State of Michigan Trauma Verification Standards

Systems of Care Conference

March 11, 2026

MDHHS

Michigan Department of Health & Human Services

MISSION:
Michigan Department of Health and Human Services (MDHHS) provides opportunities, services, and programs that promote a healthy, safe and stable environment for residents to be self-sufficient.

Hospital Statistics

Date of first verification visit:

June 2016 In-person

July 2021 Virtual Visit

Number of trauma patients seen in Level III's annually:

9079

Number of Pediatric (<15 y.o.) trauma patients seen in Level III's annually:

323

Number of Michigan Level IVs:

56

Six facilities have gone from a L3 to a L4 successfully.

Number of verification visits/year:

30

Number of focused visits/year:

8

Most common CD cited:

Top 3

CD 16-10

CD 2-17

CD 2-18

(all PI)

ACS
Level III Trauma Centers in Michigan

Henry Ford Warren 2N
(Level III – N)

Henry Ford West Bloomfield – 2N
(Level III – N)

Henry Ford Rochester
2N

McLaren Port Huron
2N

Corewell Beaumont Grosse Point – 2S

Henry Ford Genesys
3

Henry Ford Wyandotte
2S

McLaren Flint - 3

Corewell Lakeland St. Joe - 5

UPHS Portage
8

Michigan Level III Trauma Centers

- McLaren Greater Lansing – 1
- Garden City Hospital – 2S
- Lake Huron Medical Center – 2N
- DMC Huron Valley Sinai – 2N
- McLaren Bay Region - 3
- Oaklawn Hospital - 5
- Corewell Health Blodgett - 6
- Corewell Health Zeeland - 6
- Holland Hospital - 6
- MyMichigan Alpena - 7

Michigan Level IV Trauma Centers

Region 1 – 8 Level IV Facilities

Region 2N – 1 Level IV Facility

Region 2S – 4 Level IV Facilities

Region 3 – 12 Level IV Facilities

Region 5 – 7 Level IV Facilities

Region 6 - 11 Level IV Facilities

Region 7 – 7 Level Iv Facilities

Region 8 – 6 Level IV Facilities

Michigan Trauma Centers

- Michigan’s Level III trauma centers see anywhere from 125 to 700 patients annually depending on their location.
- Michigan’s Level IV trauma centers see anywhere from 20 to 700 patients annually depending on their location.
- All the facilities receive and care for pediatric patients.

Standards Discussion

- SOM Level III State requirements while very similar are not identical to the ACS Level 3 requirements listed in the Resources for Optimal Care of the Injured Patient 2022 Standards (Gray Book).
- SOM Level IV requirements were developed utilizing standards from the ACS 2014 Orange Book and the ACS 2022 Gray Book, along with a review of data from the SOM Level IV verification visits.
- Requirements that will be presented today are ones that the State of Michigan adopted and/or adapted to best reflect the criteria needed for SOM hospitals to maintain trauma verification.
- The Michigan Criteria have been included in the larger criteria document for ease of access. They have been updated to include language further explaining the expectations for each of the four sections.
- Please note when “reporting period” is referenced, that is the 12-month period prior to the verification visit date.

Document Layout

III	**Massive Transfusion Protocol MI 5.7**	All trauma centers must have a massive transfusion protocol (MTP) that is developed collaboratively between the trauma service and the blood bank. ***The policy must include pediatric dosing.***	I
	Additional Information	According to the ACS TQIP Massive Transfusion in Trauma Guidelines: 1. An MTP should be a written document, accessible to all, and adopted by the center. All staff should be familiar with the procedures. Initial training and subsequent regular drills are recommended to maintain competency. This process is especially important in trauma centers where MTP initiations are rare, for example, smaller centers. 2. Massive transfusion protocols should be developed by a multidisciplinary committee that includes, at a minimum, representatives from transfusion service/blood bank, emergency department, anesthesia, and the trauma service. 3. The massive transfusion protocol should address: • Triggers for initiating massive transfusion in trauma • Resuscitation in the trauma bay, including: ○ MTP product availability ○ MTP product delivery ○ MTP blood product transfusion • Continuing MTP in the OR, angiography suite, and intensive care unit • Transfusion service processes for delivery of blood products • Transfusion targets • The use of adjuncts for massive transfusion patients • Termination of the MTP • Performance improvement monitoring 4. An example of pediatric MTP dosing can be found at: EIIC: Hemorrhagic Shock & Massive Transfusion Protocol (MTP) • EIIC *Policy may be called massive transfusion, rapid transfusion, or emergency release policy.*	
	Measures of Compliance	• Massive transfusion protocol • MTP training, education, mock activations • MTP policy matches blood bank availability	

- If applicable, the criterion will include additional information that will explain what is needed to meet the criterion, as well as examples.
- They will also include what measures of compliance will be used by the site surveyors to show the criterion has been met.
- For consistency, the criterion numbering have remained the same in both Level III and Level IV.

Scope and Governance

Level	Requirements	Description of Requirements	Type
III and IV	**Hospital Regional Disaster Committee MI 2.2**	All trauma centers must participate in regional disaster/emergency management committees, health care coalitions, and regional mass casualty exercises.	II
	Measures of Compliance	• Attendance records from disaster/emergency management committee meetings, health care coalition meetings, and regional mass casualty exercises. • Proof of attendance in one regional exercise.	

Scope and Governance

III	**Disaster Management Planning MI 2.3**	All trauma programs must be integrated into the hospital's disaster plan to ensure a robust surgical response: 1. A trauma surgeon from the trauma panel ***must*** be included as a member of the hospital's disaster committee and be responsible for the development of a surgical response to a mass casualty event. 2. The surgical response ***must*** outline the critical personnel, means of contact, initial surgical triage (including subspecialty triage when appropriate), and coordination of secondary procedures. 3. The trauma program must participate in one hospital drill or disaster plan activation per verification cycle that includes a trauma response and are designed to refine the hospital's response to mass casualty events.	II
	Measures of Compliance	• Attendance records demonstrating trauma surgeon participation in disaster committee meetings. • Hospital disaster plan that includes a surgical response plan. • Dates and nature of drills or activations during the reporting period.	

Scope and Governance

Level	Requirements	Description of Requirements	Type
IV	**Disaster Exercise Participation MI 2.3 (4)**	The facility must participate in regional disaster management plans and exercises.	II
	Measures of Compliance	• Attendance records for hospital exercises • Information included in site visit power point presentation	

Scope and Governance

III and IV	**Trauma Medical Director Responsibility and Authority** **MI 2.6**	In all trauma centers, the TMD must be responsible for and have the authority to: 1. Develop and enforce policies and procedures relevant to care of the injured patient. 2. Ensure providers meet all requirements and adhere to institutional standards of practice. 3. Work across departments and/or other administrative units to address deficiencies in care. 4. Chair of the Multidisciplinary Performance Improvement committee with 50% attendance. 5. Determine (with their liaisons) provider participation in trauma care, which might be guided by findings from the PI process or an Ongoing Professional Practice Evaluation (OPPE). 6. Oversee the structure and process of the trauma PI program. - **Regular dedicated time with TPM/TPC for case review.** - **Thorough secondary review of cases with documentation and recommendations.** - **Advancement of cases to tertiary review.** - **Preparation of case review for multidisciplinary committee.** - **Evidence of timely performance improvement documentation to assist with loop closure/event resolution after the secondary review.** - **The TMD should not review their own cases. These reviews should be done by another physician on the panel.** ***The TMD and the TPM/TPC must have the authority and be empowered by the hospital governing body to lead the program.***	II
	Measures of Compliance	• Written documentation of roles and responsibilities of the TMD • Proof of participation in OPPE • Meeting attendance records • Scheduled/allotted time for PIPS review with TPM/TPC • Clear documentation of PIPS review/input • Evidence of participation in loop closure/event resolution • Pre-review questionnaire documentation	

TPM/TPC Staffing Where the Discussion Started….

