

TABLE OF CONTENTS

A message from the medical director	5
Children’s Minnesota Trauma overview	6
Trauma is a team effort	8
Meet the team.	9
2023 at a glance	10
Patient story highlight	12
Injury prevention	14
PROTECT: avoiding restraint during procedures . . .	16
Trauma conferences and education	18
Injury prevention in the media	20
Awards.	21
Publications.	22
Open IRB studies	22



CHANGE A LIFE.
FOREVER.





A large, white, stylized quotation mark icon.

These accomplishments signify the tireless dedication and impactful contributions of the trauma service at Children's Minnesota in ensuring the safety and well-being of children in their care.

The logo for Children's Minnesota, featuring the word "Children's" in a large, white, serif font with a white star above the letter "i". Below it, the word "MINNESOTA" is written in a smaller, white, sans-serif font.

Children's
MINNESOTA

A red banner with the word "EMERGENCY" written in white, bold, sans-serif capital letters.

EMERGENCY

WELCOME

A MESSAGE FROM THE MEDICAL DIRECTOR

In 2023, Children’s Minnesota’s trauma service achieved remarkable milestones, including the highest registry volume and admissions ever recorded for the Minneapolis campus. With 1,043 registry patients in Minneapolis and 779 admissions in Minneapolis alone, totaling 1,254 and 807 across both the Minneapolis and St. Paul campuses, the service demonstrated unparalleled dedication to serving injured children. There was a notable increase in patients aged 10–14 years and 15–18 years compared to previous years, reflecting the evolving demographics of trauma cases.


The service’s commitment to research remained steadfast, with ongoing projects focusing on pancreatic injuries, cervical spine injury imaging, firearm injury prevention, and acute stress disorder screening. Additionally, the team continued to foster knowledge-sharing through the esteemed Trauma Speaker Series, which embarked on its fourth series in October 2023, highlighting psychosocial and cultural topics essential in trauma care.

Celebrating the outstanding contributions of team members, Dex Tuttle was honored with the Injury Prevention Coordinator of the Year award by the Injury Free Coalition for Kids, a national organization of hospital-based and community-focused organizations dedicated to pediatric injury prevention. Alyx Bystrom received the prestigious DAISY Nurse Leader Award in recognition for her leadership of the St. Paul trauma program.

Injury prevention efforts thrived with 1,385 helmets distributed, 201 car seat checks conducted, and 116 new child passenger safety technicians trained. These courses were taught in four languages — English, Spanish, Oromo and American Sign Language — underscoring the service’s commitment to accessibility and inclusivity in promoting safety.

These accomplishments signify the tireless dedication and impactful contributions of the trauma service at Children’s Minnesota in ensuring the safety and well-being of children in their care.

Sincerely,



Nathaniel S. Kreykes, MD
Medical Director of Trauma Services

CHILDREN'S MINNESOTA TRAUMA OVERVIEW



Children's Minnesota Hospital – Minneapolis

As the busiest pediatric trauma center and the only freestanding Level I pediatric trauma center in the region, Children's Minnesota Minneapolis campus provides care for children of all ages. We see more than 90,000 patients in our two emergency departments. More than 800 patients are admitted with traumatic injuries on our two campuses, ranging from fractures and concussions to life-threatening head and abdominal injuries. From the moment an injured child is met in the emergency department, the trauma team works together to provide the best possible care to promote healing and recovery.

Children's Minnesota Minneapolis campus was re-verified by the American College of Surgeons in 2023 as a Level I pediatric trauma center.



Children's Minnesota Hospital – St. Paul

Children's Minnesota St. Paul campus is a designated Level 4 trauma center, and provides trauma care to children in an effort to manage simple injuries and to expedite access to additional resources when necessary. Children's Minnesota St. Paul campus was re-designated as a Level 4 trauma center in October 2022.

CHILDREN'S MINNESOTA MISSION STATEMENT

We champion the health needs of children and families. We are committed to improving children's health by providing the highest-quality, family-centered care, advanced through research and education.

WE TREAT
1,200+
PEDIATRIC TRAUMA PATIENTS
ANNUALLY FROM AROUND
THE REGION

**DEDICATED
SOLELY TO KIDS**
AS THE ONLY STAND-ALONE
LEVEL I PEDIATRIC TRAUMA
CENTER IN MINNESOTA

**LARGEST PEDIATRIC TRAUMA
TEAM WITH PEDIATRIC
SURGEONS AND CRITICAL
CARE EXPERTS IN HOUSE**

24/7

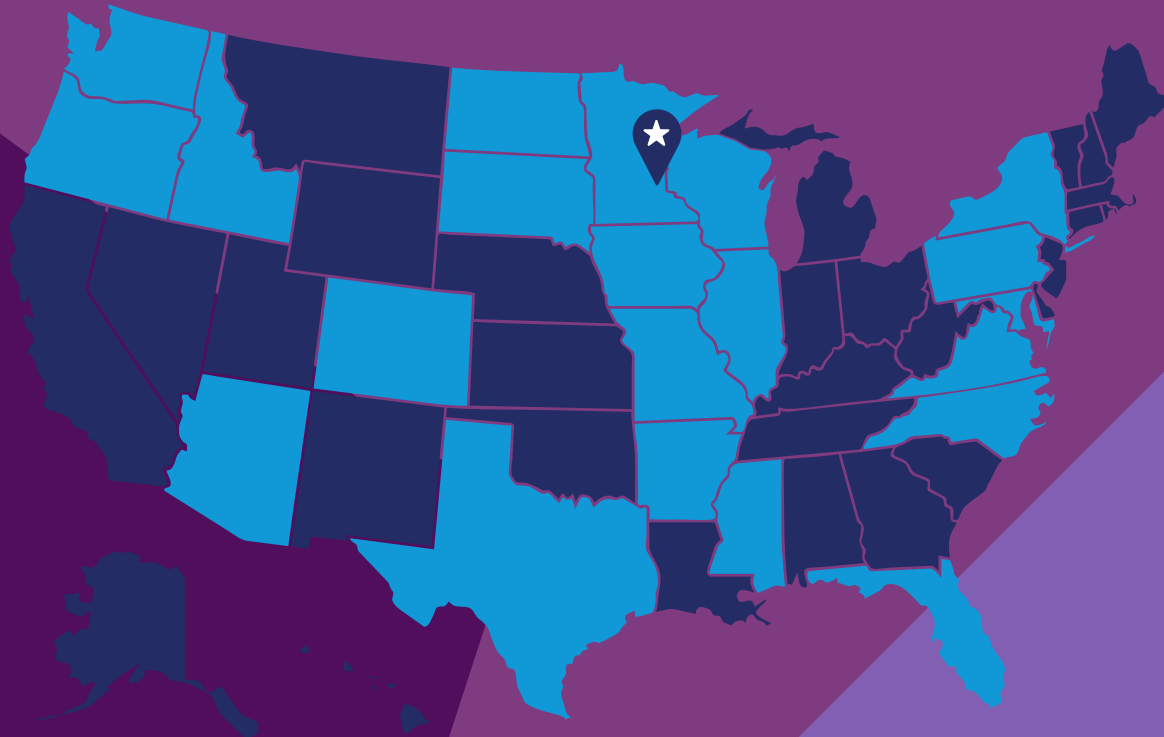


THE
**COMMITTEE
ON TRAUMA**



MINNESOTA & BEYOND

Children’s Minnesota is one of the largest pediatric health systems in the United States and the only health system in Minnesota to provide care exclusively to children — from before birth through young adulthood. The Children’s Minnesota trauma program treats patients from all over the country.* Whether they are visiting family, on vacation or participating in Minnesota sports, we can provide trauma services to any child in need.

