



Each edition of the newsletter highlights the initiatives of one of the three trauma centres in the GTA that make up the U of T Trauma Program. This newsletter focuses on Sunnybrook Health Sciences.

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.

Tory Trauma Program at Sunnybrook Health Sciences



L to R: Dr. Andy Smith, SHSC CEO, Dr. Avery Nathens, SHSC SIC, Dr. Andrew McCallum, Ornge CEO, and Kerry Comiskey, Trauma Patient, at the Sunnybrook Helipad Event.

There has been a lot of activity at Sunnybrook related to the trauma program. First, the program has been named the "Tory Trauma Program" to recognize the strong support offered by the Tory family over the years. Philanthropy continues to be critical to support the program with the rooftop helipad construction now underway and the planning for a hybrid operating room with both CT and angiographic capability. This hybrid OR will allow for comprehensive care of the most critically injured patients in one environment.

Quality Improvement

Quality improvement activities are thriving in the Program, with initiatives advanced in multiple areas. For example, an approach to structured documentation in patients with severe TBI has led to a doubling of the rate of ICP monitoring. Dr. Richard Jenkinson has led an initiative with the plastic surgery team to reduce the time to soft tissue coverage for patients with complex lower extremity fractures, thus reducing hospital stay and lowering the rate of infection. Dr. da Luz has led a project to improve resuscitation of critically injured patients by better organizing the trauma bay. A project exploring communication between EMS providers and the trauma team has just been completed and the findings suggest tremendous opportunities for improvement, which are moving forward. Lastly, Dr. Barbara Haas is working with the entire clinical team to create a geriatric trauma bundle, which will bring best practices to the care of these patients.

Trauma Education

As an academic trauma program, fulfilling our education mission is seen as critically important. The trauma program supports University of Toronto trainees in general surgery, neurosurgery, orthopedic surgery, emergency medicine, and dentistry, undergraduate medical students, as well as a number of learners from outside of the University of Toronto. Sunnybrook is party to several affiliation agreements that allow for trainees from other academic organizations to experience a rotation on the trauma service. These include: emergency medicine (Dalhousie University, Queen's University), general surgery (University de Laval, Universite de Sherbrooke, Memorial University), family medicine (Queen's University – military stream, Northern Ontario School of Medicine, Dalhousie). The attractiveness of the training in the Trauma Program comes from the operative experience (for surgical trainees) and for a sub-Trauma Team Leader experience (sub-TTL) for the non-surgical trainees. The latter provides an opportunity for trainees to lead trauma resuscitations under the supervision of an experienced TTL.

The trauma program also supports practicing physicians in rural communities through the Supplementary Emergency Medicine Experience (Department of Community and Family Medicine). This opportunity provides family physicians to expand their trauma management skills and become more comfortable in the early evaluation and management of severely injured patients.

Sunnybrook is the home of Canadian veterans and had its origins as a veterans hospital. This relationship now continues with active military personnel. In 2017, an MOU was signed between Sunnybrook and the Canadian Forces as a training site for Special Forces medical officers and physician assistants. This MOU allows for intermittent, short trauma rotations for military personnel in between deployments to maintain medical readiness. This relationship is expanding, with several Sunnybrook surgeons (2 general surgery, one orthopedics) and an anesthetist having close ties to the Canadian Forces (active or reserve).

Research

The Division of Orthopedic Surgery has several clinical trials underway including a recent trial (now completed recruitment) evaluating the utility of operative fixation of rib fractures (Drs. Jenkinson, Kreder), and an interventional trial to evaluate the effectiveness of lithium in preventing non-union (Dr. Diane Nam). In the Division of Neurosurgery, there is a focus on functional MRI and mild TBI (da Costa) as well as a randomized controlled trial evaluating the optimal timing of VTE prophylaxis (Pirouzmand). This latter trial has as one of its co-PI's an intensivist (Scales), who is the lead on another trial determining the benefit of early tracheostomy in head injury.