- Staffing for the trauma registry duties and performance improvement should be based off a combined total number of registry entries for all programs managed.
- Programs with 200 or less registry entries meeting NTDS/State criteria, the TPM/TPC must be at least 0.5 FTE
- Programs with greater than 200 registry entries meeting NTDS/State criteria, the TPM/TPC must be 1.0 FTE
- With this requirement we would have had 49 programs that would need at least a 0.5 TPM and 19 programs that would have needed a full 1.0 FTE.

TPM/TPC Staffing - Where We Ended

After multiple discussions and support from both Advisory committees. We changed the requirement to say:

Staffing for the trauma registry duties and performance improvement should be based off a combined total number of registry entries for all programs managed.

- In programs with **200-300** registry entries meeting NTDS/State criteria, the TPM/TPC must be at least 0.5 FTE
- In programs with **greater than 300** registry entries meeting NTDS/State criteria, the TPM/TPC must be 1.0 FTE

We now have only **9 programs** that would require a 0.5 FTE and **8 programs** that would require a full 1.0 FTE.

Only 5 trauma programs will need to add additional staffing time:

- 2 facilities in 2027, 2 facilities in 2028, and 1 facility in 2029.

After a careful review of past site visits, it was noted that when registry entries meeting NTDS/State criteria were over 300, staffing support was documented as an area of opportunity by reviewers.

Many of the reports from Level IV visits have an area of opportunity concerning:

- The TPM/ TPC covering multiple trauma centers or centers with larger case volumes, and how it contributes to limited ability to oversee the registry, injury prevention initiatives and availability to provide PI oversight.

Trauma Program Manager - Coordinator Requirements MI 2.7 (L III)

The trauma program manager/coordinator must be either a registered nurse, paramedic, or advanced practice provider with emergency and/or trauma care experience. The manager/coordinator's job description must define his or her roles and responsibilities for the management and leadership of the trauma program and the trauma performance improvement process.

In all trauma centers, the TPM/TPC must fulfill the following requirements:

1. Have staff commitment to the trauma program.
   - Programs with **200-300** or less registry entries meeting NTDS/State criteria, the TPM/TPC ***must*** be at least 0.5 FTE
   - Programs with **greater than 300** registry entries meeting NTDS/State criteria, the TPM/TPC ***must*** be 1.0 FTE
2. Provide evidence of 36 hours of trauma-related continuing education (CE) during the verification cycle.
3. Hold current membership in a national or regional trauma organization.

*At least 50% of the TPM/TPC's time must be spent on TPM/TPC related activities as outlined below (this should exclude clinical hours). The remaining time must be dedicated to other roles within the trauma program.

Trauma Program Manager - Coordinator Requirements MI 2.7 (L III)

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    - Programs with **greater than 300** registry entries meeting NTDS/State criteria, the TPM/TPC ***must*** be 1.0 FTE

*At least 50% of the TPM/TPC's time must be spent on TPM/TPC related activities as outlined below (this should exclude clinical hours). The remaining time must be dedicated to other roles within the trauma program.

Trauma Program Manager - Coordinator Requirements MI 2.7

TPM/TPC Multiple Facility Management Responsibilities:

1. It is recommended that a Level III TPM/TPC should not manage more than one Level III facility. If they are directed by their health system to manage additional programs it is recommended that they only manage one additional Level IV facility.
2. It is recommended that a Level IV TPM/TPC should not manage more than 2 Level IV facilities.
3. Factors to consider when determining staffing assistance for a TPM/TPC managing more than one program:
    - Patient volume
    - Duties required outside of trauma program activities (ER manager, disaster preparedness, nursing supervisor, etc.)
    - Trauma registry work and number of entries meeting NTDS criteria
    - Time needed for PI activities
    - Time needed for PI meetings for each site (4 meetings per site)
    - Time needed for injury prevention activities
    - Participation in regional meetings and activities
    - Drive time to individual facilities/ability to spend time with each trauma program
4. Staffing for the trauma registry and performance improvement must be based off a ***combined total number of registry entries for all programs managed.***
5. There must be at least a ***0.5 FTE dedicated performance improvement personnel**** when the annual registry entries meeting NTDS/State criteria ***exceed 500 patients*** (this may be the TPM/TPC).
6. If the combined facility registry entries ***exceed 1000*** registry entries meeting NTDS/State criteria, the trauma center must have a 1.0 FTE PI personnel. This cannot be the TPM/TPC.

Facilities and Equipment

IV	**Blood Products/ Laboratory MI 3.3**	24-hour availability of a laboratory capable of: • Equipment available for analysis of blood, urine, and other body fluids, including micro sampling • If utilizing point of care testing the facility must have a policy for lab analysis off site for those tests not available by point of care testing. ***Facilities must have the ability to perform all labs needed for the trauma patients***	I
	Measures of Compliance	• Evaluated during the site visit process • Equipment and staff capable of meeting requirement • Blood product availability supports MTP	

Personnel and Services

Allied Health Services - Respiratory Therapy

MI 4.16 - Level IV trauma centers must have the staff to provide respiratory services 24 hours a day.

Measures of Compliance

- Description of the model of coverage. Does not need to be a registered therapist 24/7/365.
- Training provided to those staff responsible to provide respiratory services.

Personnel and Services

III	**Trauma Registry Staffing Requirements 4.19**	There must be at least 0.5 FTE dedicated to the trauma registry if the combined facilities have 200–300 annual registry entries *meeting NTDS/State criteria*. The count of entries is defined as all patients who meet NTDS/State case inclusion criteria. If the annual combined facility registry *entries meeting NTDS/State criteria* exceeds 300, staffing should be adjusted accordingly.	II
	Measures of Compliance	• Number of trauma registry personnel • Annual trauma registry report that shows the volume of all entries	
	MI CD 1-4:	Failure of the healthcare facility to designate a person responsible for trauma registry activities shall be considered a critical deficiency.	I

Personnel and Services

IV	**Trauma Registry Staffing Requirements** **MI 4.19**	Each healthcare facility is required to designate a person responsible for trauma registry activities. This person should have minimal training necessary to maintain the registry. This need not be a dedicated position. • There ***should*** be at least a 0.5 FTE dedicated to the trauma registry if the combined facilities have 200-300 annual registry entries *meeting NTDS/State criteria*. • If the annual combined facility registry *entries meeting NTDS/State criteria* exceeds 300, staffing should be adjusted accordingly.	II
IV	***MI CD 1-4***	*Failure of the healthcare facility to designate a person responsible for trauma registry activities shall be considered a critical deficiency.*	I
	Measures of Compliance	• Staff assigned to registry activities or percentage of time TPM/TPC spends performing registry duties. • Evidence of registrar or TPM/TPC attendance at registry course.	

Personnel and Services

III	**Trauma Registry Courses 4.20**	All staff members who have a registry role in data abstraction and entry, injury coding, ISS calculation, data reporting, or data validation for the trauma registry must fulfill all the following requirements within 12 months of hire: 1. Participate in and pass the most recent version of the AAAM's Abbreviated Injury Scale (AIS) course. 2. Participate in a trauma registry course that includes all the following content: - Abstraction - Data management - Reports/report analysis - Data validation - HIPAA 3. Participate in an ICD-10 course, or an ICD-10 refresher course every five years. **CAISS Certification is not a requirement of Michigan Verified trauma facilities.**	II
	Measures of Compliance	• List of registry staff with date of hire • For each registry staff member, include: - AAAM AIS Course Certificate - Certificate from trauma registry course - ICD-10 Course Certificate dated within the past five years	

Personnel and Services

III	**Trauma Registrar Continuing Education MI 4.21**	Each trauma registrar must accrue at least 24 hours of trauma-related CE during the verification cycle.	II
	Additional Information	Trauma-related CE can be obtained internally, externally, or online.	
	Measures of Compliance	Report “template” containing course description, number of CEU’s per activity and total number of CEU’s obtained during the verification cycle.	