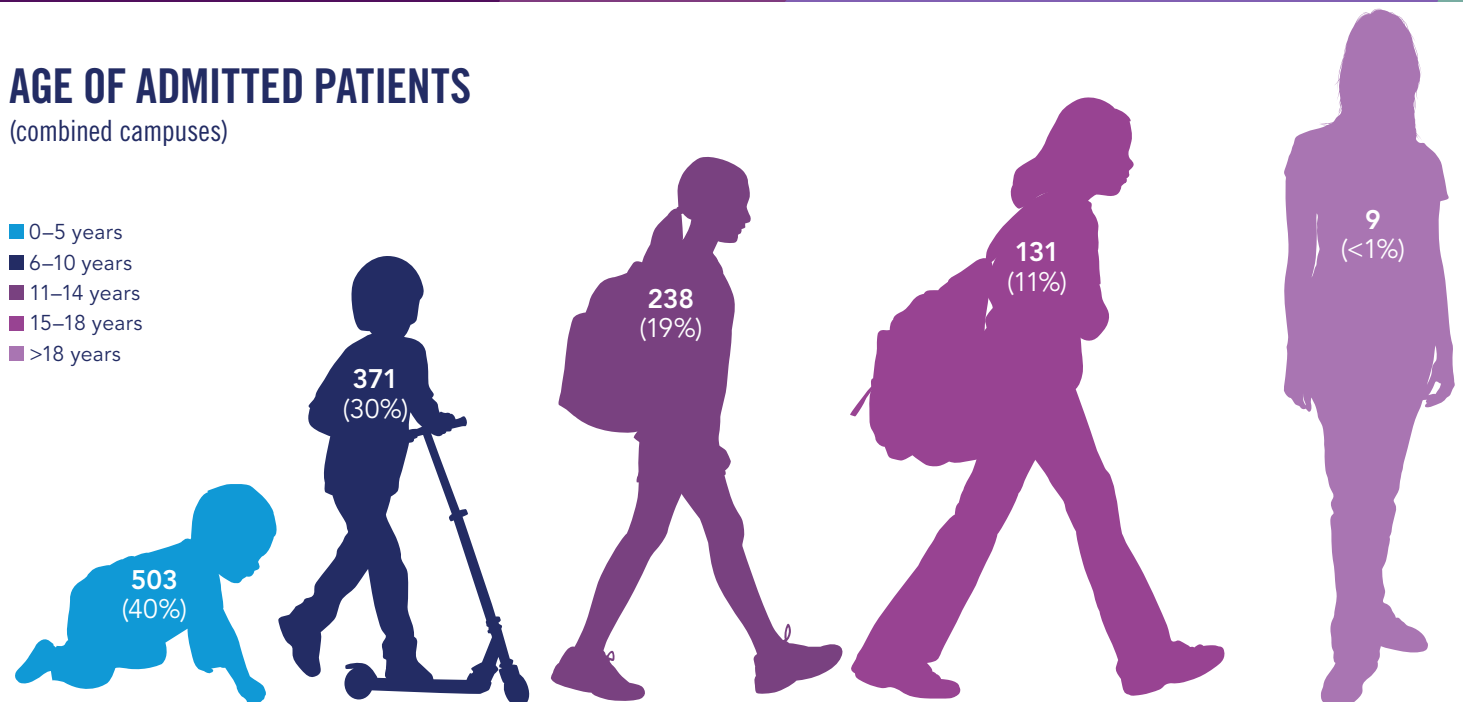


*States pictured in light blue represent the residence of at least one trauma patient treated at Children’s Minnesota in 2023.

AGE OF ADMITTED PATIENTS


(combined campuses)

- 0–5 years
- 6–10 years
- 11–14 years
- 15–18 years
- >18 years



TRAUMA IS A TEAM EFFORT

■ PHYSICIANS AND ADVANCED PRACTICE PROVIDERS
■ CLINICAL SERVICES

CASE MANAGEMENT	ADOLESCENT ORTHOPEDIC SURGERY	CHILD LIFE	ANESTHESIOLOGY	INTERPRETER SERVICES	CHILD ABUSE AND NEGLECT (MCRC)
CRITICAL CARE	LABORATORY SERVICES AND BLOOD BANK	EMERGENCY MEDICINE	MUSIC THERAPY	GYNECOLOGY	NURSING
NUTRITION SERVICES	HOSPITAL MEDICINE	OCCUPATIONAL THERAPY	INTERVENTIONAL RADIOLOGY	PATIENT REGISTRATION	NEUROLOGY
NEUROSURGERY	PHARMACY	OPHTHALMOLOGY	PHYSICAL THERAPY	ORAL AND MAXILLOFACIAL SURGERY	QUALITY AND PATIENT SAFETY
RESPIRATORY THERAPY	OTOLARYNGOLOGY	RADIOLOGY	PAIN, PALLIATIVE CARE AND INTEGRATIVE MEDICINE	SECURITY	PEDIATRIC ORTHOPEDIC SURGERY
PHYSICAL MEDICINE AND REHABILITATION	SIMULATION	PLASTIC AND HAND SURGERY	SOCIAL WORK	PSYCHOLOGICAL SERVICES	SPEECH LANGUAGE THERAPY
SPIRITUAL CARE	RADIOLOGY	TRANSPORT SERVICES	WOUND OSTOMY CARE	VASCULAR ACCESS	

MEET THE TEAM

TRAUMA SURGEONS



Nathan Kreykes, MD
Trauma Medical Director,
Minneapolis



James Fisher, MD



Joseph Lillegard, MD



Brad Linden, MD



David Schmeling, MD



Joshua Short, MD



Patricia Valusek, MD



David Wahoff, MD

TRAUMA ADVANCED PRACTICE PROVIDERS (TAPPS)



Mariya Bowen,
DNP, CPNP-AC/PC



Erica Blake, PA-C



Megan Goff, PA-C



Lynelle Logan, PA-C



Noelle Noah, PA-C



Anne-Marie Perry,
PA-C; Lead TAPP



Krista Renschen, PA-C



Valerie Ross, PA-C

TRAUMA PROGRAM

Alyx Bystrom, MSN, RN, CEN, TCRN
Trauma Program Lead

Esther DeLaCruz, CPST-I
Child Passenger Safety Coordinator

Vicky Douglas
Trauma Registrar

Lauren Gravelle, RN, BAN, CPN
Acute Care and Trauma Liaison

David Hirschman, MD
Emergency Medicine Physician
St. Paul Trauma Medical Director