Outreach

The trauma program, in concert with the Division of Plastic Surgery and through the leadership of Dr. Oleh Antonyshyn, supports an exchange program with hospitals in Ukraine. This relationship began through a series of medical missions led by Dr. Antonyshyn shortly following the Euromaidan revolution in 2014 that were funded through the Toronto Ukrainian community and subsequently through Canadian Federal Affairs. It is now supported through a donation to Sunnybrook. This program allows for surgeons from Ukraine to visit Sunnybrook and advance their skills in craniofacial reconstruction. Additionally, the program allows for ongoing medical missions to Ukraine where surgical care is provided by Sunnybrook and local surgeons. In addition to providing care, this program builds local capacity. While principally an initiative of the Division of Plastic Surgery, medical missions often include neurosurgical staff as well.

Sunnybrook brought the Stop the Bleed campaign and the Bleeding Control course to Canada in mid 2017. The Bleeding Control course educates the public to use simple hemorrhage control techniques to save lives. It was originally developed by the American College of Surgeons for the primary purpose of increasing survival rates after active shooter incidents but has broader applicability. As of August 2018 our program has trained over 600 people across Canada. The program has successfully been delivered to staff at Toronto City Hall, Metrolinx, York University Security, York Regional Transit, and the Toronto Blue Jays. We have also run several public courses and private courses as well as 6 high school programs over spring 2018.

The early evaluations of the program are showing a dramatic increase in public knowledge about bleeding and interventions that can help to save a life, as well as public comfort and confidence to be able to deliver these interventions. With the recent violence in the City of Toronto, the demand for the Bleeding Control course has grown substantially. Our program is currently working with other hospitals in Ontario and across Canada to help them launch similar programs in their areas. As of August 2018 we now have programs up and running in Kingston, Newfoundland, New Brunswick, Calgary, Lethbridge and soon British Columbia and Quebec. In Ontario the Hospital for Sick Children, North York General, Humber River Regional, The Ottawa Hospital and Hamilton Health Sciences will begin offering program in the early 2019 with our guidance and support.

The office for injury prevention is being renamed as the Centre for Injury Prevention. The P.A.R.T.Y. program is now in 173 sites around the world and continues to grow. New program content has been added to address opioids, cannabis and mental health in collaboration with Youth Psychiatry at Sunnybrook.

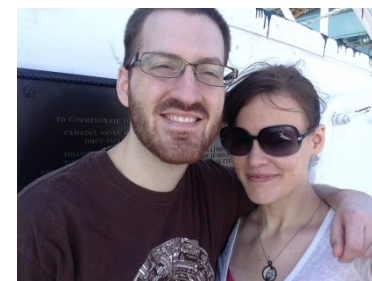
Welcome to our New Faculty & Trauma Fellows



Dr. David Gomez is the newest member of the Trauma and Acute Care Surgery (TACS) program at St Michael's Hospital & the Department of Surgery of the University of Toronto. David completed his medical training in 2007 in Bogota, Colombia. He then relocated to Toronto to pursue a Research Fellowship and PhD under Dr. Avery Nathens at St Michael's Hospital. Following his graduate studies, David completed his residency in General Surgery at the University of Toronto in 2016. After residency, David and his family moved to Sydney, Australia where he underwent additional training in upper gastrointestinal surgery, followed by a fellowship in trauma surgery.

David's clinical interests include acute care and trauma surgery as well as benign upper gastrointestinal surgery. David has particular surgical interests in rib fixation and laparoscopic management of common bile duct stones. David's primary research interests revolve around the evaluation of the enablers and barriers of access to care for patients with general surgical emergencies. He is excited to return to Toronto with his wife Carolina and his 3-year-old son Pablo.

Jordan Nantais obtained an honours degree in biochemistry at the University of Windsor, and graduated medical school at the University of Calgary in 2012. Following this he attended Dalhousie University for residency in general surgery, finishing in 2017. He is currently completing fellowships in both trauma surgery and critical care medicine at the University of Toronto. His research interests include sepsis in surgical patients, fluid resuscitation, and functional outcomes following trauma. Jordan lives with his fiancé, Diane, a critical care nurse. They also share their house with three noisy and invasive cats.



Igal Raizman graduated from medical school, and completed his general surgery residency, at Queen's University. Prior to that he earned his MSc at the university of Toronto and BSc (Hon) from McMaster University. In 2018 he returned to Toronto to pursue a fellowship in Trauma and Acute Care Surgery at the University of Toronto.

In his spare time, Igal enjoys photography, travelling, and reading about astronomy.

