Trauma Nova Scotia

Trauma. Stops. Here.

Annual Report 2016

WELCOME TO
TRAUMA NOVA SCOTIA
Annual Report 2016

Photo: TNS

Missing: Virginia Manuel

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ABOUT THIS REPORT

This report includes data on major trauma cases in Nova Scotia during the 2015/16 fiscal year. Program activities are reported for the 2016/17 fiscal year. All staff of Trauma Nova Scotia contributed information to this report. The report was prepared by Mete Erdogan.

Cover photograph: Chris MacFarlane (website) from the Rescue at Chebucto Head (see page 10)

TRAUMA NOVA SCOTIA
PROVINCIAL MEDICAL DIRECTOR'S MESSAGE

ROBERT S. GREEN, BSc, MD, DABEM, FRCPC, FRCP (Edin)

Trauma Nova Scotia (TNS) is committed to leading our province's trauma program, with a goal of providing the best patient care possible, no matter where an injury occurs. Our trauma system stretches from Yarmouth to Sydney, and also supports the care of trauma patients in PEI and New Brunswick. Through a highly coordinated system, we are able to identify and direct patients to the care that they require, from minor injuries managed at local facilities to major traumas requiring resuscitation and care at one of our two Level 1 trauma centres (the Queen Elizabeth II Health Sciences Centre [QEII HSC] and the Izaak Walton Killam [IWK] Health Centre) in Halifax. We are proud to have an inclusive trauma system of care, which is dedicated to returning our trauma patients back to their homes and families as soon as possible.

There have been numerous important events and accomplishments over the last year. Trauma Nova Scotia was the 2016 host for our national trauma conference, the Trauma Association of Canada (TAC) Annual Scientific Meeting & Conference. This meeting attracted hundreds of trauma specialists from across the world, with leading experts from the UK, USA, and Canada advancing our understanding and knowledge. We have dedicated ourselves to the education of all physicians, nurses, paramedics, and other health care professionals, with a focus on "team trauma courses". Our Rural Trauma Team Development Course (RTTDC) partners with colleagues in Emergency Health Services (EHS) and LifeFlight to bring education on team resuscitation skills and the coordination of trauma care to communities across the province.

As detailed in this 2016 Annual Report, we are pleased to see a reduction in injury-related hospital admissions in Nova Scotia. However, we note that overall mortality has increased slightly from the previous year. The reasons for this are unclear, but it is likely that there is work to be done on the inpatient side of our trauma care. Our "continuum of trauma care" illustrates that the resuscitation phase (i.e., from injury to transfer and assessment by our dedicated TNS Trauma Team) only accounts for 1% of a patient's path to recovery. Our inpatient trauma care requires more attention in order to maximize favorable patient outcomes.

I would like to thank my colleagues within TNS who work efficiently and diligently to keep our provincial trauma program running smoothly. We are truly blessed with an excellent and dedicated staff. Linda Warden takes care of all the administrative duties for the program. Linda is also responsible for scheduling our Trauma Team Leaders (TTLs) which is no small task. Beth Sealy continues to coordinate our NS Trauma Registry and works closely with Darlene Cathcart and Kathy Hartlen to record accurate data on all major trauma cases in the province, which we use to inform decisions and evaluate our quality of care. Kathy also leads trauma education in Nova Scotia, a daunting position, and travels tirelessly to sites across the province. Mete Erdogan coordinates our Quality and Research, and is responsible for helping supervise residents, fellows, and Dalhousie Medical School students during their research projects. Mete also designed and maintains our new website (www.trauma-ns.com) and is the talent behind this Annual Report - truly excellent work. We also welcomed Lewis Bedford, who is the Nova Scotia Health Authority (NSHA) Trauma Director. Together with Lewis, TNS is working closely with the NSHA to improve our trauma system. Lastly, we welcomed our first trauma fellow, Dr. Adam Harris, who is gaining trauma expertise as part of his Emergency Medicine training.

Change is inevitable as we move forward. This year, we are sad (and happy for her) that Ginny Manuel has retired after years of expert data registry support. In addition, our interim manager Susan Rafuse has returned to her prior position at EHS. We will greatly miss Ginny and Susan; their dedication and professionalism has shaped TNS as a national leader in trauma care.

It is a privilege and a pleasure to have a role in leading trauma care in our province. Despite some challenges, we continue to see positive attitudes and a willingness to help from clinicians, health care leaders and others across the province, which fosters an environment for the provision of excellent care. When we hear from patients about their experiences with our trauma system (as included in this report), we are confident our work is making a difference.

NSHA, CENTRAL ZONE TRAUMA MEDICAL DIRECTOR'S MESSAGE

SAM MINOR, MD, FRCSC, FACS

The QEII HSC Trauma Program is responsible for the initial resuscitation, evaluation and triage of trauma patients arriving at the Halifax Infirmary Hospital. As the only adult Level 1 trauma centre in Nova Scotia, we coordinate closely with Trauma Nova Scotia in order to serve the most severely injured patients in Nova Scotia and beyond. Our multidisciplinary Trauma Team consists of nurses, residents and physicians from general surgery, emergency medicine, orthopedic surgery, anesthesia, diagnostic imaging, and respiratory therapy. Our goal is to provide the highest quality of care for major trauma patients in Atlantic Canada.

Quality improvement through simulation has continued to be a major focus of our program. Each simulation that we have performed in the Charles E. Keating Trauma Room has identified areas for improvement which lead to changes in procedure to the benefit of our trauma patient care. Our bi-monthly multidisciplinary rounds have also continued to provide a variety of unique educational events ranging from journal review and case presentations to debates and trauma competitions.

This year has seen the implementation of new procedures within our radiology department including the use of direct to digital mobile X-ray units for every Trauma Team Activation and the implementation of a new trauma-specific stretcher that allows for film acquisition without moving the patient.

An inpatient trauma service is in the planning stages within the larger QEII HSC redevelopment plan and we are hopeful that once complete, our trauma patients will benefit from the provision of care coordinated by a single service. A consolidated inpatient service will allow for the specialization of multidisciplinary services, improve communication between consulting services, and ensure compliance with quality initiatives such as the tertiary survey. This remains a high priority for the future development of our program.

I am grateful to work with an incredible array of talented doctors, nurses, paramedics, respiratory therapists (RTs), X-ray technicians, educators and administrators who strive to make the QEII HSC Trauma Service a center of excellence for trauma patients in Atlantic Canada.

IWK TRAUMA MEDICAL DIRECTOR'S MESSAGE

DAFYDD A. DAVIES, MD, MPhil, FRCSC

The IWK Health Centre takes a lead role in the management of children with complicated medical conditions. Trauma is no exception to this rule. Whether children are transferred here for assessment or definitive care, we strive to provide the best possible care and a positive experience for both children and their families. In order to maintain the highest possible level of care for injured children, Trauma Nova Scotia and the IWK Health Centre Trauma Service work closely together as part of our trauma system in NS and the Maritime provinces.