Personnel and Services

III	**Performance Improvement Staffing Requirements 4.22**	1. In Level III trauma centers, there must be at least 0.5 FTE dedicated performance improvement personnel* when the annual volume of registry patient entries exceeds 500 patients. The count of entries is defined as all patients that meet NTDS/State inclusion criteria, and those patients who meet inclusion criteria for hospital, local, regional and state purposes. 2. When the annual volume exceeds 1,000 registry patient entries, the trauma center must have at least 1 FTE PI personnel. This cannot be the trauma program manager. ***If the facility has less than 500 patient entries annually, they are not required to have dedicated PI personnel.**	II
	Measures of Compliance	• Annual trauma registry report that shows the total volume of entries • Roles and responsibilities of the PI personnel • Number of PI personnel	

Patient Care

- The ACS states that trauma programs need to ensure consistency in the care they provide to patients. To achieve this goal, a trauma program must use clinical practice guidelines (CPG), protocols, and algorithms derived from evidenced-based validated resources.
- Institutional guidelines should be established according to the most current available peer-reviewed literature and clinical experience and recommendations from the State Trauma Advisory and Designation committees. Once implemented, trauma programs should track compliance with their clinical practice guidelines, protocols, and/or algorithms and ultimately monitor them for effects on outcome.

Clinical Practice Guidelines III and IV

MI 5.1 Clinical Practice Guidelines

All trauma centers must have evidence-based clinical practice guidelines, protocols, or algorithms that are reviewed at least every three years. The hospital must have a policy describing:

1. The types of trauma patients considered for admission.
2. The specialties responsible for admitting and providing consults.
3. Guidelines that focus on managing different types of injuries and patient populations.
4. The expectations for monitoring patients for deterioration.
5. Procedures to ensure that, in the event of deterioration, patients admitted for trauma care are transferred to an appropriate tertiary facility for care.

Clinical Practice Guidelines

Trauma programs must use clinical practice guidelines (CPG), protocols, and algorithms derived from evidenced-based validated resources. Examples of such activities include the following:

- Massive Transfusion
- Assessment and clearance of the cervical spine
- Management of severe traumatic brain injury
- Reversal of oral anticoagulants
- Antibiotic administration
- Geriatric Trauma Care
- Pediatric Trauma Care

The hospital must have a policy describing:

- The types of trauma patients considered for admission.
- The specialties responsible for admitting and providing consults.
- The expectations for monitoring patients for deterioration.
- Procedures to ensure that, in the event of deterioration, patients admitted for trauma care are transferred to an appropriate tertiary facility for care.

The American College of Surgeons has resource materials to help trauma centers develop CPGs.

These resources can be found at: ACS TQP Best Practices Guidelines | ACS (facs.org)

Patient Care

III and IV	**Levels of Trauma Activation MI 5.3**	In all trauma centers, the criteria for tiered activations must be clearly defined. For the highest level of activation, the following eight criteria must be included: 1. Confirmed blood pressure less than 90 mm Hg at any time in adults, and age-specific hypotension in children 2. Gunshot wounds to the neck, chest, or abdomen 3. GCS less than 9 (with mechanism attributed to trauma) 4. Transfer patients from another hospital who require ongoing blood transfusion. 5. Patients intubated in the field and directly transported to the trauma center. 6. Patients who have respiratory compromise or are in need of an emergent airway. 7. Transfer patients from another hospital with ongoing respiratory compromise (excludes patients intubated at another facility who are now stable from a respiratory standpoint) 8. Emergency physician's/Advanced Practice Provider's discretion
	Additional Information	The trauma program ***may*** include additional criteria such as: Geriatric specific criteria best-practices-guidelines-geriatric-trauma.pdf Pediatric specific criteria Field Triage Guidelines | ACS

Patient Care

Measures of Compliance	List of criteria for each tier of activation. • Level IV facilities **may, at a minimum**, have one level of activation but should carefully consider that the level of trauma activation must be clearly defined using at least the required elements defined above. • *If utilizing one level of activation it will be important to have clear guidance on identification, rapid assessment and treatment, and timely transfer of patients defined as serious impairment of bodily function, serious dysfunction of a body organ or injury placing the health of the individual in serious jeopardy.* • Once the decision to transfer has been made, the focus is on resuscitation and stabilization with the goal of minimizing the patient's length of stay at this facility. • For patients who do not meet activation criteria, the hospital should still have criteria defined to more clearly establish risk of injury and define how providers will be triaged to multiple trauma patients with potentially varying levels of acuity. • Notification for this level could be internal to the ED staff only and would alert the ED physician that the patient is in the department, and they must be seen within a determined time frame (1 hour for example).

Patient Care

- **MI 5.6 - Assessment of Children for Nonaccidental Trauma (Level III and IV) –** All trauma centers must have a process in place to assess children for nonaccidental trauma.
- **Measures of Compliance -** Nonaccidental trauma protocols/policies

Patient Care

III and IV	**5.7 Massive Transfusion Protocol**	All trauma centers must have a massive transfusion protocol (MTP) that is developed collaboratively between the trauma service and the blood bank. **This must include pediatric dosing.**	I	
	Measures of Compliance	Massive Transfusion Protocol		
III and IV	**5.8 Anticoagulation Reversal Protocol**	All trauma centers must have a rapid reversal protocol in place for patients on anticoagulants.	II	
	Measures of Compliance	Rapid reversal protocol		

