

ANNUAL REPORT

2020/21

NOVA SCOTIA HEALTH TRAUMA PROGRAM



NOVA SCOTIA HEALTH TRAUMA PROGRAM

OUR VISION

Nationally recognized leader in integrated trauma care, incorporating patient-centred clinical excellence, innovative education, practice-changing research, and reflective health care policy.

OUR MISSION

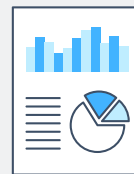
- *Lead collaboration with regional and community sites to ensure a highly efficient, effective and integrated trauma care system for all generations of Nova Scotians.*
- *Ensure excellence in compassionate, patient-centred care from the time of injury through to recovery.*
- *Coordinate and deliver trauma-related education across all health care disciplines at the local, regional, and provincial levels.*
- *Facilitate quality improvement initiatives and inform provincial policy by collecting and analyzing comprehensive data on all major trauma patients in Nova Scotia.*
- *Actively identify, initiate, publish and disseminate research as a foundation for evidence-based trauma care.*
- *Lead injury prevention initiatives together with other key stakeholders.*

OUR VALUES



Collaboration

Work with internal and external stakeholders to provide excellent patient-centred care



Critical Thinking

Interpret local data to make informed strategic decisions



Excellence

Constantly advancing through continuous process improvement



Innovation

Explore new and creative initiatives to deliver evidence-based trauma care



Integrity

Uphold the highest standards of care through honesty, fairness and transparency



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LEADERSHIP MESSAGE

SENIOR MEDICAL DIRECTOR & DIRECTOR/CO-LEAD

We are excited to share our 2020-2021 Nova Scotia Health Trauma Program of Care annual report.

The COVID-19 pandemic has necessitated an evolution of the NSH Trauma Program over the last two years. We have had to change the way we educate, modify how we do research, and become more creative in acquiring and entering data into the provincial trauma registry. Perhaps most significantly, we have reinvented how we manage complex major trauma patients who we presume have COVID. Thankfully, facing and overcoming the challenges posed by the pandemic has been rewarding and will lead to long-lasting changes in our trauma program.

We want to take this opportunity to welcome our new Director and Co-Lead for the Trauma Program of Care, Mr. Dan Cashen. A native of Dartmouth, Dan worked as a Registered Clinical Nurse in the ICU at the QEII HSC in Halifax before departing and assuming leadership roles in Calgary, Alberta. After returning to Nova Scotia to become the manager of the med-surg neuro ICU at the QEII HSC, he was successfully recruited into the role of director for our trauma program. Dan has a creative talent for problem-solving and is both process- and goal-oriented, which will serve our program well for years to come. We are just as excited to have Dan with us as he is to tackle the challenges of providing a high-functioning trauma program in Nova Scotia.

Our trauma registry is the backbone of our trauma system. Our dedicated registry professionals collect up to 2200 data points on every major trauma in Nova Scotia. Because our registry is population-based and includes data collected from the NS Medical Examiner Service, we utilize this robust information to evaluate and improve our trauma system.

The educational portfolio within the NSH Trauma Program is comprehensive. Our goal is to be a resource to all healthcare providers for trauma-related education. We provide a variety of educational initiatives including live webinars, the Advanced Trauma Life Support (ATLS) course and the NS Rural Trauma Course. Educational resources are easily accessible through our website. COVID has particularly impacted our ability to provide educational opportunities due to our belief that hands-on group discussions and practicing procedural skills are core to gaining proficiency and expertise in trauma care. We are delighted to have made tremendous progress with our ATLS courses which are back to being provided in-person. The next phase of our return to normal will be the reinstatement of a new and improved NS Rural Trauma Course.

Research within the NSH Trauma Program continues to be extremely productive. Over the last two years, we mentored 4 medical students, 3 residents/fellows, and various other health care providers in their research endeavors. This has resulted in 11 publications in peer-reviewed journals, and these studies were presented virtually at local and national conferences.

(continued)

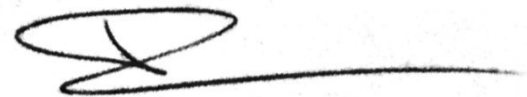
Working together with Research, Innovation & Discovery at NSH, we developed a new research coalition to nurture, support, and produce evidence-based research on violence and firearm injury. The impetus for this program, known as Heal Nova Scotia (Heal-NS), was the Portapique shootings in April 2020. We are pleased to have a multi-disciplinary committee which thus far has guided 3 research projects on gun-related trauma. Our committee includes community members from the Portapique area, representation from marginalized communities, and members from multiple medical disciplines, including Public Health and the NS Department of Health and Wellness. Our ultimate goal under the sponsorship of Dr. Gail Tomblin Murphy and Dr. David Anderson is to provide a platform, funding, and mentorship for other researchers both in Nova Scotia and across Canada to pursue research in this area. We believe this is an extremely important initiative.

We are looking forward to moving past COVID and getting on with the crucial work of providing the best possible care for our patients. In the future, we are focused on two major initiatives. The first is the creation of an inpatient trauma consult service based at the QEII HSC to help provide the necessary resources for optimal care after resuscitation to all trauma patients in Nova Scotia. Improvement in this critical phase of patient care will lead to long-standing positive benefits in our province for years to come. The second initiative is the recreation of the Nova Scotia Trauma Advisory Committee (NSTAC). We believe that representation from all zones across Nova Scotia is essential to providing excellent trauma care to all Nova Scotians. Therefore, we will be standing up the NSTAC very soon to help inform the future direction of trauma care in the province and the Maritimes.

As always, we appreciate your comments and feedback. Please feel free to contact us via our website with any questions, comments, or concerns.