Our partnership with Trauma Nova Scotia enables us to obtain valuable information on pediatric injuries through the Nova Scotia Trauma Registry which we use for a variety of purposes including quality assurance, research, and strategic planning. We are also able to disseminate pediatric trauma education throughout the province via the Rural Trauma Team Development Course and other educational activities. This robust collaboration facilitates the establishment of optimal identification and resuscitation practices throughout the Maritime Provinces.

As Medical Director of the IWK Trauma Program, I am grateful to Trauma Nova Scotia for their ongoing support of pediatric trauma care in the province and we will continue to work together to ensure that state of the art trauma care is provided to injured children and adolescents.

> "OUR GOAL IS TO PROVIDE THE HIGHEST QUALITY OF CARE FOR MAJOR TRAUMA PATIENTS IN ATLANTIC CANADA."

HISTORY

In 1997, a Provincial Trauma Program Development Team was established by EHS, a division of the Nova Scotia Department of Health, to provide advice for the establishment of a Provincial Trauma Program. This group, comprising trauma stakeholders (consumers, care providers, and administrators), identified a number of key strategies and areas of focus for trauma program development. Based on these recommendations, EHS launched the Nova Scotia Trauma Program in 1997. In 2016, the name of the progam was changed to Trauma Nova Scotia.

TNS is located within the NSHA Central Zone under the strategic direction of EHS and the Nova Scotia Department of Health and Wellness.

LEADERSHIP · RESEARCH · REGISTRY · EDUCATION

TRAUMA NOVA SCOTIA

MISSION

Trauma Nova Scotia facilitates the provision of optimal trauma care through leadership in patient care, education, research, injury prevention and the continuous development and improvement of our trauma system.

Photos: EHS

TNS WEBSITE

New Online Platform for Trauma News, Information, and Resources

Trauma Nova Scotia launched a new website in 2016. Designed and maintained in-house, the site contains a wide variety of information for trauma care professionals, trainees, researchers, media, and the public. Content includes news on trauma-related issues and events, conferences, research, and important developments in trauma care at the local, provincial, and national levels.

There is information regarding the Nova Scotia Trauma Registry (NSTR) and the process for requesting data. The TNS Education Planner is regularly updated with upcoming educational activities offered by TNS. There are guidelines, policy statements, and other resources available for download by trauma care professionals.

Trauma Nova Scotia was also active on Twitter and YouTube:

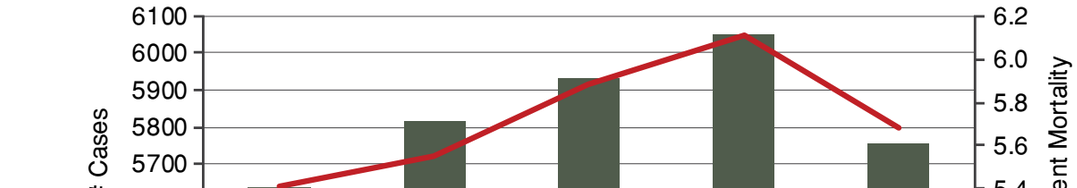
@TraumaNSMedical
@EducateTNS
@ResearchTNS

TNS YouTube Channel (link)

Photo: TNS

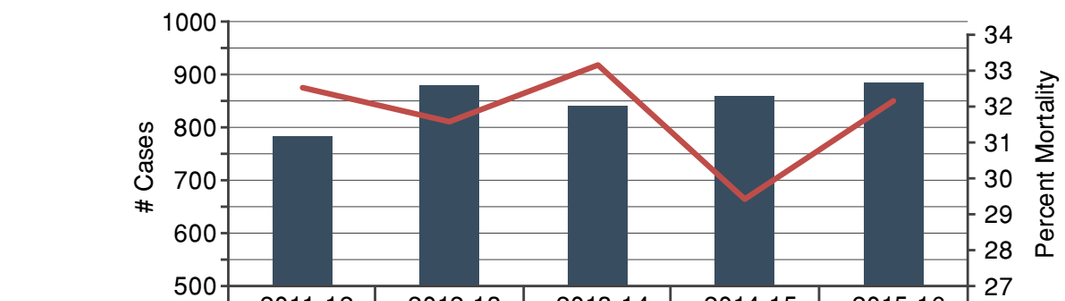
PROVINCIAL RATES OF INJURY AND MAJOR TRAUMA, 2011-2016

All Patients Admitted to Hospital in Nova Scotia for any Injury



	2011-12	2012-13	2013-14	2014-15	2015-16
# Cases	5636	5816	5932	6051	5756
% Deaths	5.4	5.6	5.9	6.1	5.7

Major Trauma Cases in Nova Scotia



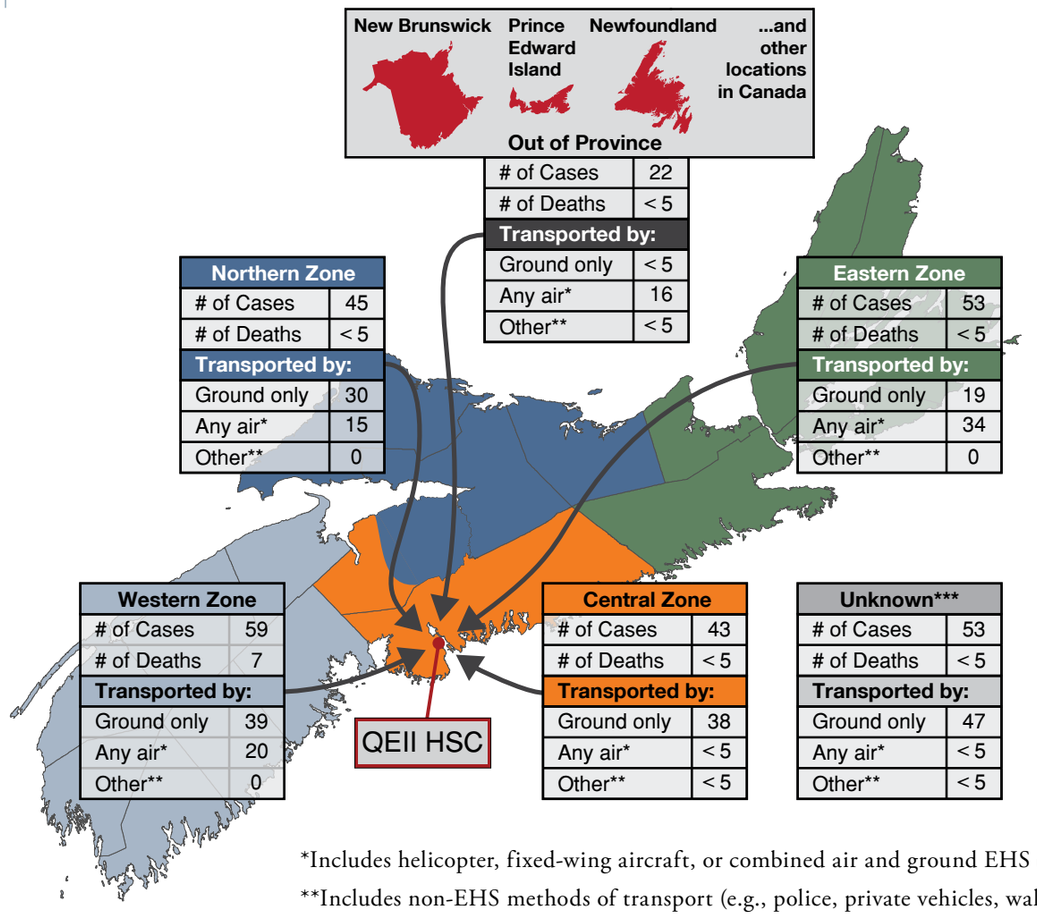
	2011-12	2012-13	2013-14	2014-15	2015-16
# Cases*	784	881	841	860	884
% Deaths**	32.5	31.6	33.2	29.4	32.1

