

SIMULATION PROGRAM ANNUAL REPORT

2023 - 24



ANNUAL REPORT

2023-24

1. Our Story
2. Quick stats and facts
3. Research
4. Translational Simulation
5. Education Highlights

OUR STORY

Unity Health's St Michael's site is a leader 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.



OUR STORY CONTINUED

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 40 000 learners in more than 4000 simulation events, signifying the huge impact this program has at Unity Health Toronto and beyond.



SIMULATION QUICK STATS

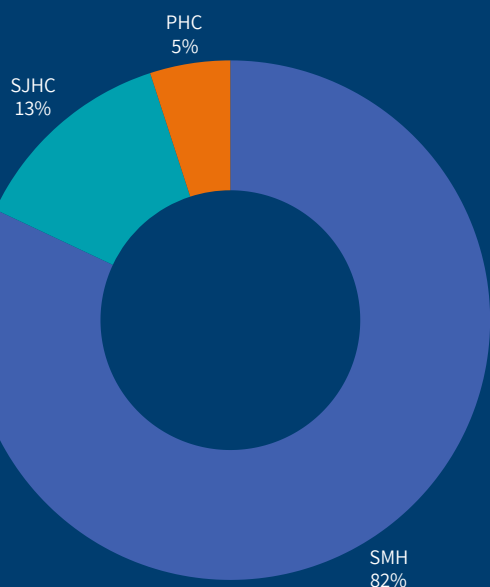
2023-2024

Programs:
21

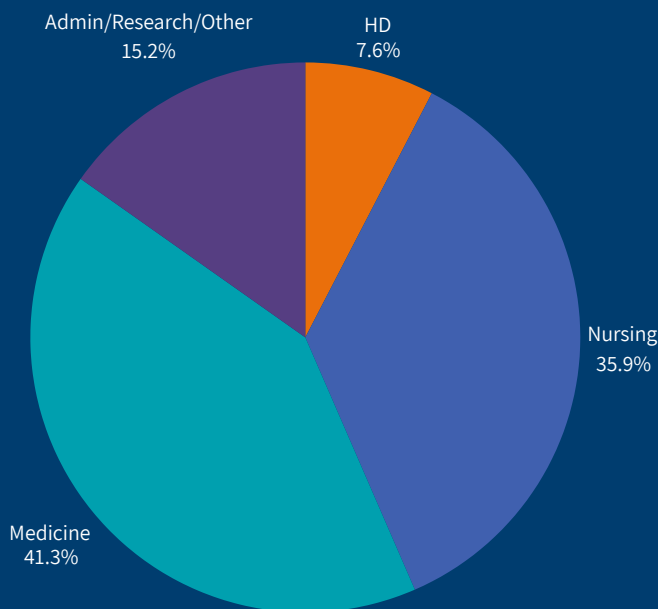
Participants:
5427

Events:
1099

Hours:
2807



Sites



Users

SIMULATION QUICK STATS

Our relationship with the University of Toronto is essential. Together, we train the next generation of physicians.



UGME Programs:
5

PGME Programs:
9

Undergraduate Medicine

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

Post Graduate Medicine

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

SIMULATION QUICK STATS

Our relationship with our internal teams and programs allows us to co-design impactful simulation activities for our clinical, administrative and support services.

21

UHT programs used our services last year



Children's Health
Critical Care
Diabetes, Kidney & Transplant
Emergency
Family Health Teams
General Internal Medicine
Heart & Vascular
Information Technology
Long-term Care
Medical & Diagnostic Imaging
Obstetrics & Women's Health
Operational Readiness
Pharmacy
Rehabilitation
Research
Respiratory Therapy
Respirology
Stroke and Cerebrovascular
Surgery
Trauma & Neurosurgery
Workplace Health, Safety and Wellness

RESEARCH 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:

