# State of Michigan Level III Performance Improvement Requirements

## TRAUMA REGISTRY

Ongoing, accurate data collection and analysis is crucial to trauma system development, performance improvement, and injury prevention. The American College of Surgeons requires trauma registries and analysis by every trauma center. Michigan requires data collection to be designated. For the purposes of this document trauma patients are defined by trauma registry inclusion criteria.

- The trauma registry is essential to the performance improvement (PI) program. The trauma registry should support the PI process and assist in identifying injury prevention priorities that are appropriate for local implementation. (CD 15-3,15-4)
- The registry should be used in the PI process to identify and track opportunities for improvement.
- The facility must be able to demonstrate that all trauma patients can be identified for review. (CD 15-1)
- The information provided by a trauma registry is only as valid as the data entered. The facility must have strategies for monitoring data validity. (CD 15–10)

## PERFORMANCE IMPROVEMENT

### Performance Improvement Written Plan

The facility must have a written performance improvement plan, which addresses the following:
(MI-CD 2-3)

- A process of event identification and levels of review which result in the development of corrective action plans, and methods of monitoring, re-evaluation, risk stratified benchmarking must be present and this process must be reviewed and updated annually.

- Problem resolution, outcome improvements and assurance of safety (loop closure) must be readily identifiable through methods of monitoring, re-evaluation, benchmarking and documentation.

- All criteria for trauma team activation have been determined by the trauma program and are evaluated on an ongoing basis in the PI process.

- The PI program identifies and reviews documents, findings, and corrective action on the following five (5) audit filters:
    a. Any system and process issue
    b. Trauma deaths in house or in emergency department
    c. Any clinical care issues, including identifying and treatment of immediate life-threatening injuries
    d. Any issues regarding transfer decision
    e. Trauma team activation times to trauma activation

- All process and outcome measures must be documented within the trauma PI program's written plan reviewed and updated at least annually. (CD 16–5)

**Performance Improvement Process**

All trauma facilities shall develop and have in place a performance improvement process. An effective performance improvement program demonstrates through clear documentation that identified opportunities for improvement lead to specific interventions that result in an alteration in conditions such that similar events are less likely to occur (CD 16-19).

- The trauma facility must have a PI program that includes a comprehensive written plan outlining the configuration and identifying both adequate personnel to implement that plan and an operational data management system. (CD 16-1)

- Peer review must occur at regular intervals ensuring that the volume of cases is reviewed in a timely fashion. (CD 2-18)

- Because the trauma PIPS program crosses many specialty lines, it must be empowered to address events that involve multiple disciplines. The PI Program must be endorsed by the hospital governing body as part of its commitment to optimal care of injured patients. (CD 5-1)

- There should be adequate administrative support to ensure evaluation of all aspects of trauma care. (CD 5-1)

- The TMD and the TPM/TNC should be empowered by the hospital governing body to have the authority to lead the PI program. (CD 5-1)

- There should be rigorous multidisciplinary performance improvement to evaluate over triage and under triage rates to attain the optimal goal of less than 5 percent under triage. (CD 3-3)

- The facility's PI program should integrate with the hospital quality and patient safety effort and have a clearly defined reporting structure and method for provision of feedback. (CD 16-3)

- The trauma program should use clinical practice guidelines, protocols, and algorithms derived from evidenced-based validated resources. (CD 16-4)

**Activation and Transfer Performance Improvement**

- The emergency physician may initially evaluate the limited-tier trauma patient, but the center must have a clearly defined response expectation for the trauma surgical evaluation of those patients requiring admissions. The trauma surgeon response time to other levels of trauma team activation and backup call response time must be monitored. (CD 5-16).

- The PIPS committee must document response time variances and review the reason for delay, opportunities for improvement, and corrective actions.

- The facility must monitor all trauma patients who are diverted or transferred during the acute phase of hospitalization to: (CD 9-14, CD 3-4, CD 4-3)

    a. Another trauma center, acute care hospital, or specialty hospital (for example, burn center, re-implantation center, pediatric trauma center)

    b. Patients requiring cardiopulmonary bypass

    c. When specialty personnel are unavailable

- The facility must subject these diversion and/or transfer cases to individual case review to determine the rationale for transfer, appropriateness of care, and opportunities for improvement. (CD 9-14, CD 3-4, CD 4-3)

- The facility should receive follow up from the center to which the patient was transferred and include it as part of the case review. (CD 9-14, CD 3-4, CD 4-3)

- The PI Process should review the appropriateness of the decision to transfer or retain major orthopedic trauma patients. (CD 9-13)

**Radiology Performance Improvement**

- Changes in interpretation identified between preliminary and final reports, as well as missed injuries should monitored through the PI program. (CD 11-37)

- The trauma program should have a process for tracking changes in radiology interpretation and missed injuries, and these changes should be monitored through PI. This process should include FAST exams in the ED.