*Using Abbreviated Injury Scale '05 only.

**Includes deaths at the scene.

TRANSPORT TO THE QEII HSC

Trauma Patients Transported by EHS From a Referring Facility to the QEII HSC, Grouped by Incident Location



*Includes helicopter, fixed-wing aircraft, or combined air and ground EHS transport.

**Includes non-EHS methods of transport (e.g., police, private vehicles, walk-ins).

***Trauma cases for which information on the incident location was unavailable.

Photo: EHS

PATIENTS WHO SUSTAIN A MAJOR TRAUMATIC INJURY ARE TRANSFERRED TO THE QEII HSC FOR ASSESSMENT BY OUR TRAUMA TEAM FROM ALL OF NS AND BEYOND

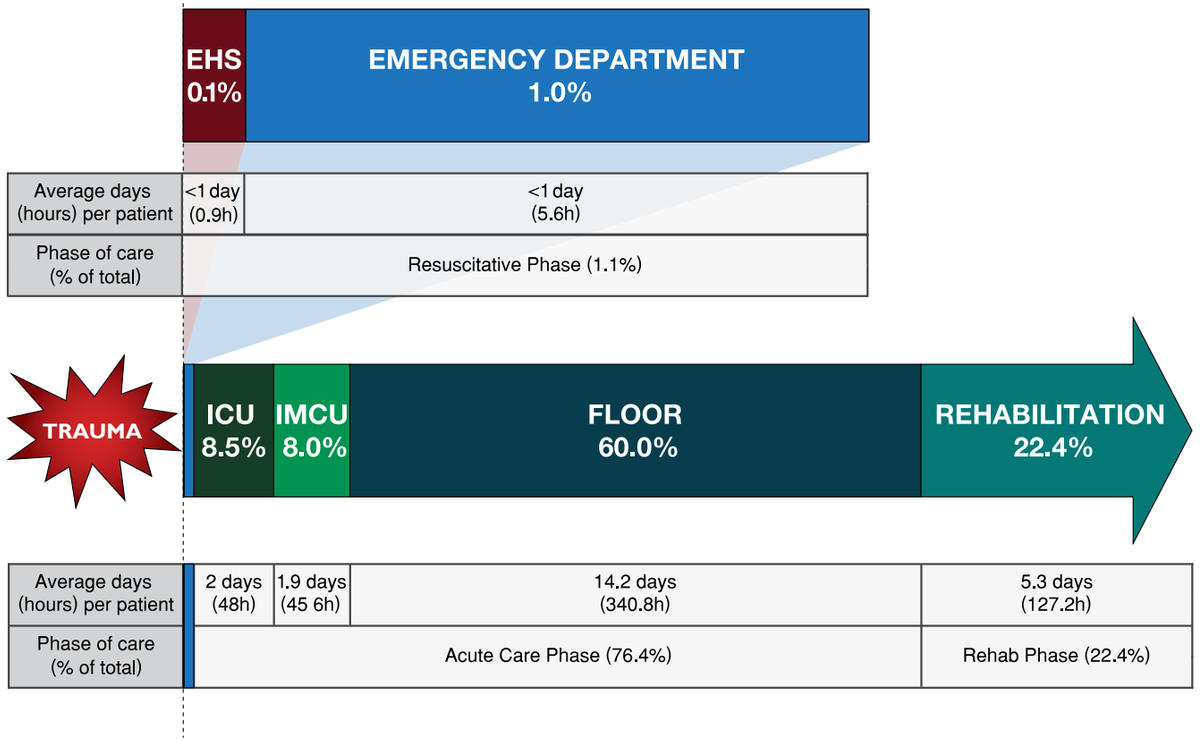
THE CONTINUUM OF TRAUMA CARE

Average Time Per Patient for Each Phase of Trauma Care

EHS Arrival at the Scene

Average prehospital time direct to QEII HSC = 51.1 minutes (0.9h) [*shown below*]

Average prehospital time via intermediate facility = 5.9 hours [*not shown*]



EHS = Emergency Health Services; ICU = Intensive Care Unit; IMCU = Intermediate Care Unit

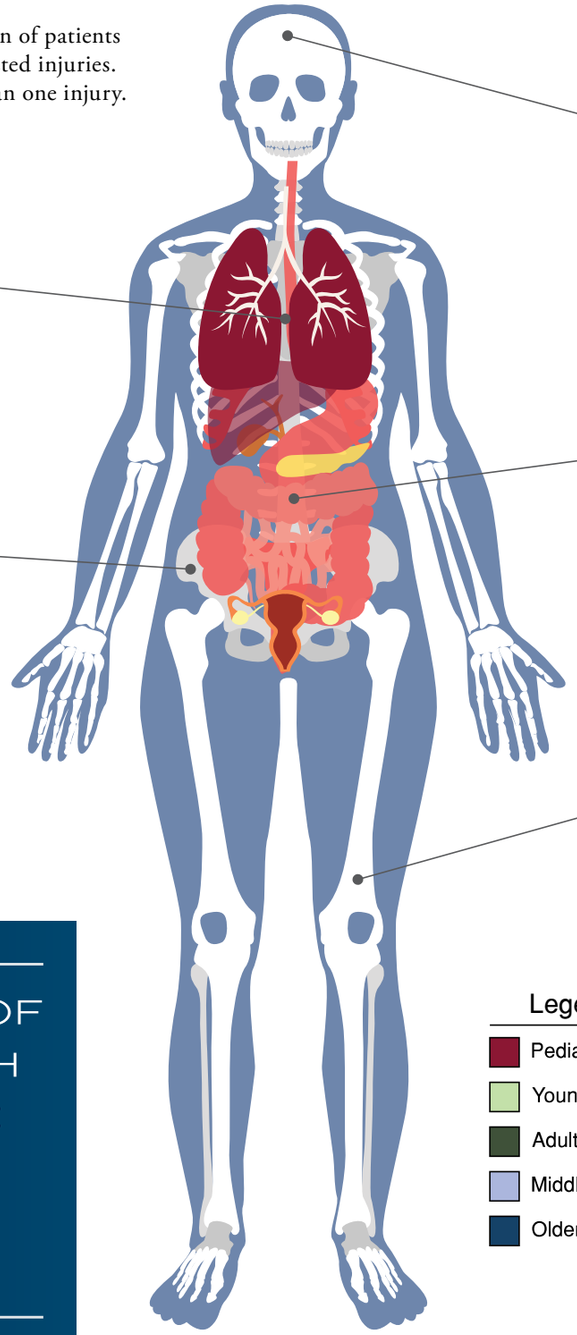
Photo: Mac Mackay

RESUSCITATION IS ONLY 1.1% OF THE TOTAL CONTINUUM OF TRAUMA CARE

PATTERNS OF INJURY BY AGE

Selected Injury Types by Age Group, 2015-2016

Note: Data shows proportion of patients in each age group with selected injuries. Many patients had more than one injury.



