REGION 8 TRAUMA ADVISORY COUNCIL

DECEMBER 2025

AGENDA

- Call to order
- Attendance and introductions
- Agenda approval
- Minutes approval
- Public comment

STATE UPDATES

EMS Coordination Council

- Rural Subcommittee
- MCA Subcommittee
- Patient Movement Subcommittee

State Trauma Advisory Council

Region 8 Trauma

Prehospital Blood

Retrospective analysis using EMS data and hospital trauma registry using definition of who to extract

Points to ensure completeness and accuracy moving forward:

- Time PSAP / Dispatch *received the 911 call*, then all other times
- Initial scene BP, pulse, respirations (this includes first responder agencies!)
- Accurate GCS and AVPU
- End tidal numeric
- Procedures
- Initial emergency department BP, pulse, respirations, GCS
- ISS scores

Prehospital Blood

Blood coordinator guide is under formulation with appropriate CFRs and blood standards with citations

National repository of data is being fleshed out

Suggest consideration in the R8 2026-2029 Systems of Care application

R

T

A

C

2026 Calendar

January

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10		12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7		9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11		13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13		15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8		10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

10 AM ET

PUBLIC INFORMATION BASICS

To equip participants with the skills needed to be full or part-time PIOs, including oral and written communications; understanding and working with the media; and basic tools and techniques to perform effectively as a PIO, both in the proactive/ advocacy times and crisis/emergency response.

Prerequisites: IS-029.a
Cost: No cost
MI-TRAIN Course ID: 1104108
Dates and Location:
July 28 - 30, 2026 – Marquette

OLD BUSINESS

MEDICAL DIRECTOR COLLABORATION

By December 2025, the RTN shall encourage the MCAs to have active, minimally quarterly, meetings of their Professional Standards Review Organizations that include MCA medical directors' and trauma medical directors' input on reports that identify patients meeting trauma triage criteria, procedures rendered, hospital capabilities, and hospital outcomes.

By December 2024, the RTN will author a procedure template for MCAs and hospital trauma programs to adopt that formalizes the relationship between trauma medical directors and MCA medical directors and the content to which there should be collaboration, i.e., medical directors' and trauma medical directors' invited to provide input on MCA PSRO reports that involved trauma care.

COLLABORATION TEMPLATE

MCA trauma related protocol revisions

MCA PSRO reviews of protocol identified red criteria patients with areas of improvement

Trending prehospital or hospital events that need both medical directors to review and be part of action planning

Injury Prevention Plan UPDATE

IP Ad-Hoc Committee November 6 meeting with Emilee Schwalbach from Upper Peninsula Commission for Area Progress (UPCAP):

1. UPCAP is the designated Michigan Area Agencies on Aging organization

What are Area Agencies on Aging?

A nationwide network of entities designated by federal statute to plan and develop services to promote health and independence. They serve as a one-stop shop with expertise on aging and long-term care. AAAs were created 40 years ago by the federal Older Americans Act (OAA) with the mission of creating a system of home and community-based services to maximize the independence and dignity of older adults and provide alternatives to nursing homes. The state entity responsible for overseeing OAA services and designating AAAs is the Michigan Aging and Adult Services Agency.

Injury Prevention Plan UPDATE

IP Ad-Hoc Committee November 6 meeting with Emilee Schwalbach from Upper Peninsula Commission for Area Progress (UPCAP):

2. UPCAP represents the UP on the Michigan Falls Prevention Coalition

The Michigan Falls Prevention Coalition brings together organizations and providers to collaborate to reduce fall risk among older adults and adults with disabilities, identify state or community needs, recommend policy changes, and build capacity. We aim to identify fall prevention programs available in Michigan and establish referral pathways to the programs, ensuring clinicians can access and utilize them.

3. UPCAP is the host of 211 for the Upper Peninsula

MDHHS and Michigan Falls Prevention Coalition launch 211 feature page to expand access to fall prevention resources - June 04, 2025

LANSING, Mich. – The Michigan Department of Health and Human Services (MDHHS) Bureau of Aging, Community Living and Supports Health Services, Oakland University and the Michigan Falls Prevention Coalition have partnered with Michigan 211 to offer fall prevention resources on mi211.org. The information is designed to connect health care providers, community organizations and residents with vital fall prevention resources. About 30% of Michiganders ages 65 and older report falling each year and most of these falls occur at home. "This initiative aims to improve statewide access to evidence-based fall prevention programs, durable medical equipment and nutrition services that support older adults and individuals at risk of a fall," said Dr. Natasha Bagdasarian, chief medical executive. "Falls can lead to serious injuries, including head trauma and broken bones. By collaborating and sharing resources, we can work together to make Michigan a safer place for everyone."

Individuals and health care professionals can access resources and services through the site or by calling 211. Searches for education and safety planning resources, physical health and wellness services, daily living supports and home accessibility modifications can be conducted by ZIP code. In addition, 211 specialists have been trained to assist callers in locating fall prevention services. The website was made possible through a $408,499 grant from the Michigan Health Endowment Fund Healthy Aging Grant. Funding also supported development of the Michigan Falls Coalition website and an awareness campaign about the Michigan 211 resource. The coalition is supported through partnerships with MDHHS and Oakland University and brings together organizations and providers to collaborate to reduce fall risks among older adults and adults with disabilities, identify state or community needs, recommend policy changes and build capacity. "Oakland University is proud to lead innovative research and community partnerships that improve the health and safety of Michiganders," said Dr. Chris Wilson, lead author on the grant application and associate professor in the Physical Therapy Program at Oakland University's School of Health Sciences. "Through our leadership within the Michigan Falls Prevention Coalition and initiatives like the 211 resource platform, we are committed to connecting older adults and individuals with disabilities to the services and supports they need to stay safe, active, and independent in their homes and communities."

https://www.michigan.gov/mdhhs/inside-mdhhs/newsroom/2025/06/04/falls-prevention

Injury Prevention Plan UPDATE

UPCAP has not had data to use as support during their representation of the Upper Peninsula at the Michigan Falls Coalition meetings.

On November 13, Lyn provided to the IP Ad Hoc and UPCAP the following analysis to assist in identifying key locations for awareness / injury prevention messaging / programs:

CY2025 YTD EMS records fall or greater 1 level fall, =>5 at location	
County	**Facility Name**
Baraga	Bayside Village
Chippewa	Hearthside Assisted Living
Chippewa	Chippewa Medical Associates
Chippewa	Kewadin Casinos
Chippewa	Kinross Correctional Facility
Delta	Christian Park Health Care Center
Delta	Harbor Tower Apartments
Delta	North Woods
Delta	West Highland Apartments
Gogebic	Keen Ager Adult Foster Care
Gogebic	E Vaughn Apartments
Gogebic	N Lake & Pabst
Iron	Iron County Medical Care Facility
Luce	E Victory Way
Marquette	Brookridge
Marquette	Eastwood
Marquette	Jacobetti Vet
Marquette	Jamrich NMU
Marquette	Marquette County Medical Care Facility
Marquette	Warming Center
Menominee	Harbors Retirement
Schoolcraft	Schoolcraft Medical Care Facility

Injury Prevention Plan UPDATE

UPCAP will provide to the R8 IP Ad Hoc Committee:

1. Process to update 211
2. Fall prevention programs they are aware of throughout the region

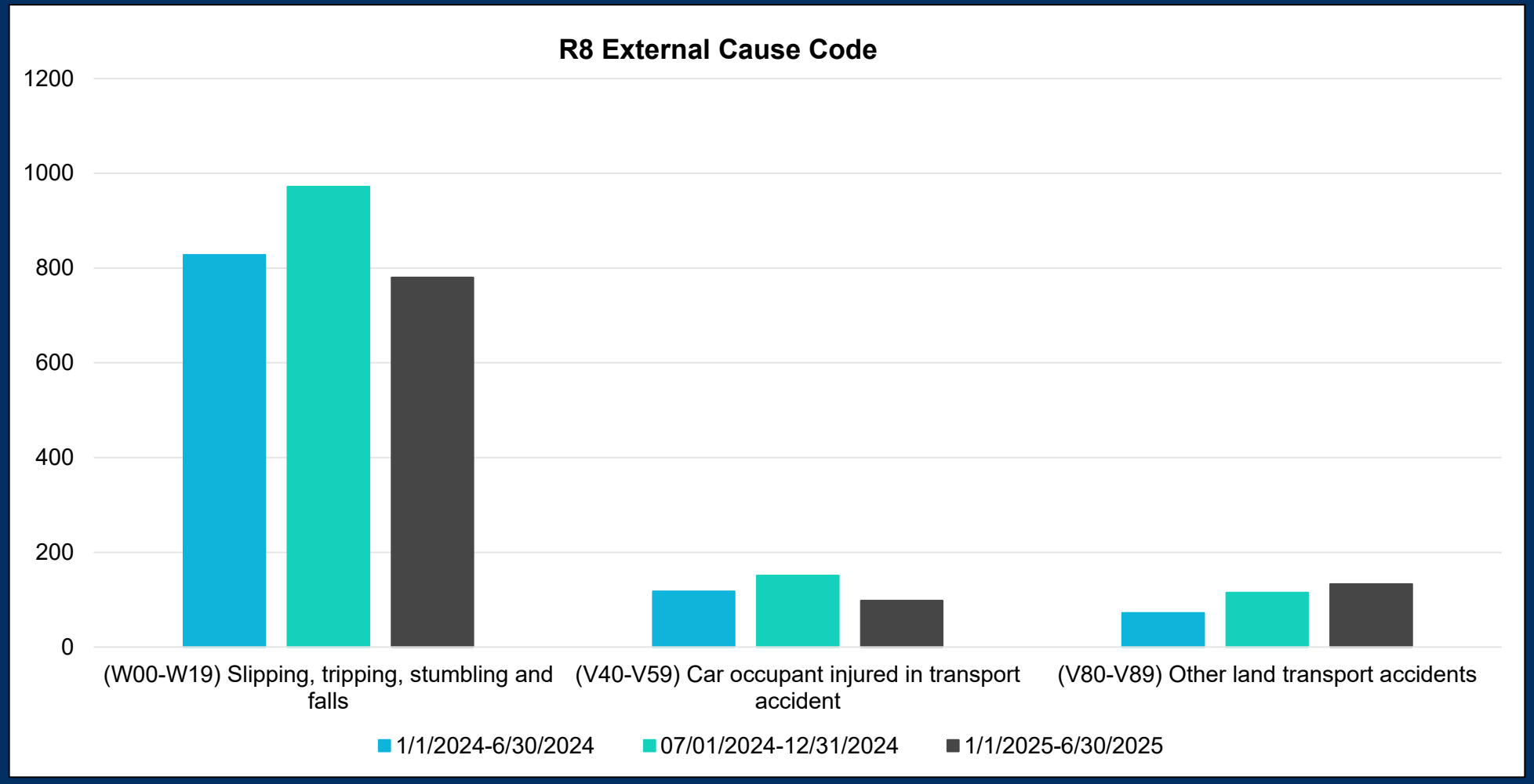
Injury Prevention Plan UPDATE

Our Injury Prevention Program List

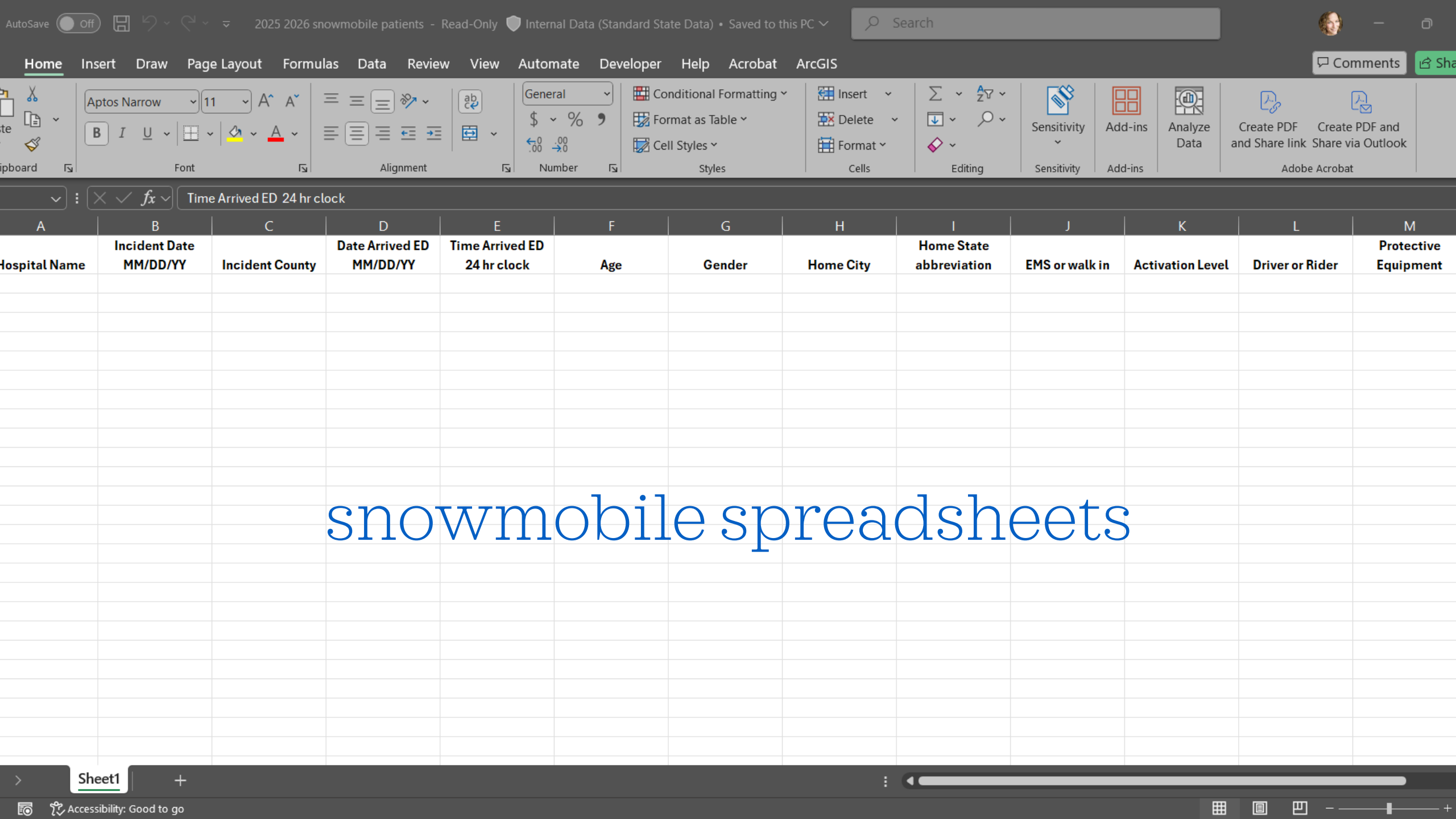
Numerous rows have been removed as they were not validated by hospital trauma programs

Lyn has updated the Ad Hoc Committee with counties were there are gaps in known fall prevention programs

Injury Prevention Plan UPDATE



NEW BUSINESS


AutoSave Off
2025 2026 snowmobile patients - Read-Only
Internal Data (Standard State Data) • Saved to this PC
Search
Home Insert Draw Page Layout Formulas Data Review View Automate Developer Help Acrobat ArcGIS
Comments
Aptos Narrow 11
General
Conditional Formatting
Format as Table
Cell Styles
Insert
Delete
Format
Sensitivity
Add-ins
Analyze Data
Create PDF and Share link
Create PDF and Share via Outlook
Font
Alignment
Number
Styles
Cells
Editing
Sensitivity
Add-ins
Adobe Acrobat
Time Arrived ED 24 hr clock
A B C D E F G H I J K L M
Hospital Name
Incident Date MM/DD/YY
Incident County
Date Arrived ED MM/DD/YY
Time Arrived ED 24 hr clock
Age
Gender
Home City
Home State abbreviation
EMS or walk in
Activation Level
Driver or Rider
Protective Equipment
snowmobile spreadsheets
Sheet1
Accessibility: Good to go

PREHOSPITAL TRAUMA COMPENDIUMS

Prehospital Trauma Compendium: Traumatic Pneumothorax Care: Position Statement and Resource Document of NAEMSP

Prehospital Trauma Compendium: Tranexamic Acid in Trauma – A Joint Position Statement and Resource Document of NAEMSP, ACEP, and ACSCOT

Prehospital Trauma Compendium: Prehospital Management of Spinal Cord Injuries – A NAEMSP Comprehensive Review and Analysis of the Literature

Prehospital Trauma Compendium: Management of Suspected Femoral Shaft Fractures – A Position Statement and Resource Document of NAEMSP

TXA

Dr. Fales, SOM Medical Director EMS and Systems of Care

Current State EMS Protocol for TXA in Trauma

9. Per MCA Selection, if bleeding is uncontrolled and non-compressible, administer Tranexamic Acid (**TXA**)

Tranexamic Acid (TXA) Included

☐ Yes ☐ No

Age greater than 18 years old AND > 50 kg

1. Destination must be capable of administering 2nd dose.
2. Draw up and mix 1 gram of **TXA** into a 100 ml bag of **normal saline** solution (0.9% Sodium Chloride Solution).
   a. Use a filter needle if the medication is supplied in an ampule.
   b. Apply pre-printed "**TXA** added" fluorescent-colored label to IV bag.
3. Administer mixed medication via piggyback into IV/IO line over 10 minutes.

MDHHS Bureau of Emergency Preparedness, EMS and Systems of Care

Michigan
Trauma and Environmental
HEMORRHAGIC SHOCK

Initial Date: 3/23/2018
Revised Date: 05/23/2023 Section: 2-14

Hemorrhagic Shock

Purpose: To provide treatment for patients displaying signs and symptoms of shock attributed to hemorrhage including trauma and **severe postpartum hemorrhage.**

1. Follow **General Pre-hospital Care-Treatment Protocol** control bleeding according to **Bleeding Control (BCON)-Treatment Protocol** when applicable.
2. Transport according to **Adult and Pediatric Trauma Triage-Treatment Protocol** and MCA Transport Protocol.
3. No intervention should delay transport.
4. Obtain vascular access.
5. For signs of hypotension unaccompanied by moderate to severe head trauma administer NS or LR IV/IO fluid bolus IV/IO (refer to **Vascular Access and IV Fluid Therapy-Procedure Protocol**).
   a. Adults (≥ 14 years of age): up to 1 liter
   b. Pediatrics (< 14 years of age): up to 20 mL/kg
6. For signs of hypotension accompanied by moderate to severe head trauma refer to **Head Injury–Treatment Protocol** for fluid administration guidelines.
7. Consider other causes of traumatic hypotension and treat accordingly. (Tension pneumothorax see **Pleural Decompression-Procedure Protocol,** neurogenic shock see **Shock-Treatment Protocol**)
8. Hypotensive patients unaccompanied by moderate to severe head trauma should receive additional IV/IO fluid boluses, as indicated by hemodynamic state.
   a. Adults (≥ 14 years of age): repeat IV/IO fluid bolus to a maximum of 2 liters.
   b. Pediatrics (< 14 years of age): repeat dose of 20 ml/kg to a maximum of 40 ml/kg.
   c. Monitor for pulmonary edema.
   d. If pulmonary edema presents, stop fluids and contact Medical Control for direction.
9. Per MCA Selection, if bleeding is uncontrolled and non-compressible, administer Tranexamic Acid (**TXA**)

Tranexamic Acid (TXA) Included

☐ Yes ☐ No

Age greater than 18 years old AND > 50 kg

1. Destination must be capable of administering 2nd dose.
2. Draw up and mix 1 gram of **TXA** into a 100 ml bag of **normal saline** solution (0.9% Sodium Chloride Solution).
   a. Use a filter needle if the medication is supplied in an ampule.
   b. Apply pre-printed "**TXA** added" fluorescent-colored label to IV bag.
3. Administer mixed medication via piggyback into IV/IO line over 10 minutes.

Current TXA Protocol for Head Trauma

MDHHS Michigan Department of Health & Human Services | Bureau of Emergency Preparedness, EMS and Systems of Care

Michigan
Trauma and Environmental
HEAD INJURY
MODERATE & SEVERE TBI

Initial Date 03/24/2023
Revied Date:

Section: 2-12

meticulously prevented. Use Pressure-Controlled Bags (PCBs) and Ventilation Rate Timers (VRTs) when available.
a. Utilize basic airway adjuncts (OPA, NPA)

5. Manage Hemorrhage
   a. See **Bleeding Control (BCON)-Treatment Protocol**
   b. Consider **TXA**, if available, per the **Hemorrhagic Shock-Treatment Protocol**
      i. Consider contacting medical control for patients who may not meet clinical criteria for **TXA** administration but hemorrhage is suspected.

e. If hypoventilation or hypoxia persists after these interventions, consider advanced airway options, go to **Airway Management-Treatment Protocol.**

5. Manage Hemorrhage
   a. See **Bleeding Control (BCON)-Treatment Protocol**
   b. Consider **TXA**, if available, per the **Hemorrhagic Shock-Treatment Protocol**
      i. Consider contacting medical control for patients who may not meet clinical criteria for **TXA** administration but hemorrhage is suspected.

TXA in Trauma – Protocol Considerations

- What should adult dosing be?
  - 1 g over in 100 mL over 10 minutes + 1 g over 8 hours [current] and/**or**
  - **2 g bolus or in 100 mL IV [proposed as single treatment option]**
- TXA in pediatric patients
  - Age > 18 YO [current]
  - **Age 15-18 YO – expand use as in adults [proposed]**
  - **Age ≤14 YO – consider use per medical control, when able [proposed]**
    - 15 mg/kg
- TXA in isolated moderate to severe head trauma
  - Consider if hemorrhage suspected per medical control [current]
  - **Administer in moderate to severe head trauma (GCS ≤12) per medical control [proposed]**
- IM TXA
  - **When IV access is unavailable/delayed per medical control**
  - **Dose: 1 g (5 mL x2) IM, 2nd dose of 1 g IV, if available [proposed]**

Requesting Input

Prehospital Use of TXA in Michigan

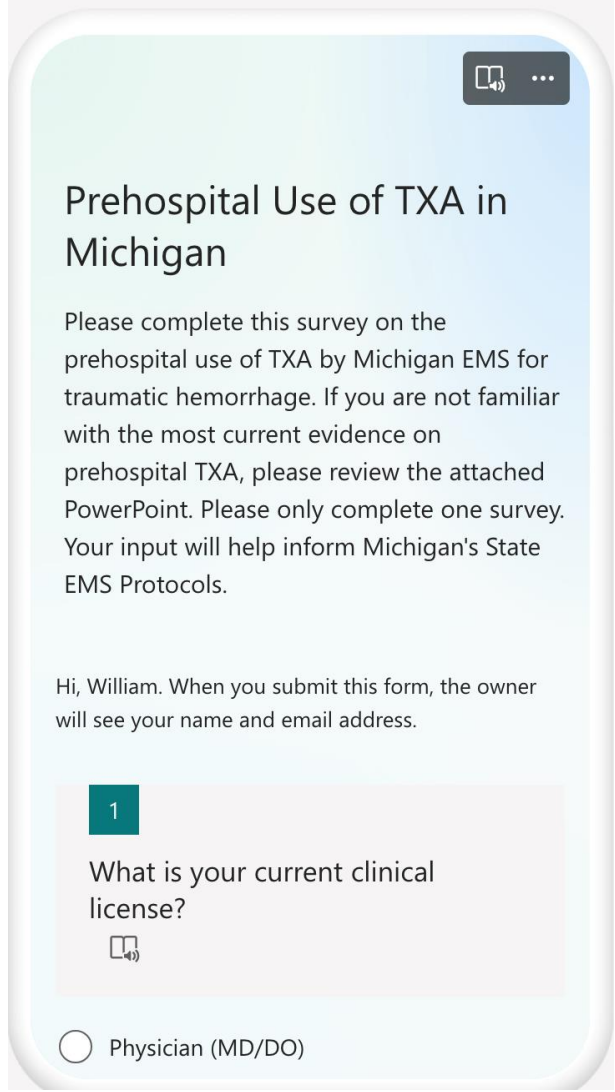
Please complete this survey on the prehospital use of TXA by Michigan EMS for traumatic hemorrhage. If you are not familiar with the most current evidence on prehospital TXA, please review the attached PowerPoint. Please only complete one survey. Your input will help inform Michigan's State EMS Protocols.