Dr. Robert Green, Senior Medical Director



Dan Cashen, Director/Co-Lead



ACKNOWLEDGEMENTS

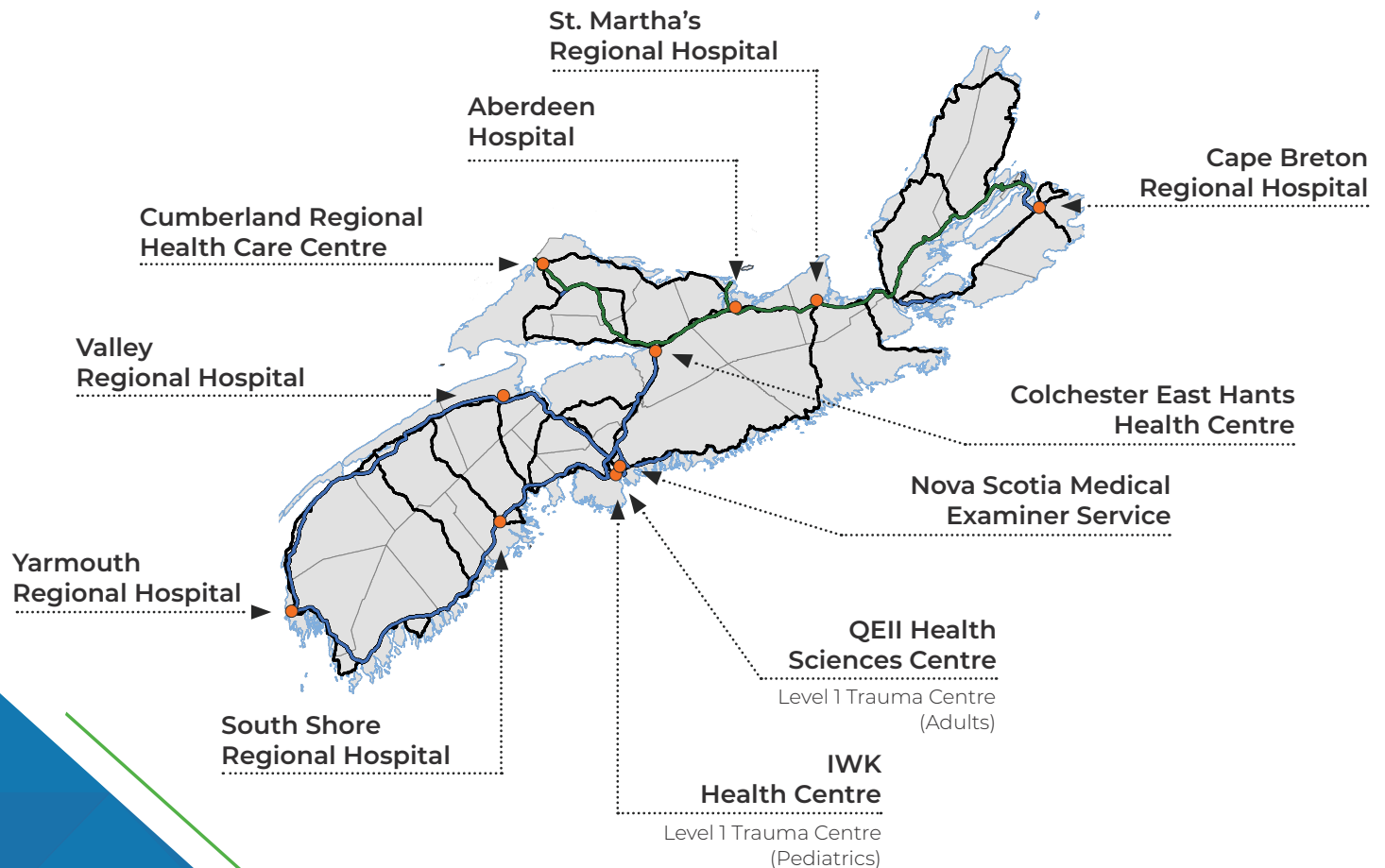
NSH Trauma Program is a provincial program operated and managed under Nova Scotia Health. The Nova Scotia Trauma Registry (NSTR) is managed by the NSH Trauma Program. The NS Department of Health and Wellness (DHW) is the custodian of the NSTR.

The 2020/21 NSH Trauma Program Annual Report was prepared using data from the NSTR under the direction of the Senior Medical Director and the Director/Co-Lead, together with the NSH Trauma Program Manager and Staff. NSH Trauma Program Staff collect data on major trauma patients from the 2 Level 1 trauma centres in Halifax, the 8 regional hospitals across NS, and the NS Medical Examiner Service (see map below). We are grateful to these sites for their ongoing support of the NSTR.

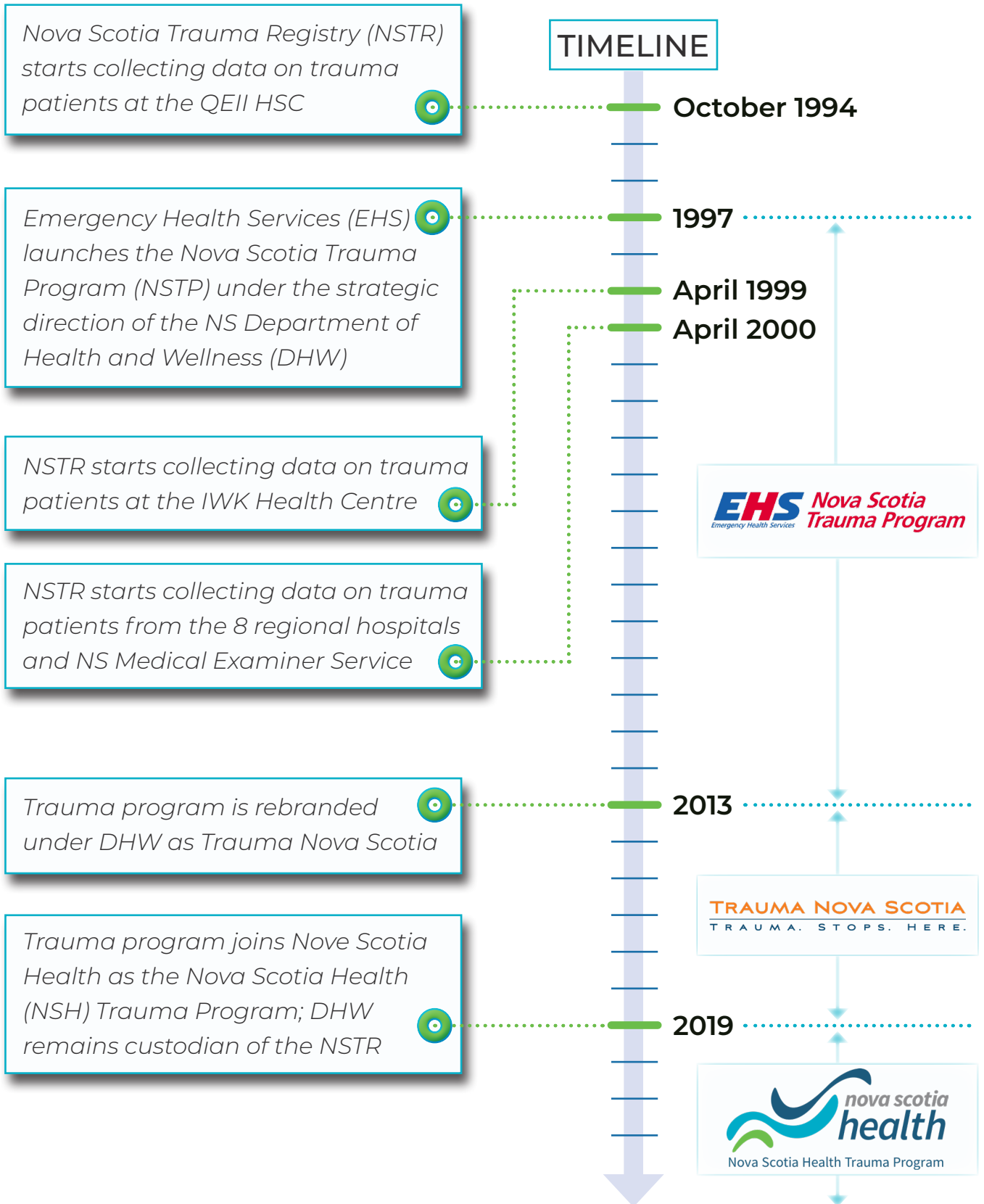
While the NSTR collects data on all major trauma patients across the province, the data presented in this report highlights the most seriously injured patients who were seen at the Adult Level 1 Trauma Centre (QEII Health Sciences Centre) and the Pediatric Level 1 Trauma Centre (IWK Health Centre) in Halifax.