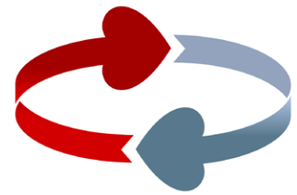
PROPORTION OF PATIENTS WITH A TRAUMATIC BRAIN INJURY INCREASED WITH AGE

ORGAN DONATION IN TRAUMA

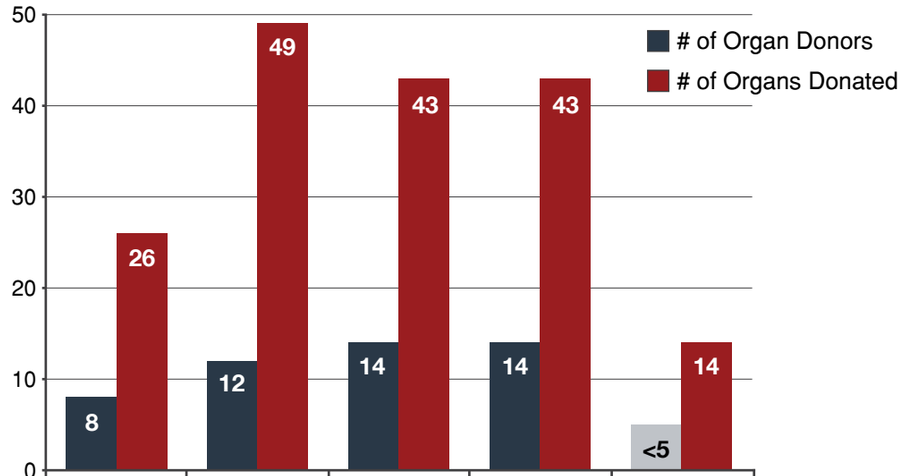
Organ donation is the only therapeutic option for some patients. Unfortunately, the number of patients on transplant waiting lists far exceeds available organs.

Trauma patients represent a large pool of potential organ donors. While the tragedy of an unanticipated loss is tremendously unfortunate for the trauma victim, their family, and their loved ones, these situations present an opportunity for the donation of organs with potentially lifesaving benefits to individuals in need of a transplant. The family of the trauma victim may be comforted at a time of shock and grief by knowing that their loss has helped to renew the lives of others.

In 2015, TNS started working in collaboration with the Legacy of Life Program and the Multi-Organ Transplant Program at NSHA to investigate the epidemiology of organ donation by trauma patients in Nova Scotia, assess for factors predictive of successful organ donation, and identify any gaps in the organ donation process.



Deaths at the QEII HSC, 2011-2016



	2011-12	2012-13	2013-14	2014-15	2015-16
Total # Deaths	43	73	78	58	46

ORGAN DONATION BY DECEASED TRAUMA PATIENTS DECREASED IN 2015/16. ONGOING RESEARCH AT TNS IS INVESTIGATING WAYS TO IMPROVE RATES OF DONATION IN TRAUMA

Rescue at Chebucto Head

In February of 2017, photographers Allan Zilkowsky and Chris MacFarlane were hiking on the Chebucto Head trail in Duncans Cove, about 30 minutes outside of Halifax. It was early on a Saturday morning and the friends were on a mission to capture the sun rising over the Atlantic Ocean. After taking their pictures and packing up their gear, they turned to head for their car when Zilkowsky slipped on an icy rock. He knew right away something was wrong. They were a 20-minute hike from the entrance to the trail and it was difficult footing the entire way.

Zilkowsky called for help using his phone and waited for first responders to arrive. When they arrived, the firefighters determined that an onshore rescue would not be safe due to the ice and snow. Instead, they would make their approach from the water using a rescue boat. Zilkowsky was helped by firefighters into the boat, and then transferred to the Canadian Coast Guard vessel Sambro. The Coast Guard transported Zilkowsky to a waiting ambulance in Ketch Harbour, and he was taken to hospital where he had surgery.

Zilkowsky had high praise for first responders in the field and medical staff at the hospital. He has recovered well from his injury and is back behind the lens, hunting for the perfect photograph.

Photos: Chris MacFarlane (website)

Bicyclist Hit-and-Run

In August of 2016, Tim Lane was biking in the morning along St. Margaret's Bay Road in Halifax. He was on his way to work when he was hit from behind by a passing pickup truck, sending him 15 feet into the air. As a result, he had a fractured skull, jaw, and orbital bone around his eye. He also suffered punctured lungs, broken ribs, a ruptured spleen, and a broken femur bone.

Fortunately for Lane, an off-duty police officer called an ambulance, and he was taken to the QEII HSC by ambulance and remained in the hospital for nearly three weeks. Lane was placed in an induced coma and did not regain awarenesss of his whereabouts until five days following the incident.

He remembered little from the accident; his only memories were from getting ready for work the day before. The patient and his family are profoundly grateful for the care they received from EHS, the Trauma Team, and all staff in the Emergency Department and the Intensive Care Unit.

Lane is back on his feet and recovering well from his injuries. Unfortunately, the driver of the pickup remains at large. The cyclist is urging others to be careful and pushing the city to increase safety on the roads for people who ride a bicycle.

Photos: Tim Lane

TRAUMA REGISTRY

The Nova Scotia Trauma Registry (NSTR) is an invaluable resource that enables Trauma Nova Scotia and others to conduct quality assurance, engage in injury surveillance, perform research and develop injury prevention strategies. In addition, trauma registries allow administrators and clinicians alike to engage in evidence-based decision making, policy development and program planning.

Our database is a population-based trauma registry, capturing data on major traumas from hospitals across the entire province. The information is collected from the QEII HSC, the IWK Health Centre, the eight regional hospitals and the Nova Scotia Medical Examiner Service. The registry has been province-wide since April 2000 and now houses over 14,500 records of the most severely injured patients, with the capacity to collect over 2,200 data elements per record.