Kati Kiely, LGSW
Trauma Social Worker

Janet Logid, MAN, RN-BC, CPEN
Clinical Education Specialist

Brandie Martin
Senior Administrative Assistant

Laura Plasencia, MPH, RN, TCRN
Trauma Services Manager, Minneapolis

Lyndsey Reece, DHA, NBC-HWC, CPSTI
Child Passenger Safety Coordinator

Michael Rhodes, CSTR, CAISS
Trauma Registrar

Laura Sietsema, RHIT
Trauma Registrar

Dex Tuttle, MEd, CPST-I
Injury Prevention Program Manager

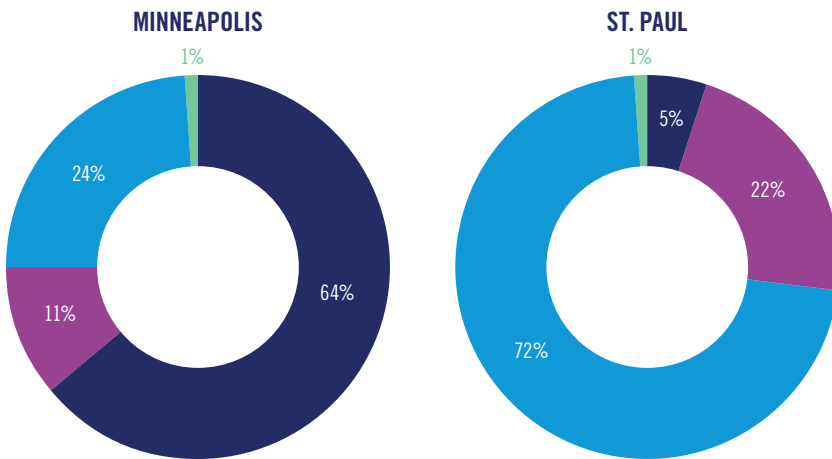
PROVIDING A FULL SPECTRUM OF PEDIATRIC AND ADOLESCENT SURGICAL CARE.

2023 AT A GLANCE

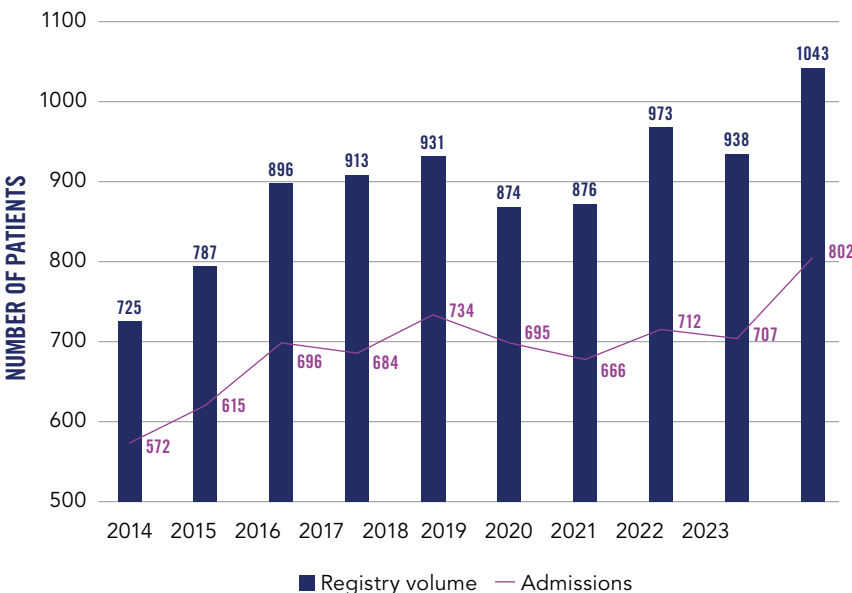
Children’s Minnesota celebrated 10 years of trauma care on its St. Paul and Minneapolis campuses. The Minneapolis campus remains a verified Level I pediatric trauma center, and the St. Paul campus is a Level 4 designated trauma center. We collaborate with referring hospitals and EMS agencies to provide a smooth transition of care for patients.

WHERE OUR PATIENTS COME FROM

- Transfers from another hospital
- From scene by EMS
- Private vehicle/walk-in
- Direct admission



MINNEAPOLIS ANNUAL VOLUME TREND (10-YEAR)



1,254

TRAUMA REGISTRY PATIENTS
Minneapolis: 1043 | St. Paul: 211

807

ADMITTED TRAUMA PATIENTS
Minneapolis: 779 | St. Paul: 28

458

OR CASES
Minneapolis: 449 | St. Paul: 6

48

LEVEL 1 TTAS
Minneapolis: 42 | St. Paul: 6

296

LEVEL 2 TTAS
Minneapolis: 178 | St. Paul: 76

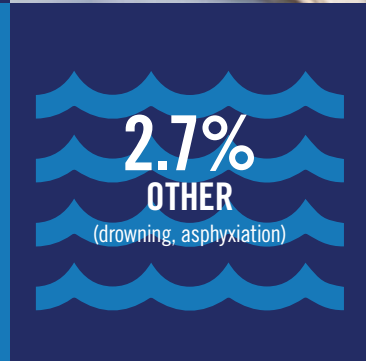
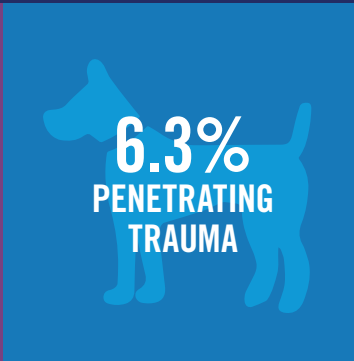
MECHANISMS OF INJURY

(combined campuses)

FALL ON PLAYGROUND
 GYMNASTICS BICYCLE
 MOTOR VEHICLE COLLISION FALL BEING CARRIED
 ANIMAL BITES/CONTACT TRAMPOLINING
FALL FROM FURNITURE
 PEDESTRIAN VS. MOTOR VEHICLE TEAM SPORTS
 NON-ACCIDENTAL TRAUMA
 FALL FROM STRUCTURE
WINTER/SNOW ACTIVITIES
 FALL ON STAIRS
 MOTORCYCLE/ATV/OFF-ROAD

TYPES OF INJURY

(combined campuses)



FATAL MECHANISMS OF INJURY

(combined campuses)

DROWNINGS IN HOME AND HOTEL POOLS
 DROWNINGS IN LAKES AND PONDS
 ASPHYXIATION WHILE CO-SLEEPING
 CRUSH INJURY BY FARM EQUIPMENT
 ASPHYXIATION BY HANGING
 UNINTENTIONAL STRANGULATION
 PEDESTRIAN STRUCK BY VEHICLE



MORE THAN
TWO MILLION
 EMERGENCY DEPARTMENT VISITS
 A YEAR ARE RELATED TO
CHILDHOOD FALLS.
 THANKFULLY, MANY FALLS CAN BE PREVENTED.
SUPERVISION
 IS THE MOST IMPORTANT WAY TO
 PREVENT CHILDHOOD INJURIES.
 VIEW OUR FALL PREVENTION RESOURCES AT
CHILDRENSMN.ORG/MAKINGSAFESIMPLE.

PATIENT STORY HIGHLIGHT

HENRIK OVERCOMES SEVERE BRAIN INJURY WITH THE HELP OF OUR LEVEL I TRAUMA CENTER AND NEUROSURGERY TEAMS

May 9, 2023, was supposed to be a routine day for Emily and Derek Youngren and their two sons. That day, Emily dropped then-14-month-old Henrik off at daycare near their family farm in Waverly, Minnesota and went on with her day. A few hours later — she got a call.