Hi, William. When you submit this form, the owner will see your name and email address.

1

What is your current clinical license?

- Physician (MD/DO)
- Nurse
- Paramedic
- Pharmacist
- Physician Assistant
- Nurse Practitioner
- Other



Prehospital Trauma Compendium: Tranexamic Acid in Trauma – A Joint Position Statement and Resource Document of NAEMSP, ACEP, and ACS-COT

PREHOSPITAL EMERGENCY CARE
https://doi.org/10.1080/10903127.2025.2497056

Taylor & Francis
Taylor & Francis Group

Check for updates

Prehospital Trauma Compendium: Tranexamic Acid in Trauma – A Joint Position Statement and Resource Document of NAEMSP, ACEP, and ACS-COT

Whitney J. Barrett[a], Kevin A. Kaucher[b], Ross E. Orpet[c], Eric M. Campion[d], Jeffrey M. Goodloe[e], Peter E. Fischer[fx], Christopher B. Colwell[g] and John W. Lyng[h]

[a]University of New Mexico School of Medicine, Department of Emergency Medicine, National Association of EMS Physicians, Albuquerque, New Mexico; [b]University of New Mexico Health Sciences Center, Department of Pharmacy Practice, National Association of EMS Physicians, Albuquerque, New Mexico; [c]First Contact Medical Specialists, Montrose Regional Health, Department of Emergency Medicine, National Association of EMS Physicians, Montrose, Colorado; [d]Denver Health Medical Center, Department of Surgery, American College of Surgeons, Denver, Colorado; [e]University of Oklahoma School of Community Medicine, Department of Emergency Medicine, American College of Emergency Physicians, Tulsa, Oklahoma; [f]University of Tennessee Health Science Center, Department of Surgery, American College of Surgeons Committee on Trauma, Memphis, Tennessee; [g]University of California at San Francisco School of Medicine, Department of Emergency Medicine, National Association of EMS Physicians, San Francisco, California; [h]North Memorial Health Level I Trauma Center, Department of Emergency Medicine, National Association of EMS Physicians, Minneapolis, Minnesota

ABSTRACT

Prehospital use of tranexamic acid (TXA) has grown substantially over the past decade despite contradictory evidence supporting its widespread use. Since the previous guidance document on the prehospital use of TXA for injured patients was published by the National Association of Emergency Medical Services Physicians (NAEMSP), the American College of Surgeons Committee on Trauma (ACS-COT), and the American College of Emergency Physicians (ACEP) in 2016, new research has investigated outcomes of patients who receive TXA in the prehospital setting. To provide updated evidence-based guidance on the use of intravenous TXA for injured patients in the EMS setting, we performed a structured literature review and developed the following recommendations supported by the evidence summarized in the accompanying resource document.

NAEMSP, ACEP, AND ACS-COT RECOMMENDS

- Prehospital TXA administration may reduce mortality in adult trauma patients with hemorrhagic shock when administered after lifesaving interventions.
- Prehospital TXA administration appears safe, with low risk of thromboembolic events or seizure.
- The ideal dose, rate, and route of prehospital administration of TXA for adult trauma patients with hemorrhagic shock has not been determined. Current evidence suggest EMS agencies may administer either a 1-gram IV/IO dose (followed by a hospital-based 1-gram infusion over 8 hours), or a 2-gram IV/IO dose as an infusion or slow push.
- Prehospital TXA administration, if used for adult trauma patients, should be given to those with clinical signs of hemorrhagic shock and no later than 3 hours post-injury. There is no evidence to date to suggest improved clinical outcomes from TXA initiation beyond this time or in those without clinically significant bleeding.
- The role of prehospital TXA in pediatric trauma patients with clinical signs of hemorrhagic shock has not been studied and standardized dosing has not been established. If used, it should be given within 3 hours of injury.
- Prehospital TXA administration, if used, should be clearly communicated to receiving healthcare professionals to promote appropriate monitoring and to avoid duplicate administration(s).
- A multidisciplinary team, led by EMS physicians, that includes EMS clinicians, emergency physicians, and trauma surgeons should be responsible for developing a quality improvement program to assess prehospital TXA administration for protocol compliance and identification of clinical complications.

ARTICLE HISTORY
Received 28 January 2025
Revised 9 April 2025
Accepted 10 April 2025

Introduction

Tranexamic acid (TXA) has been variably introduced into prehospital trauma resuscitation protocols following the publication of the CRASH-2 and MATTERs trials based on its potential lifesaving effect (1,2). The beneficial findings of CRASH-2 and MATTERs were predicated on TXA dosing in-hospital and in forward battlefield hospitals respectively. Since the publication of those trials, much attention has been focused on further clarifying the efficacy and safety of TXA use in prehospital settings.

The impact of EMS-administered TXA on early survival (e.g., 24-hr), 30-day survival, long-term functional neurologic

CONTACT Whitney J. Barrett wjbarrett@salud.unm.edu
*Additional affiliation: Washington Regional Medical Center, Department of Surgery, American College of Surgeons Committee on Trauma, Fayetteville, Arkansas.
Supplemental data for this article can be accessed online at https://doi.org/10.1080/10903127.2025.2497056.

NAEMSP, ACEP, AND ACS-COT RECOMMENDS

- Prehospital TXA administration may reduce mortality in adult trauma patients with hemorrhagic shock when administered after lifesaving interventions.
- Prehospital TXA administration appears safe, with low risk of thromboembolic events or seizure.
- The ideal dose, rate, and route of prehospital administration of TXA for adult trauma patients with hemorrhagic shock has not been determined. Current evidence suggest EMS agencies may administer either a 1-gram IV/IO dose (followed by a hospital-based 1-gram infusion over 8 hours), or a 2-gram IV/IO dose as an infusion or slow push.
- Prehospital TXA administration, if used for adult trauma patients, should be given to those with clinical signs of hemorrhagic shock and no later than 3 hours post-injury. There is no evidence to date to suggest improved clinical outcomes from TXA initiation beyond this time or in those without clinically significant bleeding.
- The role of prehospital TXA in pediatric trauma patients with clinical signs of hemorrhagic shock has not been studied and standardized dosing has not been established. If used, it should be given within 3 hours of injury.
- Prehospital TXA administration, if used, should be clearly communicated to receiving healthcare professionals to promote appropriate monitoring and to avoid duplicate administration(s).
- A multidisciplinary team, led by EMS physicians, that includes EMS clinicians, emergency physicians, and trauma surgeons should be responsible for developing a quality improvement program to assess prehospital TXA administration for protocol compliance and identification of clinical complications.

Source: file:///Users/wdfale/Downloads/Prehospital%20Trauma%20Compendium%20Tranexamic%20Acid%20in%20Trauma%20A%20Joint%20Position%20Statement%20and%20Resource%20Document%20of%20NAEMSP%20ACEP%20and%20ACS-COT.pdf

NAEMSP/ACEP/ACS-COT General Recommendations in Trauma

- Prehospital TXA administration may reduce mortality in adult trauma patients with hemorrhagic shock when administered after lifesaving interventions. • Prehospital TXA administration appears safe, with low risk of thromboembolic events or seizure.
- Prehospital TXA administration appears safe, with low risk of thromboembolic events or seizure.
- Should be given to those with clinical signs of hemorrhagic shock and no later than 3 hours post-injury.
- If used, should be clearly communicated to receiving healthcare professionals to promote appropriate monitoring and to avoid duplicate administration(s).

Source: file:///Users/wdfale/Downloads/Prehospital%20Trauma%20Compendium%20Tranexamic%20Acid%20in%20Trauma%20A%20Joint%20Position%20Statement%20and%20Resource%20Document%20of%20NAEMSP%20ACEP%20and%20ACS-COT.pdf

