



*Each edition of the newsletter will highlight the initiatives of one of the three trauma centres in the GTA that make up the U of T Trauma Program. This newsletter will focus on St. Michael's Hospital.*

## **“All the Pieces Matter” – Trauma Resuscitation Using In-Situ Simulation Team Training (TRUST)**

### **Using Risk-Informed Simulation for Team Performance and Human Factors Evaluation in Trauma**



**TRUST offers an innovative opportunity to review high-risk situations beyond the traditional morbidity and mortality rounds**

Trauma resuscitation requires an adhoc multidisciplinary team to perform at a high level within a dynamic, high-stakes environment. The unpredictable nature of trauma care increases the possibility for errors, often from underlying latent safety threats (LSTs) – threats to patient safety that are otherwise unrecognized and can materialize at any time. LSTs may manifest from equipment issues, the physical environment and hospital systems.

In situ simulation (ISS) is a point-of-care training strategy that occurs within the patient care environment involving the actual healthcare team and provides an innovative approach to quality improvement, LST identification and team training. Using ISS, critical events can be recreated providing an opportunity to explore and learn from past challenges that may impact patient safety and system processes.

At St. Michael's Hospital (SMH), we sought to develop and pilot a risk-informed, multidisciplinary ISS trauma training program over one year, led by Andrew Petrosoniak and Christopher Hicks (both trauma team leaders and emergency physicians), with the support of the SMH Allan Waters Family Simulation Centre, SMH Trauma Program, and HumanEra (human factors experts) from University Health Network.

Beginning in the fall of 2014, a comprehensive engagement process with all stakeholders involved in trauma care was undertaken at SMH and residency programs across U of T. Simulation cases were developed from a review of adverse events and unexpected deaths in the trauma bay, with input from human factors experts integrating system- and process-related elements.

Over the past year, twelve multidisciplinary, high-fidelity, unannounced ISS sessions have been conducted with over 120 multidisciplinary staff and trainees participating in at least one session. Sessions begin with trauma team activation and are conducted with either a high fidelity manikin or standardized patient, followed by a team-based debriefing to identify LSTs. All sessions are video recorded for framework analysis (a novel method for LST identification) by human factors experts. LSTs are identified and categorized into seven themes that relate to clinical tasks, equipment, team communication, and participant workflow.

Identified LSTs have included: 1) functional design for optimal surgical airway performance 2) logistical considerations during massive transfusion protocol (MTP) activation; and 3) communication of critical patient information during paramedic-trauma team handover. Through this iterative ISS training approach, the TRUST team has worked closely with operational management groups across SMH to trial proposed changes to trauma system processes (ie. move from two call to one for MTP activation) prior to implementation in clinical care. This collaborative approach has served to identify unintended consequences of proposed changes and has offered an avenue to test drive improvement initiatives without impacting clinical care.

As a testament to the ED and trauma team's resilience, TRUST study sessions have been effectively implemented during both low and high ED patient volume situations. ISS was also helpful in the reopening of the trauma bay following the devastating ED flood in February 2016 that saw SMH close to trauma patients. Using a preplanned TRUST session, we were able to trial our "new" trauma bay prior to accepting trauma patients and reassured everyone that we were operational ready..

TRUST offers an innovative opportunity to review high-risk situations beyond the traditional morbidity and mortality rounds; rather than waiting for an actual case to prompt discussion, we prophylactically examined critical situations and processes.

## **New U of T Trauma Faculty**



**Luis Da Luz** is a general surgeon from Brazil. In Canada Dr. Da Luz completed a trauma surgery fellowship and a critical care medicine fellowship, both at the University of Toronto. Luis also obtained a MSc focused in traumatic brain injury at U of T and is currently enrolled in a second MSc at the Institute of Health Policy, Management and Evaluation at U of T, focusing on clinical epidemiology.

Luis has special interests in resuscitation of severe injured patients and his research focus is in systematic reviews and meta-analysis in trauma, surgery, and critical care. Luis will also lead projects of quality improvement in trauma care at Sunnybrook.