Questions regarding this document should be directed to:

Krista Golden, Manager
Email: Krista.Golden@nshealth.ca



BACKGROUND



2020/21

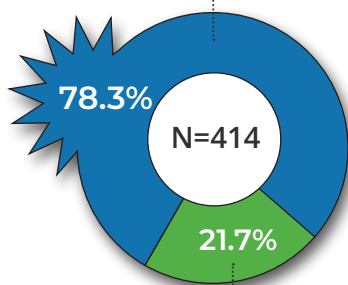
QEII HSC TRAUMA STATISTICS

414 TRAUMA TEAM ACTIVATIONS AT THE QEII

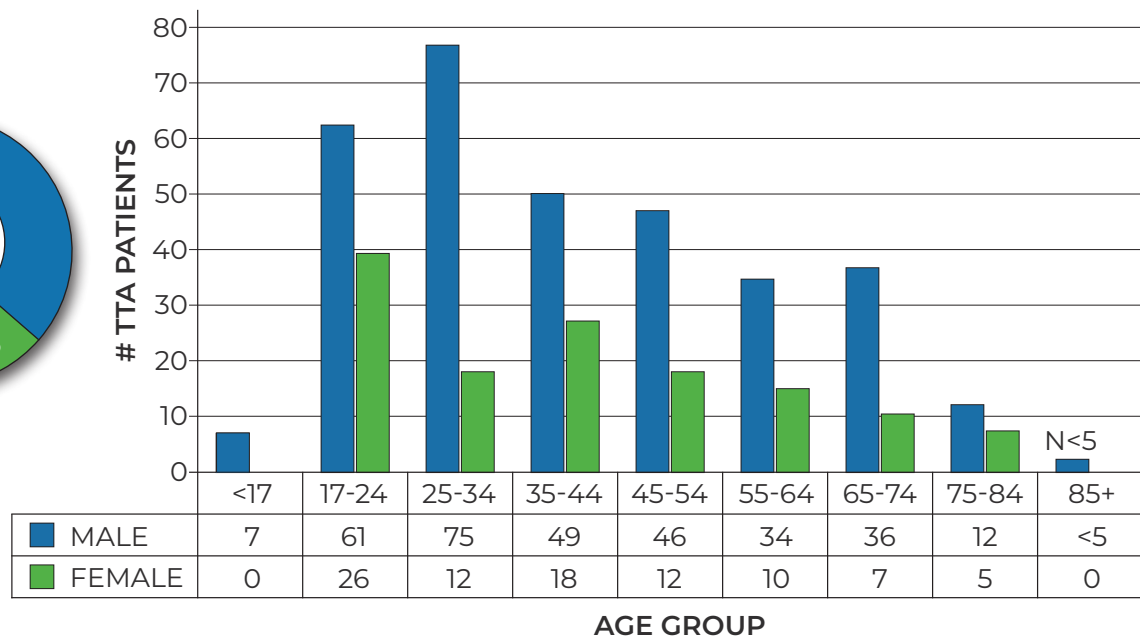
Criteria for Trauma Team Activation (TTA) include physiologic, anatomic, mechanistic, and logistic considerations. Patients who meet TTA criteria are managed by a multidisciplinary team led by a Trauma Team Leader (TTL) and Resident TTL (rTTL). Separate trauma teams manage adult (age 17+) and pediatric trauma patients at the QEII HSC and the IWK Health Centre, respectively.