“At first, my reaction wasn’t much,” recalled Emily about the moment she learned Henrik fell off a couch backwards and hit his head on a carpeted concrete floor. “But once I got to daycare and saw him, I realized it was very serious.”

Rather than take Henrik to a local hospital in rural Minnesota, an ambulance rushed the toddler directly to the Level I trauma center at Children’s Minnesota in Minneapolis 40 miles away. The site is Minnesota’s only Level I pediatric trauma care center in a hospital dedicated solely to kids.

“Every minute is valuable with a brain injury,” explained Emily. “We are so thankful for the EMTs that made that important decision to go straight there and save every important minute.”

Emily described the extent of her son’s injuries as one in a million. These unfortunate odds left Henrik with a skull fracture and a severe brain bleed. The blood surrounding the area around his brain caused dangerous swelling and pressure to build inside his skull.

Derek explained there was a chance his son could never walk, talk, see with both eyes or eat independently again,

“I was heartbroken, thinking about everything that would have to change for our other son and Henrik.”

“We were told Henrik’s injuries were significant and he sustained significant brain damage,” recalled Emily while adding the family would have had to sell their home and find a new house that could accommodate Henrik’s potential special needs. “They told us they must tell us worst case scenario based on the scans and that they hoped he would surprise us all — almost every doctor we encountered told us, ‘The little ones always surprise us.’”

DILIGENT CARE

Within minutes of arriving to the emergency department at Children’s Minnesota, Dr. Kyle Halvorson, pediatric neurosurgeon and member of the Level I pediatric trauma care team at Children’s Minnesota, performed a craniectomy procedure. The neurosurgeon removed a portion of the right side of Henrik’s skull to relieve the mounting pressure and swelling on his brain. Dr. Halvorson also performed a procedure, called an external ventricular drainage, to help excess cerebrospinal fluid (CSF) drain. The specialist then placed a temporary device to monitor the pressure in Henrik’s skull.

Henrik spent 23 days recovering in the pediatric intensive care unit (PICU) at Children’s Minnesota.

“The PICU staff was diligent with Henrik’s care and so kind to us. For weeks they advocated for him, kept him comfortable and acted with such love while taking care of him,” described Emily.



LEVEL I PEDIATRIC TRAUMA CARE

Immediately after arriving at Children’s Minnesota, the pediatric specialists assessed the extent of Henrik’s head injury.

“From the moment we walked through the doors, we were blessed with the most incredible staff,” said Emily. “The 20-plus medical staff in the trauma bay, social workers and the

chaplain were all quick in their care for Henrik while also making sure we were aware of what was going on.”



Derek also praised his son's care team, "the PICU team is some of the most genuine people there are. They took such good care of Henrik as well as us."

Henrik also received care from the physical and occupational therapy teams (PT/OT) at Children's Minnesota before his discharge. Rather than planning to sell their home, the family returned to their farm in Waverly.

HENRIK'S CONTINUED CARE JOURNEY

During Henrik's care journey, he returned to Children's Minnesota for several procedures. Dr. Halvorson placed a special tube, called a shunt, from his brain to the space inside his abdomen where the stomach, bowels and other internal organs sit. The successful procedure allows excess CSF to safely drain and be naturally absorbed by Henrik's body.

In a separate surgery, Dr. Halvorson re-attached the piece of Henrik's skull that was removed during his emergency operation in May. The bone was safely stored in a special medical freezer at Children's Minnesota until it was time to re-attach it. However, Henrik's body rejected the piece of skull and left him temporarily with a large area of his head unprotected under his skin.

THE NEED FOR A CUSTOM SKULL PLATE

This called for The Kid Experts® from both the ear, nose and throat team (ENT) and neurosurgery program at Children's Minnesota to design and place a custom plate to protect Henrik's developing skull and brain. The protective plate is made from a plastic-like medical-grade material called polyether ether ketone, and it fits exactly over the open area of Henrik's skull.

The Youngren family returned to their farm and anxiously waited for a call that the custom skull plate was ready. As a precaution, Henrik wore a special helmet until his procedure with the words "farm boy tough" stenciled across it. In October 2023, the wait was over — Dr. Halvorson successfully attached the plate to Henrik's skull.

FARM BOY TOUGH

After spending months worrying, Emily and Derek now get to see for themselves the extent of Henrik's recovery. Instead of hoping their son will walk again — they see him exploring the farm, playing with his big brother and learning to talk. Henrik will undergo routine follow-up care with the neurosurgery team at Children's Minnesota to monitor his skull plate and brain development. Just like his initial injury, Henrik's parents now call his recovery one in a million.

"His recovery so far has been miraculous," Derek said.

Emily also reflected on her son's care journey, "It sometimes doesn't even feel real. We went from having a typical 14-month-old boy, to not knowing if he'd be able to walk, talk or eat independently. To him now defying the odds and being a typical rambunctious 20-month-old, I feel so grateful."