Trauma Nova Scotia received over 30 requests for information from the NSTR in 2016, including several projects involving linkages with other databases to create more robust datasets. We now have five years of data using the 2005 version (update 2008) of the Abbreviated Injury Scale (AIS) for calculating the Injury Severity Score (ISS). The number of cases which meet the NSTR inclusion criteria using AIS '05 is less overall compared with the previous version (AIS '90).

Data from the NSTR has been utilized for award winning research, publications, presentations at national and international conferences, public policy advocacy, program performance indicators and evaluation. Masters and PhD candidates have also used the data in their thesis projects. Information can be made available to clinicians, researchers, and injury prevention organizations by completing a data request form and complying with the associated privacy and release of information policies.

http://www.trauma-ns.com/registry

NSTR information request forms may be obtained by contacting us via email: nstrauma@nshealth.ca

Beth Sealy, BA, CHIM
Coordinator,
NS Trauma Registry

Darlene Cathcart, RN
Informatics Nurse

Kathy Hartlen, RN
Education Coordinator

Virginia Manuel, CHIM, ICP
Informatics Paramedic
(Retired)

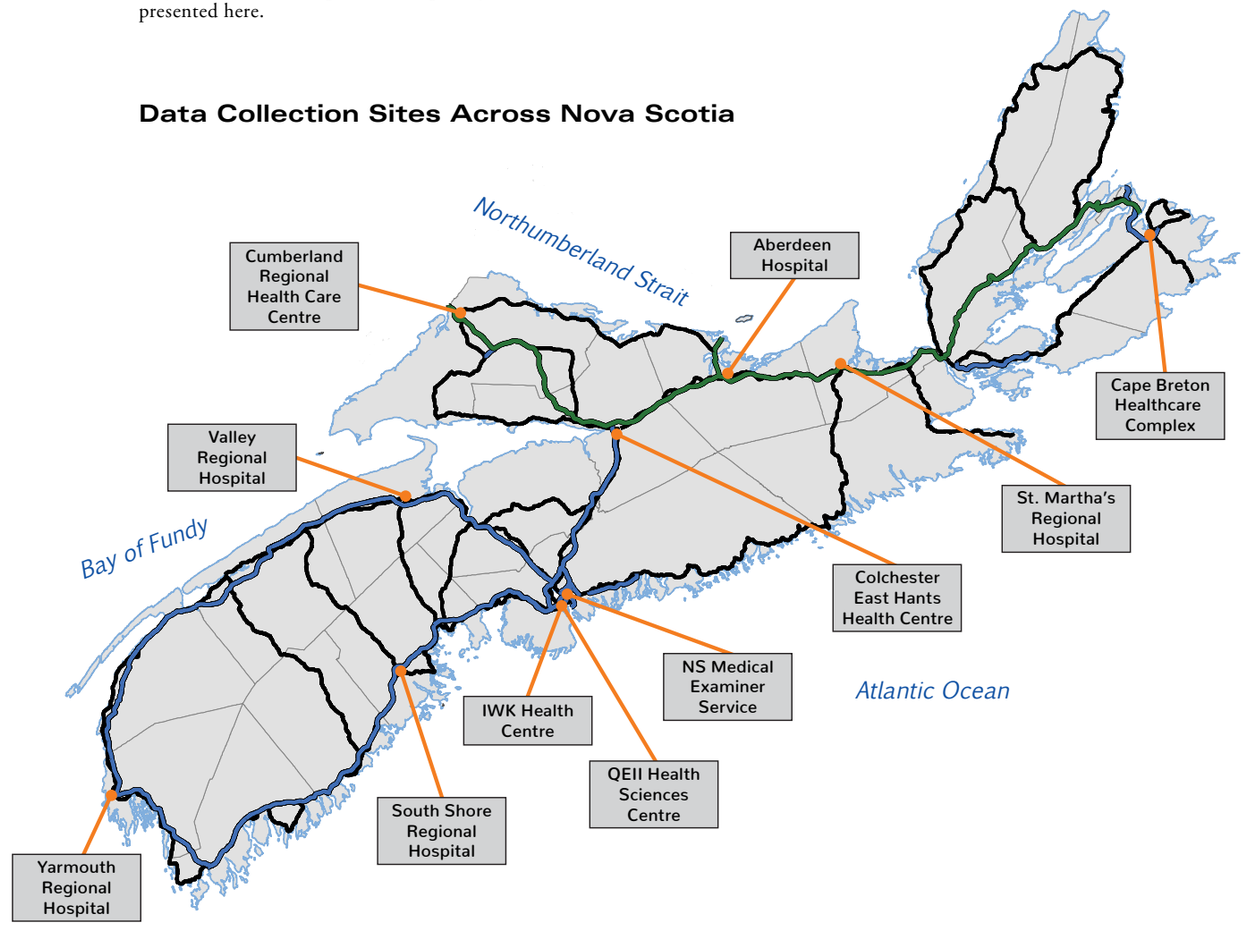
Definition of "Major Trauma" and NSTR Inclusion/Exclusion Criteria

TNS defines major trauma as injury resulting from the transfer of energy (e.g., kinetic, thermal) with an ISS of 12 or greater and an appropriate ICD External Cause of Injury Code, as well as penetrating injury cases with an ISS of 9 or greater. Drownings, hangings, suffocations, and asphyxias are included if they have an ISS of 12 or greater. The inclusion criteria for the NSTR are shown to the right.

Excluded from the NSTR are injuries which do not meet this criteria, medical errors, and discharges from the Emergency Department which were not Trauma Team Activations. TNS stopped collecting AIS '90 codes in the NSTR on March 31, 2015. Starting in 2016, the inclusion of major trauma cases in the NSTR was based only on AIS '05 coding and the eligibility criteria presented here.

Events Included in the Nova Scotia Trauma Registry
ISS ≥ 12 for blunt, burn, hanging or drowning/asphyxia trauma
ISS ≥ 9 for penetrating trauma
Trauma Team Activation with/without admission to acute care facility, regardless of ISS
Death in the Emergency Department due to an appropriate mechanism of injury, regardless of ISS
Death at scene due to an appropriate injury mechanism, regardless of ISS
Predetermined inclusion at another trauma centre, where the individual has been treated and admitted, prior to transfer to a second or third trauma centre for continuing care of the initial injury

Data Collection Sites Across Nova Scotia



EDUCATION

Trauma Nova Scotia delivers trauma education opportunities to Inter-Professional health care providers across our province. The goal of these programs is to increase trauma knowledge and skills. These provide a communication network within the province to improve our trauma system and address best practices in trauma care.

Our programs are approved as Continuing Medical Education (CME) through the Dalhousie University CME office. This year, planning and registration for educational events was made easier with the introduction of the TNS Education Planner on the TNS website.

Courses

The Advanced Trauma Life Support (ATLS) Course teaches clinicians how to assess a patient's condition, resuscitate, stabilize, and arrange interfacility transfers in our trauma system. TNS also offered the ATLS Instructors Course to help develop future ATLS instructors by learning educational principles and how to properly facilitate an ATLS Course.