AGE AND SEX OF QEII TTA PATIENTS

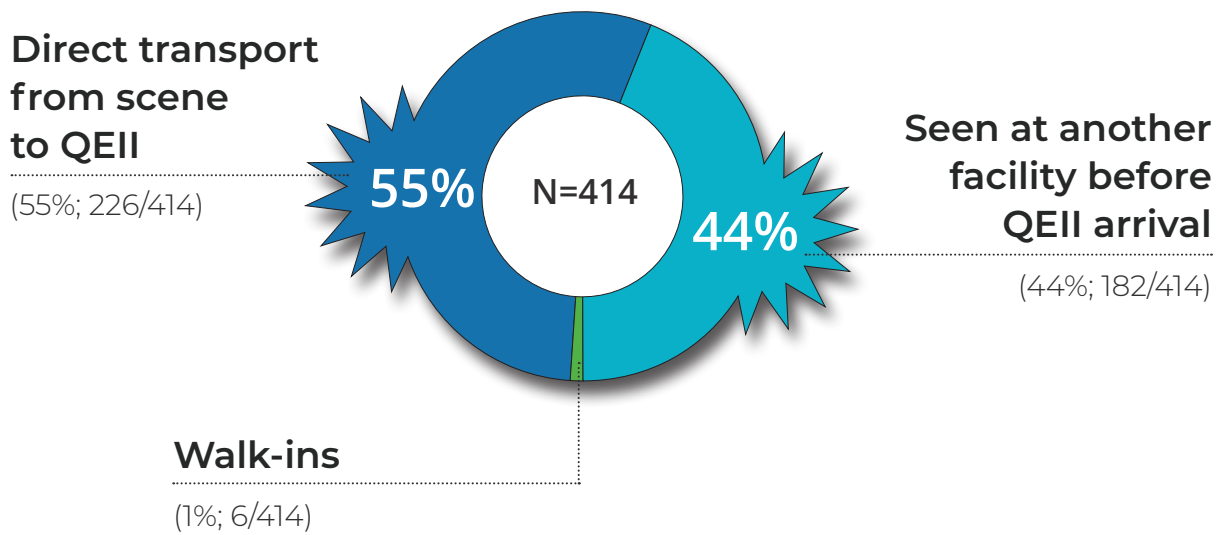
MALES



FEMALES

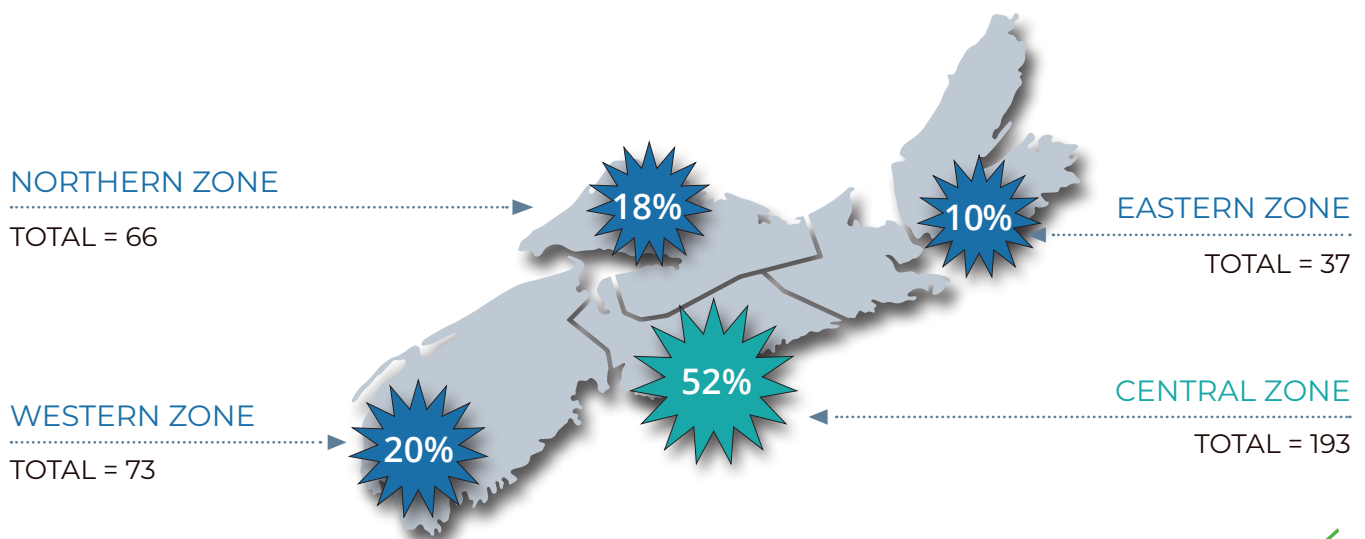


EHS TRANSPORT / REFERRING FACILITIES

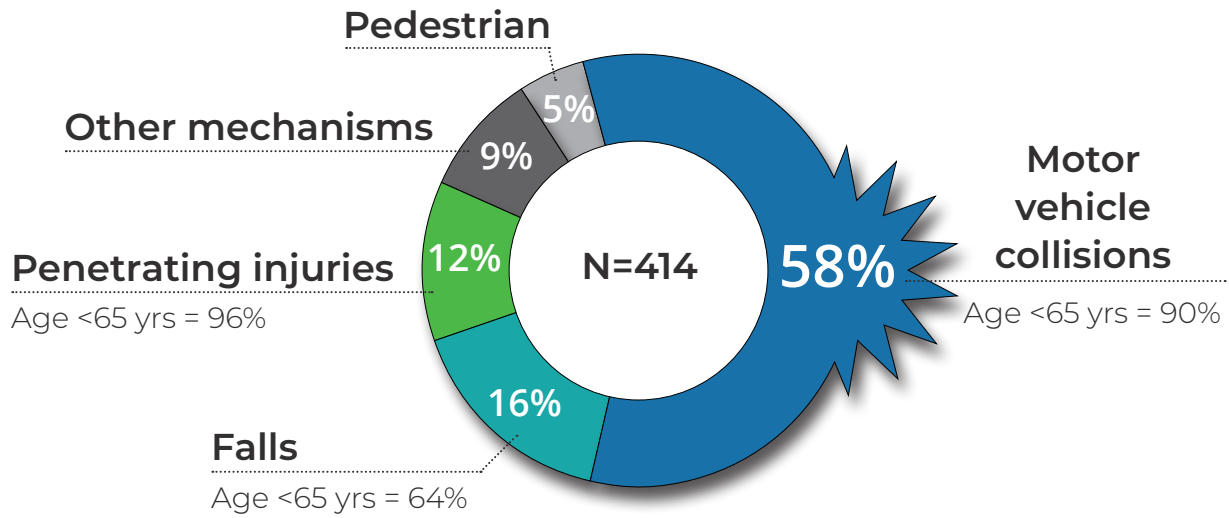


QEII TRAUMA TEAM ACTIVATIONS BY ZONE

TOTAL WITH KNOWN INCIDENT LOCATION = 369



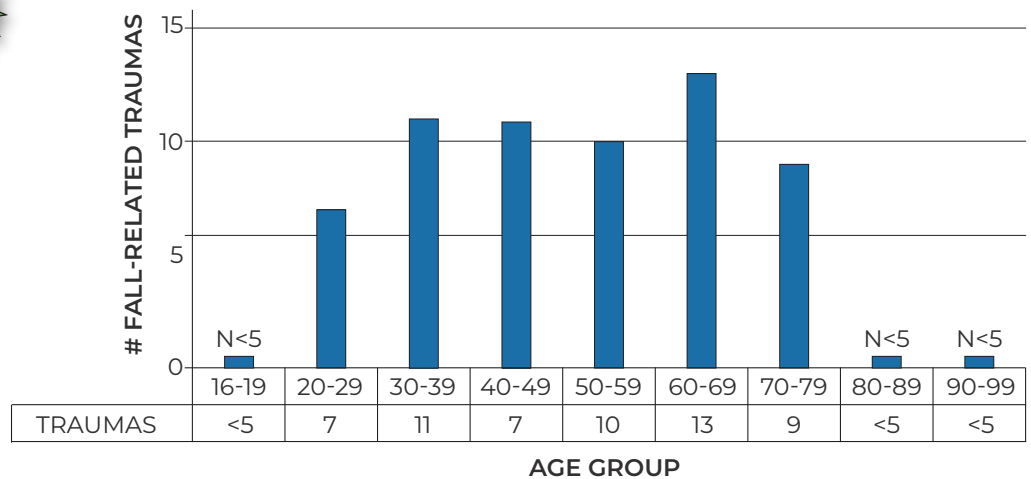
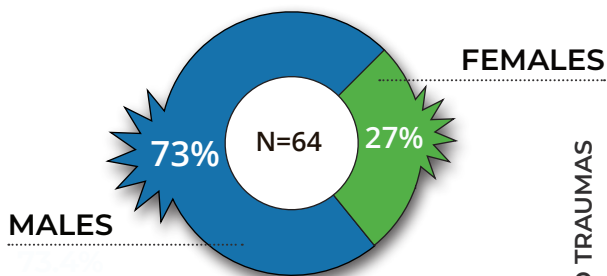
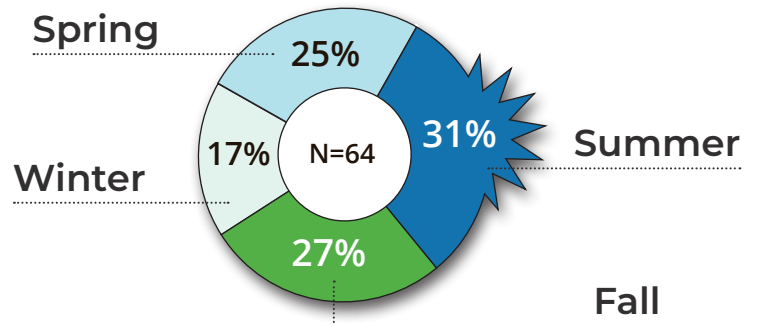
MECHANISMS OF INJURY