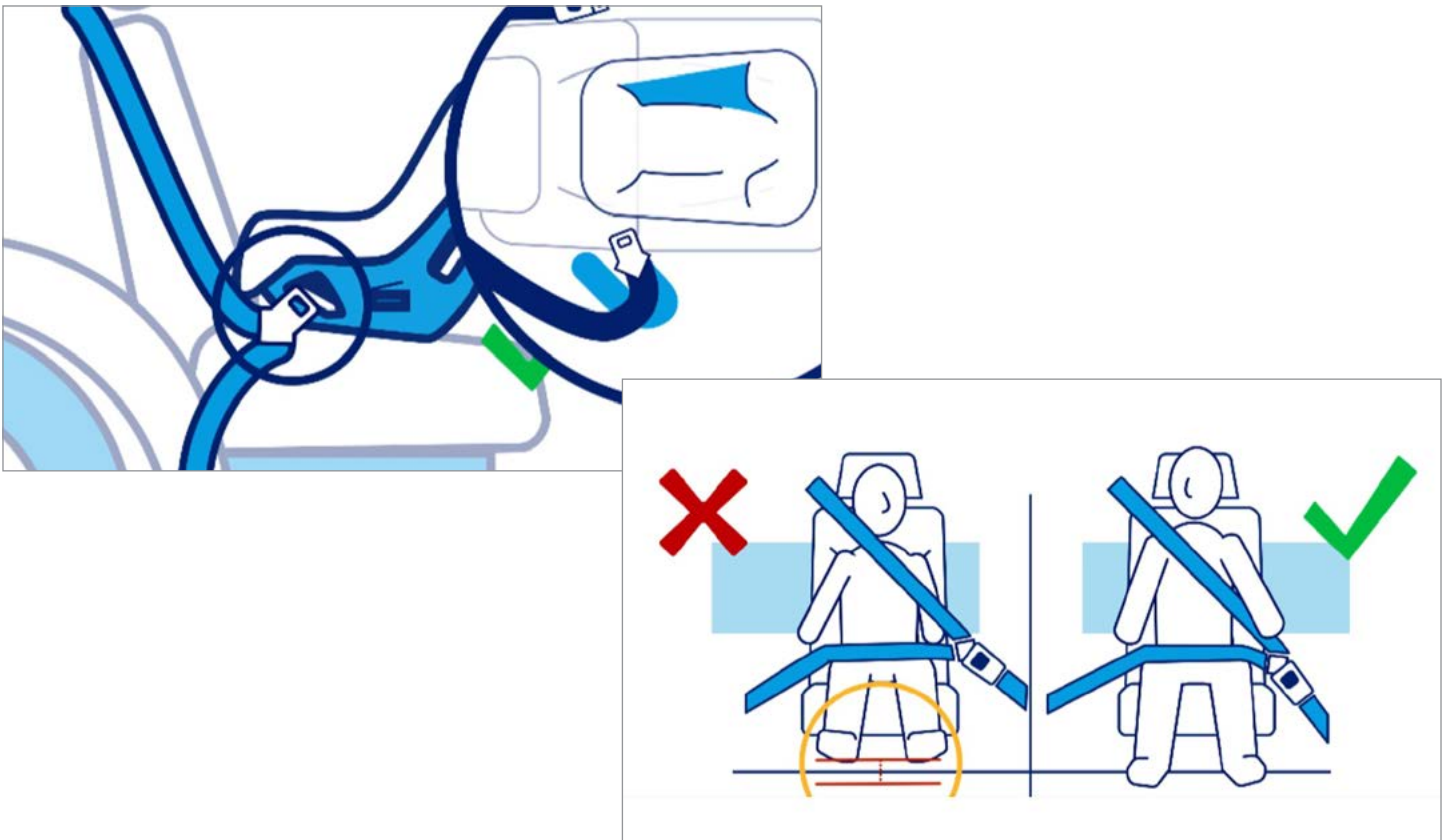
INJURY PREVENTION HIGHLIGHTS

The injury prevention team continues to prioritize equity and inclusion in its efforts to prevent injury at home, at play, and on the way. The 2022 Children’s Health Needs Assessment found that families in the metro speak 210 different languages at home. An animated video series has been developed that relies solely on positive messaging through animation, with no written or spoken words. This allows for universal understanding without the need for interpreters or multiple versions. This work was the subject of a qualitative research study, which confirmed that the messages being shared in the videos are well understood by a broad audience. This work was presented at the Pediatric Trauma Society annual meeting in November, 2023.

A grant through the Professional Executive Council (PEC) in 2022 for \$50,000 was used to create a video highlighting best practices for using car seats and booster seats. There is consistent research that demonstrates that while car seats and booster seats are very effective in preventing serious injury or death, disparities exist among families across racial, ethnic, socioeconomic, and educational level definitions. The use of car seats is also prone to significant error, which impacts their effectiveness in the event of a collision.

As the video was drafted and animated by Crash + Sue’s, feedback was sought from employee resource groups at Children’s Minnesota, child passenger seat technicians in Minnesota and nationally, and a diverse representation of community partners. The video was completed in the same style as previous videos, using positive messaging with no written or spoken language.

The goal now is to find intentional ways to share this content with other organizations, health departments, and trauma centers, as well as to develop a supplemental written guide.



1385

HELMETS DONATED

- LAW ENFORCEMENT PARTNERSHIPS
- HOSPITAL PARTNERS
 - BIKE SHOP
- CHM CLINIC PARTNERS



EDUCATION + TRAINING

- BUS DRIVERS
- DAY CARE AND FOSTER CARE PROVIDERS
 - REHAB THERAPISTS
- ECFE PARENT GROUPS

INJURY PREVENTION BY THE NUMBERS

Car seat, helmet and home safety



201

CAR SEATS CHECKED
133 INDIVIDUAL APPOINTMENTS

24

CONSULTS FROM THE COMMUNITY
FOR UNIQUE CIRCUMSTANCES



116

NEW CHILD PASSENGER SAFETY TECHNICIANS (CPSTs)

- 5 HYBRID COURSES AND 9 IN-PERSON COURSES FOR CPST TRAINING
- 2 NEW CPST INSTRUCTORS CERTIFIED



CHILD PASSENGER SAFETY EDUCATION TRAINING PROVIDED IN:

- ENGLISH
- SPANISH
- OROMO
- AMERICAN SIGN LANGUAGE

PROTECT

Seven principles for avoiding restraint during needle procedures.

"Preventing people from moving when something terrible happens... that's one of the things that makes trauma a trauma."

– Dr. Bessel van der Kolk



P

PREVENT PAIN AND FEAR.

Numb skin with a topical anesthetic prior to needle procedures. Shield the patient from frightening sights such as needles, sharp instruments, wounds or deformed extremities.



R

REINFORCE THE PATIENT'S SENSE OF AUTONOMY.

Give kids a sense of control by offering specific choices with all options offered to the child being acceptable to the care team. This may include choices for oral distraction, play, or positioning.



O

ORAL DISTRACTION.

Offering developmentally appropriate oral distractions, such as pacifiers, sucrose, or a popsicle, up to 2 minutes before and during the procedure reduces pain and distress.



T

TEACH PATIENTS AND PARENTS WHAT TO EXPECT.

Reframe the procedure and equipment in non-threatening terms and give kids a chance to play with the materials. Tell the patient and caregiver what will be expected of them and provide a job for everyone.



E

ENGAGE THE PATIENT IN PLAY OR RELAXATION.

Make sure the patient is fully engaged in play or relaxation. Have multiple backup activities ready: age-appropriate games on a tablet, seek and find books, blowing bubbles, or eating a popsicle.



C

CLINICIAN EXPERTISE MATTERS.

The younger the child, the higher their risk of poorly managed procedural pain, distress and restraint. Make it a priority to provide young children with the most experienced proceduralists available.



T

TRUST

Trust is built through multiple, brief, non-threatening interactions. Once the patient loses trust, a new plan must be made and sedation should be considered.

SOURCES

Scribner-O'Pray M, Taylor ED, Krause E, Nickel A, Bergmann KR. Factors Associated With Low Procedural Pain Scores Among 1- to 5-Year-Old Patients Undergoing Facial Laceration Repair. *Pediatr Emerg Care*. 2023 Mar 1;39(3):135-141. doi: 10.1097/PEC.0000000000002744. Epub 2022 May 17. PMID: 35608526. P R T E C T M0132 01/24 0 QR COD

WAYS TO IMPLEMENT THE **PROTECT** PRINCIPLES

PREVENT PAIN AND FEAR.

- Topical anesthetics for needle procedures: lidocaine cream, jet injected lidocaine, LET, Buzzy
- Systemic analgesia: oral acetaminophen, oral ibuprofen, intranasal fentanyl, intravenous morphine
- Test for numbness/analgesia before the procedure and revise the pain plan as needed
- Keep sharp instruments or scary tools out of sight and out of mind. Use visual barriers such as books, blankets, or positioning techniques to shield the patient from injuries or instruments.
- Choose your words carefully. Say “string bandaid” instead of “stitches” or “string holder” instead of “needle driver”
- Demonstrate confidence and a sense of play. Calmness is contagious!

REINFORCE THE PATIENT’S SENSE OF AUTONOMY.

- Give meaningful choices with all options being acceptable and realistic: “do you want an orange popsicle or a red popsicle?”
- Keep infants and young children snuggled with their caregiver
- Allow patients to remain in a position of comfort instead of laying them flat. “Do you want to sit up by yourself or do you want to sit in your mom’s lap?”

ORAL DISTRACTION.