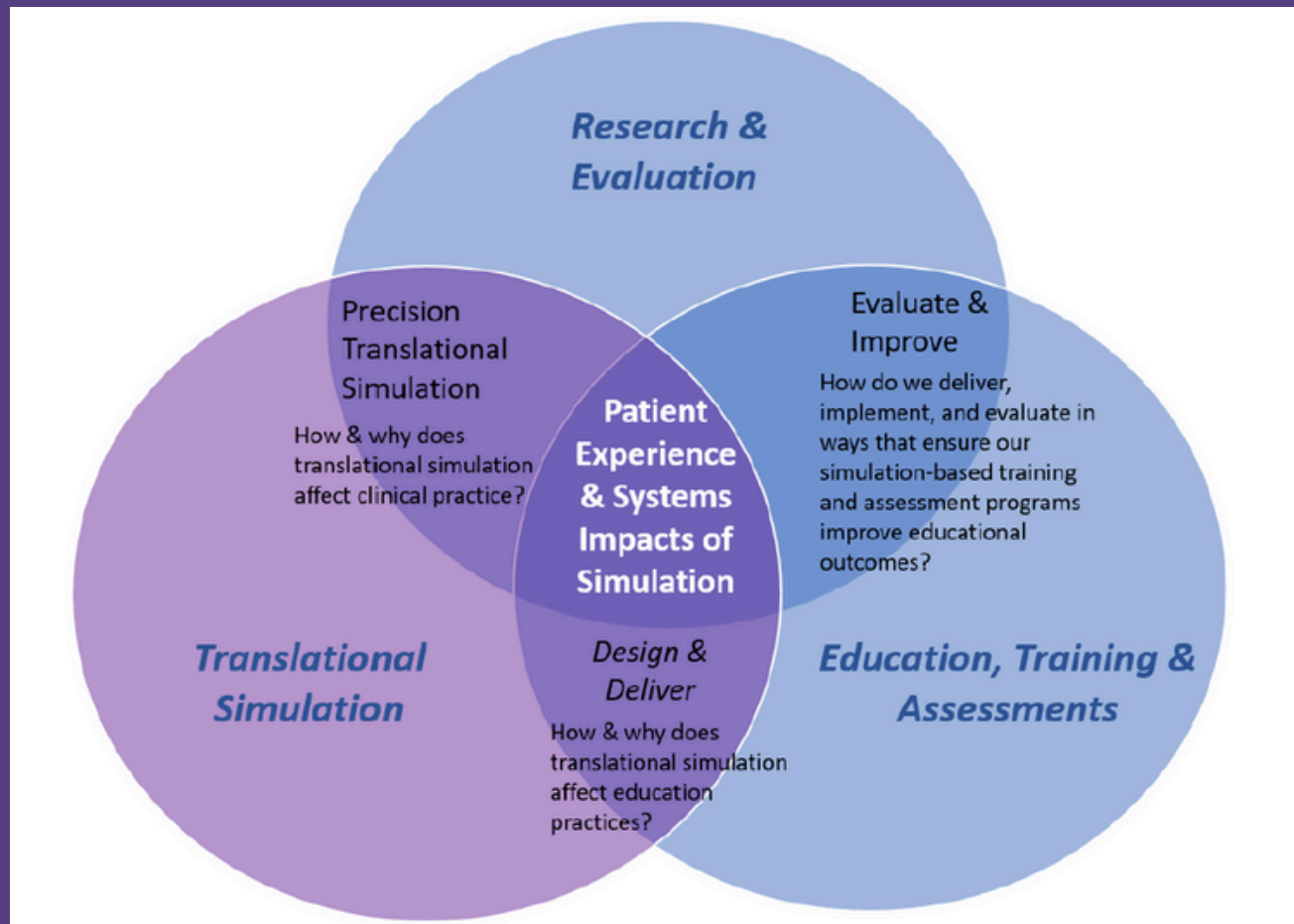
To establish how and why translational simulation affects clinical and educational practice; studying translational simulation as the object of research.

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.