FALL-RELATED INJURIES

64
FALL-RELATED INJURIES

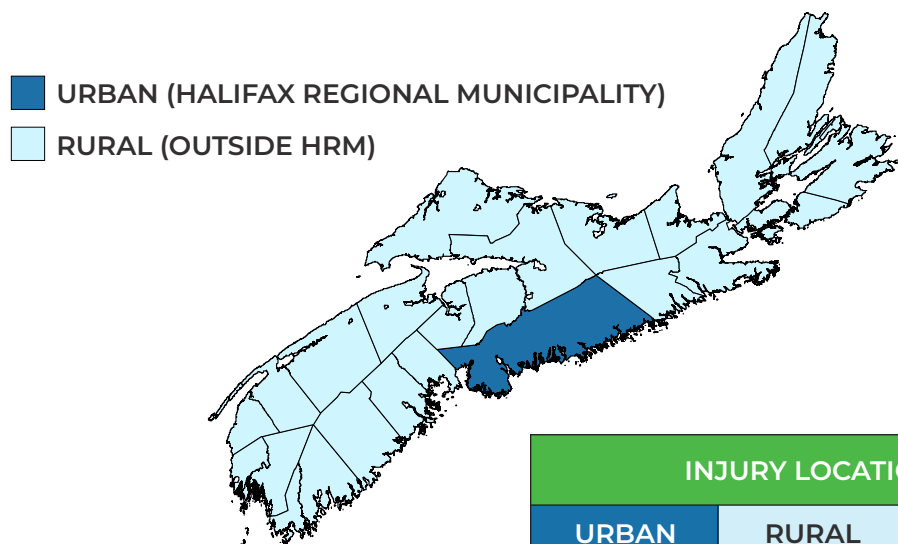
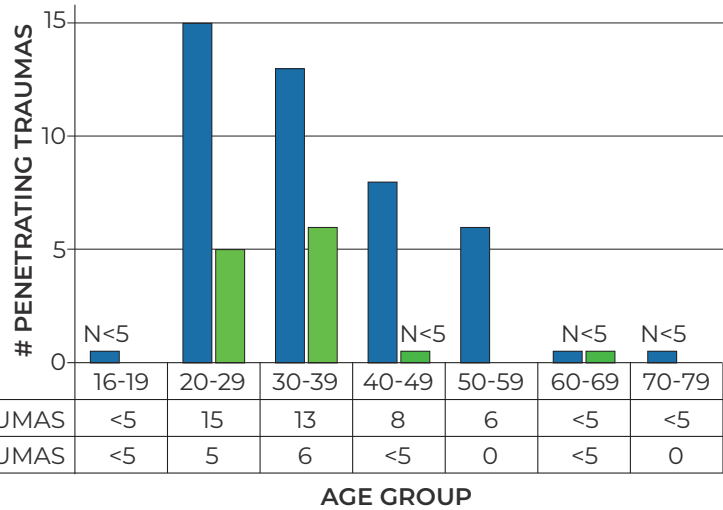
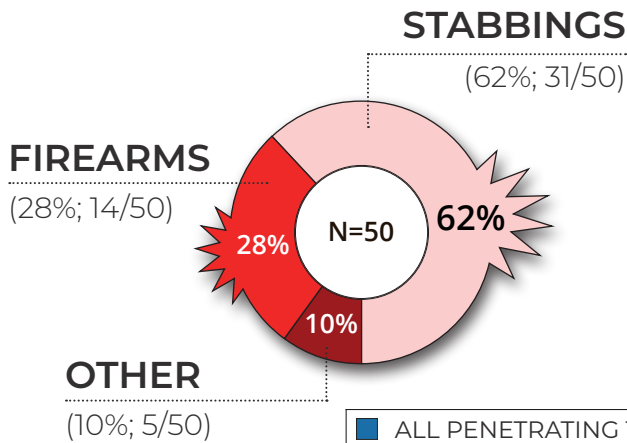
- Highest in summer (31%); lowest in winter (17%)
- 60-69 year age group had greatest number of falls
- Nearly 3/4 of falls were in males



PENETRATING INJURIES

50 PENETRATING INJURIES

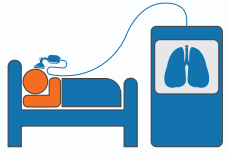
- Most in 20-29 year age group (30%)
- Majority were male (88%)
- All gunshot wound trauma patients were male
- Most gunshot wounds (57%) occurred in Halifax Regional Municipality (HRM)



	INJURY LOCATION		
	URBAN	RURAL	UNKNOWN
ALL PENETRATING TRAUMAS	32	9	9
GUNSHOT WOUND TRAUMAS	8	N<5	N<5

QEII TTA OUTCOMES

**Direct Admission
to ICU**




**94
(22.7%)**

**Mean In-Hospital
Length of Stay**



**15.8
Days**

**In-Hospital
Mortality**



**19
(4.6%)**



QEII HSC TRAUMA TEAM

TRAUMA TEAM LEADERS

- Dr. Sam Campbell (Emergency Medicine, Trauma)
- Dr. Mike Biddulph (Orthopaedic Surgery, Trauma)
- Dr. Sean Christie (Neurosurgery, Trauma)
- Dr. Chad Coles (Orthopaedic Surgery, Trauma)
- Dr. Dafydd Davies (Pediatric General & Thoracic Surgery, Trauma)
- Dr. Danny French (Thoracic Surgery, Trauma)
- Dr. Rob Green (Critical Care, Trauma)
- Dr. George Kovacs (Emergency Medicine, Trauma)
- Dr. Janet MacIntyre (Emergency Medicine, Trauma)
- Dr. Kirk Magee (Emergency Medicine, Trauma)
- Dr. Graeme McBride (Anesthesia, Trauma)
- Dr. Sam Minor (General Surgery, Trauma)
- Dr. David Petrie (Emergency Medicine, Trauma)
- Dr. Matt Smith (Vascular Surgery, Trauma)
- Dr. Nick Sowers (Emergency Medicine, Trauma)