In addition, the RTTDC has been taught at sites across the province. This full-day course emphasizes a team approach to the initial evaluation and resuscitation of the trauma patient at a rural facility and includes practical skills stations to teach important techniques.

Clinical Rounds and Webinars

This year, TNS continued to offer Inter-Professional Clinical Trauma Rounds, both for pediatric and adult trauma. These events included reviews of significant trauma cases in the province, presentations of important trauma research, and lively debates. TNS also offered a number of well-attended online webinars that were presented by local physicians on various trauma-related topics.

Kathy Hartlen, RN
Education Coordinator

http://www.trauma-ns.com/education

TNS Education Planner

ATLS Advanced Trauma Life Support

Participant/Refresher Course
Date: Friday, March 24th - Sunday March 26th, 2017
Time: 17:00 on Friday - 14:30 on Sunday
Location: Bethune Building, VG Site, QEII Health Sciences Centre, Halifax

Register

ICTR Inter-Professional Clinical Trauma Rounds

Date: Tuesday, April 4th 2017
Time: 17:00 - 18:00
Location: RBC Theatre, QEII Health Sciences Centre
Topic: The Great Debate

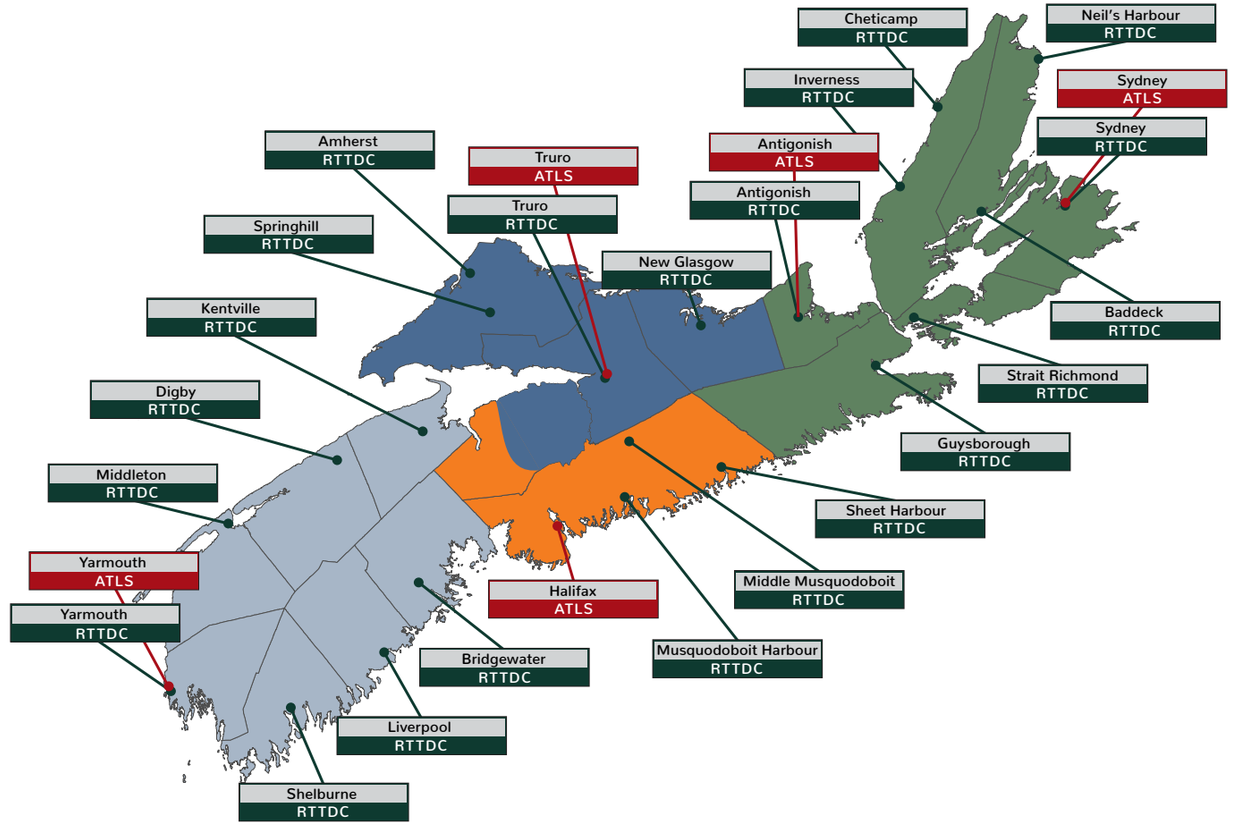
Trauma Education Committee

(Shown left to right)
Sam Jessula
Dafydd Davies
Stewart Forbes
Dave Wilson
Kathy Hartlen
Rob Green
Adam Harris
Sam Minor

(Not shown)
Jonathon Brooks
Sam Campbell
Nancy Connor
Katie Eddy
Susan Rafuse
Janet Lake
Janet McIntyre

Photo: TNS

ATLS and RTTDC Courses Provided Across Nova Scotia, 2014-2016



Simulation Training

Simulation training offers a "controlled" environment for individuals to safely acquire and practice skills, and learn how to work together as a team during critical situations. This form of training is performed at the QEII HSC in dedicated simulation labs (Emergency Department Simulation Bay, Atlantic Health Training and Simulation Centre, and the Skills Centre for Health Sciences).

On a larger scale in the QEII HSC, simulation training takes place as ***in situ*** hospital-wide simulations, starting at the pre-hospital phase and continuing through arrival at the trauma bay, initial resuscitation of the "patient", and transfer to the operating room. These ***in situ*** simulations have enabled us to identify latent safety issues, and they have proven to be valuable learning experiences for the trauma program, stakeholders, and all participants.

In addition, simulation training is offered to trauma care professionals across Nova Scotia via the EHS Mobile Simulation Unit. The vehicle is equipped with technology that simulates a wide range of trauma-related scenarios, as well as a video recording system that enables the facilitator to go back and review the simulation with the learner. This mobile training platform was present at RTTDC events this year and was a big hit with participants.

Photos: TNS

Photo: TNS

Photo: Mete Erdogan

Pediatric Trauma Education

Our pediatric population is cared for by a dedicated group at the IWK Health Centre, and we enthusiastically lead pediatric trauma educational efforts and activities both within our facility and across the province. At the national level, pediatric Trauma Team Leaders Dr. Dafydd Davies and Dr. Natalie Yanchar were integral to the success of the pediatric trauma stream at the 2016 TAC conference hosted in Halifax, which was attended by many of our allied health providers.

Dr. Davies continues to promote excellent pediatric trauma care, speaking at the annual IWK Pediatric Emergency Care Conference and three of the RTTDCs. Other important conferences this year included Translating Emergency Knowledge in Kids (TREKK), which is a network of pediatric emergency specialists who provide evidence-based, tailored education to staff in facilities that care for pediatric patients but are not solely pediatric centres. TREKK days were held in Truro and Sheet Harbor, with the Pediatric Trauma Coordinator participating as faculty.

