety.



Above, testing the design of two different triage options. Discovered the "L" option provides an additional layer of privacy for our patients.

Right, applying human factors principles and usability testing to create a better pediatric resuscitation tower for our emergency departments.



Translational Simulation: ROI

Return on investment (ROI) is a big focus for our program, as we continue to develop new ways of understanding and talking about ROI.

The ROI for translational simulation projects are multifactorial and are project specific. We assign the following categories to project ROI:

Cost savings: direct project cost savings related to the application of translational simulation

Time savings: This includes reductions in personnel time, decision making time and process time for a given project. Time savings often translates to cost savings however this is kept separate during the evaluation process.

Enhanced decision making: This represents a metric that is more difficult to quantify but remains a key value add for applying translational simulation. Qualitative feedback about decisions are sought during the reflection phase by participants/stakeholders.

Patient safety and patient outcomes: Often the most important ROI metric, this represents a spectrum including the identification and mitigation of latent safety threats and improvements in patient oriented outcomes.

Culture: Engagement of participants/stakeholders in their workplace has been shown to improve the team and safety culture within an institution. Qualitative and quantitative measures through survey-type data is used.

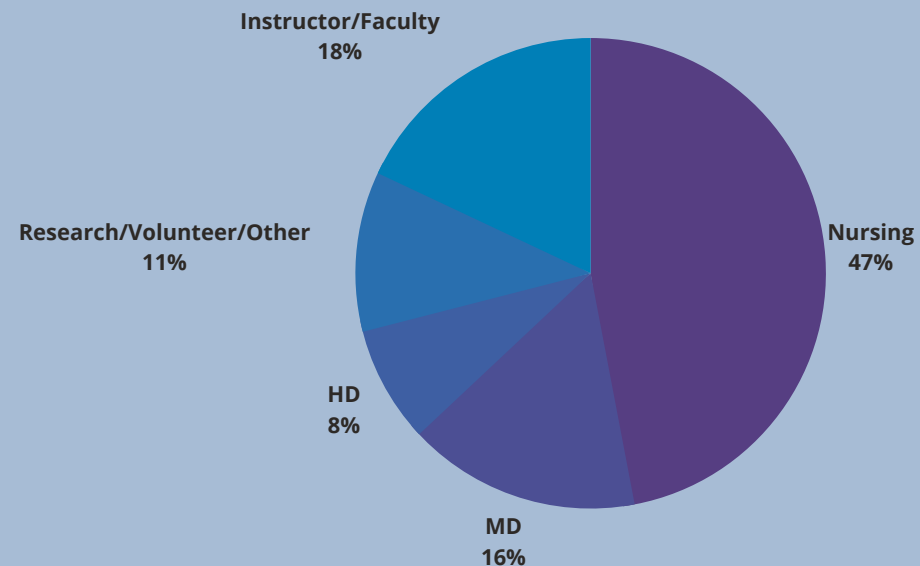
Simulation Story at St. Joseph's

We have continued our strong partnership at St. Joseph's, leading to a 150% increase in situ simulations, and new opportunities to use our translational simulation expertise. As an example, the Simulation team was approached by a nurse educator who wanted to improve the way we teach nurses to document a Code Blue. We supported the design of a simulation scenario that was recorded. Using simulation best practices in designing the scenario resulted in a highly effective teaching tool.

"I want to express my gratitude to the SIM team who collaborated and supported us through this process... This was truly an amazing interprofessional collaboration which also included RT, PSWs, RNs, RPNs, and Clinical Educators. As you are aware, there are many facets to developing any learning video and we were able to meet our target." - St Joseph's Clinical Educator – Nursing



Simulation Participants



Simulation Story Providence

This past year Unity Health revised its corporate Code Silver policy. Leaders and front line staff at Providence were unsure what this would look like at Providence, with its different footprint, patient population and resources.

To help identify the needs of Providence, we partnered with Emergency Preparedness to run a Code Silver tabletop simulation to identify the nuances of Providence's response and to ensure the right people and infrastructure are in place.



Code Silver Represented Groups:

Security, Emergency Preparedness & Risk, Maintenance & Plant Services, Operational Leads, Switchboard, Health Disciplines, Nursing, Admissions, Environmental, Food & Transport Services, Communications Advisor and Toronto Police Services

Findings:

1. the creation of template resources would help teams know the required actions for their specific area
2. identification of key resources and people available at Providence to aid in the response
3. specific areas where funding should be sought to improve the safety infrastructure

Simulation Story at St. Michael's

At our St Michael's site 2022-23 saw a few exciting opportunities to demonstrate our simulation expertise to external colleagues. In February of 2023, the Ministry of Health chose the Simulation Centre at St. Michael's to host one of their announcements. This provided the unique opportunity for our team to speak to the innovative ways in which we use simulation to make our healthcare system better.



Above, Nazanin Khodadoust and Sue Zelko from the Simulation Program speak with Minister of Health Sylvia Jones during a Provincial announcement session.



Above, manikin simulating a prepared operating room set up for Ministry visit.

Simulation Story beyond Unity Health

Office of Inclusion & Diversity, University of Toronto

2022-23 was a year of establishing and maintaining partnerships. In February of this year, the Simulation Program partnered with the University of Toronto's Temerty Faculty of Medicine's Office of Inclusion and Diversity to host a pilot based on the "Let's Talk about Race" Virtual Reality Modules. These innovative modules allow users to explore topics like race, bias, privilege and micro aggressions using state of the art technology. This pilot will support Unity Health Toronto's own use of the Let's Talk about Race modules, and a pilot involving Unity Health Leadership is planned for 2023-24.

"LET'S TALK ABOUT RACE" VIRTUAL REALITY SERIES

FULL IMMERSIVE EXPERIENCE ANTI-RACISM TRAINING
IN HEALTH SCIENCES EDUCATION PILOT



Office of Inclusion & Diversity



SCAN FOR MORE INFO!



LOCATION

The Allan Waters Family
Simulation Centre at St. Michael's
Hospital-Li Ka Shing Building

February 3, 9am - 12pm

OR

February 22, 1pm - 4pm

IN-PERSON

Virtual Reality - Navigating Microaggression Session



2022-23: A year in review

Research and innovation need partners. We work with internal and external collaborators to shape the future uses of simulation.

Research and Innovation enabled by partnerships:

Supported by the ***Canadian Department of Defense*** and working with our clinician-scientist colleagues, we are trying to understand the impact of digital Interventions on nurses' stress responses.

Partnering with fellow Simulationists from ***Sunnybrook Health Sciences Centre*** we are trying to understand the impact of virtual reality on skill and competency development in anesthesia residents.

Supported by a grant from the ***Laerdal Foundation***, we are working with colleagues in Denmark from Aarhus University to better understand the clinical impacts of different modalities of resuscitation training on interprofessional teams.

With a grant from the ***Social Sciences and Humanities Research Council*** (SSHRC), we are looking at the impacts of productive struggle on learning for respirology trainees.

Simulation Story beyond Unity Health

Provincial and Federal Partnerships

A key pillar in our plan to increase our VR capacity is the Ontario Skills Development Grant, co-submitted by Lumeto, a Toronto-based VR start up, Conestoga College and our team. This grant would facilitate the co-design of virtual reality modules to support nursing onboarding and orientation in an effort to address the human health resource crisis. If successful with the application, it will be a significant source of funding for the program, and accelerate our use of VR.



Building on past partnership with the Canadian Military, in March of this year we hosted our Canadian Armed Forces colleagues for a day of training. This interprofessional, day-long event included multiple complex high-fidelity simulations to provide their teams an opportunity to practice their first aid and resuscitation skills.