TXA in Trauma/Shock

Prehospital Evidence Based Practice

Tranexamic Acid

Level	Direction	Primary Outcome	Patient/Process	Setting	Reference
I	Supportive (Green)	Mortality (at 24h, 48h, 1 month)	Patient	ED-Paramedic & CCP	Biffi A, Porcu G, Castellini G, et al. Systemic hemostatic agents initiated in trauma patients in the pre-hospital setting: a systematic review. Eur J Trauma Emerg Surg Dec 2022. Medline
I	Supportive (Green)	Adverse events	Patient	PH-Paramedic	Deeb AP, Hoteit L, Li S, Guyette FX, Eastridge BJ, Nirula R, Vercruysse GA, O'Keeffe T, Joseph B, Neal MD, Sperry JL, Brown JB. Prehospital synergy: Tranexamic acid and blood transfusion in patients at risk for hemorrhage. J Trauma Acute Care Surg 2022. Medline
I	Supportive (Green)	Mortality	Patient	PH-Paramedic	Ker K. Antifibrinolytic drugs for acute traumatic injury. Cochrane Database of Systematic Reviews 2015:5. Medline
I	Supportive (Green)	Mortality/survival	Patient	PH-Paramedic	Li SR, Guyette F, Brown J, Zenati M, Reitz KM, Eastridge B, et al. Early Prehospital Tranexamic Acid Following Injury is Associated with a 30-day Survival Benefit: A Secondary Analysis of a Randomized Clinical Trial. Ann Surg 2021. Medline
I	Supportive (Green)	28 day survival	Patient	PH-Paramedic	Mazzei M, Donohue JK, Schreiber M, et al. Prehospital tranexamic acid is associated with a survival benefit without an increase in complications: results of two harmonized randomized clinical trials. J Trauma Acute Care Surg. March 2024. Medline
I	Supportive (Green)	Need for blood transfusion	Patient	OR	Montroy J, Hutton B, Moodley P, Fergusson NA, Cheng W, Tinmouth A, Lavallée LT, Fergusson DA, Breau RH.The efficacy and safety of topical tranexamic acid: A systematic review and meta-analysis. Transfus Med Rev. 2018 [Epub ahead of print] Medline
I	Supportive (Green)	Death	Patient	ED-MD	Roberts I., Shakur H., Coats T., et al. The CRASH-2 trial: A randomised controlled trial and economic evaluation of the effects of tranexamic acid on death, vascular occlusive events and transfusion requirement in bleeding trauma patients. Health Technol Assess 2013; 17(10):1-79. Medline
I	Neutral (Yellow)	30-day mortality from trauma	Patient	PH-Paramedic & CCT	Guyette FX, Brown JB, Zenati MS, Early-Young B, Adams PW, Eastridge BJ, et al. Tranexamic Acid during Prehospital Transport in Patients at Risk for Hemorrhage after Injury: A Double-blind, Placebo-Controlled, Randomized Clinical Trial. JAMA Surgery 2020. Medline
I	Neutral (Yellow)	Survival neurologically intact 6 months post injury	Patient	PH-Paramedic	PATCH-Trauma Investigators and the ANZICS Clinical Trials Group; Gruen RL, Mitra B, Bernard SA, McArthur CJ, et al. Prehospital Tranexamic Acid for Severe Trauma. N Engl J Med 2023. Medline
II	Supportive (Green)	Mortality	Patient	PH-Paramedic & CCT	Almuwallad A, Cole E, Ross J, Perkins Z, Davenport R. The Impact of Pre-Hospital TXA on Mortality among Bleeding Trauma Patients: A Systematic Review and Meta-Analysis. J Trauma Acute Care Surg 2021. Medline
II	Supportive (Green)	mortality	Patient	PH-Paramedic	Chen HY, Wu LG, Fan CC, Yuan W, Xu WT. Effectiveness and safety of prehospital tranexamic acid in patients with trauma: an updated systematic review and meta-analysis with trial sequential analysis. BMC Emerg Med 2024; 24(1):202. Medline
II	Supportive (Green)	Mortality	Patient	ED-MD	Cole E., Davenport R., Willett K., Brohi K. Tranexamic acid use in severely injured civilian patients and the effects on outcomes: A prospective cohort study. Ann Surg 2015; 261(2):390-4. Medline
II	Supportive (Green)	Mortality	Patient	ED-MD	Eckert MJ., Wertin TM., Tyner SD., Nelson DW., Izenberg S., Martin MJ. Tranexamic acid administration to pediatric trauma patients in a combat setting: The pediatric trauma and tranexamic acid study (PED-TRAX). J Trauma Acute Care Surg 2014; 77(6):852-8, discussion 858. Medline
II	Supportive (Green)	24-hour mortality	Patient	PH-Paramedic	El-Menyar A., Sathian B., Asim M., Latifi R., Al-Thani H. Efficacy of prehospital administration of tranexamic acid in trauma patients A meta-analysis of the randomized controlled trials. Am J Emerg Med 2018; 36(6) 1079-87. Medline
II	Supportive (Green)	Cellular damage	Patient	ED-Paramedic & MD	Gruen DS, Brown JB, Guyette FX, Johansson PI, Stensballe J, et al. Prehospital tranexamic acid is associated with a dose-dependent decrease in syndecan-1 after trauma: A secondary analysis of a prospective randomized trial. J Trauma Acute Care Surg 2023. Medline
II	Supportive (Green)	In Hospital mortality at 24 and 48 hours	Patient	PH-Paramedic	Morrison JJ., Dubose JJ., Rasmussen TE., Midwinter MJ.. Military application of tranexamic acid in trauma emergency resuscitation (MATTERs) study. Arch Surg 2012; 147(2):113-9. Medline
II	Supportive (Green)	In-hospital mortality	Patient	PH-Paramedic	Morrison JJ., Ross JD., Dubose JJ., Jansen JO., Midwinter MJ., Rasmussen TE. Association of cryoprecipitate and tranexamic acid with improved survival following wartime injury: Findings from the MATTERs II study. JAMA Surg 2013; 148(3):218-25. Medline
II	Supportive (Green)	Mortality recorded at 24 hours	Patient	PH-Paramedic	Neeki MM, Dong F, Toy J, Vaezazizi R, Powell J, Wong D, et al. Tranexamic Acid in Civilian Trauma Care in the California Prehospital Antifibrinolytic Therapy Study. The western journal of emergency medicine 2018; 19(6):977-86. Medline
II	Supportive (Green)	Blunting of measures of coagulopathy	Patient	PH-Paramedic & CCT	Stein P., Studt JD., Albrecht R., Maller S., von Ow D, Fischer S., et al. The Impact of Prehospital Tranexamic Acid on Blood Coagulation in Trauma Patients. Anesth Analg 2018; 126(2) 522-9. Medline
II	Supportive (Green)	Survival	Patient	PH-Paramedic	Wafaisade A., Lefering R., Bouillon B., Bohmer AB., Gassler M., Ruppert M., et al. Prehospital administration of tranexamic acid in trauma patients. Crit Care 2016; 20(1):143-016-1322-5. Medline

Source: https://emspep.cdha.nshealth.ca/FAQ.aspx

TXA in Trauma/Shock (con't)

Prehospital Evidence Based Practice

II	Neutral (Yellow)	30 day mortality	Patient	PH-MD & CCT	Bossers SM, Loer SA, Bloemers FW, Den Hartog D, Van Lieshout EMM, Hoogerwerf N, et al. Association Between Prehospital Tranexamic Acid Administration and Outcomes of Severe Traumatic Brain Injury. JAMA Neurol 2021; 78(3):338-45. Medline
II	Neutral (Yellow)	In hospital mortality	Patient	ED-Paramedic & MD	Boutonnet M., Abback P., Le Sachac F., Harrois A., Follin A., Imbert N., et al. Tranexamic acid in severe trauma patients managed in a mature trauma care system. The journal of trauma and acute care surgery 2018; 84(6) S54-62. Medline
II	Neutral (Yellow)	Hospital length of stay	Patient	Other	Cornelius BG., McCarty K., Hylan K., Cornelius A., Carter K., Smith KWG., et al. Tranexamic Acid Promise or Panacea The Impact of Air Medical Administration of Tranexamic Acid on Morbidity, Mortality, and Length of Stay. Advanced emergency nursing journal; 40(1) 27-35. Medline
II	Neutral (Yellow)	Appropriate use	Process	PH-Paramedic	Kheirbek T, Jikaria N, Murray B, Martin TJ, Lueckel SN, Stephen AH, et al. Unjustified Administration in Liberal Use of Tranexamic Acid in Trauma Resuscitation. J Surg Res 2021; 258:125-31. Medline
II	Neutral (Yellow)	Mortality	Patient	PH-Paramedic	Neeki MM, Dong F, Toy J, Vaezazizi R, Powell J, Jabourian N, et al. Efficacy and Safety of Tranexamic Acid in Prehospital Traumatic Hemorrhagic Shock: Outcomes of the Cal-PAT Study. The western journal of emergency medicine 2017; 18(4):673-83. Medline
II	Neutral (Yellow)	Development of pulmonary complication	Patient	PH-Paramedic	Raza SS, Tatum D, Nordham KD, et al. Tranexamic Acid and Pulmonary Complications: A Secondary Analysis of an EAST Multicenter Trial. Am Surg Jan 2025; 91(1):107-114. Medline
II	Neutral (Yellow)	Myocardial injury	Patient	ED-Paramedic & MD	Stroda A, Thelen S, M'Pembele R, et al. Possible effect of the early administration of tranexamic acid on myocardial injury in patients with severe trauma. J Thromb Thrombolysis February 2024; 57(2 PG-179-185):179-185. Medline
II	Neutral (Yellow)	Development of ARDS	Patient	In-Patient	Taghavi S, Chun T, Bellfi L, Malone C, Oremosu J, Ali A, et al. A Propensity-Matched Analysis of Tranexamic Acid and Acute Respiratory Distress Syndrome in Trauma Patients. J Surg Res 2022; 280:469–74. Medline
II	Neutral (Yellow)	In-hospital mortality	Patient	PH-Paramedic	Van Wessem KJP, Jochems D, Leenen LPH. The effect of prehospital tranexamic acid on outcome in polytrauma patients with associated severe brain injury. Eur J Trauma Emerg Surg 2021; 1–11. Medline
II	Neutral (Yellow)	Neutral on TXA Administration	Patient	Other	Van Wessem KJP, Leenan LPH. Does Liberal Prehospital and In-Hospital Tranexamic Acid Influence Outcome in Severely Injured Patients? A Prospective Cohort Study. World J Surg 2021; 45(8):2398–407. Medline
II	Neutral (Yellow)	Adverse outcomes	Patient	PH-Paramedic	van Wessem KJP, Leenen LPH. Does Liberal Prehospital and In-Hospital Tranexamic Acid Influence Outcome in Severely Injured Patients? A Prospective Cohort Study. World J Surg 2021; 45(8):2398-407. Medline
II	Opposes (Red)	Reliability	Process	PH-Paramedic	Valle EJ., Allen CJ., Van Haren RM., et al. Do all trauma patients benefit from tranexamic acid? J Trauma Acute Care Surg 2014; 76(6):1373-1378. Medline
III	Supportive (Green)	In hospital 24 hr mortality from penetrating trauma.	Patient	PH-Paramedic	Broome JM, Nordham KD, Piehl M, et al. Faster refill in an urban emergency medical services system saves lives: A prospective preliminary evaluation of a prehospital advanced resuscitative care bundle. J Trauma Acute Care Surg May 2024; 96(5):702-7. Medline
III	Supportive (Green)	Management of hemorrhagic shick	Patient	PH-Paramedic	Cathers AD, Forsythe J, Sippel N, Williamson C, Kohler JE, Brazelton TB, et al. Tranexamic Acid Use in Pediatric Hemorrhagic Shock From Farm-Related Trauma: A Case Report. Air Med J 2020; 39(5):414-6. Medline
III	Supportive (Green)	Managing hemorrhagic shock	Patient	PH-MD & CCT	Lima LPST, Santos PRS, Martins HJ, Rodrigues DAS, Silva LM, Libardi MBO, et al. Use of Tranexamic Acid in Traumatic Resuscitation in a Prehospital Setting: A Case Report. Air Med J 2021; 40(5):359–62. Medline
III	Supportive (Green)	Efficacy	Patient	PH-Paramedic	Vu EN, Wan WCY, Yeung TC, Callaway DW. Intramuscular Tranexamic Acid in Tactical and Combat Settings. Journal of special operations medicine: a peer reviewed journal for SOF medical professionals; 18(1):62-8. Medline
III	Neutral (Yellow)	Hyperfibrinolysis (ROTEM)	Patient		Kunze-Szikszay N., Krack LA., Wildenauer P., et al. The pre-hospital administration of tranexamic acid to patients with multiple injuries and its effects on rotational thrombelastometry: A prospective observational study in pre-hospital emergency medicine. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine 2016; 24(1):122. Medline
III	Opposes (Red)	Adverse event	Patient	ED-MD	Carroll ND., Restrepo CS., Eastridge BJ., Stasik CN. Left atrial thrombi following tranexamic acid in a bleeding trauma patient-A word of caution. J Card Surg 2018; 33(2) 83-5. Medline

Source: https://emspep.cdha.nshealth.ca/FAQ.aspx

NAEMSP/ACEP/ACS-COT Recommendations and Considerations Regarding Adult Dosing

- The ideal dose, rate, and route of prehospital administration of TXA for adult trauma patients with hemorrhagic shock has not been determined.
- Current evidence suggest EMS agencies may administer either
  - 1-gram IV/IO dose (followed by a hospital-based 1-gram infusion over 8 hours), or
  - **2-gram IV/IO dose as an infusion or slow push**
- MI EMS Protocol Recommendation: *Adopt single adult 2-g dosing statewide*
  - Higher prehospital TXA doses correlate with improved survival and reduced transfusion needs
  - Faster administration
  - Operationally easier for EMS and hospitals
  - No evidence of increased thromboembolic events or seizures
  - Minimal cost impact (<$9/1 g)

NAEMSP/ACEP/ACS-COT Recommendations and Considerations Regarding Peds Use

- The role of prehospital TXA in pediatric trauma patients with clinical signs of hemorrhagic shock has not been studied and standardized dosing has not been established.
- If used, it should be given within 3 hours of injury.
- No recommendation for peds dosing
- MI EMS Protocol Recommendation: *Lower adult age to >15 YO and consider TXA per medical control for children <15 YO*
  - Hemorrhage is a leading preventable cause of death in pediatric trauma
  - Pediatric Trauma Hemorrhagic Shock Consensus Conference Recommendations – Empiric TXA use within 3 hours may be considered.
  - PED-TRAX Study – Peds TXA use in 766 combat injuries was independently associated with decreased mortality, without increased adverse effects.
  - **Meta-analysis** (Lin YC et al., 2025): 34,144 pediatric trauma patients showed an associated reduced mortality with TXA
    - **No increase in thromboembolic events** in children receiving TXA.