RESIDENT TRAUMA TEAM LEADERS

- Dr. Sultan Almuallem (General Surgery, Trauma)
- Dr. Lujain Attar (General Surgery, Trauma)
- Dr. Olga Bednarek (General Surgery, Trauma)
- Dr. Victoria Bentley (General Surgery, Trauma)
- Dr. Shawn Brophy (General Surgery, Trauma)
- Dr. Jill Carter (Emergency Medicine, Trauma)
- Dr. Jon Cottreau (General Surgery, Trauma)
- Dr. Shashwat Desai (Emergency Medicine, Trauma)
- Dr. Kyle Eastwood (Emergency Medicine, Trauma)
- Dr. Jordan Eng (General Surgery, Trauma)
- Dr. Rebecca Haworth (Emergency Medicine, Trauma)
- Dr. Eric Hempel (General Surgery, Trauma)
- Dr. Jacqueline Hiob (Emergency Medicine, Trauma)
- Dr. Simon Huang (Emergency Medicine, Trauma)
- Dr. Dave Hung (Emergency Medicine, Trauma)
- Dr. Sean Hurley (Emergency Medicine, Trauma)
- Dr. Renee Kinden (Emergency Medicine, Trauma)
- Dr. Jacynthe Labrecque (General Surgery, Trauma)
- Dr. Matthew Mackin (Anesthesia, Trauma)
- Dr. Pascal Mailhot (Orthopaedic Surgery, Trauma)
- Dr. Patricia Marks (Emergency Medicine, Trauma)
- Dr. Ronnie May (Pediatric Emergency Medicine, Trauma)
- Dr. Heather McFadgen (General Surgery, Trauma)
- Dr. Kit Moran (Orthopaedic Surgery, Trauma)
- Dr. Brendan Morgan (Anesthesia, Trauma)
- Dr. James Nunn (Emergency Medicine, Trauma)
- Dr. Pooja Patel (General Surgery, Trauma)
- Dr. Ollie Poole (Anesthesia, Trauma)
- Dr. Stephanie Power (Anesthesia, Trauma)
- Dr. Robert Raskin (General Surgery, Trauma)
- Dr. Ashley Robinson (General Surgery, Trauma)
- Dr. Victoria Smith (General Surgery, Trauma)
- Dr. Adam Southcott (General Surgery, Trauma)
- Dr. Jillian Tweedy (General Surgery, Trauma)
- Dr. Laura Wade (Emergency Medicine, Trauma)

TRAUMA TEAM MEMBERS

The QEII Trauma Team includes clinicians and staff from the following specialties:

- | | | |
|----------------------|-----------------------|----------------------------------|
| • General Surgery | • Paramedicine | • Emergency Social Worker |
| • Orthopedic Surgery | • Nursing | • Neurosurgery (consult only) |
| • Anesthesia | • Respiratory Therapy | • Plastic Surgery (consult only) |
| • Radiology | • Ward Aid | |

PEDIATRIC TRAUMA

The IWK Trauma Care Program continues to provide specialized multidisciplinary trauma assessment, resuscitation, stabilization, and management to children and youth who have suffered a traumatic injury as defined by specific physiologic, anatomic, and logistic criteria, or by mechanism of injury. All children and youth under the age of 16 suffering physical trauma meeting criteria are covered by the IWK's TTA Criteria policy. The Trauma Team works under the direction of the TTL to provide exemplary care, operating under the principles of Advanced Trauma Life Support (ATLS).

TEAM DETAIL

The IWK Trauma Care Program is staffed by a Medical Director (Dr. Dafydd Davies) and a 0.5 FTE Trauma Coordinator (Melanie Doyle). TTL coverage is provided by a stable pool of physicians from various disciplines including General Surgery, Orthopedic Surgery, and Emergency Medicine, for a total of 10 TTLs.

POLICY UPDATE

The IWK TTA policy had a major update and revision this year to include changes to the Activation Criteria. The new criteria now include a second tier of trauma response, the "ED Trauma Alert", for patients meeting mechanism of injury criteria, but are otherwise considered stable. The update to the criteria also includes a section on the transfer of trauma patients to the IWK from other hospitals, with the option of a "trauma consult" by the TTL. The new policy and activation criteria came into effect in July 2021.

IWK TRAUMA STATISTICS

55 TRAUMA PATIENTS SEEN AT THE IWK HEALTH CENTRE

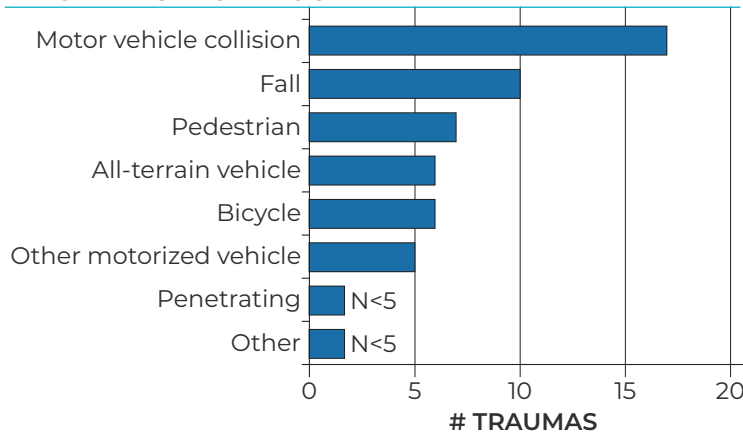
39
TRAUMA
TEAM
ACTIVATIONS

7
TTL
TRAUMA
CONSULTS

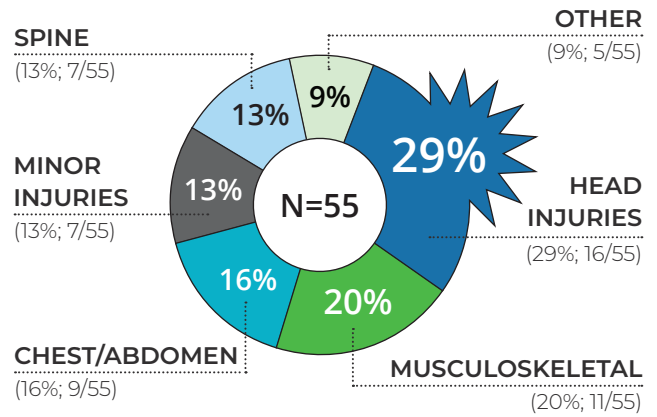
9
ED
TRAUMA
ALERTS*

*There were 11 total ED trauma alerts: 1 upgraded to TTA, 1 upgraded to TTL trauma consult

MECHANISM OF INJURY



INJURY PATTERNS



Direct Admission to ICU

8 (19.5%)

Mean In-Hospital Length of Stay

9.7 Days

In-Hospital Mortality

<5 Patients

IWK TRAUMA TEAM

TRAUMA TEAM LEADERS

- Dr. Chris Blackmore (Pediatric General Surgery, Trauma)
- Dr. Dafydd Davies (Pediatric General & Thoracic Surgery, Trauma)
- Dr. Ron El-Hawary (Pediatric Orthopaedics, Trauma)
- Dr. Jason Emsley (Pediatric Emergency Medicine, Trauma)
- Dr. Luke Gauthier (Pediatric Orthopaedics, Trauma)
- Dr. Katrina Hurley (Pediatric Emergency Medicine, Trauma)
- Dr. Jessica Mills (Pediatric General & Thoracic Surgery, Trauma)
- Dr. Chris McCrossin (Pediatric Emergency Medicine, Trauma)
- Dr. Rodrigo Romao (Pediatric General & Thoracic Surgery, Trauma)
- Dr. Kristen Weerdenburg (Pediatric Emergency Medicine, Trauma)

RESIDENT TRAUMA TEAM LEADERS

- Dr. Mackenzie C. Lees (Pediatric Surgery Program, Trauma)
- Dr. Andrea Sadoway (Pediatric Emergency Program, Trauma)
- Dr. Ashley Martin (Pediatric Emergency Medicine Resident, Trauma)

PEDIATRIC TRAUMA EDUCATION

TRAUMA ROUNDS

Multidisciplinary Trauma Rounds at the IWK Health Centre continued this year. All sessions were presented virtually over Zoom and were well-attended. Presentation topics this year included: "Massive transfusion protocol, lessons learned", "Traumatic cardiac arrest" and "Penetrating thoracic trauma and resuscitative thoracotomy in the pediatric population".