Within the IWK Health Centre, Multidisciplinary Trauma Rounds were held four times this year. Presenters included Trauma Team Leaders, the Pediatric Trauma Coordinator, and the Clinical Pharmacist for the Emergency Department (ED). Topics ranged from pain management in trauma to clinical decision rules for computerized tomography (CT) scanning.

The "Trauma Education Orientation" involving a full day of lectures and simulation training for nursing staff in the IWK ED occurred again this year. The Pediatric Trauma Coordinator worked closely with the ED Clinical Leader Development to ensure that appropriate topics were covered.

Finally, we conducted multiple Trauma Simulation Sessions this year. These multidisciplinary sessions included ED nurses, RTs and Pediatric Emergency Fellows, and highlighted important clinical and communication skills as well as crisis resource management during a Trauma Team Activation. Based on the success of these simulations, additional sessions will be scheduled on an ongoing basis.

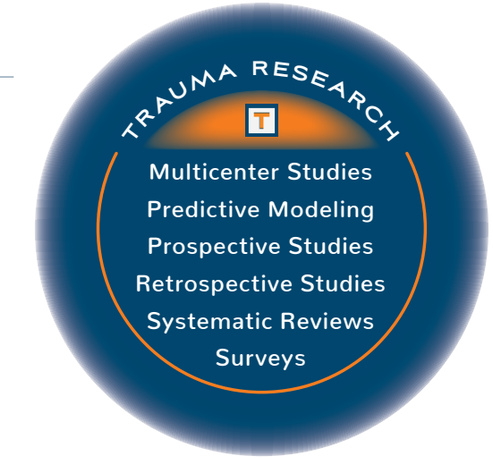
Janet Lake, RN, BN
Trauma Coordinator, IWK
Trauma Care Program

QUALITY & RESEARCH

The Quality & Research Coordinator was actively engaged in performing quality assurance projects for TNS in order to ensure excellent care is provided by our trauma program. This has included the careful review of documents and other materials prepared by the program, as well as analysis and interpretation of data from the NSTR intended for use in policy, guidelines, and media briefings. These activities are ongoing and ensure that the work accomplished by TNS continues to meet the highest possible standards of quality.

TNS also conducts research on a broad range of topics associated with traumatic injuries, trauma care, and trauma system performance. These commonly take the form of retrospective studies using data from the NSTR (often linked with other data sources), prospective studies to determine the impact of clinical interventions, predictive modelling to assess for factors associated with outcomes of interest, systematic reviews to synthesize all existing evidence regarding a specific research question, and surveys to better understand the attitudes and behaviours of trauma care professionals, patients, and the public at large.

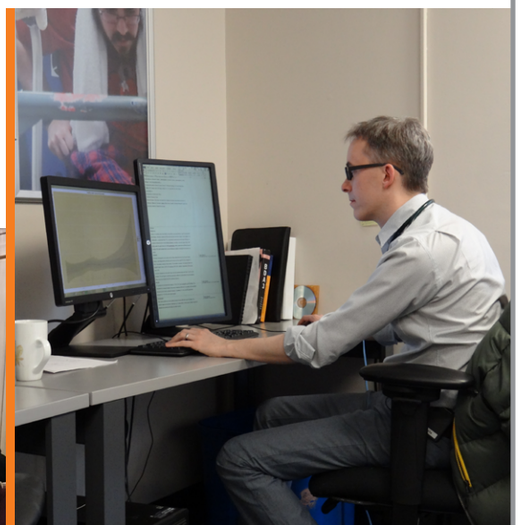
Investigations and quality projects performed by TNS could not be completed without the contributions of collaborating physicians, residents, students and administrators, both locally and nationally. In 2016, TNS published multiple studies and presented research at local, national, and international conferences. New areas of interest this year included distracted driving related to use of mobile devices, development of post-intubation hypotension in trauma patients, and deceased organ donation by trauma patients.



https://www.trauma-ns.com/research

Photos: TNS

Mete Erdogan, PhD, MHI
Quality & Research Coordinator



Photos: TNS

Published Manuscripts

- Use of intraosseous devices in trauma: a survey of trauma practitioners in Canada, Australia and New Zealand (Canadian Journal of Surgery)
- A traumatic tale of two cities: a comparison of outcomes for adults with major trauma who present to differing trauma centres in neighbouring Canadian provinces (Canadian Journal of Emergency Medicine)
- Development of a model to quantify the spatial accessibility of a Canadian trauma system (Canadian Journal of Emergency Medicine)
- Vasopressor use following traumatic injury: protocol for a systematic review (BMJ Open)

Manuscripts Under Review

- Increased mortality in trauma patients who develop post-intubation hypotension (Journal of Trauma and Acute Care Surgery)
- Road traffic injuries and fatalities among drivers distracted by mobile devices: a systematic review (Traffic Injury Prevention)
- Age of transfused blood in critically ill adult trauma patients: a pre-specified nested analysis of the ABLE trial (Critical Care)
- Prevalence and predictors of alcohol testing in trauma team activation patients at a Canadian tertiary trauma center (Western Journal of Emergency Medicine)
- A traumatic tale of two cities: Does EMS level of care and transportation model affect survival in trauma patients transported to level 1 trauma centres in two neighbouring Canadian provinces (Emergency Medicine Journal)
- Prognostication in critically ill patients with severe traumatic brain injury: The TBI-Prognosis multicenter feasibility study (BMJ Open)
- Risk factors for adverse outcomes in older adults with blunt chest trauma: a systematic review (Canadian Journal of Emergency Medicine)
- Effect of an emergency medicine resident as team leader on outcomes of trauma team activations (Canadian Journal of Emergency Medicine)

Selected Research Studies in Progress

- Characteristics and predictors of deceased organ donation following traumatic injury in Nova Scotia: a retrospective analysis
- An investigation of the health and economic outcomes of alcohol-related traumatic brain injury in Nova Scotia
- Alcohol-related major trauma recidivism in Nova Scotia: a retrospective analysis
- Surgeon versus non-surgeon trauma team leader: a multicenter cohort study
- A characterization of major adult sport-related trauma in Nova Scotia, 2000-2016
- Effect of hypotension in trauma: a systematic review
- Traumatic brain injury recidivism in Nova Scotia: a retrospective analysis
- Potential utility of REBOA for trauma patients in Canada
- Impact of a massive transfusion protocol in Nova Scotia
- The role of simulation in trauma education

TRAUMA TEAM

Nova Scotia has two Level 1 trauma referral centres, both of which are located in Halifax. The QEII HSC is the site of our multidisciplinary Adult Trauma Team. This trauma team manages adult patients (age ≥ 17 years) from all over Nova Scotia, as well as seriously injured patients from Prince Edward Island and New Brunswick.

Our pediatric trauma population is supported by our Pediatric Trauma Team located in the IWK Health Centre. Children from all over the Maritimes can be referred to the Pediatric Trauma Team for advanced care.