2018 AWARDS, HONOURS & ACHIEVEMENTS

David Gomez (Trauma Surgeon, SMH) Publication: "External benchmarking of trauma services in New South Wales: Risk-adjusted mortality after moderate to severe injury from 2012 to 2016." *Injury*. Accepted September 2018.

Presentations: XXXI Panamerican Congress of Trauma and XLIV National Congress Advances in Surgery - Colombia August 2018: "Surgical treatment of flail chest and rib fractures: Traditional non-absorbable vs. absorbable plates, who and when?" and "Are we ready for the new world disorder? Civilian trauma center disaster preparedness plans" and "Vascular trauma."

Avery Nathens (Surgeon-in-Chief & Trauma Medical Director, SHSC)

Publications:

- Accelerating surgical quality improvement in Ontario through a regional collaborative: a quality-improvement study. *CMAJ Open*. 8/2018
- Uncovering Cultural Barriers to Quality Improvement Learning in a Trauma Program: An Ethnographic Study. *J Surg Educ*. 8/2018
- Medical Costs of Delayed Hip Fracture Surgery. *J Bone Joint Surg Am*. 8/2018
- Laparoscopic Surgery for Small Bowel Obstruction: Is It Safe? *Adv Surg*. 9/2018
- Evolving Management Strategies in Patients with Adhesive Small Bowel Obstruction: a Population-Based Analysis. *J Gastrointest Surg*. 7/2018
- Simulation-based training for trauma resuscitation among ACS TQIP-Pediatric centers: Understanding prevalence of use, associated center characteristics, training factors, and implementation barriers. *Am J Surg* 6/2018
- Reporting and evaluating wait times for urgent hip fracture surgery in Ontario, Canada. *CMAJ*. 6/2018
- Standardization of perioperative urinary catheter use to reduce postsurgical urinary tract infection: an interrupted time series study. *BMJ Qual Saf*. 5/2018
- What is the quality of reporting on guideline, protocol or algorithm implementation in adult trauma centres? Protocol for a systematic review. *BMJ Open*. 5/2018
- Impact of ICU Structure and Processes of Care on Outcomes After Severe Traumatic Brain Injury: A Multicenter Cohort Study. *Crit Care Med* 7/2018
- Practical Guide to Surgical Data Sets: National Trauma Data Bank (NTDB). *JAMA Surg*. 4/2018
- Nationwide trends in mortality following penetrating trauma: Are we up for the challenge? *J Trauma Acute Care Surg*. 7/2018
- The impact of perioperative blood transfusions on short-term outcomes following hepatectomy. *Hepatobiliary Surg Nutr*. 2/2018
- Increased Rate of Long-term Mortality Among Burn Survivors: A Population-based Matched Cohort Study. *Ann Surg*. 2/2018
- Canceled to Be Called Back: A Retrospective Cohort Study of Canceled Helicopter Emergency Medical Service Scene Calls That Are Later Transferred to a Trauma Center. *Air Med J*. 2018 Mar - Apr

Presentations:

- Visiting Professor, Maclean Center, University of Chicago: "Ethical Issues in Violence, Trauma and Trauma Surgery", Chicago May 2018
- Visiting Professor, UT Southwestern Medical Centre: "Lessons learned from the American College of Surgeons Trauma Quality Improvement Program", Dallas December 2018

Illana Perlman (Social Worker, SHSC) Publication: "10 Years Later...Are Rotational Field Placements Working?" *Clinical Social Work Journal*, 1-10

Sharon Ramagnano (Manager of Trauma Services, SHSC)

Awards:

- Best Rapid Fire Presentation: Trauma Association of Canada – Toronto Conference February 2018: "How are we going to harm the next trauma patient? A quality improvement initiative" and Best Oral Presentation: "Implementing a Regional Trauma Network in a complex system."
- Poster First Place Winner: Interprofessional Education and Interprofessional Care Showcase – Toronto June 2018: "Collaborating on an EMS patient outcome report with level 1 trauma centres"

Publication: Stop the Bleed: Teaching citizens to be first responders when facing tragedy. *Journal of Emergency Nursing of Ontario*. Spring 2018

Presentations:

- Society of International Orthopedic Traumatology World Congress - Montreal October 2018: "P.A.R.T.Y. Program the Canadian Experience."
- Interprofessional Collaboration Showcase – Sunnybrook June 2018: "Stopping the bleed together: An interprofessional team response to improve public knowledge and confidence with uncontrolled bleeding recognition and intervention" and Poster Presentation: "Developing a patient outcome report between prehospital and Level 1 trauma centres."
- National Emergency Nurses Association of Canada Conference – Kelowna April 2018: "Fall from standing is a trauma?: Collaborating with EMS on a Patient Outcome Report to Improve Field Trauma Triage."
- TQIP Trauma Quality Improvement Program American College of Surgeons - Anaheim November 2018: Poster Presentation: "Stopping the bleed: A Canadian Response to Improve Public Knowledge and Confidence with Uncontrolled Bleeding Recognition and Intervention."
- Trauma Association of Canada Conference – Toronto February 2018: "How are we going to harm the next trauma patient? A quality improvement initiative" and "Implementing a Regional Trauma Network in a complex system."

Sandy Trpcic (Trauma Research Manager, SMH) Award: St. Michael's Hospital Community of Service Award for her outstanding contribution to the hospital and to core values of Human Dignity, Excellence, Compassion, Social Responsibility, Community of Service, and Pride of Achievement.

Upcoming Events 2019

Please join us for the upcoming

“MASS CASUALTY IN A CANADIAN CONTEXT”

Inter-disciplinary Trauma Conference

Friday June 14, 2019
 BMO Institute for Learning, Toronto, ON

Visit traumaconference.ca for more details

Surgery
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MASS CASUALTY IN CANADIAN CONTEXT

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SickKids
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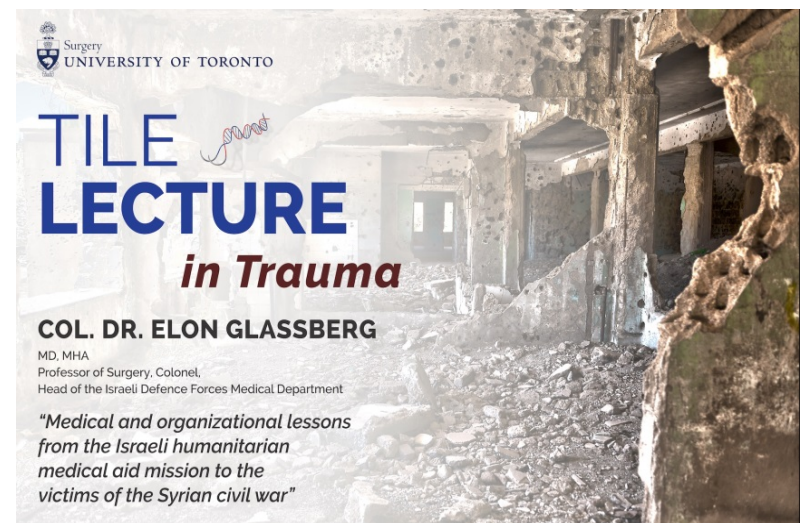
Sunnybrook
 HEALTH SCIENCES CENTRE

2018 U of T Tile Lecture

The U of T Trauma Program was honored to host an expert in pre-hospital trauma and military medicine – Col. Dr. Elon Glassberg. Dr. Glassberg is Head of the Israeli Defense Forces Medical Department and professor of surgery at the faculty of medicine in the Galilee (Bar-Ilan University) and an adjunct professor of surgery at the Uniformed Services University of the Health Sciences in Bethesda, Maryland, USA (USUHS).

On June 1st, 2018 he delivered a spirited U of T Department of Surgery Tile (named after the renowned orthopedic surgeon Dr. Marvin Tile) lecture on the topic 'Medical and organizational lessons from the Israeli humanitarian medical aid mission to the victims of the Syrian Civil War' to a packed house. Prof. Glassberg was involved in the Israeli humanitarian aid mission to the victims of the Syrian civil war as a provider, as a surgeon, and as the Medical Commander of the operation. Dr. Glassberg shared moving case studies of individuals that out of despair traveled to the border of their biggest enemies to receive medical care, and explained the challenges and ethical issues involved in caring for political enemies in need.

All in attendance appreciated the humanitarian efforts made at great cost, and learning from Col. Dr. Glassberg's expertise. It was a privilege to have him as our 2018 Visiting Professor in Trauma.