**THE U OF T TRAUMA PROGRAM**  
IS A COLLABORATIVE OF THE  
DEPARTMENTS OF SURGERY OF  
ST. MICHAEL'S HOSPITAL, SUNNYBROOK  
HEALTH SCIENCES CENTRE, AND THE  
HOSPITAL FOR SICK CHILDREN.  
IT IS DESIGNED TO PROMOTE QUALITY  
PATIENT CARE, EDUCATION, AND  
RESEARCH ACROSS THREE SITES AND TO  
INTEGRATE TRAUMA RELATED ACTIVITIES  
IN THE AREAS OF EDUCATION, QUALITY  
AND RESEARCH.

**Barbara Haas** completed her residency in General Surgery at the University of Toronto, during which time she completed her PhD. Her doctoral work focused on access to trauma care in the province of Ontario, as well as trauma centre quality improvement. Following her residency, Barbara completed her fellowship in Adult Critical Care Medicine at the University of Toronto. She has recently returned from Chicago, where she completed a fellowship in Trauma Surgery at the John H. Stroger Jr. Hospital of Cook County.



In addition to her clinical interests in trauma, acute care surgery and critical care medicine, Barbara is developing a research program focused on trauma and emergency surgery in the elderly. Her work will focus on optimizing long-term outcomes, as well as improving inter-specialty communication regarding these complex patients.

## 2016 U of T Visiting Professor in Trauma & Tile Lecturer



L to R: Dr. Avery Nathens, Dr. Marvin Tile, and 2016 Visiting Professor, Dr. Geoffrey Manley

Our 2016 U of T Visiting Professor in Trauma was Dr. Geoffrey T. Manley, Professor and Vice Chairman of Neurological Surgery, University of California, Chief of Neurosurgery, San Francisco General Hospital, and Co-Director, Brain and Spinal Injury Center.

The visit began as customary with the City-Wide Trauma Journal Club and dinner where two recent scientific articles were presented by Dr. Christopher Pasarikovski (Neurosurgery Resident) and Dr. Timothy Rice (Trauma Fellow) and discussed by the group. The U of T Department of Surgery Tile Lecture was held on Friday, June 3<sup>rd</sup>, 2016. Dr. Manley gave an excellent lecture on 'Traumatic Brain Injury: A precision medicine approach' that engaged the entire Department. Following the Tile Lecture was the Research Symposium highlighting recent research done in the Trauma community. Drs. Sunjay Sharma, Brodie Nolan, James Byrne, Stephanie Mason, Aziz Ali, and Allan Martin presented on subjects ranging from urgent transfers to neurosurgical centres in Ontario to the association between burn injury and mental health. Dr. Manley's visit was enjoyed by all.

## New U of T Trauma Fellows 2016-2017



**Dylan Pannell** was born and raised in downtown Toronto where he attended Jarvis Collegiate Institute. He completed his undergraduate studies at the University of Toronto and continued on to complete his PhD in Medical Genetics and Molecular Biology at the University of Toronto in 2002 with Dr. James Ellis. His thesis focused on chromatin structure and developmental regulation of gene expression. In 2003 he enrolled in the Canadian Forces as an infantry officer and trained as a paratrooper. He later transferred to the Medical Branch as a medical officer and completed his MD at Queen's University. Dylan then trained in family medicine at St. Michael's Hospital in Toronto.

Upon completion of his residency he was posted to 2 Field Ambulance in Petawawa, Ontario and employed as a General Duty Medical Officer for the 3<sup>rd</sup> Battalion, Royal Canadian Regiment. He deployed to Canadian Force Station ALERT, the northernmost permanently inhabited station and was also the Canadian Forces Task Force Medical Advisor during the G8 Summit. In 2010 Dylan deployed to Afghanistan on Operation ATHENA as a trauma team leader at the Role 3 Multinational Medical Unit and second-in-command of the Canadian contingent. During this combat deployment his team was responsible for resuscitating hundreds of critically injured soldiers and Afghans. He was awarded the Chief of the Defense Staff Commendation for his conduct. Upon his return from Afghanistan he pursued specialist training in General Surgery at the University of Toronto. Dylan's research focus is on Trauma survivorship, combat-related trauma, pre-hospital care in austere environments, and disaster medicine. He has three awesome young daughters. In his free time he enjoys running, hiking, camping, and free-style rap battles.