TXA in Peds Trauma/Shock

Prehospital Evidence Based Practice

Tranexamic Acid

Level	Direction	Primary Outcome	Patient/Process	Setting	Reference
II	Supportive (Green)	Mortality	Patient	Other	Eckert MJ, Wertin TM, Tyner SD, Nelson DW, Izenberg S, Martin MJ. Tranexamic acid administration to pediatric trauma patients in a combat setting: the pediatric trauma and tranexamic acid study (PED-TRAX). J Trauma Acute Care Surg. 2014 Dec;77(6):852-8; discussion 858. doi: 10.1097/TA.0000000000000443. PMID: 25423534. Medline
II	Supportive (Green)	In-hospital mortality	Patient	Other	Hamele M, Aden JK, Borgman MA. Tranexamic acid in pediatric combat trauma requiring massive transfusions and mortality. J Trauma Acute Care Surg. 2020 Aug;89(2S Suppl 2):S242-S245. doi: 10.1097/TA.0000000000002701. PMID: 32265388. Medline
II	Neutral (Yellow)	Trauma mortality	Patient	PH-Paramedic	Gendler S, Gelikas S, Talmy T, et al. Prehospital Tranexamic Acid Administration in Pediatric Trauma Patients: A Propensity-Matched Analysis of the Israeli Defense Forces Registry. Pediatr Crit Care Med 2023. Medline
II	Neutral (Yellow)	Use	Process	PH-MD & CCT	Gossiome A, Claustre C, Fraticelli L, Jacquet L, Bouchut JC, Javouhey E, et al. Prehospital Tranexamic Acid in Major Pediatric Trauma Within a Physician-Led Emergency Medical Services System: A Multicenter Retrospective Study. Pediatr Crit Care Med 2022. Medline
II	Neutral (Yellow)	Adverse effects	Patient	PH-Paramedic	Maeda T, Michihata N, Sasabuchi Y, Matsui H, Ohnishi Y, Miyata S, Yasunaga H. Safety of Tranexamic Acid During Pediatric Trauma: A Nationwide Database Study. Pediatr Crit Care Med. 2018 Dec;19(12):e637-e642. doi: 10.1097/PCC.0000000000001724. PMID: 30199511. Medline
II	Neutral (Yellow)	Survival to discharge	Patient	ED-MD	Thomson JM, Huynh HH, Drone HM, Jantzer JL, Tsai AK, Jancik JT. Experience in an Urban Level 1 Trauma Center With Tranexamic Acid in Pediatric Trauma: A Retrospective Chart Review. J Intensive Care Med. 2021 Apr;36(4):413-418. doi: 10.1177/0885066619890834. Epub 2020 Feb 24. PMID: 32090705. Medline

Source: https://emspep.cdha.nshealth.ca/FAQ.aspx

NAEMSP/ACEP/ACS-COT Recommendations and Considerations for TXA in Isolated TBI

- "Prehospital TXA does not appear to confer any functional or survival benefit based on current evidence"
- "TXA is likely safe in patients with moderate to severe TBI"
- MI EMS Protocol Recommendation: *Administer in moderate to severe head trauma (GCS ≤12) per medical control*.
  - Evidence of benefit is limited, but minimal evidence of harm
  - NAEMSP/ACEP/COT did not consider
    - CRASH-3 subanalysis that excluded patients with GCS 3 or b/l blown pupils that showed a reduction in mortality
  - Aligns with the Committee on Tactical Combat Casualty Care and DOD guidelines

TXA in Isolated TBI

Prehospital Evidence Based Practice

Tranexamic acid for isolated TBI

Level	Direction	Primary Outcome	Patient/Process	Setting	Reference
I	Supportive (Green)	Mortality	Patient	PH-Paramedic	Coburn W, Trottier Z, Villarreal RI, Paulson MW, et al. Prehospital Pharmacotherapy in Moderate and Severe Traumatic Brain Injury: A Systematic Review. Med J (Ft Sam Houst Tex) 2023; (Per 23-1/2/3):47-56. Medline
I	Supportive (Green)	mortality	Patient	ED-MD	CRASH-3 trial collaborators. Effects of tranexamic acid on death, disability, vascular occlusive events and other morbidities in patients with acute traumatic brain injury (CRASH-3): a randomised, placebo-controlled trial. Lancet. 2019; ahead of print Medline
I	Neutral (Yellow)	Mortality	Patient	PH-Paramedic	Brito AMP, Schreiber MA, El Haddi J, Meier EN, Rowell SE. The Effects of Timing of Prehospital Tranexamic Acid on Outcomes after Traumatic Brain Injury; Sub Analysis of a Randomized Controlled Trial. J Trauma Acute Care Surg 2022. Medline
I	Neutral (Yellow)	Favorable neurological outcome at 6 months.	Patient	ED-Paramedic & MD	Rowell, Susan E et al. "Effect of Out-of-Hospital Tranexamic Acid vs Placebo on 6-Month Functional Neurologic Outcomes in Patients With Moderate or Severe Traumatic Brain Injury." JAMA vol. 324,10 (2020): 961-974. doi:10.1001/jama.2020.8958 Medline
II	Neutral (Yellow)	Overall mortality	Patient	PH-Paramedic	Biffi A, Porcu G, Castellini G, et al. Systemic hemostatic agents initiated in trauma patients in the pre-hospital setting: a systematic review. Eur J Trauma Emerg Surg Dec 2022. Medline
II	Neutral (Yellow)	Adverse events	Process	In-Patient	Harmer JW, Dewey EN, Meier EN, Rowell SE, Schreiber MA. Tranexamic acid is not inferior to placebo with respect to adverse events in suspected traumatic brain injury patients not in shock with a normal head computed tomography scan: A retrospective study of a randomized trial. J Trauma Acute Care Surg 2022. Medline
II	Neutral (Yellow)	28 Day Mortality	Patient	PH-Paramedic	Hoefer LE, Benjamin AJ, Polcari AM, Schreiber MA, Zakrison TL, Rowell SE. TXA does not affect levels of TBI-related biomarkers in blunt TBI with ICH: A secondary analysis of the Prehospital TXA for TBI Trial. J Trauma Acute Care Surg October 2023. Medline
II	Neutral (Yellow)	Administration of 2g of TXA in the prehospital setting in patients with moderate to severe TBI was not associated with reduction in surrogate markers for cerebral edema	Patient	PH-Paramedic	McKinley WI, Lazaridis C, Mansour A, et al. Association between prehospital tranexamic acid and cerebral edema in patients with moderate or severe traumatic brain injury. J Trauma Acute Care Surg Feb 2025. Medline
II	Neutral (Yellow)	Blood Product Transfusion	Patient	PH-Paramedic	Newman ZC, McKinley WI, Nordgren RK, et al. Prehospital Tranexamic Acid and First 24-hour Blood Product Transfusion in Patients with Isolated Traumatic Brain Injury. J Am Coll Surg. April 2025. Medline
II	Opposes (Red)	30 day mortality	Patient	PH-MD & CCT	Bossers SM, Loer SA, Bloemers FW, Den Hartog D, Van Lieshout EMM, Hoogerwerf N, et al. Association Between Prehospital Tranexamic Acid Administration and Outcomes of Severe Traumatic Brain Injury. JAMA Neurol 2021; 78(3):338-45. Medline
III	Supportive (Green)	Seizure activity within 72 hrs of injury	Patient	PH-Paramedic	Deshpande DV, McKinley WI, Benjamin AJ, Schreiber MA, Rowell SE. The Association Between Tranexamic Acid and Seizures in Moderate or Severe Traumatic Brain Injury. J Surg Res. July 2024; 301:359-64. Medline
X	Not Yet Graded (White)	-			Maginot ER, Gawargi FI, Moore EE, et al. Tranexamic Acid and Systemic Complement Activation in Traumatic Brain Injury Patients. J Am Coll Surg August 2025. Medline

Source: https://emspep.cdha.nshealth.ca/FAQ.aspx

NAEMSP/ACEP/ACS-COT Recommendations and Considerations Supporting IM TXA

- NAEMSP/ACEP/ACS-COT does not address the IM route
- MI EMS Protocol Recommendation: *IM TXA when IV access is unavailable/delayed per medical control at a dose of 1 g (5 mL x2) IM, 2nd dose of 1 g IV, if available*
- Rationale
  - IV/IO access in trauma patients may not be readily achieved (e.g., entrapped)
  - In a pharmacokinetic study involving 30 bleeding trauma patients, intramuscular TXA is well tolerated and rapidly absorbed.
  - IM TXA in a swine study achieved effective fibrinolysis inhibition within 10 minutes
  - Approved for use in Ontario and in UK and recently in Houston, TX (incl. BLS)

TXA in Trauma – Protocol Considerations

- What should adult dosing be?
  - 1 g over in 100 mL over 10 minutes + 1 g over 8 hours [current] and/**or**
  - **2 g bolus or in 100 mL IV [proposed as single treatment option]**
- TXA in pediatric patients
  - Age > 18 YO [current]
  - **Age 15-18 YO – expand use as in adults [proposed]**
  - **Age ≤14 YO – consider use per medical control, when able [proposed]**
    - 15 mg/kg
- TXA in isolated moderate to severe head trauma
  - Consider if hemorrhage suspected per medical control [current]
  - **Administer in moderate to severe head trauma (GCS ≤12) per medical control [proposed]**
- IM TXA
  - When IV access is unavailable/delayed per medical control
  - Dose: 1 g (5 mL x2) IM, 2nd dose of 1 g IV, if available

Requesting Input

Prehospital Use of TXA in Michigan

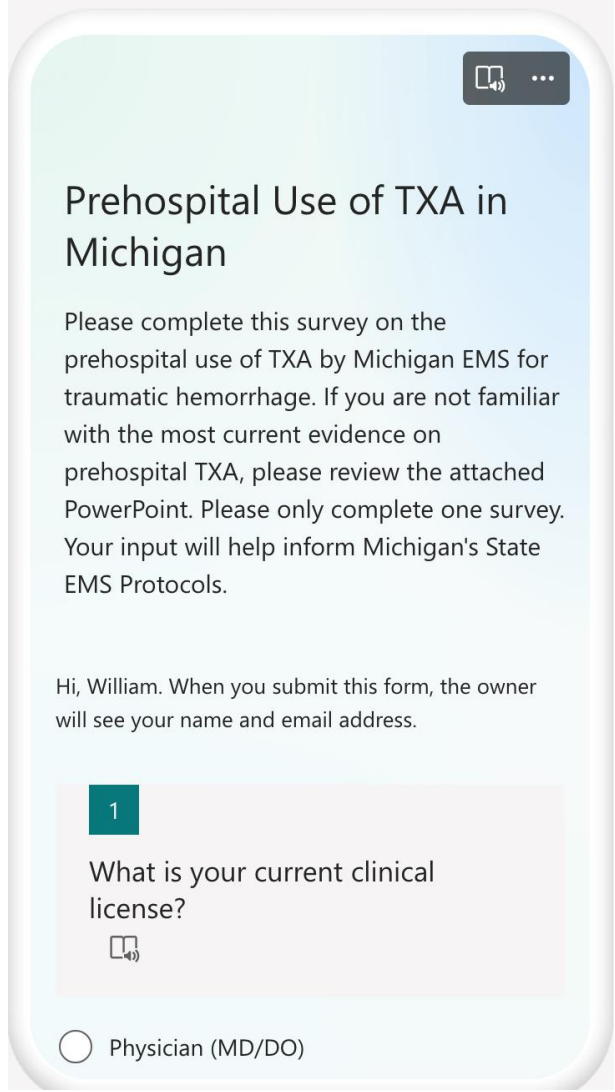
Please complete this survey on the prehospital use of TXA by Michigan EMS for traumatic hemorrhage. If you are not familiar with the most current evidence on prehospital TXA, please review the attached PowerPoint. Please only complete one survey. Your input will help inform Michigan's State EMS Protocols.