Pediatric Readiness MI 5.9

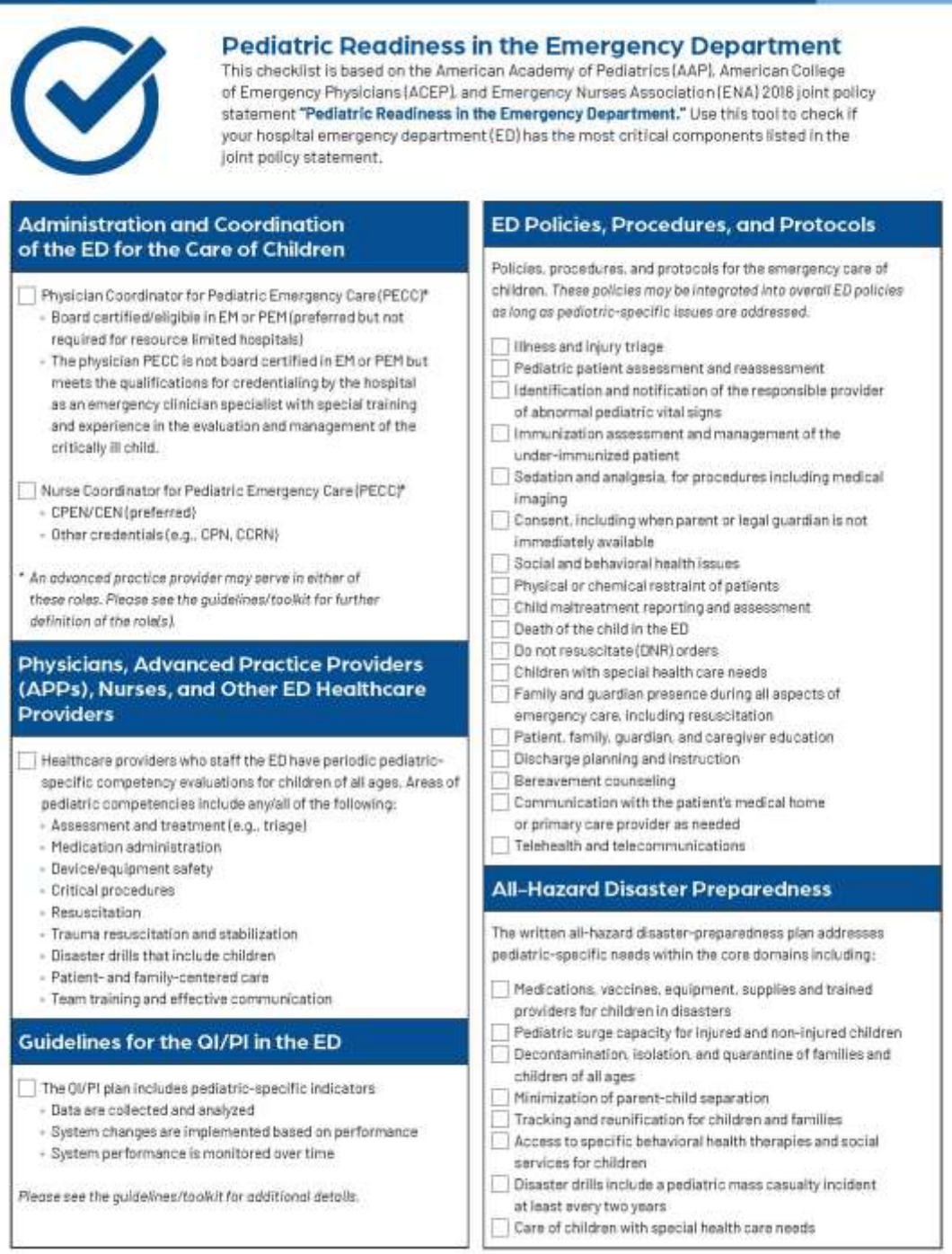
Children who require emergency care have unique needs, especially when the emergency is serious or life-threatening. The American Academy of Pediatrics has stressed the importance of all hospital emergency departments having the appropriate resources and staff to provide emergency care for children.

"Children have unique anatomic, physiologic, developmental and medical needs that differ from adults."

Pediatric trauma care is often referred to as a low frequency, high impact event.

The National Pediatric Readiness Project noted that most children seeking emergency care (69.4%) are cared for in EDs that have seen fewer than 15 pediatric patients per day, highlighting the need to provide additional pediatric emergency resources to smaller and rural emergency departments.

With the number of rural hospitals in Michigan, and the continued efforts to verify and designate all Michigan hospitals as trauma centers, this poses the perfect opportunity for facilities to build on trauma designations to improve their ED's pediatric readiness.



Pediatric Readiness in the Emergency Department

This checklist is based on the American Academy of Pediatrics (AAP), American College of Emergency Physicians (ACEP), and Emergency Nurses Association (ENA) 2018 joint policy statement **"Pediatric Readiness in the Emergency Department."** Use this tool to check if your hospital emergency department (ED) has the most critical components listed in the joint policy statement.

Administration and Coordination of the ED for the Care of Children

- ☐ Physician Coordinator for Pediatric Emergency Care (PECC)*
  - Board certified/eligible in EM or PEM (preferred but not required for resource limited hospitals)
  - The physician PECC is not board certified in EM or PEM but meets the qualifications for credentialing by the hospital as an emergency clinician specialist with special training and experience in the evaluation and management of the critically ill child.
- ☐ Nurse Coordinator for Pediatric Emergency Care (PECC)*
  - CPEN/CEN (preferred)
  - Other credentials (e.g., CPN, CCRN)

** An advanced practice provider may serve in either of these roles. Please see the guidelines/toolkit for further definition of the role(s).*

Physicians, Advanced Practice Providers (APPs), Nurses, and Other ED Healthcare Providers

- ☐ Healthcare providers who staff the ED have periodic pediatric-specific competency evaluations for children of all ages. Areas of pediatric competencies include any/all of the following:
  - Assessment and treatment (e.g., triage)
  - Medication administration
  - Device/equipment safety
  - Critical procedures
  - Resuscitation
  - Trauma resuscitation and stabilization
  - Disaster drills that include children
  - Patient- and family-centered care
  - Team training and effective communication

Guidelines for the QI/PI in the ED

- ☐ The QI/PI plan includes pediatric-specific indicators
  - Data are collected and analyzed
  - System changes are implemented based on performance
  - System performance is monitored over time

Please see the guidelines/toolkit for additional details.

ED Policies, Procedures, and Protocols

Policies, procedures, and protocols for the emergency care of children. *These policies may be integrated into overall ED policies as long as pediatric-specific issues are addressed.*

- ☐ Illness and injury triage
- ☐ Pediatric patient assessment and reassessment
- ☐ Identification and notification of the responsible provider of abnormal pediatric vital signs
- ☐ Immunization assessment and management of the under-immunized patient
- ☐ Sedation and analgesia, for procedures including medical imaging
- ☐ Consent, including when parent or legal guardian is not immediately available
- ☐ Social and behavioral health issues
- ☐ Physical or chemical restraint of patients
- ☐ Child maltreatment reporting and assessment
- ☐ Death of the child in the ED
- ☐ Do not resuscitate (DNR) orders
- ☐ Children with special health care needs
- ☐ Family and guardian presence during all aspects of emergency care, including resuscitation
- ☐ Patient, family, guardian, and caregiver education
- ☐ Discharge planning and instruction
- ☐ Bereavement counseling
- ☐ Communication with the patient's medical home or primary care provider as needed
- ☐ Telehealth and telecommunications

All-Hazard Disaster Preparedness

The written all-hazard disaster-preparedness plan addresses pediatric-specific needs within the core domains including:

- ☐ Medications, vaccines, equipment, supplies and trained providers for children in disasters
- ☐ Pediatric surge capacity for injured and non-injured children
- ☐ Decontamination, isolation, and quarantine of families and children of all ages
- ☐ Minimization of parent-child separation
- ☐ Tracking and reunification for children and families
- ☐ Access to specific behavioral health therapies and social services for children
- ☐ Disaster drills include a pediatric mass casualty incident at least every two years
- ☐ Care of children with special health care needs

Patient Care

Pediatric Readiness MI 5.9 (Level III and IV) In all trauma centers, the emergency department must evaluate its pediatric readiness and have a plan to address any deficiencies.

- **Measures of Compliance**
  - Gap analysis with plan to address deficiencies in pediatric readiness which is based off the center's Pediatric Readiness Score.
  - Mechanisms are in place to monitor professional performance, continuing education, and clinical competencies, including the integration of findings from tertiary case reviews for pediatric emergency care.

Pediatric Readiness MI 5.9

- There are seven categories addressed in the recommendations and ideas on how to achieve the goals. The categories include:
  - Administration and coordination for the care of children in the emergency department
  - Competencies for physicians, advanced practice providers, nurses, and other health care providers
  - Quality improvement and/or performance improvement in the emergency department
  - Policies, procedures, and protocols for the emergency department
  - Pediatric patient and medication safety in the emergency department
  - Support services for the emergency department
  - Equipment, supplies and medications
- Staff in the emergency department need to have yearly education and competencies to ensure the care they provide is consistent with current guidelines and they have the competencies and skills to provide care to children.
- Policies, procedures, and protocols for the emergency care of children are age-specific and include neonates, infants, children, adolescents, and children with special health care needs. Staff are educated accordingly, monitored for compliance and periodically updated.