- Offer age-appropriate options to the child, such as lollipops, popsicles, oral sucrose, or breastfeeding immediately before and/or during the procedure
- Use different flavors or offerings during the procedure as a way to engage in play or to re-direct attention

TEACH PATIENTS AND PARENTS WHAT TO EXPECT.

- Coach caregivers to act as though they are on a fun adventure with their child. No one says “don’t worry, it will be over soon” when they’re having fun!
- Explain to kids what they will feel, see, smell, taste, and hear.
- Introduce instruments and materials as non-threatening, and let kids play with them. Ideas include squirting water from the syringe, feeling the gauze, and showing the child that the needle driver is blunt.
- Give everyone in the room a job to do during the procedure, including the caregivers. “Your job is to eat your popsicle and read a book with Dad. My job is to work on the string bandaid. Dad, your job is to read a story and keep her comfy on your lap.”

ENGAGE THE PATIENT IN PLAY OR RELAXATION.

- Active engagement involving play/problem solving is better than passive distraction. Creating stories together, determining the best way to care for imaginary pets, or singing songs may be developmentally appropriate options.
- Engage kids’ curiosity through various means of play, such as toys, tablet apps, seek-and-find books, blowing bubbles, or oral distractions. Have multiple back-up options immediately ready to anticipate when a child is needing a new distraction.

CLINICIAN EXPERTISE MATTERS.

- Prioritize providing young children, who are at greatest risk for poorly managed procedural pain, with the most skilled proceduralist available. This may also include engaging with vascular access/IV therapy teams or wound care specialists.

TRUST

- Trust is needed between the clinical team, caregivers, and the child for the best outcome. Children develop a rapport with their clinical team through short, brief, non-threatening interactions, such as through play or a calm approach.
- Once the child loses trust, new plans to complete the procedure may need to be made. This may include nitrous or intravenous sedation, as appropriate.

TRAUMA SPEAKER SERIES AND CONFERENCE PARTICIPATION

WESTERN PEDIATRIC TRAUMA CONFERENCE JULY 2023

Children's Minnesota is a member of the planning committee for the Western Pediatric Trauma Conference, which is a collaborative effort between pediatric trauma centers across the western United States.

Content shared during the conference emphasizes evidence-based standards of care for injured children and trauma program development best practices as a way to improve the care of kids everywhere. Children's Minnesota participated in this event in a number of ways:

- Dr. Siva Chinnadurai, an ENT surgeon, presented on the management of airway injuries in children.
- Alyx Bystrom presented a poster titled "Decreasing pressure injuries and increasing education in the pediatric population"
- Dex Tuttle, Laura Plasencia and Christy Hacker, MPH, CPST-I, from the Great Plains Tribal Leaders' Health Board, presented a poster titled "Promoting Safe Travel through Indian Country: Partnership between the Great Plains Tribal Leaders' Health Board and Children's Minnesota"
- Michael Scribner-O'Pray won Best Poster for the poster outlining work by Erin Taylor, DNP, APRN, and he titled "Factors Associated with Low Procedural Pain Scores Among 1–5 year old Patients undergoing Facial Laceration Repair"

SHARING CHILDREN'S EXPERTISE WITH THE REGION

Trauma Services represents Children's Minnesota at a number of events throughout the region, sharing resources to improve the care of kids locally in those areas as well as to foster collaboration in the event patients need to transfer for further care. Events in 2023 included:

- 42nd Annual Arrowhead EMS Conference, which is Minnesota's largest gathering of EMS providers, held each year in January in Duluth, Minnesota
- Minnesota EMS Medical Directors Retreat, held each year in Alexandria, Minnesota, which brings together leaders of EMS agencies throughout the state to share best practice and discuss emerging trends
- North Dakota Trauma Foundation Annual Conference, held in 2023 in Fargo, ND. This is a collaborative effort by the four verified Level I and II trauma centers in North Dakota, and attended by EMS and hospital personnel
- Toward Zero Deaths annual conference, held in October each year in Minnesota. This event is led by the Department of Traffic Safety, and brings together law enforcement personnel, EMS agencies, and child passenger safety professionals to identify strategies and celebrate successes in eliminating traffic-related injuries and fatalities.



TRAUMA EDUCATION

HYBRID ACUTE WOUND MANAGEMENT AND SUTURING WORKSHOP

To meet the needs of both internal providers and our external partners, Children's Minnesota hosts the Acute Wound Management and Suturing Workshop. This has evolved into a hybrid course consisting of virtual presentations by a number of specialists here at Children's Minnesota, covering a wide variety of topics related to acute wound management, laceration repair, tools and techniques for repairs, pain management, and strategies for caring for children in this setting. An optional in-person workshop is also available twice per year, where providers can receive additional proctored training on suture technique using simulated skin.

TRAUMA NURSE CORE COURSE (TNCC)

This course is a 1.5 day course designed to provide core-level trauma knowledge and to develop psychomotor skills associated with the delivery of emergency nursing to injured patients. Four TNCC courses were hosted in 2023, training 34 nurses to ensure TNCC certified nurses are available to care for injured children in the St. Paul and Minneapolis Emergency Departments.

ESSENTIALS OF CRITICAL CARE: TRAUMA WORKSHOP

This course is designed to prepare critical care nurses to care for injured children in the PICU setting, in accordance with requirements set forth by the American College of Surgeons and the Minnesota Department of Health. Trauma Services collaborated with the PICU clinical educators and the Center for Professional Development and Practice (CPDP) to provide training for 48 PICU nurses in 2023.



Children's MINNESOTA
The Kid Experts®
Level I Pediatric Trauma Center

ONLINE RESOURCES

Clinical Guidelines • Trauma Speaker Series •
Reference Guides • Injury Prevention Materials •
and More!



cmn.education.childremsmn.org/trauma
(Scroll down to find Resources and Quick Links.)

**CHILDREN'S MINNESOTA
PHYSICIAN ACCESS
866-755-2121**
Your resource for 24/7 referral, admission
and neonatal transport assistance.

M0191 12/23

INJURY PREVENTION IN THE MEDIA

Children’s Minnesota reaches large regional audiences by promoting messages about safe play, travel and injury prevention.

Children's Minnesota
Oct 30, at 09:00am

Put your stash away from your kid's Halloween candy stash. Get more advice on how to safely store edibles so kids don't get in thinking they are candy. Dr. Andrew Kiragu, associate chief of pediatrics, shares more tips. [short.url/aBcXyZ](https://bit.ly/aBcXyZ)