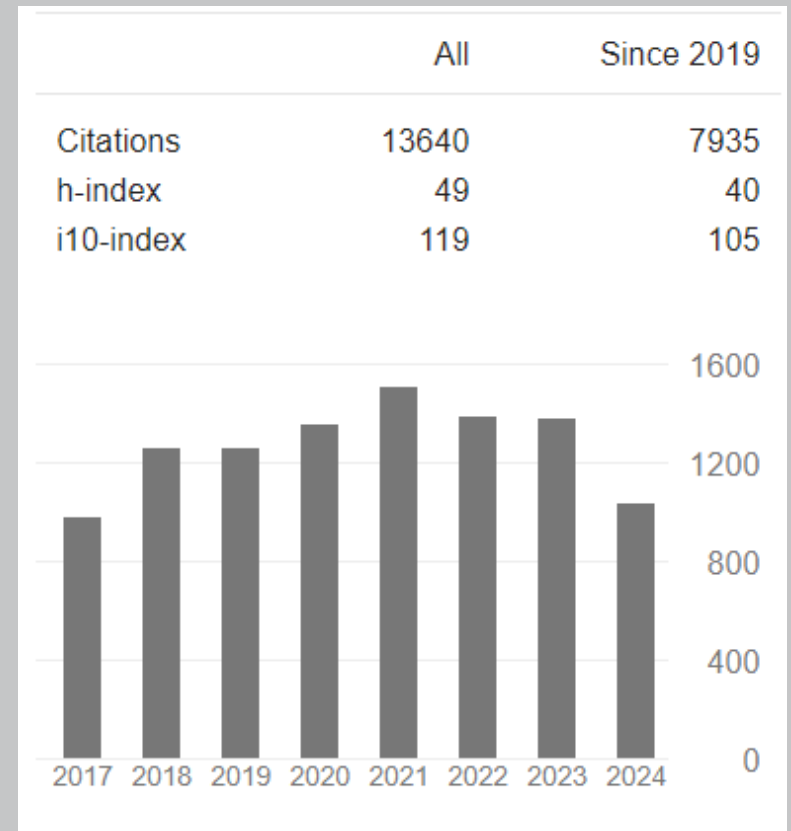
INTEGRATING EDUCATION, RESEARCH & TRANSLATIONAL SIMULATION



RESEARCH HIGHLIGHTS

Research output from our program continues to be strong, with our researchers disseminating key learning in education and translational simulation.

Excitingly we've also partnered with clinical colleagues to better understand the impact of training on clinical outcomes.



Number of citations from the UHT Simulation Program annually

RESEARCH HIGHLIGHTS

Our program has an incredibly impactful research stream. Whether using simulation in research or the focus of the inquiry, our findings help shape simulation centres and healthcare around the world. Here are some highlights of key findings

Petrosoniak A et al. 2023 on which approaches maximize skills training for residents

“Emergency medicine residents engaging in deliberate practice and mastery learning did not outperform (overall quality of performance), residents who self-guided their practice of simulated bougie-assisted cricothyroidotomy”

Lorello et al. 2023 on how we should be structuring simulation facilitation to maximize learning

“In the relatively transient teaching that is common in simulation centres, where different staff, senior residents, or fellows teach single sessions of larger groups of trainees, the opportunity to form such learning relationships likely diminishes... such one-hour sessions amount to arranged relationships with short timelines, and relatively minimal investment from teacher or learner into co-constructing deep, sustainable knowledge or skill.”



RESEARCH HIGHLIGHTS

Simulation research doesn't just look at clinically-based outcomes and teaching. It can also be used to better understand an institutional response. In March 2023 we supported executive leadership to better understand their response to a cyber-attack. We presented our unique translational simulation approach at Sim Expo in Dec 2023.

Beavers et al. 2023

“Translational Simulation was used in two tabletops that helped identify gaps in infrastructure and decision-making processes during a cyber-attack. The tabletops allowed the organization to prioritize areas to improve and hopefully reduce the impact of an attack on our systems”

Cyber-Attack Preparedness: Enhancing Readiness through Translational Simulation

Authors:

Lindsay Beavers^{1,3}, Kristen Sampson¹, Julia Lee^{1,4}, Camille Gallant¹,
Andrew Petrosniak^{1,2} & Nazanin Khodadoust¹

Contributors:

Rachel Manson¹ & Mike Wrobel¹

¹Simulation Program, Unity Health Toronto, Toronto, Canada

²Department of Medicine, Temerty Faculty of Medicine, University of Toronto, Toronto, Canada

³Department of Physical Therapy, Temerty Faculty of Medicine, University of Toronto, Toronto, Canada

⁴Practice Based Researcher (Status Only) Li Ka Shing



Scan here to learn more
about Unity Health
Toronto's Simulation
Program!