TRAUMA SIMULATION

There were both challenges and successes with the Trauma Simulation program this year at the IWK. The IWK trauma simulation program received Continuing Professional Development (CPD) accreditation through Dalhousie University for a period of another 3 years.

PEDIATRIC TRAUMA RESEARCH

Dr. Jason Emsley is the Medical Director of the Research Program for the IWK Emergency Department and the Senior Investigator on several ongoing research studies pertaining to pediatric trauma (*see below*).

2020/21 PEDIATRIC RESEARCH PROJECTS

- **Epidemiology of pediatric trauma in Nova Scotia**
Lead: Andrea Sadoway, Pediatric Emergency Medicine Fellow
- **Pre-hospital mortality in pediatric trauma**
Lead: Renee Kinden, Resident, FRCPC Emergency Medicine
- **Effect of trauma team activations on emergency department flow**
Lead: Ronnie May, Pediatric Emergency Medicine Fellow project; currently staff
- **Perception of the impact of trauma team activations and resuscitations on departmental flow**
Lead: Casey Jones, Med 3
- **Epidemiology of submersion injuries in Canada**
Lead: Mike O'Leary, Med 4
- **Epidemiology of infant trauma in Canada**
Lead: Juliana Ali, Med 3
- **Emergency department staff awareness of human trafficking**
Lead: Emily Devereaux, RN
- **Pediatric trauma recidivism**
Lead: Manal Sheikh, Resident, FRCPC Emergency Medicine

IWK QUALITY INITIATIVES

IWK TRAUMA QPS COMMITTEE

The IWK Trauma QPS Committee meets regularly to review cases arising from SIMS reports or other concerns. The committee works to identify problems or issues and provides feedback for ways to improve processes. This year in total, 5 cases from the trauma program were reviewed. The Trauma Care Program will continue to hold quarterly Trauma QPS Committee meetings, and the Trauma Coordinator will continue to work closely with the IWK Quality and Improvement Consultant to improve processes within the trauma program.

TRAUMA NURSE CHAMPION GROUP

The Trauma Nurse Champion group has continued this year, with 5 ED nurses forming the group. The trauma nurse champions work to identify any issues or gaps to bring to the trauma coordinator, and the group works together to find solutions and make improvements. The nurse champions also serve as a resource for trauma care to nursing staff in the ED. Work is in progress for improvements to the Massive Transfusion Protocol (MTP), education planning for new staff, and upgrades to the trauma nursing forms.

MASSIVE TRANSFUSION PROTOCOL

Following a large-scale simulation case in 2020, a working group has been formed to improve the MTP within the IWK ED and pediatric operating room. The group is working on different algorithms and checklists to streamline and improve MTP implementation, and to improve communications between team members.

IWK ED REDEVELOPMENT GROUP

As the IWK continues the planning process for a new ED, the Trauma Coordinator and the Trauma Medical Director have worked with the IWK Trauma Redevelopment Group to support planning efforts for the new Trauma/Resuscitation room. As part of this, several simulations have taken place in a “mock-up” trauma room, allowing members of the trauma team to provide feedback on various aspects including the functionality of the room layout, equipment positioning, and communication.

STRATEGIC PARTNERS

The NSH Trauma Program maintains strategic partnerships with the provincial trauma program in New Brunswick (Trauma NB) and with trauma care professionals in PEI. The QEII HSC serves as the adult referral site for major trauma patients from PEI and on occasion from NB, and the IWK Health Centre serves as the pediatric referral site for the Maritimes.

OUT-OF-PROVINCE TRAUMA TEAM ACTIVATIONS



REGISTRY

The trauma registry is an essential component of a successful trauma system as it allows for timely evaluation, research, and monitoring of trauma care, and can be used for outreach, planning, and improvement. Since April 2000, the NSH Trauma Program has identified and collected data on all major trauma patients seen at the two Level 1 trauma centers in Halifax (QEII Health Sciences Centre, IWK Health Center), the 8 regional hospitals across Nova Scotia, and from the Nova Scotia Medical Examiner Service. This information is stored in the Nova Scotia Trauma Registry (NSTR), a comprehensive population-based database that now houses over 17,000 records of the most severely injured patients with the capacity to collect over 2200 data elements per record.

The NSTR is a valuable resource that enables the NSH Trauma Program to conduct quality assurance, engage in injury surveillance, and research, and develop injury prevention and control strategies. In addition, the NSTR allows administrators and clinicians to engage in evidence-based decision-making, policy development, and program planning. In 2020/21, the NSH Trauma Program received 17 requests for access to data from the NSTR; these requests ranged from ongoing partnership studies to research studies investigating various topics including pediatric trauma, burn-related trauma, and gunshot wounds.

PRESENTATIONS

Using data collected from the NSTR, the NSH Trauma Program presented an abstract at the Trauma Association of Canada (TAC) Annual Scientific Meeting in April 2021 titled "Value of data collected by the medical examiner service on the quality of alcohol and toxicology testing in fatal motor vehicle collisions". The study examined how advantageous it is for trauma registries to collaborate with medical examiner services to obtain a complete picture of how alcohol and toxicology affect motor vehicle collisions. The abstract was published in the Canadian Journal of Surgery.

Ssebazza K, Kearley C, LeBlanc J. Value of data collected by the medical examiner service on the quality of alcohol and toxicology testing in fatal motor vehicle collisions. *Can J Surg.* 2021;64:S51-S52. Available at: <https://www.proquest.com/scholarly-journals/value-data-collected-medical-examiner-service-on/docview/2626300450/se-2?accountid=26764>

EDUCATION

Trauma education grows critical thinking skills, improves technical skills, and advances general knowledge to ensure optimal management of severely injured patients by trauma care professionals. The NSH Trauma Program provides trauma education courses, webinars, and simulation training to interprofessional clinicians across the province. Our education programs and courses are designed to improve trauma care by increasing trauma knowledge and skills, and by providing a network of communication within the province.

Despite the ongoing COVID-19 pandemic, the NSH Trauma Program continued to offer courses, webinars, and simulation training to interprofessional clinicians. Looking ahead to 2022/23, we hope to expand our educational opportunities to staff across the province and explore how to incorporate virtual training and education sessions to complement our current programs.

This section highlights educational opportunities that were provided to health care providers during 2020/21.



Resident TTL Bootcamp



TRAUMA EDUCATION COURSES

NS RURAL TRAUMA COURSE

We continue to partner with EHS Lifeflight and the EHS Simulation Program to offer the NS Rural Trauma Course throughout the province. The NS Rural Trauma Course is a one-day team-focused resuscitative course based on the Rural Trauma Team Development Course (RTTDC) from the American College of Surgeons. The course emphasizes a team-based approach to the initial evaluation and resuscitation of the trauma patient at a rural facility. Unfortunately, the pandemic interrupted our ability to offer courses due to restrictions on group gatherings. We will start offering the NS Rural Trauma Course at sites throughout Nova Scotia once again in the near future.