Pediatric Policies, Procedures, and Protocols for the Emergency Department

Pediatric transfer policy includes what facilities accept ill and injured children and the choice of the appropriate level of care for transport.

Patient Transfers - Each hospital should have **transfer policies** and procedures as well as **transfer agreements** with hospitals capable of providing a higher level of pediatric care. This is very important because being able to transfer a child to a higher level of care in a timely manner can make a difference in the outcome.

All staff responsible for a part in the transfer process should know:

- what facilities take pediatric patients.
- what EMS agencies have the capabilities to transfer critically ill pediatric patients
- The facility's process for transferring patients.

Your emergency department should have some considerations for early transfer in their policy. This would include conditions the facility does not have the resources to care for. Conditions may include:

- Depressed or deteriorating neurologic status (GCS ≤14) with a focus on changes in the motor function.
- Respiratory distress or failure.
- Children requiring endotracheal intubation and/or ventilatory support.
- Shock, uncompensated or compensated.
- Children requiring any one of the following:
    a. Invasive monitoring (arterial and/or central venous pressure)
    b. Intracranial pressure monitoring
    c. Vasoactive medications
- Burns
- Fractures of major long bones, spinal cord, or fractures complicated by neurovascular or compartment syndrome
- Penetrating wounds to the head, neck, thorax, abdomen, pelvis, or groin

The Peds champion should strive to engage their hospital staff, staff at transferring facilities, and their local EMS and MCA leadership on transfer protocols and policies*. They should keep their plan up to date (contacts) and coordinate with the EMS Pediatric Champions in their area, keeping in mind one person may cover several agencies in rural areas.*

Injury Evaluation in the Emergency Department

In our emergency department, your child's safety and well-being come first. We screen every child for bruises and other injuries.

Why do we screen for injuries?

Parents and caregivers do the right thing by taking an ill or injured child to the emergency department. Some types of injuries can be a sign of the need to do a more extensive evaluation for other less obvious injuries and/or medical problems.

What are the guidelines for a more extensive

EIIC
EMSC Innovation and Improvement Center

We want to do what is right for every child, including yours. We

Patient Care

III and IV	**Decision to Transfer** **MI 5.12**	In all trauma centers, the decision to transfer an injured patient must be based solely on the needs of the patient, without consideration of their health plan or payor status. A door to transfer benchmark time for the most critical patients should be established and monitored.	II
	Additional Information	1. Trauma patients who will be transferred to a tertiary trauma center must be identified and rapidly assessed, treated quickly and transferred efficiently to provide the best possible outcome. 2. Patients to be transferred can often be identified before they arrive in the emergency department. Arrangements for emergent transfer can often begin the moment the emergency department is notified by EMS that they are enroute with a major trauma patient. 3. All trauma patients will receive a medical screening examination and stabilizing treatment, within the hospital's capabilities, before the transfer is made. 4. Once the decision to transfer has been made, including the method (Ground vs. Air) the focus is on resuscitation and stabilization with the goal of minimizing the patient's length of stay at this facility. 5. Consideration should be given to whether the patient will be transferred via ground or air.	
	Measures of Compliance	• Evaluated during the site visit process • Facility transfer policy/guidelines	

The criterion requiring transfer agreements has been removed

Patient Care

III Only	**5.28 Mental Health Screening**	Level III trauma centers must meet the mental health needs of trauma patients by having: 1. A process for referral to a mental health provider when required (LIII)	II
	Measures of Compliance	Mental health referral process	
III and IV	**5.29 Alcohol Misuse Screening**	All trauma centers must screen all admitted trauma patients ***greater than 12 years old*** for alcohol misuse with a validated tool or routine blood alcohol content testing. Programs must achieve a screening rate of at least 80 percent.	II
	Measures of Compliance	Alcohol misuse screening report that includes criteria outlined in the standard.	
III Only	**5.30 Alcohol Misuse Intervention**	In Level III trauma centers, at least 80 percent of patients who have screened positive for alcohol misuse must receive a brief intervention by appropriately trained staff prior to discharge. This intervention must be documented. **Level III trauma centers must have a mechanism for referral if brief intervention is not available as an inpatient.**	II
	Measures of Compliance	• Screening, Brief Intervention and Referral to Treatment (SBIRT) protocol • Alcohol misuse intervention report	

Data and Surveillance

Level	Requirements	Description of Requirements	Type
III and IV	**6.1 Data Quality Plan**	All trauma centers must have a data quality plan that, at a minimum, requires quarterly data validation.	II
	Measures of Compliance	• Written data quality plan • Written results summarizing internal/external data validation. • Trauma center's trauma registry data validation report(s) ***The process can be included in the Performance Improvement plan.***	

Performance Improvement

Level	Requirements	Description of Requirements	Type

III	**7.2 Performance Improvement (PI) Plan**	All trauma centers must have a written PI plan that:
		• Outlines the organizational structure of the trauma PI process, with a clearly defined relationship to the hospital PI program.
		• Specifies the processes for event identification. As an example, these events may be brought forth by a variety of sources, including but not limited to individual personnel reporting, morning report or daily sign outs, case abstraction, registry surveillance, use of clinical guideline variances, patient relations, or risk management. The scope for event review must extend from prehospital care to hospital discharge.
		• Includes a list of audit filters, event review, and report review that must include, at minimum, those listed in the Resources section.
		• Defines levels of review (primary, secondary, tertiary, and/or quaternary), with a listing for each level that clarifies:
		  ○ Which cases are to be reviewed
		  ○ Who performs the review
		  ○ When cases can be closed or must be advanced to the next level
		• Specifies the members and responsibilities of the trauma multidisciplinary PIPS committee.
		• Outlines an annual process for identification of priority areas for PI, based on audit filters, event reviews, and benchmarking reports
			I

	Measures of Compliance	PI plan that meets criteria outlined in this standard	

Performance Improvement

Level	Requirements	Description of Requirements	Type
IV	**7.2 Performance Improvement (PI) Plan**	All trauma centers must have a written PI plan that: 1. Specifies the processes for event identification. 2. The scope for event review must extend from prehospital care to hospital discharge. 3. Includes a list of audit filters, event review, and report review that must include, at minimum, those listed in the Audit Filter section. 4. Defines levels of review (primary, secondary, tertiary, and/or quaternary), with a listing for each level that clarifies: • Which cases are to be reviewed, including guidance on which cases should always receive a tertiary case review. • Who performs the review. • Documentation of each level of review, discussion/minutes, actions taken, and loop closure. 5. Specifies the members and responsibilities of the trauma multidisciplinary PIPS committee. 6. Outlines an annual process for identification of priority areas for PI, based on audit filters, event reviews, and PI committee guidance.	I
	Measures of Compliance	PI plan that meets criteria outlined in this standard	

Performance Improvement

III	**7.6 Trauma Multidisciplinary Performance Improvement Committee Attendance and Physician Participation in Performance Improvement**	Level III trauma centers must meet the following trauma multidisciplinary performance improvement committee meeting attendance thresholds (PI committee must meet a minimum of 6 meetings per year): 1. 4 out of 6 meetings for the TMD 2. 50 percent of meetings for each trauma surgeon 3. 50 percent of meetings for the liaisons (or one predetermined alternate): • Emergency medicine • Neurosurgery (trauma centers with neurosurgical capabilities) • Orthopedic surgery • ICU • Anesthesia (highly recommended but not required or may be ad hoc) • Radiology (highly recommended but not required or may be ad hoc) • Hospitalist or Medicine (highly recommended)	II
	Measures of Compliance	• Dates of PI committee meetings throughout the reporting period • PI committee meeting attendance records. The attendance records should include attendee's first and last name and title. • Evidence of tertiary reviews including service line providers participating in the care of the patient being reviewed.	