Stop the Bleed: Teaching the public to be first responders in Ontario

From Jan 1st 2017 to December 31 2017 there were 346 mass casualty shootings in the United States of America. Mass shootings are defined as four or more people shot in one event (Gun Violence Archive, 2018). When studying active shooter incidents from 2000 to 2013 the duration of the active shooter incident ended in 5 minutes or less with the majority ending in less than 2 minutes. When an event like this occurs, law enforcement are concerned with scene safety and threat suppression. Once they confirm there is no further risk it is only then that first responders, Emergency Medical Services (EMS) are allowed to respond. In fact, during the Columbine high school massacre in 1999, EMS response time was 40 min after the active shooter threat was cleared (Blair & Schweit, 2014). During these precious minutes the public must make life or death decisions and are tasked with helping the wounded to survive to stay alive and make it to definitive care. The public becomes the first responders.



Massive bleeding from any cause, but particularly from an active shooter or explosive event where a response is delayed can result in death. Following the events at Sandy Hook Elementary School in Newtown CT in 2012 and after the death of 20 innocent children, the Hartford consensus was established to review the pattern of injuries sustained as well as the scene response. The consensus was derived from a team of government and health care leaders, including representatives from the White House; the National Security Council; the Department of Homeland Security; the Federal Emergency Management Agency; law enforcement, including the Federal Bureau of Investigation; the Department of Defense; and prehospital and physician provider organizations (Hartford Consensus, 2015). At the time, President Obama tasked the group with creating a protocol for national policy to enhance survivability from an active shooter and intentional mass casualty events. The committee's first report, established a new algorithm for initial response to deadly injury. The acronym THREAT was created, which is built on the concept of **T**hreat suppression, **H**emorrhage control, **R**apid **E**xtrication to safety,

“Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has.” —

Margaret Mead

Assessment by medical providers, and **T**ransport to definitive care (Hartford Consensus, 2015). In order to address the 'H', hemorrhage control, the American College of Surgeons was tasked by Homeland Security under President Obama's direction with addressing the issue of public response at a scene and developing educational materials for dissemination to the general public. It was then that Stop the Bleed was developed with the concept of teaching the public simple techniques with the goal of saving a life. Similar to how the general public learns and performs CPR, the public must learn proper bleeding control techniques, including how to use their hands, dressings, and tourniquets. Victims can quickly die from uncontrolled bleeding, within five to 10 minutes. By providing civilian bystanders the skills and basic tools to stop uncontrolled bleeding in an emergency situation, lives would be saved. Stop the bleed focuses on teaching the public if you see something, do something. It teaches how to identify uncontrolled bleeding and techniques to stop the bleeding such as pressure dressings, packing, and effective tourniquet use.

The course ideally is taught to any public member who may work or be in areas of high risk such as train stations, large shopping centres, stadiums, concert venues, schools, airports and landmarks. The course is also designed to teach the general public the skills needed to help in any incident of bleeding such as car crashes, industrial, construction or even home or cottage potential injuries.

So what about Canada? In August 2017 Sunnybrook, being the first and the largest trauma centre in the country, became the first hospital in Canada to provide Stop the Bleed instructor and provider training. Led by Dr. Avery Nathens, Medical Director of Trauma and Surgeon In-Chief, four trauma team members from Sunnybrook Health Sciences Centre, were able to receive instructor certification in Chicago in May 2017.

In August 2017 the group taught their first provider class to Toronto City Hall Special Events Staff in preparation for Nuit Blanche, and on Nov 20th 2017 they were able to train over 150 Metrolinx staff consisting of Union station, Go Bus and Go Train employees. In January 2018 they launched a high school program as well as a monthly public provider course on site at Sunnybrook.

On July 7th 2018 it was an honor to be able to teach this program to over 70 Toronto Blue Jay staff members at Rogers Centre. The Sunnybrook Stop the Bleed team delivered the program content and hands on training as well as met with a small group of Blue Jay Nurses to provide instructor training. This was the first sports arena training in Canada. Our team was even able to get a behind the scenes tour and some glimpses of players warming up before the game.

For more information about Stop the Bleed please see www.bleedingcontrol.org

If you are interested in a provider course at Sunnybrook, or looking to start up your own program with some assistance, please see www.sunnybrook.ca/stopthebleed or contact the program at stopthebleed@sunnybrook.ca.

THE U OF T TRAUMA PROGRAM 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



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