Hi, William. When you submit this form, the owner will see your name and email address.

1

What is your current clinical license?

- Physician (MD/DO)
- Nurse
- Paramedic
- Pharmacist
- Physician Assistant
- Nurse Practitioner
- Other



PEDIATRIC READINESS

Dr. Sam Wrobleski, SOM EMS for Children Coordinator

BEPESoC Internal Pediatric Co-Leads

	**Samantha Wrobleski DO, MPH** EMS for Children Coordinator MDHHS – BEPESOC WrobleskiS@michigan.gov	**Madison Kozlowski RN, BSN** Medical Surge Analyst Healthcare Preparedness Program KozlowskiM@michigan.gov	
	**Aubree Verlinde RN, MSN** Region 5 Trauma Coordinator Systems of Care VerlindeA@michigan.gov	**Dennis Fitzpatrick, EMT I/C, B.S.Ed.** EMS/Emergency Preparedness Liaison MDHHS – BEPESOC FitzpatrickD3@michigan.gov	

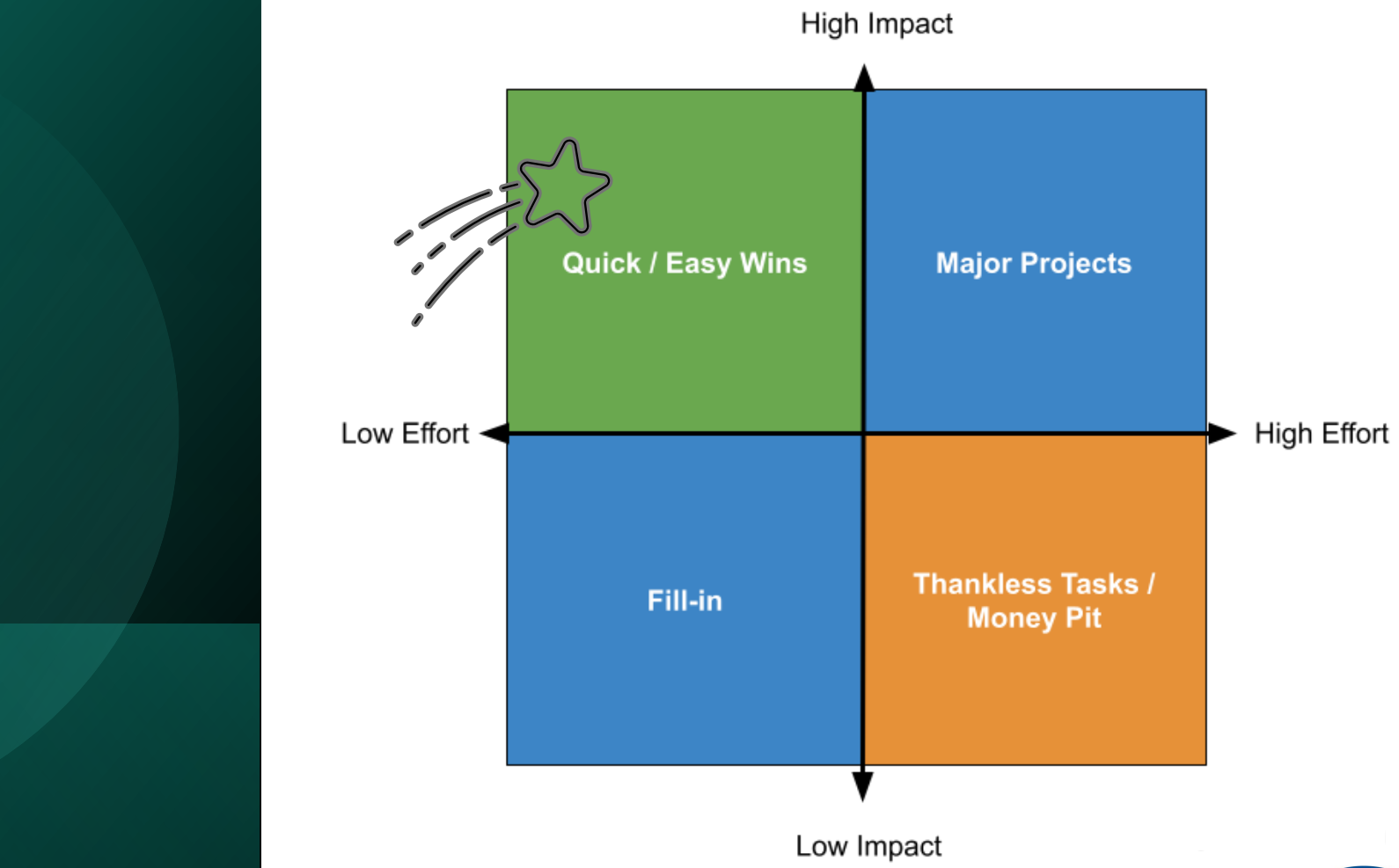
EMSC Mission

Reduce child and youth mortality and morbidity resulting from severe illness or trauma

Pediatric Readiness

The day-to-day ability to meet the immediate needs of an ill or injured child

Pediatric Readiness



Monthly Pediatric Education Hour

Last Tuesday of every month

2:00 – 3:00 pm

Virtual, free

CEs: EMS, Nursing, Physicians Assistant’s, Physicians

Recorded and available on-demand

https://forms.office.com/g/KQZAy3DbtE

2026 Education Hour Line up

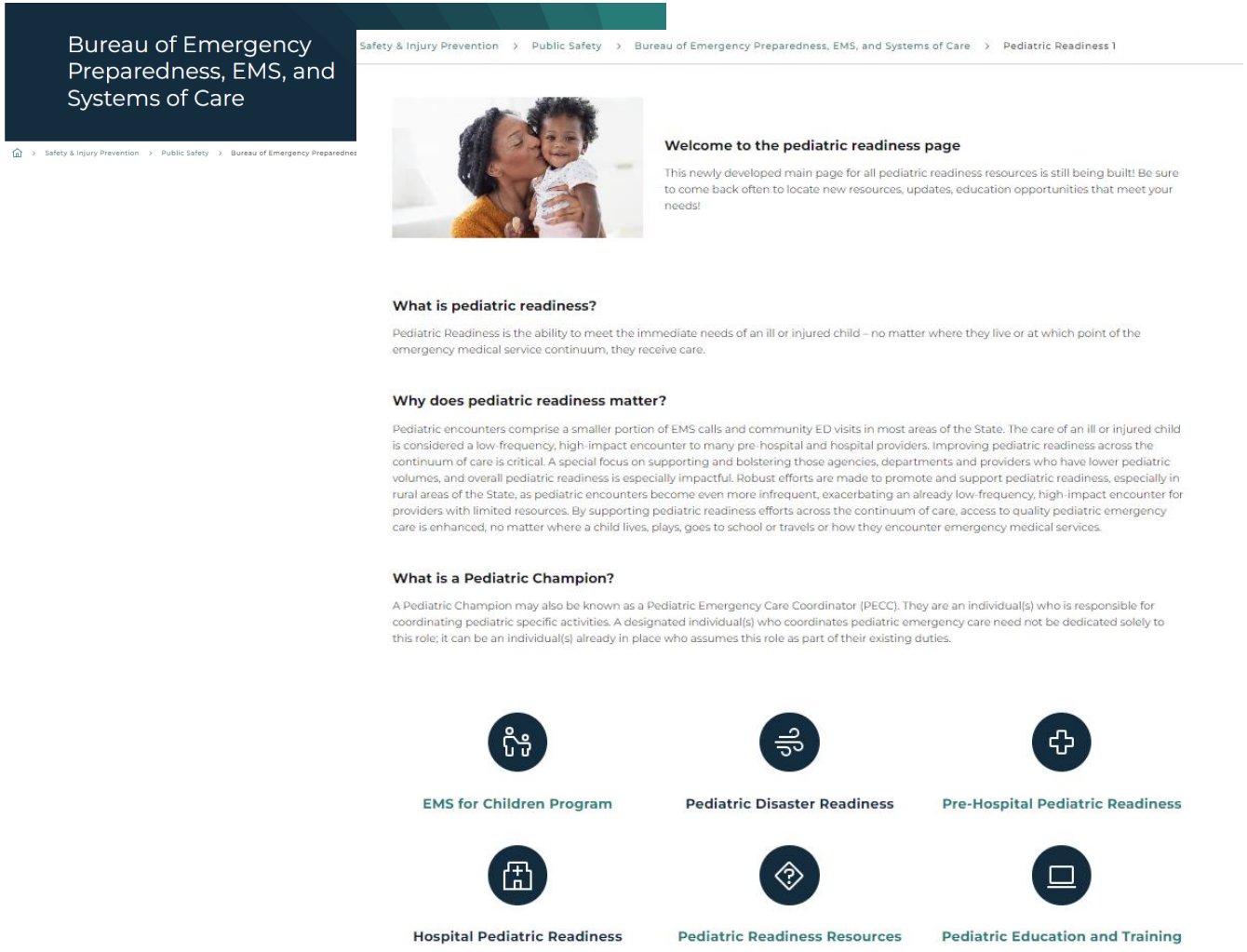
January **Pediatric Critical Care**	**February** **Neonatal Emergencies & Resuscitation**
March **Pediatric Disaster Readiness Preparedness & Response**	**April** **Child Abuse – beyond recognition Exam, Document & Report**
May **Sports Related Injuries**	**June** **Pediatric Burns**

What do you want to learn next?