Performance Improvement

IV	**7.6 Trauma Multidisciplinary PI Committee Attendance and Physician Participation in Performance Improvement**	In Level IV trauma centers, there must be a minimum of 3 physicians that participate in the multi-disciplinary meetings. • One must be the trauma medical director • One must be an emergency medicine physician • The third could be an emergency department provider or an APP from the ED or another service. The following providers are also required if caring for trauma patients: 1. General Surgeon (if indicated/ad hoc) 2. Orthopedic Surgeon Liaison (if indicated/ad hoc) 3. Hospitalist/Internal Medicine/Admitting Provider (if the facility admits trauma patients a provider from a service that admits patients to the hospital should be included) 4. Anesthesia Liaison (if indicated/ad hoc) The trauma program manager/coordinator is also required to attend. Other service lines that are highly recommended, but not required are: • Radiology - Attendance of a radiology provider at PI meetings is especially important if the facility is experiencing delays in radiology reads or misreads. There should be a process to send cases with radiology issues for PI review.	II
	Measures of Compliance	1. Dates of PI committee meetings throughout the reporting period. 2. PI committee meeting attendance records. The attendance records should include attendees' first and last name and title. 3. Evidence of tertiary reviews including service line providers participating in the care of the patient being reviewed.	

Performance Improvement

III and IV	**7.7 Trauma Mortality Review**	In all trauma centers, all cases of trauma-related mortality and transfers to hospice must be reviewed and classified for potential opportunities for improvement. Deaths must be categorized as: 1. Mortality with opportunity for improvement 2. Mortality without opportunity for improvement 3. Transfers to hospice – with opportunities for improvement identified ***In Level IV facilities all trauma deaths need to be reviewed at the multi-disciplinary PI meeting.***	II
	Measures of Compliance	Trauma multidisciplinary PI committee meeting minutes documenting review of mortalities.	

Performance Improvement

Trauma Transfers MI 7.11 (4 only)
All transfers must be reviewed by the TMD

Measures of Compliance:

- Documentation of case reviews
- Report out on transfers at PI
- Feedback from receiving facilities

Audit Filters

Description of Audit Filter
Surgeon arrival time for the highest level of activation
Delay in response for urgent assessment by the neurosurgery and orthopedic specialists
Delayed recognition of or missed injuries.
Compliance with prehospital triage criteria, as dictated by regional protocols
Delays or adverse events associated with prehospital trauma care
Compliance of trauma team activation, as dictated by program protocols
Accuracy of trauma team activation protocols
Delays in care due to the unavailability of emergency department physician
Unanticipated return to the OR
Unanticipated transfer to the ICU or intermediate care
Transfers out of the facility for timeliness, appropriateness, and safety
All nonsurgical admissions (excludes isolated hip fractures)
Radiology interpretation errors or discrepancies between the preliminary and final reports
Delays in access to time-sensitive diagnostic or therapeutic interventions
Compliance with policies related to timely access to the OR for urgent surgical intervention
Delays in response to the ICU for patients with critical needs
Lack of availability of essential equipment for resuscitation or monitoring
MTP activations
Significant complications and adverse events
Transfers to hospice
All deaths: inpatient, died in emergency department (DIE), DOA
Inadequate or delayed blood product availability
Patient referral and organ procurement rates
Screening of eligible patients for psychological sequelae
Delays in providing rehab services
Screening of eligible patients for alcohol misuse
Neurotrauma care at Level III trauma centers
Neurotrauma diversion
Pediatric Trauma Activations

Audit Filters

Description of Criteria	Minimum Level of Review
All trauma patients who are diverted or transferred during the acute phase of hospitalization to: • Another trauma center • Acute care hospital, or specialty hospital (for example, burn center, re-implantation center, pediatric trauma center)	Level 2
Delayed recognition of or missed injuries	Level 2
Significant complications and adverse events	Level 2
All deaths: inpatient, died in emergency department (DIE), DOA	Level 3
Delays or adverse events associated with prehospital trauma care	Level 2
Compliance of trauma team activation, as dictated by program protocols	Level 2
Accuracy of trauma team activation protocols (over/under triage)	Level 1
Delays in care due to the unavailability of emergency department physician	Level 2
Lack of availability of essential equipment for resuscitation or monitoring	Level 2
Radiology interpretation errors or discrepancies between the preliminary and final reports	Level 3 report out to PI Committee
Delays in access to time-sensitive diagnostic or therapeutic interventions	Level 2
Pediatric trauma activations	Level 3
MTP activations	Level 3
All nonsurgical admissions (excludes isolated hip fractures)	Level 2
Transfers to hospice	Level 1
Inadequate or delayed blood product availability	Level 2
Screening of eligible patients for alcohol misuse	Level 1
Compliance with prehospital triage criteria	Level 1

Michigan Criteria Measures of Compliance

Regional Performance Improvement

Regional Injury Prevention

IV	***MI CD 2-1***	*Failure to participate in the Regional Trauma Networks performance improvement workplan and initiatives shall be considered a critical deficiency.*	I
	Additional information	1. Performance improvement is integral in ensuring a highly functioning trauma program and a statewide trauma system. The Michigan Administrative Rules reflect this emphasis on continually evaluating performance as does the American College of Surgeons Committee on Trauma (ACS-COT), and the respective accrediting, certifying bodies. Healthcare facilities seeking designation as a Michigan trauma facility must do so in accordance with the following expectations. 2. Participation in Regional Performance Improvement includes: • Providing data/information for regional the RPSRO inventory as needed • Participation in regional PI projects • Attendance at the RPSRO committee meetings	
	Measures of Compliance	• Demonstrate participation in the regional performance improvement process as described in the Regional SOC Network workplan by participating/attending 50 percent of the regional meetings as documented on the attendance roster maintained by the Regional Trauma Coordinator. • Successfully meeting the audit of participation when included in the random sample conducted annually. • Documentation of regional participation in the required Facility Introduction Power Point presented at the verification site visit.	

IV	**Injury Prevention Program** **MI 2.9**	1. There must be someone that has injury prevention as part of his or her job description. This may include the TPM/TPC. 2. Must have an organized and effective approach to injury prevention and must prioritize those efforts based on local trauma registry and epidemiologic data. 3. The program should implement at least two activities over the course of the verification cycle; one regional project and one facility project.	II
IV	***MI CD 3-1***	*Failure of the healthcare facility to participate in the Regional Trauma Network Injury Prevention work plan and initiatives is considered a critical deficiency.*	I
	Additional Information	Examples of injury prevention areas of focus could include: 1. Fall prevention 2. Motor vehicle occupant safety 3. Child passenger safety seat education 4. Distracted driving 5. Violence intervention and screening programs 6. Firearm injury prevention programs 7. Motorcycle and bicycle safety/helmet initiatives 8. Pedestrian safety 9. STOP THE BLEED® program as a community engagement strategy	

Reference Material

Performance Improvement Guidelines includes topics like:

- Basics of PI
- Event Identification
- Levels of Review
- Evaluation and Loop Closure
- Developing PI Plans
- Trauma PI Worksheets and Data Collection
- PDSA Cycle

BASIC COMPONENTS OF PROCESS IMPROVEMENT

Data Collection Tips

1 Regular and Timely Reviews

Data needed for process improvement can be found through:

- Chart reviews
- Patient rounding
- Team and committee meetings
- Data reports
- Discussions with staff

2 Patient Identification

A process should be in place to identify trauma patients for review and entry into the trauma registry.