RESEARCH HIGHLIGHTS

Let's Talk About Race (LTAR) is a simulation-based program, developed by Bodyswaps© and a team from George Brown College that takes learners on a reflective journey through a collection of experiences through virtual reality(VR) modules. These modules are designed to build knowledge and skills to talk about race and to recognize and respond to power, privilege, bias, and microaggressions. The Simulation Program partnered with the CARESA Education Working Group, and Centre for Faculty Development to pilot these modules and understand the potential value and feasibility of implementing LTAR at Unity Health.

The pilot was successful, and Unity Health is actively pursuing the LTAR modules as educational offerings in 2024-25.

This research has been submitted for publication to share our learnings with the broader simulation community.



CLINICAL IMPACTS RESEARCH

We partnered with researchers Drs. Katherine Allen and Natalie Wong to determine if our new hybrid BLS program impacted clinical outcomes.

Our preliminary data show that staff taking the new hybrid BLS program are meeting or exceeding the American Heart Association guidelines for CPR when they respond to Code Blues.

100%



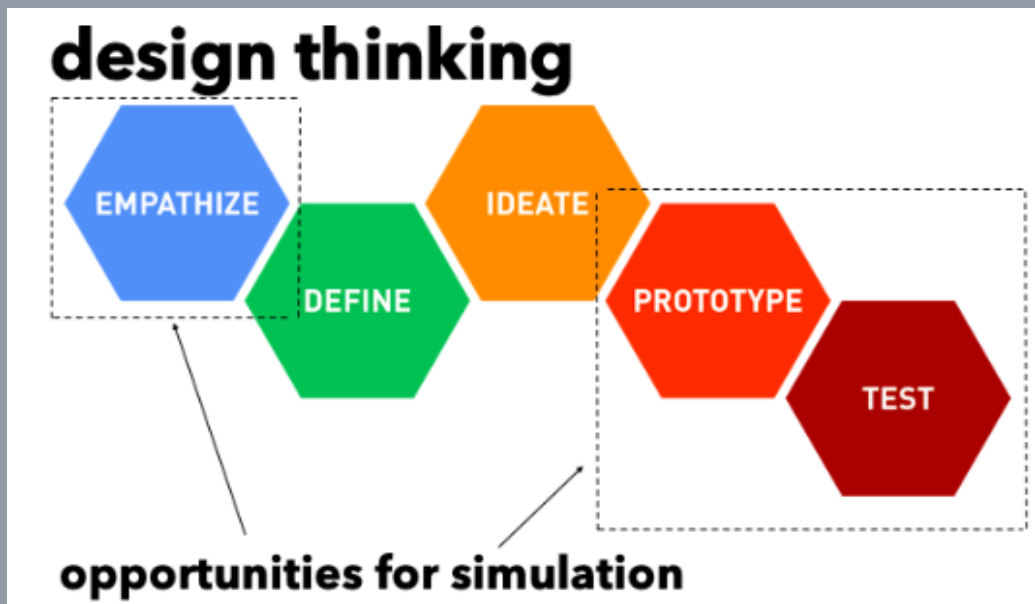
increased course
efficiency for
instructors, equivalent
clinical outcomes

Linking education & clinical outcomes



TRANSLATION SIMULATION (TSIM)

Unity Health's Translational Simulation Program continues to see increased demand within our organization. We've worked hard this past year to identify key return on investment (ROI) metrics that help us and our users understand how we can help.



Cost: direct project cost savings.

Time savings: reductions in personnel, decision making and processing time.

Enhanced decision making: different and better decision through simulation.

Patient Safety & Outcomes: identification and mitigation of latent safety threats and improved patient outcomes.

Culture: engagement of participants & stakeholders improving team and safety culture.

TSIM PROJECTS

Protocol & Systems

- 61 Queen Women's Health Clinic Code White Protocol
- Alert for Behavioural Care Policy
- Code Crimson Policy



Space Design & Testing

- St Joes ED resuscitation bay
- 16 PGT infusion clinic
- Neurosurgery operating rooms
- Medical Imaging Day Unit Opening



TSIM: WHY IT MATTERS FOR DESIGN

Translational Simulation saves Unity Health money when the Simulation Program is brought in early.