https://forms.cloud.microsoft/g/2TwHmXN1we

Resources & Staying Connected

Michigan Pediatric Readiness Website



Pediatric Readiness Website

- Resources
- Education on-demand
- Program support (to come)
- National and State updates
- One stop for all you need

https://bit.ly/PediatricReadiness

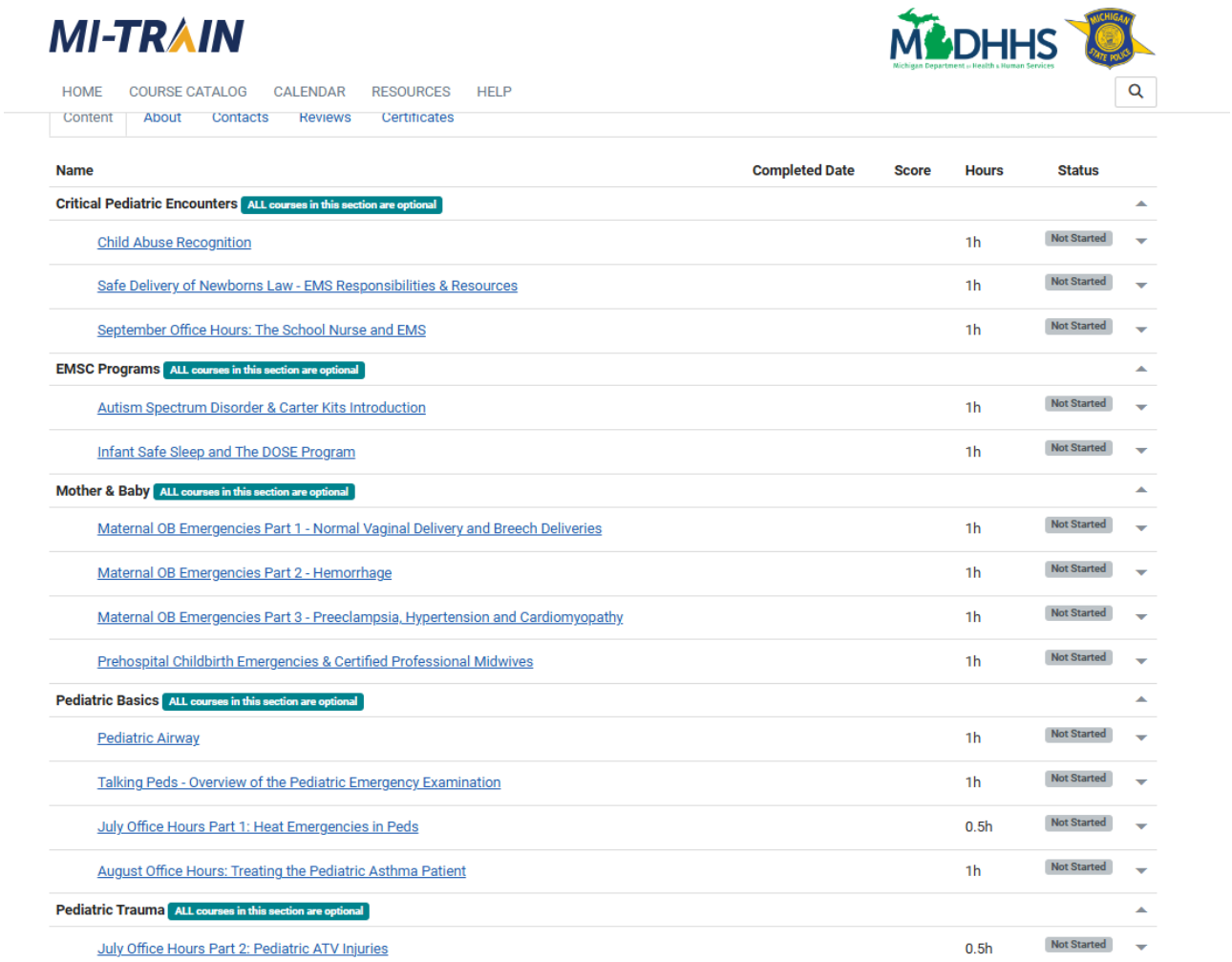
Pre-Hospital Pediatric Readiness Support

Email Updates:

- ✓ Resources
- ✓ Opportunities
- ✓ Education
- ✓ Support
- ✓ Pediatric Readiness Program information

https://forms.cloud.microsoft/g/BPC8v8fz8K

EMS Pediatric Education – compiled for you



EMS Pediatric Education Collection

- MITRAIN – ID 1116901
- https://www.train.org/mi-train/course/1116901/compilation

Hospital Based Pediatric Readiness Support

Email Updates:

- ✓ Resources
- ✓ Opportunities
- ✓ Education
- ✓ Support
- ✓ Pediatric Readiness Program information

https://forms.office.com/g/ZyXj3zCxyF

Peds ready assessment – a tool for readiness

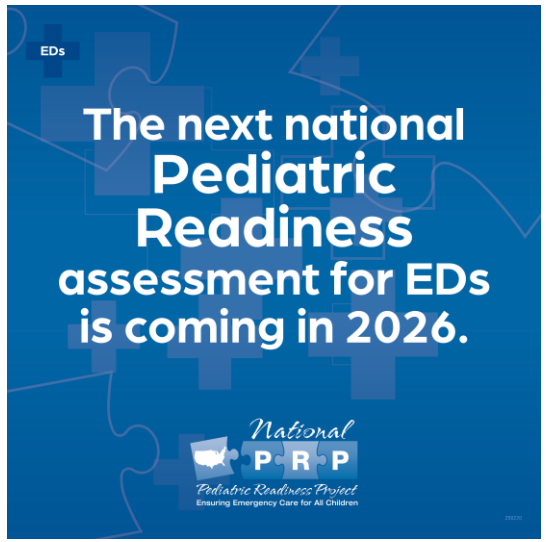
QI phase now

Questions are from 2021 assessment

Receive gap report immediately

Accepted for ACS Trauma Center Verification

Repeat as often as desired

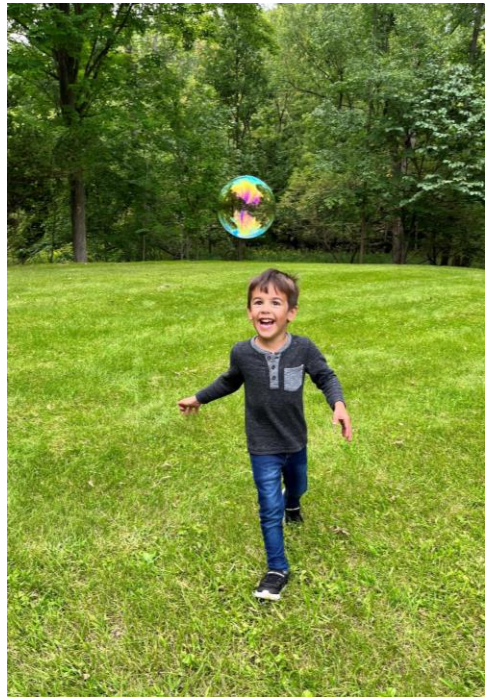


Be sure to save it!

www.PedsReady.org

"only when caring for a child do we have the chance to save a lifetime"

Let's Connect!



Dr. Sam

Samantha Wrobleski, DO, MPH

EMS for Children Coordinator

MDHHS BEPESoC

WrobleskiS@michigan.gov

National Pediatric Readiness Project
Ensuring Emergency Care for All Children

EMSC Emergency Medical Services for Children

The NPRP is funded in part by the HRSA EMSC Program

Michigan 2021 National Pediatric Readiness Regional Summary

Region: 8

2021 Region 8 - Pediatric Readiness Response Rate

Numerator: **15**
Denominator: **15**
Response Rate: **100%**

The overall 2021 National Pediatric Readiness scores (based on the 2018 Joint Policy Guidelines) are not directly comparable with the 2013-14 state scores (based on the 2009 Joint Policy Guidelines). These were two unique assessments based on two different published sets of guidelines. Questions were added/removed and point values changed based on the new guidelines. Although the overall scores are not comparable, several individual questions remained the same and these components can be compared over time.

2021 Average REGIONAL Score	2021 Average State Score	2021 Median REGIONAL Score	2021 Median State Score
63	71	65	69
Regional AVERAGE Hospital Score out of 100 (n=15)	State AVERAGE Hospital Score out of 100 (n=133)	Regional MEDIAN Hospital Score out of 100 (n=15)	State MEDIAN Hospital Score out of 100 (n=133)

2021 Region 8 - Distribution of Scores by Volume

Breakdown of Region 8 Scores by Volume Type:

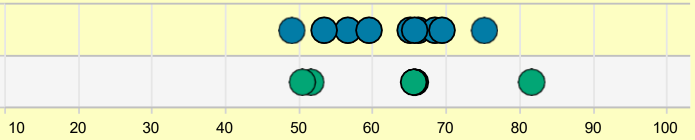
Annual Pediatric Volume	# of Hospitals	Avg. Score	Median Score	Min. Score	Max. Score
Low: <1,800 pediatric patients (average of 5 or fewer a day)	14	62	65	49	82
Medium: 1,800 – 4,999 pediatric patients (average of 6-13 a day)	Less than 5 EDs - Not Shown				
Grand Total	**15**	**63**	**65**	**49**	**82**

Breakdown of Region 8 Scores by Trauma Designation

Annual Pediatric Volume: All

Trauma Designation: All

	# of Hospitals	Avg. Score
Designated	10	63
No Trauma Designation	5	63



Region 8 - Average Scores By Section

Section	Missing Records	Avg Section Score	Section Score
Guidelines for Administration and Coordination of the ED for the Care of Children (19 pts)	0	7.0	19
Physicians, Nurses, and Other Health Care Providers Who Staff the ED (10 pts)	0	3.8	10
Guidelines QI/PI in the ED (7 pts)	0	1.5	7
Guidelines for Improving Pediatric Patient Safety in the ED (14 pts)	0	11.6	14
Guidelines for Policies, Procedures, and Protocols for the ED (17 pts)	0	7.2	17
Guidelines for Equipment, Supplies, and Medications for the Care of Pediatric Patients in the ED (33 pts)	0	31.7	33

NOTE: If there are missing values from any of the assessments (specifically from PDF assessments), they are shown in the "Missing Records" column. This indicates records that were missing scored questions and could not be included in the calculation of the average section score.

Analysis of Scored Questions in the Assessment by Section

The following analysis is grouped by the **six** main sections of the assessment. Each section has an average score shown on page 2. Under the section headings are the list of scored questions and a report of your regional performance with a comparison of your state's results from the most recent national assessment.

The KPI (Key Performance Indicator) is shown in the legend on your right in colors and shapes. These symbols are not punitive, rather an indicator of performance **to help you quickly identify areas for quality improvement** based on the 2021 results. Collaborate with stakeholders in your state/territory to identify areas to work on first.

The importance of having each of these items can be found in the "Importance Statements" document: https://www.pedsready.org/docs/NPRP%20Gap%20Report%20Importance%20Statements.pdf

KPI Legend:

- 100% of EDs Have Item
- 80 to 99.9% Have Item
- 60 to 79.9% Have Item
- 30 to 59.9% Have Item
- HELP 29.9% or Less Have Item

?