- Those patients meeting criteria for entry into the statewide trauma registry should be entered into the PI process.
- This includes, but is not limited to, patients with trauma injury codes, trauma team activation, surgery, admission, inter-facility transfer, or die.

3 Audit Filters

- The trauma program should have knowledge of audit filters that must be reviewed, as well as audit filters specific to the program.
- Audit filters required by the State of Michigan can be found in the Level III and Level IV Criteria Quick Reference guide

4 Patient Care Review

- The trauma program should have a standard process and form utilized for chart review
- Trauma cases should be reviewed in a timely manner
- The process for chart review should be outlined in the PIPS plan

5 Data Abstraction

Data collection should include:

- Patient demographics
- Mechanism of Injury
- EMS information
- Activation information
- Patient assessment findings
- Patient disposition
- Complications
- Contributing factors

6 Issue Identification

- Staff reporting of quality issues
- Active rounding on admitted patients
- Establish & monitor quality indicators for all trauma patient medical records
- Appropriateness/timeliness of care
- Documentation quality/accuracy
- Adherence to care guidelines/protocols
- Specific complications

Division of EMS and Systems of Care

Performance Improvement Process Guide

Chart Review

- Identify patients to be reviewed
- Review required audit filters for verification level
- Review patient care and adherence to program policies/protocols
- Abstract Data from Chart for Registry Entry
- Identify any issues for review
- Prepare any supporting documentation for review

Primary Review (TPM)

- Review identified issue
- Use supporting documentation for validation of Issue
- Provide immediate resolution of issue and feedback to staff if able
- Document PI activities performed related to identified issue
- May be closed at this level. Ensure issue identified not required to be reviewed at secondary level.

Secondary Review (TMD/TPM)

- Input from the TMD utilized to develop initial action plan
- Investigate identified issues further
- Refer to tertiary review if warrants or audit filter requires
- Document all PI actions completed at this level of review
- May be closed at this level. Ensure issue identified not required to be reviewed at teritary level.

Tertiary Review (PIPS Committee)

- Prepare chart for review by Multidisciplinary Committee
- Prepare for discussion at Trauma Operations Committee is needed
- Document committee discussions thoroughly in minutes
- Discuss actions required determined by committee
- Move case in to tracking/loop closure is further action needed

Tracking and Loop Closure

- Develop Action Plan
- Document changes, expected outcomes and education for relevant staff
- Determine length of track and trend and what outcome should be reached
- Update policies, perform peer reviews, develop education or enhance resources identified in PI review
- Document all levels of review, case discussions, actions plans, corrective actions and loop closure for case

TRAUMA PROCESS IMPROVEMENT FLOWSHEET

Case Identification through:
Chart audit, PI committee review, patient rounds, staff report, email, patient complaint, observations

Primary review by TPM

No

Yes

Audit Filter fall out Process or Patient Care Concern Identified

No → Records of all trauma PI activities maintained by trauma program staff. This should include documentation of face-to-face conversations.

Yes

Secondary Review TMD and TPM

No → Records of all trauma PI activities maintained by trauma program staff. This should include documentation of face-to-face conversations.

Yes

Process or care concern identified

Yes

Tertiary Review Multidisciplinary Committee

Yes

Develop action plan and define loop closure perameters

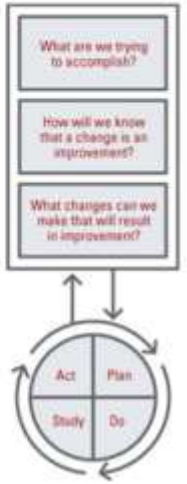
Records of all trauma PI activities maintained by trauma program staff. This should include documentation of face-to-face conversations.

Tertiary Review: Provider Care Review

- Peer review
- Counselling
- Individual Education

Tertiary Review: Program Staff

- Policy changes
- Staff education
- Resource addition
- Track and Trend



CLOSING THE LOOP

1 CASE SUMMARY

Summarize the case, including all relevant information including:

- Vital signs
- Assessment findings
- Relevant lab results
- Radiology findings
- Treatments
- Patient Disposition

2 IDENTIFIED ISSUES

- Poor patient outcome
- Deviation from policy
- Delay in care
- Delay in transfer
- Equipment missing/failure
- Documentation errors/missing
- Medication error

3 LEVEL OF REVIEW

- Document all levels of review with notes from each level and signatures of TMD and TPM
- Document conversations
- Take complete meeting minutes capturing conversations around case reviews
- Document any steps taken at each level of review

4 CORRECTIVE ACTIONS

Document all corrective actions put into place as a result of the review:

- Staff education
- Track and trend of issue
- Policy change
- Equipment/Resource addition
- Peer review

5 IMPLEMENTATION

- Document how corrective actions were implemented
- If the corrective action requires monitoring, document how long and how often monitoring will occur
- If education was provided include this in the PI documents

6 CLOSE THE LOOP

Document Loop Closure:

- How the loop was closed
- When the loops was closed
- If the issue needs reevaluation in the future

PDSA CYCLE

Plan-Do-Study-Act (PDSA) Directions and Examples | Agency for Healthcare Research and Quality (ahrq.gov)

PDSA stands for (Plan-Do-Study-Act) is a systematic process used obtain information for the continual improvement of a process, such as the care of a trauma patient.

P

The cycle begins with the **PLAN** step.

Plan - involves identifying a goal or plan to defining the desired goal or metrics and putting it into action.

D

These activities are followed by the **DO** step.

Do - the components of the plan are implemented, such as conducting an educational session or reviewing charts for the ETOH screening.

S

Next comes the **STUDY** step.

Study – this is where outcomes are monitored to ensure the plan shows signs of progress and success, or problems and areas for improvement.

A

The **ACT** step closes the cycle.

Act – this involves integrating the knowledge generated by the process, which can be used to adjust the goal, change the components of the plan, or broaden the learning improvement cycle from a small-scale process improvement goal to a larger process or policy change.

Clinical Practice Guidelines

- Rib Fractures
- Traumatic Brain Injuries
- Pediatrics

Clinical Practice Guidelines

Includes Links to Evidenced Based Medicine:

- The American College of Surgeons has resource materials to help trauma centers develop CPGs. These resources can be found at: ACS TQP Best Practices Guidelines | ACS (facs.org)
- The BIG (brain injury guidelines) project: defining the management of traumatic brain injury by acute care surgeons - PubMed (nih.gov)
- EIIC (emscimprovement.center)
- Texas Consideration for Pediatric Consultation and Transfer
- TEN-4-FACESp | Stanley Manne Children's Research Institute at Lurie Children's

Variables	BIG 1	BIG 2	BIG 3
Loss of Consciousness	Yes or No	Yes or No	Yes or No
Neuro Exam/GCS	Normal	Normal	Abnormal
Intoxication	No	Yes or No	Yes or No
Anticoag/Antiplatelet Therapy	No	No	Yes
Skull Fracture	No	Non-displaced	Displaced
Subdural Hemorrhage (SDH)	≤ 4mm	5-7 mm	≥8 mm and/or midline shift
Epidural Hemorrhage (EDH)	No	No	Yes
Intraparenchymal Hemorrhage (IPH)	≤ 4mm and 1 location	5-7 mm or 2 locations	≥ 8 mm or multiple locations
Subarachnoid Hemorrhage (SAH)	Trace: small volume. single sulcus	Localized: > 1 sulci, single brain region	Scattered: > 2 sulci, multiple brain regions
Intraventricular Hemorrhage (IVH)	No	No	Yes
Therapeutic Plan			
Repeat Head CT	No (Repeat if condition changes)	No (Repeat if condition changes)	Yes
Neurological Consultation	No	No	Yes
Neuropsych/Physiatry Consult	Yes/No	Yes/Yes	Yes/Yes
Follow up Recommendations	TBI Clinic/Specialist	Neuropsych/Psych if needed	Neuropsych/Psych if needed