\$1

**invested in
Translational
Simulation by
Unity Health
can save up to**

\$26.85

**in construction
costs**

(Health Quality Council of Alberta, 2020)

TSIM: WHY IT MATTERS CLINICALLY

When a new temporary transfusion space opened in 16 PGT, the clinical team knew getting a Code Blue team there in an emergency would be challenging due to its location. Evidence shows that patients with delayed defibrillation were significantly less likely to survive to hospital discharge.

The simulation team ran multiple simulations to enable the team to practice responding to a code, as well as identify the most efficient route for responding Code Blue team members.



Faster Code team response and defibrillation equals

17%

increase in chance of survival at time of hospital discharge

(Chan et al., 2008)

TSIM: WHY IT MATTERS FOR PATIENT SAFETY



The Code Crimson policy, required as part of St. Michael's Level One Trauma Accreditation (American College of Surgeons) dictates how to get a critically ill patient to the operating room in 15 minutes or less to save their life. It is an incredibly complex endeavour that requires the coordination across multiple different disciplines and hospital areas.

After two years of trying to capture the complexities in a policy, the Simulation Program supported the trauma team to run a simulation that helped launch the policy and provide critical evidence for our accreditation application.

Apart from helping us truly understand the complex process of a Code Crimson, a huge value of the simulation was to prove to ourselves that we could do it -

Verity Tulloch, Quality Improvement Specialist,
Trauma

TSIM: WHY IT MATTERS FOR PATIENT SAFETY

This one simulated event allowed for the testing of **six** discrete processes within the Code Crimson policy.

Simulation also allowed for enhanced decision-making, including the identification of the anesthesia coordinator as a key player and the introduction of an overhead page protocol.

>100 participants

>50 planning hours



EDUCATION HIGHLIGHTS

When cardiac arrest occurs outside the home, men are more likely than women to receive cardiopulmonary resuscitation (CPR) from a bystander—and are more likely to survive (Blom et al., 2019; Kramer et al., 2014).

Most available CPR simulation manikins do not have breast tissue, so healthcare workers continue to train on only male-representing bodies.

Our simulation program has changed that, by adding breasts to our manikins. This simple addition allows us to better represent our patient population and ensure staff and physicians are ready to save the lives of everyone.

We've presented our work at the Teaching for Transformation conference in 2023, and have been accepted to present our initial research on findings on this change in Nov 2024 at SimExpo.



USING CLINICAL OUTPUTS TO IMPROVE EDUCATION

The Simulation Program's First 5 curriculum allows staff to practice the first 5 steps of their response when someone goes into medical distress.

Running the First 5 sessions across our acute care sites allows us to analyze and identify system-level latent safety threats. This data then drives unit practices, equipment purchase as well as updates to the Simulation Program's Basic Life Support (BLS) training.

All of these actions help make our teams more effective in responding to medical emergencies.



First 5 sessions run on units and latent safety threats (LTS) identified

LST communicated to units and analyzed within and across our acute care sites

BLS curriculum updated to focus on LST data as needed

EDUCATION: FIRST 5'S IDENTIFYING LATENT SAFETY THREATS (LST)

18

units across St Joseph and St.
Michael's

Top 5 LST Themes

- Missing essential equipment (e.g. stools to ensure effective CPR)
- Unfamiliar with CPR release on beds
- Undetermined Code status of pts
- Training/Knowledge gaps
- Missing keys for automated external defibrillator (AED)

Actions as a result of First 5 Training

- New equipment purchased
- Increased BLS training for staff
- New processes for determining Code status of patients
- BLS curriculum updated to highlight common knowledge gaps



EDUCATION HIGHLIGHTS



This year we partnered with the St. Michael's Next Surgeon program. This pilot program provides mentorship to high school students from under-represented communities to help develop interest and diversity in the surgical profession.

Using simulation, we demonstrated the myriad of interprofessional possibilities in healthcare and showcased the lived experience and professional trajectory of our diverse staff.

EDUCATION HIGHLIGHTS

Point of Care Ultrasound

The use of POCUS is exponentially growing in the fields of Cardiology, Critical Care, Emergency Medicine, Obstetrics and Gynecology, and Internal Medicine in Canada. There are multiple documented benefits, including quicker diagnoses, cost-effectiveness, and shorter hospital stays.

Last fiscal the organization supported our program in purchasing new point of care ultrasound equipment, and we've incorporated it into dozens of simulations and skills days helping our medical learners upskill and maintain their competency with this tool.



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