Region 8 - Guidelines for Administration and Coordination of the ED for the Care of Children (19 points)

	KPI	Region Number of EDs that Have Item	Region Percent that Have Item	Michigan Percent that Have Item	Difference Between State and Region
Physcian Coordinator	HELP	3/15 (Missing=0)	20.0%	32.1%	-12.1% ▼
Nurse Coordinator	◆	8/15 (Missing=0)	53.3%	47.1%	6.2% ▲

Region 8 - Physicians, Nurses, and Other Health Care Providers Who Staff the ED (10 points)

Physician Competency Evaluations	◆	7/15 (Missing=0)	46.7%	65.2%	-18.5% ▼
Physician Maintenance of Board Certification	HELP	4/15 (Missing=0)	26.7%	55.8%	-29.1% ▼
Nurse Competency Evaluations	●	12/15 (Missing=0)	80.0%	91.2%	-11.2% ▼
Nurse Maintenance of Specialty Certification	HELP	0/15 (Missing=0)	0.0%	13.2%	-13.2% ▼

Region 8 - Guidelines QI/PI in the ED (7 points)

	KPI	Region Number of EDs that Have Item	Region Percent that Have Item	Michigan Percent that Have Item	Difference Between State and Region
Patient care-review process (chart review)	◆	5/15 (Missing=0)	33.3%	44.2%	-10.9% ▼
Identification of quality indicators for children	HELP	3/15 (Missing=0)	20.0%	31.2%	-11.2% ▼
Collection and analysis of pediatric emergency care data	HELP	4/15 (Missing=0)	26.7%	39.9%	-13.2% ▼
Development of a plan for improvement in pediatric emergency care	HELP	2/15 (Missing=0)	13.3%	32.6%	-19.3% ▼
Re-evaluation of performance using outcomes-based measures	HELP	2/15 (Missing=0)	13.3%	29.7%	-16.4% ▼

Region 8 - Guidelines for Improving Pediatric Patient Safety in the ED (14 points)

Children seen in the ED weighed in kilograms (without conversion from pounds)	◆	7/15 (Missing=0)	46.7%	81.2%	-34.5% ▼
Children's weights recorded in the ED medical record in kilograms only	◆	8/15 (Missing=0)	53.3%	79.0%	-25.7% ▼
Temperature, heart rate, and respiratory rate recorded	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
Blood pressure monitoring available based on severity of illness	✓	15/15 (Missing=0)	100.0%	98.6%	1.4% ▲
Pulse oximetry monitoring available based on severity of illness	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
End tidal CO2 monitoring available based on severity of illness	●	13/15 (Missing=0)	86.7%	92.0%	-5.3% ▼
Process in place for notification (manual or automated) of physicians when abnormal vital signs are found	✓	15/15 (Missing=0)	100.0%	96.4%	3.6% ▲

Region 8 - Guidelines for Improving Pediatric Patient Safety in the ED (14 points)

	KPI	Region Number of EDs that Have Item	Region Percent that Have Item	Michigan Percent that Have Item	Difference Between State and Region
Process in place for the use of pre-calculated drug dosing in all children		12/15 (Missing=0)	80.0%	88.4%	-8.4% ▼
Process in place that allows for 24/7 access to interpreter services in the ED		14/15 (Missing=0)	93.3%	99.3%	-6.0% ▼
Level of consciousness (e.g. AVPU or GCS) assessed in all children		11/15 (Missing=0)	73.3%	84.1%	-10.8% ▼
Level of pain assessed in all children		14/15 (Missing=0)	93.3%	94.2%	-0.9% ▼

Region 8 - Guidelines for Policies, Procedures, and Protocols for the ED (17 points)

	KPI	Region Number of EDs that Have Item	Region Percent that Have Item	Michigan Percent that Have Item	Difference Between State and Region
Triage policy that specifically addresses ill and injured children		6/15 (Missing=0)	40.0%	56.5%	-16.5% ▼
Policy for pediatric patient assessment and reassessment		11/15 (Missing=0)	73.3%	78.3%	-5.0% ▼
Policy for immunization assessment and management of the under-immunized child	HELP	2/15 (Missing=0)	13.3%	39.1%	-25.8% ▼
Policy for child maltreatment		12/15 (Missing=0)	80.0%	88.4%	-8.4% ▼
Policy for death of the child in the ED	HELP	2/15 (Missing=0)	13.3%	65.9%	-52.6% ▼
Policy for reduced-dose radiation for CT and x-ray imaging based on pediatric age or weight		9/15 (Missing=0)	60.0%	76.8%	-16.8% ▼
Policy for behavioral health issues for children of all ages		6/15 (Missing=0)	40.0%	66.7%	-26.7% ▼
Involving families and caregivers in patient care decision-making	HELP	8/15 (Missing=0)	53.3%	63.5%	-10.2% ▼
Involving families and caregivers in medication safety processes		4/15 (Missing=0)	26.7%	55.5%	-28.8%

Region 8 - Guidelines for Policies, Procedures, and Protocols for the ED (17 points)

	KPI	Region Number of EDs that Have Item	Region Percent that Have Item	Michigan Percent that Have Item	Difference Between State and Region
Family and guardian presence during all aspects of emergency care, including resuscitation	HELP	4/15 (Missing=0)	26.7%	56.2%	-29.5 % ▼
Education of the patient, family, and caregivers on treatment plan and disposition	◆	6/15 (Missing=0)	40.0%	60.6%	-20.6 % ▼
Bereavement counseling	HELP	1/15 (Missing=0)	6.7%	42.3%	-35.6 % ▼
Disaster plan includes availability of medications, vaccines, equipment, supplies, and appropriately trained providers	HELP	2/15 (Missing=0)	13.3%	41.3%	-28.0 % ▼
Disaster plan includes decontamination, isolation, and quarantine of families and children	HELP	2/15 (Missing=0)	13.3%	44.9%	-31.6 % ▼
Disaster plan includes minimization of parent-child separation and methods for reuniting separated children with their families	HELP	2/15 (Missing=0)	13.3%	45.7%	-32.4 % ▼
All disaster drills include pediatric patients	HELP	0/15 (Missing=0)	0.0%	31.9%	-31.9 % ▼
Disaster plan includes pediatric surge capacity for both injured and non-injured children	HELP	2/15 (Missing=0)	13.3%	42.8%	-29.5 % ▼
Disaster plan includes access to behavioral health resources for children	HELP	2/15 (Missing=0)	13.3%	39.1%	-25.8 % ▼
Disaster plan includes care of children with special health care needs	△	1/15 (Missing=0)	6.7%	35.5%	-28.8 % ▼
Written inter-facility transfer guidelines		10/15 (Missing=0)	66.7%	73.2%	-6.5%

Region 8 - Guidelines for Equipment, Supplies, and Medications for the Care of Pediatric Patients in the ED (33 points)

	KPI	Region Number of EDs that Have Item	Region Percent that Have Item	Michigan Percent that Have Item	Difference Between State and Region
All staff trained on the location of all pediatric equipment and medications	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
Daily method used to verify the proper location and function of pediatric equipment and supplies	●	13/15 (Missing=0)	86.7%	83.3%	3.4% ▲
Standardized chart or tool to estimate weight if resuscitation precludes the use of a weight scale (e.g., length-based tape)	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
Neonatal blood pressure cuff	✓	15/15 (Missing=0)	100.0%	91.3%	8.7% ▲
Infant blood pressure cuff	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
Child blood pressure cuff	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
Defibrillator with pediatric and adult capabilities including pads and or paddles	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
Pulse oximeter with pediatric and adult probes	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
Continuous end-tidal CO2 monitoring device	●	14/15 (Missing=0)	93.3%	95.7%	-2.4% ▼
22 gauge catheter-over-the-needle	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
24 gauge catheter-over-the-needle	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
Pediatric intra-osseus needles	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
IV administration sets with calibrated chambers or an infusion pump	✓	15/15 (Missing=0)	100.0%	94.9%	5.1% ▲

Region 8 - Guidelines for Equipment, Supplies, and Medications for the Care of Pediatric Patients in the ED (33 points)

	KPI	Region Number of EDs that Have Item	Region Percent that Have Item	Michigan Percent that Have Item	Difference Between State and Region
Endotracheal tubes: cuffed or uncuffed 2.5 mm	●	14/15 (Missing=0)	93.3%	96.4%	-3.1% ▼
Endotracheal tubes: cuffed or uncuffed 3.0 mm	●	14/15 (Missing=0)	93.3%	98.6%	-5.3% ▼
Endotracheal tubes: cuffed or uncuffed 3.5 mm	✓	15/15 (Missing=0)	100.0%	99.3%	0.7% ▲
Endotracheal tubes: cuffed or uncuffed 4.0 mm	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
Endotracheal tubes: cuffed or uncuffed 4.5 mm	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
Endotracheal tubes: cuffed or uncuffed 5.0 mm	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
Endotracheal tubes: cuffed or uncuffed 5.5 mm	✓	15/15 (Missing=0)	100.0%	98.6%	1.4% ▲
Endotracheal tubes: cuffed 6.0 mm	✓	15/15 (Missing=0)	100.0%	99.3%	0.7% ▲
Laryngoscope blades: straight, size 0	●	13/15 (Missing=0)	86.7%	94.9%	-8.2% ▼
Laryngoscope blades: straight, size 1	✓	15/15 (Missing=0)	100.0%	99.3%	0.7% ▲
Laryngoscope blades: straight, size 2	✓	15/15 (Missing=0)	100.0%	98.6%	1.4% ▲
Laryngoscope blades: curved, size 2	✓	15/15 (Missing=0)	100.0%	97.1%	2.9% ▲
Pediatric-sized Magill forcep	●	13/15 (Missing=0)	86.7%	92.0%	-5.3% ▼
Nasopharyngeal airways: infant-sized	●	13/15 (Missing=0)	86.7%	88.4%	-1.7% ▼
Nasopharyngeal airways: child-sized	●	14/15 (Missing=0)	93.3%	92.8%	0.5% ▲

Region 8 - Guidelines for Equipment, Supplies, and Medications for the Care of Pediatric Patients in the ED (33 points)

	KPI	Region Number of EDs that Have Item	Region Percent that Have Item	Michigan Percent that Have Item	Difference Between State and Region
Oropharyngeal airways: size 0 (50mm)	✓	15/15 (Missing=0)	100.0%	95.7%	4.3% ▲
Oropharyngeal airways: size 1 (60mm)	✓	15/15 (Missing=0)	100.0%	98.6%	1.4% ▲
Oropharyngeal airways: size 2 (70mm)	✓	15/15 (Missing=0)	100.0%	97.8%	2.2% ▲
Oropharyngeal airways: size 3 (80mm)	✓	15/15 (Missing=0)	100.0%	98.6%	1.4% ▲
Stylets for pediatric/infant-sized endotracheal tube	✓	15/15 (Missing=0)	100.0%	100.0%	0.0%
Bag-mask device, self-inflating (infant/child)	●	14/15 (Missing=0)	93.3%	99.3%	-6.0% ▼
Masks (neonatal size) to fit bag-mask device	✓	15/15 (Missing=0)	100.0%	91.3%	8.7% ▲
Masks (infant size) to fit bag-mask device	✓	15/15 (Missing=0)	100.0%	99.3%	0.7% ▲
Masks (child size) to fit bag-mask device	✓	15/15 (Missing=0)	100.0%	99.3%	0.7% ▲
Simple oxygen face masks: standard infant	△	11/15 (Missing=0)	73.3%	90.6%	-17.3% ▼
Clear oxygen masks: standard child	●	14/15 (Missing=0)	93.3%	94.9%	-1.6% ▼
Non-rebreather masks: infant-sized	△	11/15 (Missing=0)	73.3%	84.8%	-11.5% ▼
Non-rebreather masks: child-sized	✓	15/15 (Missing=0)	100.0%	98.6%	1.4% ▲
Nasal cannulas: infant	●	14/15 (Missing=0)	93.3%	97.1%	-3.8% ▼
Nasal cannulas: child	✓	15/15 (Missing=0)	100.0%	98.6%	1.4% ▲
Suction catheters: at least one in range 6-8F	✓	15/15 (Missing=0)	100.0%	98.6%	1.4% ▲
Suction catheters: at least one in range 10-12F	✓	15/15 (Missing=0)	100.0%	99.3%	0.7% ▲
Supplies/kit for pediatric patients with difficult airways	●	13/15 (Missing=0)	86.7%	92.8%	-6.1% ▼

REPORTS

Injury prevention
Communications
Infrastructure
Regional performance improvement
Continuum of care
Education

AGENDA

- Member announcements
- Public comment
- Adjournment

R8MCAN.org

NelsonL7@michigan.gov