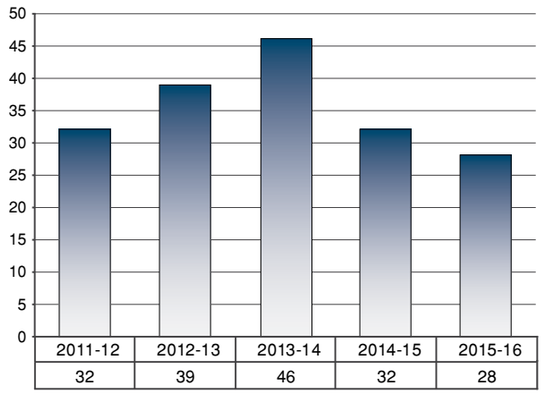
TNS is responsible for the coordination and development of Trauma Team Leaders (TTLs) and Resident Trauma Team Leaders (rTTLs), and provides ongoing guidance and support to these physicians. The rTTL is a trainee who works closely yet semi-independently with the TTL; this role was introduced at the QEII HSC in 2014.

We strive for rapid triage and referral of all major trauma patients in Nova Scotia. Our on-call trauma team leaders can provide immediate advice to clinicians who are managing injured patients anywhere in the Maritimes.

Our trauma system can be easily accessed by contacting one of our communication paramedics at 1-800-743-1334 on a 24 hour basis. Please note that both the Pediatric Trauma Team and the Adult Trauma Team can be contacted through the same number.

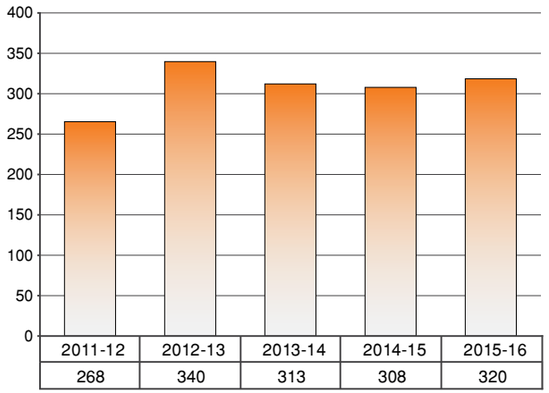
http://www.trauma-ns.com/professionals

Pediatric Trauma Team Activations at the IWK Health Centre



2011-12	2012-13	2013-14	2014-15	2015-16
32	39	46	32	28

Adult Trauma Team Activations at the QEII Health Sciences Centre



2011-12	2012-13	2013-14	2014-15	2015-16
268	340	313	308	320

TRAUMA TEAM LEADERS

Dr. Rob Green
Critical Care
Emergency Medicine
Trauma

Dr. Kirk Magee
Emergency Medicine
Trauma

Dr. John Ross
Emergency Medicine
Trauma

Dr. Dafydd Davies
Pediatric General &
Thoracic Surgery
Trauma

Dr. Sam Minor
Critical Care
General Surgery
Trauma

Dr. David Petrie
Emergency Medicine
Trauma

Dr. Natalie Yanchar
Pediatric General Surgery
Trauma

Dr. Sam Campbell
Emergency Medicine
Trauma

Dr. Chad Coles
Orthopaedic Surgery
Trauma

Dr. Katrina Hurley
Pediatric Emergency
Medicine
Trauma

Dr. Andrew Travers
Emergency Medical Services
Emergency Medicine
Trauma

Dr. Janet MacIntyre
Emergency Medicine
Trauma

Dr. Sean Christie
Neurosurgery
Trauma

Dr. Rodrigo Romao
Pediatric General &
Thoracic Surgery
Trauma

Dr. Jessica Mills
Pediatric General &
Thoracic Surgery
Trauma

Dr. George Kovacs
Emergency Medicine
Trauma

Dr. Matt Smith
Vascular Surgery
Trauma

Dr. Mike Biddulph
Orthopaedic Surgery
Trauma

Dr. Luke Gauthier
Pediatric Orthopaedics
Trauma

Dr. Ron El-Hawary
Pediatric Orthopaedics
Trauma

ADULT TTLS

PEDIATRIC TTLS

Photo: TNS

Photo: EHS

FUTURE PLANS AND EVENTS

Trauma-Related Conferences in 2017/18

- Department of Emergency Medicine Research Day. Dalhousie University, Halifax, NS. May 10 2017.
- Canadian Association of Emergency Physicians Annual Conference, Whistler, BC. June 3-7 2017.
- Atlantic Trauma and Emergency Medicine Conference, Moncton, NB. September 21-23 2017.
- Trauma Association of Canada Annual Scientific Meeting & Conference, Toronto, ON. February 22-23 2018.

TNS Newsletter

In 2017, TNS will begin circulating an electronic Trauma newsletter on a quarterly basis. Updates on provincial trauma care and upcoming events will be provided.

Research in Medicine (RIM) Students

TNS continues to support young trauma researchers through the RIM Program at Dalhousie University. In 2017, we will work with three first-year medical students on research projects related to organ donation in trauma patients.

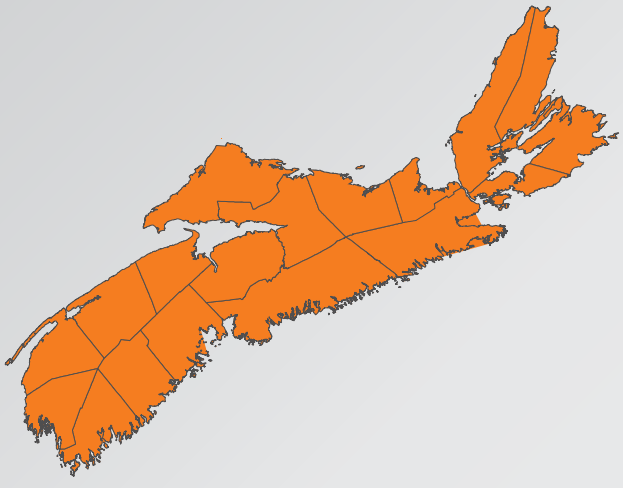
Canadian Resuscitation Outcomes Consortium

In collaboration with the Division of EMS, Department of Emergency Medicine at Dalhousie University, TNS is taking steps to make Nova Scotia a new site for the Canadian Resuscitation Outcomes Consortium (CanROC). The aim of this national resuscitation clinical research program is to collect prehospital and in-hospital data on patients with cardiac arrest or life threatening traumatic injury and use it to perform research that leads to higher survival rates and better outcomes in these critically ill patients.

Linda Warden, CAP-OM
Administrative Assistant
(Retired)

A special thank-you to Linda and Ginny who both retired this past year after many years of service to Trauma Nova Scotia. You will be missed!

Virginia Manuel, CHIM, ICP
Informatics Paramedic
(Retired)



Trauma Team Activation

1-800-743-1334

Trauma Nova Scotia

TRAUMA. STOPS. HERE.

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