Children's Minnesota
Jul 03, at 09:00am

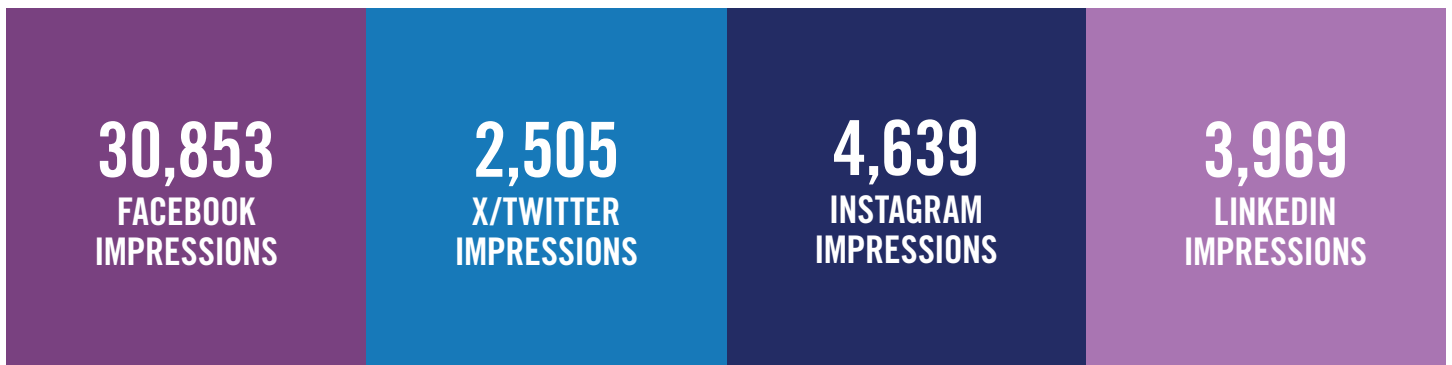
It's going to be a hot 4th of July week! Kids may want to cool off in a pool or lake. Learn to keep your kids safe in the water with these drowning prevention tips. [short.url/aBcXyZ](https://bit.ly/aBcXyZ)

Children's Minnesota
28,552 followers
6mo •

"The message to people is to learn CPR." Dr. Manu Madhok, emergency medicine professor, discusses his recent research about the discrepancies in bystander CPR rates. Learn more about Children's Minnesota's free CPR training course. #TheKidExperts <https://bit.ly/3sg35CS>

R could make you a lifesaver. Here's how to learn. <https://bit.ly/3sg35CS>
6m • 6 min read

41,966 TOTAL SOCIAL MEDIA IMPRESSIONS



TRAUMA AND INJURY PREVENTION ON THE MEDIA

76

Trauma media stories in 2023

319,818,963

Impressions

AWARDS

ALYX BYSTROM, MSN, RN, TCRN, CEN

DAISY NURSE LEADER AWARD

CHILDREN'S MINNESOTA

Alyx was awarded the DAISY Nurse Leader Award during Nurses Week in 2023. Alyx reviews the care of each injured patient in the trauma registry as part of her role as the Trauma Program Lead. In December 2021, Alyx graciously agreed to serve as the trauma program manager for the St. Paul campus in addition to her responsibilities as the performance improvement coordinator for Trauma Services. She led the trauma program re-designation for the St. Paul campus, receiving high praise by the reviewers and the MDH representatives who participated in the site visit in October, 2022, for her leadership and organization of the visit.

Alyx works diligently to ensure the standards of care in place for injured children are met on both campuses. She has collaborated across departments and disciplines on a variety of projects, including development of a pediatric splinting guide, an automated process for notifying blood bank of Level I trauma team activations, improved order sets for patients requiring soft helmets or prolonged use of a cervical collar, and updated policies and protocols. She represents Children's Minnesota well in her interactions with the Minnesota Department of Health and the American College of Surgeons. She goes above and beyond to support the trauma service, and the mission of the organization and the goals of the trauma service.

DEX TUTTLE

INJURY PREVENTION COORDINATOR OF THE YEAR

INJURY FREE COALITION FOR KIDS (IFCK) — INJURY FREE AWARDS

Dex Tuttle was named the 2023 Injury Prevention Coordinator of the Year by the Injury Free Coalition for Kids, a national program comprised of hospital-based, community-oriented programs whose efforts are anchored in research, education, and advocacy. Dex was recognized in part for his efforts to make safety messages more equitably available through the development of animated videos that do not rely on spoken or written word to convey their messages. This incorporation of art and positive messaging has allowed messages to be shared across cultural and language groups. He also conducted research on the effectiveness and efficacy of these videos in communicating their messages.

His enthusiasm for injury prevention and passion for reaching families and caregivers who are otherwise left out of the national conversation about safety are inspiring. He is the only instructor in Minnesota certified to teach the Child Passenger Safety Technician, Safe Travels for All Children, and Safe Native American Passages courses. He has collaborated extensively with the Great Plains Tribal Health Leaders Board, which serves 18 tribes in a four-state area, to develop a self-sustaining child passenger safety program, including leading CPST courses and mentoring their first CPST instructor.

Dex partners with over 30 community organizations and a multitude of hospital departments to champion efforts to educate and share resources, including bike helmets and safety locks. He represents Children's Minnesota on multiple local and national committees, always striving to be as inclusive and resourceful in his efforts as possible.

PUBLICATIONS IN 2023 RELATED TO THE CARE OF INJURED CHILDREN

Names listed in bold indicate a Children's Minnesota professional staff member or employee.

1. Hanson HR, Formica M, Laraque-Arena D, Zonfrillo MR, Desai P, O'Neil JO, Unni P, Johnson EL, Cobb P, Agarwal M, Beckworth K, Schroter S, Strotmeyer S, Donnelly KA, Middelberg LK, Morse AM, Dodington J, Latuska RF, Anderson B, Lawson KA, Valente M, Levas MN, **Kiragu AW**, et al. A multicenter evaluation of pediatric emergency department injury visits during the COVID-19 pandemic. *Inj Epidemiol.* 2023 Dec 13;10(1):66. doi: 10.1186/s40621-023-00476-z. PubMed [citation] PMID: 38093383, PMCID: PMC10717699
2. Labuz DF, Tobias J, Selesner L, Han X, Cunningham A, Marengo CW, Escobar MA Jr, Hazeltine MD, Cleary MA, Kotagal M, Falcone RA Jr, Vogel AM, MacArthur T, Klinkner DB, Shah A, Chernoguz A, Orioles A, **Zagel A**, Gosain A, Knaus M, Hamilton NA, Jafri MA. Impact of institutional prophylaxis guidelines on rates of pediatric venous thromboembolism following trauma-A multicenter study from the pediatric trauma society research committee. *J Trauma Acute Care Surg.* 2023 Sep 1;95(3):341-346. doi: 10.1097/TA.0000000000003918. Epub 2023 Mar 6. PubMed [citation] PMID: 36872513
3. Mattice T, Schnaith A, **Ortega HW**, Segura B, Kaila R, Amoni I, Shanley R, Louie JP. A Pediatric Level III Trauma Center Experience With Dog Bite Injuries. *Clin Pediatr (Phila).* 2023 Sep 13;99228231200097. doi: 10.1177/00099228231200097. [Epub ahead of print] PubMed [citation] PMID: 37705176
4. **Riggs A, Bergmann KR, Zagel AL.** Self-Reported Anxiety and Perception of Safety Following School Lockdown Drills among Adolescent Youth. *J Sch Health.* 2023 Dec;93(12):1129-1136. doi: 10.1111/josh.13362. Epub 2023 Jul 25. PubMed [citation] PMID: 37489107
5. Zhang AL, Louie JP, **Ortega HW.** Pediatric Glue-Related Injuries in U.S. Emergency Departments: A 10-Year Overview. *Clin Pediatr (Phila).* 2023 Jan;62(1):17-23. doi: 10.1177/00099228221108532. Epub 2022 Jul 7. PubMed [citation] PMID: 35801269
6. **Lefchak B, Bergmann KR, Lammers S, Hester GZ.** Piloting a Mobile Clinical Decision Support Application for Pediatric Clinical Guidelines. *Clin Pediatr (Phila).* 2023 Aug 30;99228231197078. doi: 10.1177/00099228231197078. [Epub ahead of print] PubMed [citation] PMID: 37649259
7. Auerbach MA, Whitfill T, Montgomery E, Leung J, Kessler D, Gross IT, Walsh BM, Fiedor Hamilton M, Gawel M, Kant S, Janofsky S, Brown LL, Walls TA, Alletag M, Sessa A, Arteaga GM, Keilman A, Van Ittersum W, Rutman MS, Zaveri P, Good G, Schoen JC, ... **Vora S**, et al. Factors Associated With Improved Pediatric Resuscitative Care in General Emergency Departments. *Pediatrics.* 2023 Aug 1;152(2). pii: e2022060790. doi: 10.1542/peds.2022-060790. PubMed [citation] PMID: 37416979