- The PI program should document and monitor the response times when the specialties listed below are responding from outside the trauma facility:
    - Response times of computed tomography technologist (30 minutes)
    - Magnetic resonance imaging (60 minutes)
    - Technologist/Interventional radiology team (30 minutes)

**Specialty Services Performance Improvement**

- The availability of the anesthesia services and the absence of delays in airway control or operations should be documented by the hospital PI Process. (CD 11-6)

- The PI program should review all ICU admissions and transfers of ICU patients to ensure appropriateness of patients being selected to remain at the Level III trauma facility vs. being transferred to a higher level of care? (CD 11-57)

- The PI program should document the timeliness and appropriate ICU care and coverage is being provided. (CD 11-60)

**Pediatric Patient Performance Improvement**

Regardless of the type of hospital or designation, system performance for pediatric patients, at a minimum, should be measured by analysis of mortality, morbidity, and functional status Pediatric process and outcome measures that encompass prehospital hospital, and post hospital care should be tracked concurrently and reviewed periodically.

- If the facility admits less than 100 injured children younger than 15 years per year they must review the care of all the injured children through the PI program. (CD 2-24, 2-25)

**Mortality Review**
All trauma-related mortalities must be systematically reviewed and those mortalities with opportunity for improvement identified for peer review. (CD 16-6, 16-17)

The facility should review total trauma-related mortality rates. Outcome measures for total, pediatric (younger than 15 years), and geriatric (older than 64 years) trauma encounters should be categorized as follows:

- DOA (pronounced dead on arrival with no additional resuscitation efforts initiated in the emergency department).
- DIED (died in the emergency department despite resuscitation efforts).
- In-hospital (including operating room).
- Mortality rates by Injury Severity Scale (ISS) subgroups using the table below:

**Mortality Table**

| ISS | Number Admitted to Trauma Service | Number of Mortalities | Percentage Mortality | Number Admitted to Non-Trauma Service |
|---|---|---|---|---|
| 0-9 | | | | |
| 10-15 | | | | |
| 16-24 | | | | |
| >/= 25 | | | | |
| Total | | | | |

**Event Identification Review**
Sufficient mechanisms must be available to identify events for review by the trauma PI program. Issues that must be reviewed will revolve predominately around:

1. System and process issues such as documentation and communication
2. Clinical care, including identification and treatment of immediate life-threatening injuries (ATLS)
3. Transfer decisions

- The facility should have a plan on how these events are verified and validated through the PI process. (CD 16-11)

- The facility should have a Multidisciplinary Trauma Systems/Operations Committee to review system events identified through the PI process. (CD 16-12)

- There must be documentation (minutes) reflecting the review of operational events and, when appropriate, the analysis and proposed corrective actions. (CD 16-13)

- The PI program should address the need for pulse oximetry, end-tidal carbon dioxide detection, arterial pressure monitoring, pulmonary artery catheterization, patient rewarming, and intracranial pressure monitoring (in Level III's with Neurosurgery) in all trauma patients. (CD 11–27)

- Occasionally, in a Level III trauma center, it is necessary for the physician to leave the emergency department for short periods to address in-house emergencies. These cases and their frequency should be reviewed by the performance improvement and patient safety (PIPS) program to ensure that this practice does not adversely affect the care of patients in the emergency department? (CD 7-3)

**Multidisciplinary Trauma Committee**

- The trauma facility's PI program must have a multidisciplinary trauma peer review committee chaired by the TMD with representatives from general surgery (group of general surgeons on the call panel), orthopedic surgery, emergency medicine, ICU**,** and anesthesia, and neurosurgery (if applicable). (CD 6–8, CD 5-25)

- The following trauma team members must attend a minimum of 50% of the multidisciplinary trauma peer review committee meetings. (CD 16-15)

    1. Trauma Medical Director (CD 5-10)
    2. General Surgeons on the call panel (CD 6-8)
    3. Emergency Medicine Representative or designee (CD 7-11)
    4. Orthopedic Liaison (CD 9-16)
    5. Anesthesiology Representative (CD 11-13)
    6. ICU Liaison (CD 11-62)
    7. Neurosurgical Representative (CD 8-13)

- The multidisciplinary trauma peer review committee must meet regularly, with required attendance of medical staff active in trauma resuscitation, to review systemic and care provider issues, as well as propose improvements to the care of the injured. (CD 2–18)

- The trauma medical director should ensure and document dissemination of information and findings from the peer review meetings to the general surgeons. (CD 16-16)

- Mortality data, adverse events and problem trends, and selected cases involving multiple specialties should undergo multidisciplinary trauma peer review? (CD 16–14)

- Selected case reviews must involve the participation and leadership of the trauma medical director (CD 5–10), general surgeons on the call panel and the liaisons from emergency medicine, orthopedics, neurosurgery, anesthesia, critical care, and radiology. (CD 5-10, 6-8, 7-11, 9-16, 11-13, 11-62)

- When an opportunity for improvement is identified, appropriate corrective actions to mitigate or prevent similar future adverse events must be developed, implemented, and clearly documented by the trauma PI program. (CD 16-18) Examples of corrective actions include the following:

    1. Guideline, protocol, or pathway development or revision.
    2. Targeted education (for example, rounds, conferences, or journal clubs)
    3. Additional and/or enhanced resources
    4. Counseling
    5. Peer review presentation
    6. External review or consultation
    7. Ongoing professional practice evaluation
    8. Change in provider privileges