**Dave Paskar** is an incoming fellow in the combined Trauma/Acute Care Surgery/Critical Care fellowship at the University of Toronto. He completed his residency in general surgery at the University of Western Ontario and his MD training at the University of Toronto. During his residency, he completed a MSc degree in Health Research Methodology and Clinical Epidemiology at McMaster University. Dave completed his undergraduate education at the University of Toronto with an HSc in biology, physiology and psychology. In 2014, Dave won the 'Best Trainee Scientific Poster' award at the Trauma Association of Canada's Annual Scientific Assembly.

Dave's research interests are varied, but include quality in epidemiologic reporting, clinical trials and systematic review. Dave is married to his wife of five years, Amy, and they welcomed their first child in July 2016. Their family is balanced out by Jasper, their loyal canine companion. Outside of medicine, Dave is a passionate sports fan (Blue Jays and Raptors) and enjoys the outdoors (golf and watersports).



## 2016 Trauma Awards in the U of T Trauma Community

*We would like to extend our congratulations to the following recipients:*

### **Dr. Stephanie Mason, Surgeon Scientist Program**

*Regional ACS Committee on Trauma resident paper competition "Self-harm emergencies after major burn injury: a population-based analysis" & Best oral presentation, Canadian Burn Symposium "Temporal trends in mortality and regionalization of major burn injury".*

**Dr. James Byrne, Surgeon Scientist Program** won Best Clinical Paper at the 2016 Resident/Fellow Paper Competition at the American College of Surgeons Committee on Trauma Annual Meeting in San Diego (April 2016). Title: "Timing of Venous Thromboembolism Prophylaxis in Severe Traumatic Brain Injury". Sunnybrook faculty involved in this project are Avery Nathens (Trauma) and Farhad Pirouzmand (Neurosurg).

**Illana Perlman - Social Worker, Trauma Program/Educational Coordinator,** Sunnybrook Health Sciences Centre won *Sunnybrook Schulich Award for Clinical Excellence - April 2016 & Ontario Brain Injury Association: Hospital Social Worker of the Year Award - October 2016*

**The C5 Trauma Unit Interdisciplinary Team** won the 2016 Sunnybrook team award, Sunnybrook Health Sciences Centre

An award of appreciation was presented to **Sunnybrook Health Science Centre's Canadian Simulation Centre and Tory Regional Trauma Centre** by the Toronto Police Service and Traffic Services in recognition of their support with the development of the 'Police Officers Guide to the Trauma Room' Program.

## GTA Trauma Forum

In the early spring of 2016, a group of almost 40 trauma leaders from the prehospital, hospital, and government met at the Sunnybrook Centre for Prehospital Medicine to connect key individuals and share information. The group discussed the patient's journey from the point of injury to rehabilitation and beyond to better understand the system, and identify opportunities for improvement. This included a discussion of a number of processes including the first call to 9-1-1, the differences between urban and rural responses for paramedics, and access to trauma centres either directly or through Ornge.

The group considered a number of opportunities to enhance the system including better communication between prehospital and hospital providers, structured feedback to paramedics following a trauma case (similar to the feedback paramedics receive for cardiac arrest), access to patient outcomes, and information sharing.

The field trauma triage guidelines, repatriation, and rehabilitation issues were also considered. Challenges noted included the evolution of the guidelines and desire to find the correct balance between volumes and patient acuity, temporal versus physical geographic boundaries for selection of trauma centres, and the process to manage repatriation and access to rehabilitation and follow-up efficiently and in a patient centric fashion.

The group agreed that these "ad hoc" gatherings are useful and important as check-ins, and to ensure the key players have an opportunity to discuss our trauma system

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AIMS TO PROVIDE LEADERSHIP IN THE  
DELIVERY OF SPECIALIZED CARE TO SEVERELY  
INJURED PATIENTS, INJURY RELATED  
RESEARCH, AND EDUCATION AND INJURY  
PREVENTION. PROVIDE COORDINATED  
PATIENT-FOCUSED CARE  
RECOMMENDATIONS IN CLOSE  
COLLABORATION WITH EMS, REFERRING  
INSTITUTIONS, AND FACILITIES PROVIDING  
PRE AND POST-ACUTE CARE



St. Michael's

SickKids

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Surgery  
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