ATLS

The Advanced Trauma Life Support (ATLS) course teaches clinicians a systematic approach to the care of trauma patients. Physicians learn to assess a patient's condition, resuscitate, stabilize, and arrange interfacility transfers in our trauma system. While the ATLS course is limited to physicians, we welcome all health care professionals involved in the care of trauma patients to audit the course.

2020/21 ATLS COURSES

- 5 Hybrid ATLS courses were held. Approximately 90 participants received their ATLS certificate.
- NSH Trauma Program, in partnership with EHS Lifeflight, provided 1 refresher course with 11 participants receiving their ATLS certificate.

TRAUMA ROUNDS & WEBINARS



Interprofessional clinical trauma webinars are held monthly. The virtual platform allows us to reach staff throughout the province and provide an interactive experience for those attending. Our trauma webinars continue to be approved as Continuing Medical Education (CME) through the Dalhousie University CME office.

2020/21 PRESENTATIONS

- REBOA in Nova Scotia; Now or Never (Dr. S. Hurley)
- Stop the Bleed: Approach to Anticoagulated Trauma Patient (Dr. R. Green)
- Trauma in the Time of Covid 19 (Dr. A. Beckett)
- Geriatric Trauma in Nova Scotia: A Booming Problem (Dr. S. Hurley)
- Traumatic Cardiac Arrest (Dr. N. Sowers)
- Massive Transfusion Protocol (MTP): The Why and How of MTPs? (Dr. J. Manna)
- Code Trauma: Why did the car go off the road? (Dr. A. Harris)

*Recorded webinars
can be accessed from
the NSH Trauma
Program [website](#)*

TRAUMA SIMULATION

SIM

QEII HSC EMERGENCY DEPARTMENT STAFF

Simulation training offers individuals a “controlled” environment to safely acquire and practice skills and learn how to work together during critical situations.

In collaboration with the ED Clinical Nurse Educator at the QEII HSC, we conducted 3 successful in-situ simulations in the fall of 2021. As a result, approximately 15 interprofessional staff of the QEII HSC ED gained knowledge and conducted a hands-on review of equipment specific to trauma care.

A simulation-based education day was held at the QEII HSC in March 2022. Multidisciplinary members of the trauma team, along with ED staff, spent the day learning about components of trauma care that are vital to providing optimal care to polytrauma patients.

RESIDENT TRAUMA TEAM LEADER TRAINING

Simulation “boot camps” were provided to residents onboarding into the trauma team. Using challenging case scenarios, these sessions opportunity allowed residents to develop the crisis resource management skills required to become effective team leaders.



Trauma Simulation at the QEII

RESEARCH & QUALITY ASSURANCE

The NS Health Trauma Program led numerous research projects in 2020/21. These projects were performed in collaboration with physicians, residents and fellows at the QEII HSC and from other institutions across Canada. Areas of research focus included outcomes of trauma patients with chronic kidney disease, use of extracorporeal membrane oxygenation (ECMO) therapy in burn patients, need for resuscitative endovascular balloon occlusion of the aorta (REBOA) among trauma patients in Nova Scotia, and the epidemiology of major traumatic brain injury in Nova Scotia. Furthermore, through the Research In Medicine (RIM) Program at Dalhousie University, we mentored 2 medical students who worked on projects investigating firearm-related injuries as part of our Heal-NS initiative. These efforts resulted in a total of 4 publications in peer-reviewed journals, as well as 2 studies that have been accepted for publication. Although the COVID-19 pandemic forced us to work remotely and led to the cancellation or postponement of some conferences, we were still able to present our studies virtually at several local and national conferences.

Research activities performed by the NS Health Trauma Program are led by the Senior Medical Director and coordinated by the Research & Statistics Officer. While our studies commonly use data from the NSTR (often linked with other data sources), we also perform prospective studies measuring the impact of clinical interventions, retrospective studies involving predictive modelling, systematic reviews and rapid reviews to synthesize evidence on specific topics, and surveys to determine the opinions of professionals and patients across the continuum of trauma care. In addition to research coordination, the Research & Statistics Officer is also responsible for quality assurance of program materials (e.g., forms, policies, guidelines, infographics, business cases, newsletters, media briefings) that are generated by the NS Health Trauma Program.

2020/21 RESEARCH PUBLICATIONS

Rasmussen J, Erdogan M, Loubani O, Green RS. Successful use of extracorporeal membrane oxygenation therapy in patients with 80% full thickness burns. *J Burn Care Res*. 2021;42(2):345-7.

Pratt R, Erdogan M, Green R, Clark D, Vinson A, Tennankore K. Outcomes of major trauma among patients with chronic kidney disease and receiving dialysis in Nova Scotia: a retrospective analysis. *Trauma Surg Acute Care Open*. 2021;6(1):e000672.

Hurley S, Erdogan M, Kureshi N, Casey P, Smith M, Green RS. Resuscitative endovascular balloon occlusion of the aorta (REBOA) candidacy among major trauma patients in Nova Scotia: comparison of clinical and anatomical criteria. *CJEM*. 2021;23(4):528-36.

Kureshi N, Erdogan M, Thibault-Halman G, Fenerty L, Green RS, Clarke DB. Long-term trends in the epidemiology of major traumatic brain injury. *J Community Health*. 2021;46(6):1197-1203.



FUTURE DIRECTIONS

Reviewing all of our accomplishments from the previous year, we have highlighted our ongoing successes in shaping the provincial trauma system. However, there is more work on the horizon. We are excited to take the next step with our stakeholders as we come closer to realizing our goal of having a fully integrated provincial trauma system that best serves all citizens of Nova Scotia.

We will continue developing an inpatient trauma consult service at the QEII HSC that will improve outcomes for multisystem trauma patients and enable better communication and collaboration amongst the many professionals that provide trauma care. This will be a provincial resource that provides many benefits for trauma patients at the provincial and regional levels. Our focus will be to improve access and flow to services, involvement in the discharge process and follow-up in the community. The trauma consult service will provide us with real-time feedback from patients and families and help to shape the future of inpatient trauma care in Nova Scotia.

The NSH Trauma Leadership Team will be visiting the 22 community and 8 regional hospitals to better understand trauma resource allocation across the province, and how the NSH Trauma Program can continue to support sites to improve their trauma care. Through policy review, provision of interdisciplinary education opportunities, and participation in quality reviews we will continue to increase our presence and collaboration with teams in the province's rural and small urban areas. This partnership is critical to the ongoing provision of quality trauma care to the over 500,000 residents who live outside the Halifax Regional Municipality.

We look forward to working with everyone in the next year and many more years to come.

Dan Cashen
Director/Co-Lead, NSH Trauma Program

NSH TRAUMA PROGRAM

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ANNUAL REPORT

2020/21

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