OPEN IRB STUDIES RELATED TO TRAUMA CARE

1. Alberto Orioles, MD: Observation of Multi-Center Quality Improvement Project: Improving Safety and Quality of Tracheal Intubation Practice in Pediatric Emergency Department and Neonatal ICUs (NEAR4KIDS in PICU and NICU). IRB #1309-109.
2. Robert Doss, PsyD, ABPP-CN, LP: The Use of Magnetoencephalography & Magnetic Resonance Spectroscopy to Investigate Potential Biomarkers of Pediatric Concussion: A Multi-Modal Imaging Pilot Project. IRB #1411-082, 1411-109.
3. Robert Doss, PsyD, ABPP-CN, LP: Differences in Rate of Recovery from Concussion in Children Injured During the School Year vs. Summer Months. IRB #1507-030, 1507-082.
4. Amy Linabery, PhD, MS: Objective Measurement of Sleep and Physical Activity as Predictors of Recovery After Concussion: A Prospective Pilot Study. IRB #1708-116, 1708-031.
5. Manu Madhok, MD: Cognitive Aid to Improve Team Leader Performance In a Simulated Hazardous Material Incidents- A Pilot Study. IRB #1803-067.
6. Amy Linabery, PhD, MS: Combined Clinical/Research Concussion Database. IRB#1806-067, 1806-079.
7. Amy Linabery, PhD, MS: Examining Microhemorrhages in Pediatric and Adolescent Concussion Patients with Extended Symptoms. IRB #1807-113.

8. Henry Ortega, MD; Kelly Bergmann, DO, MS. Potential Disparities in Time to Opiate Administration for Long Bone Fractures in the Emergency Department. IRB #1809-140.
9. Kyle Halvorson, MD: Evaluating a Novel MRI Biomarker to Identify Retinal Hemorrhage: A Pediatric Chart Review Study. IRB #1812-140, 1812-143.
10. Kelly Bergmann, DO, MS: The Pediatric Submersion Score. IRB #1812-143.
11. Nathan Kreykes, MD: Prospective Longitudinal Trial Evaluating Operative vs. Non-Operative Management of Pancreatic Injuries in the Pediatric Population. IRB #1906-068.
12. Shea Lammers, MS: Psychological Sequelae Following Traumatic Injury: The Role of Perceived Resiliency and Psychosocial Factors. IRB #1907-090.
13. Amy Linabery, PhD, MS: Sex Differences in Concussion Presentation and Recovery in a Pediatric Population. IRB #1907-095
14. Amy Linaberry, PhD, MS; Robert Doss, PsyD, ABPP-CN, LP: Examining Associations Between Injury Characteristics and Concussion Recovery in Pediatric Patients. IRB #2002-016.
15. Mike Finch, PhD; Donna Eull, MA, RN: A Retrospective Cohort Study to Examine Potential Differences in the Acute Pain Management of Hospitalized Children by Sex, Race/ Ethnicity and Limited English Proficiency. IRB #2002-026.
16. Amy Linabery, PhD, MS: The Effects of Sleep Disturbances on Concussion Recovery in a Pediatric Population. IRB #2002-043.
17. Andrew Kiragu, MD: Pediatric Injuries During COVID Epidemic. IRB #2020-091.
18. Brianne Barnett Roby, MD; Siva Chinnadurai, MD: Children's Minnesota ENT and Facial Plastic Surgery Program Patient Registry. IRB #2020-054.
19. Siva Chinnadurai, MD: Pediatric Facial Scarring: An evaluation of the most visually noticeable locations of facial scarring and validation of a caregiver reported scar assessment scale for pediatric facial scars. IRB #2021-016.
20. Ariel Stein, MD: At-home administration of opioid analgesia in children discharged from the emergency department after reduction of forearm fracture. IRB #2021-017.
21. Jennifer Laine, MD: Pediatric Orthopedic Trauma and Infection (CORTICES Registry). IRB #2021-030.
22. Amy Linabery, PhD, MS: Brief RCT for Elevated Anxiety Sensitivity after Trauma to the Head (BREATHe) Study Also: A brief psychological intervention following concussion for children and adolescents with heightened anxiety sensitivity: A pilot randomized controlled trial. IRB #2022-048.
23. Amy Linabery, PhD, MS: Yoga-based intervention following concussion in youth: A pilot randomized controlled trial. IRB #2022-041.
24. Andrew Kiragu, MD: Ketogenic Diet Following Moderate to Severe Pediatric Traumatic Brain Injury. IRB #2022-041.
25. Bergthor Jonsson, MD: External Validation of the Surgical Intervention for Traumatic Injuries (SITI) Score in Children. IRB #2023-019.
26. Kelly Bergmann, DO, MS: DRIFT Trial--Distal Radius Interventions for Fracture Treatment. IRB #2023-029
27. Kelly Bergmann, DO, MS: COMET Trial--Cast or Operation for Medial Epicondyle fracture Treatment in children. IRB #2023-030.
28. Laura Plasencia, MPH, RN: Pediatric cervical spine clearance: a multi-center prospective observational study. IRB #2023-071.
29. Amy Linabery, PhD, MS: Use of an Electronic Eye Tracking Device to Predict Concussion in the Pediatric Emergency and Specialty Clinic Setting after Traumatic Brain Injury. IRB #2023-088.
30. Shea Lammers, MS: Evaluating the Feasibility of Administering an Acute Stress Screener among Children Who Experience Traumatic Injuries. IRB #2024-028.

LOCATIONS



MINNEAPOLIS

2525 Chicago Avenue South | Minneapolis, MN 55404
612-813-6000

Our pediatric emergency department and Level I Trauma Center in Minneapolis is Minnesota's only Level I pediatric trauma center in a hospital dedicated solely to kids.

Drop-off and pick-up is located on E. 25th Street.



ST. PAUL

345 North Smith Avenue | St. Paul, MN 55102
651-220-6000

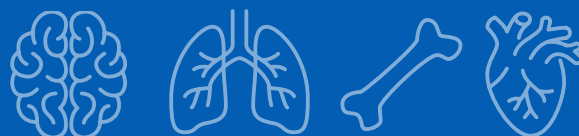
The Peter J. King Emergency Department in St. Paul is a Level 4 trauma center, with resources for emergency resuscitation and care of injured patients. Patients may require transfer to the Minneapolis campus for care by the trauma care team and other specialists.

Drop-off and pick-up is located on Smith Avenue.

Children's
MINNESOTA

The Kid Experts[®]

Level I Pediatric Trauma Center



childrensMN.org/Trauma