The BIG (brain injury guidelines) project: defining the management of traumatic brain injury by acute care surgeons - PubMed (nih.gov)

Rib Fracture Decision Tree

- Incentive Spirometry <1000ml or <15 ml/kg
- Requires oxygen (new for patient)
- Flail segment
- 65 years of age or older with 2 or more rib
- fractures
- Lung injury or underlying pulmonary dysfunction

Consider Transfer to tertiary trauma center

Inpatient Considerations

Respiratory
- Incentive Spirometry every hour
- Nebulizer as needed
- Early mobilization
- CXR daily and PRN

Pain
- Consult anesthesia/pain service
- Oral medications
- IV medications/PCA as needed

- Incentive Spirometry <1000ml or <15 ml/kg
- Other injuries preventing mobility
- Greater than 3 rib fractures

Admit to Facility

NOTIFY SURGEON/TRAUMA CENTER IF PATIENT HAS PNEUMOTHORAX

Respiratory
- Incentive Spirometry every hour
- Nebulizer as needed
- Early mobilization
- CXR PRN and prior to discharge

Pain
- Oral medications
- IV medications/PCA as needed

- Incentive Spirometry greater than 1500 ml
- No new oxygen requirements
- Greater than or equal to 2 rib
- fractures

- Discharge
- If patient unable to return home due to pain or inability to perform basic ADL's consider observation

Inpatient Considerations

Respiratory
- Incentive Spirometry every hour
- CXR PRN and prior to discharge

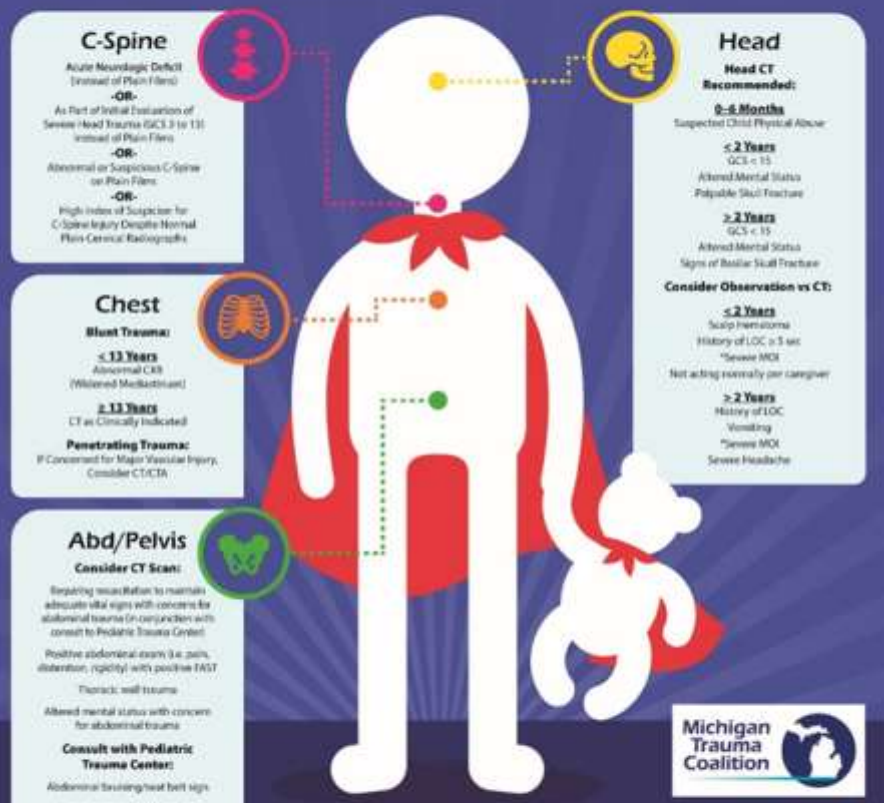
Pain
- Oral medications

ta500682 200..203 (westerntrauma.org)
Chest Trauma: Current Recommendations for Rib Fractures, Pneumothorax, and Other Injuries - PMC (nih.gov)

Pediatric Trauma Imaging Guidelines

Imaging should not delay transfer to definitive care

This criteria is meant to serve as an adjunct to clinical decision making and is not meant to replace physician discretion. It should be used to determine when CT imaging should be considered and is not meant to provide criteria for clearance of cervical spine or other injuries. When in doubt, contact your nearest ACS verified Pediatric Trauma facility.



C-Spine

Acute Neurologic Deficit
(instead of Plain Films)

-OR-

As Part of Initial Evaluation of Severe Head Trauma (GCS 3 to 13)
instead of Plain Films

-OR-

Abnormal or Suspicious C-Spine on Plain Films

-OR-

High Index of Suspicion for C-Spine Injury Despite Normal Plain Cervical Radiographs

Chest

Blunt Trauma:

< 13 Years
Abnormal CXR
(Widened Mediastinum)

≥ 13 Years
CT as Clinically Indicated

Penetrating Trauma:
If Concerned for Major Vascular Injury, Consider CT/CTA

Abd/Pelvis

Consider CT Scan:

Requiring resuscitation to maintain adequate vital signs with concerns for abdominal trauma (in conjunction with consult to Pediatric Trauma Center)

Positive abdominal exam (i.e. pain, distention, rigidity) with positive FAST

Thoracic wall trauma

Altered mental status with concern for abdominal trauma

Consult with Pediatric Trauma Center:

Abdominal bruising/seat belt sign

Hematuria or rectal bleeding

Elevated AST (>200), ALT (>125), Amylase, Lipase

Head

Head CT Recommended:

0-6 Months
Suspected Child Physical Abuse

< 2 Years
GCS < 15
Altered Mental Status
Palpable Skull Fracture

≥ 2 Years
GCS < 15
Altered Mental Status
Signs of Basilar Skull Fracture

Consider Observation vs CT:

< 2 Years
Scalp Hematoma
History of LOC ≥ 5 sec
*Severe MOI
Not acting normally per caregiver

≥ 2 Years
History of LOC
Vomiting
*Severe MOI
Severe Headache

Michigan Trauma Coalition

*Severe Mechanism of Injury: Motor vehicle crash with patient ejection, death of another passenger, or rollover, pedestrian or bicyclist without helmet struck by a motorized vehicle, falls of more than 3 ft in patients < 2 years of age or more than 5 ft. for patients age 2 yr. or older, head struck by high impact object.

Individual hospital resources must be considered when determining the appropriateness of ordering CT imaging for pediatric patients as well as when determining appropriateness of observation vs CT in the Emergency Department.

Techniques for Pediatric Plain Film Imaging
Scan QR code to view this resource or visit:
https://mitrauma.org/techniques-for-pediatric-plain-film-imaging/

Clinical Screening Tools for Child Maltreatment
Scan QR code to view this resource or visit:
https://mitrauma.org/clinical-screening-tools-for-child-maltreatment/

Timelines and Process Evaluation

February 2027- The new criteria will be used for verification visits and ACS **designation** requests (MI-Criteria).

Third Quarter 2026- Site Reviewers will begin training

Reference and Links- **Because** these are living documents (live links) efforts will be made to ensure these documents are as up to date as possible. A change log will be developed for ease of monitoring changes.

Process Evaluation- While this will be ongoing, changes to the published documents, language, or process will be done only when sufficient measurable, change is necessary supported by the Advisory committees.