Level 4 Trauma Hospital Designation Criteria

Section	Criteria
1 Institution	1.1 The board of directors, administration and medical staff shall demonstrate a commitment to provide the resources and support necessary to sustain the trauma designation. This commitment shall be renewed with each application for designation.
	1.2 The trauma program shall be established by the facility and shall be represented on the organizational chart, which may be within an existing department (e.g., emergency or surgery).
2 Medical Director	2.1 Trauma program medical director or medical advisor shall be a physician whose job description defines his or her authority, roles and responsibilities for the leadership of the trauma program, the trauma performance improvement process and tertiary case review.
	2.2 The trauma program medical director or medical advisor must meet the same trauma training requirements as the Emergency Physician.
	2.3 The trauma program medical director or medical advisor may appoint an advance practice provider to serve as a co-medical advisor. 2.4 The advance practice provider co-medical advisor must meet the same trauma training requirement as the Emergency Advance Practice Provider.

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Section	Criteria
3 Program Manager	3.1 The trauma manager/coordinator must be either a registered nurse or an allied health staff with emergency and 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.
	3.2 If the trauma program manager/coordinator is not a registered nurse, a registered nurse must assist with the review of trauma care provided in all areas of the hospital and function as a liaison between the trauma program and the nursing staff.
4 Trauma Team Activation	4.1 The hospital must have a trauma team activation policy, protocol or guideline that includes: ▪ A list of all team members expected to respond, which may include telemedicine providers; ▪ The response time expectation for the team members; ▪ The physiological and clinical indicators that, when met, require the activation of the trauma team; and ▪ The person(s) authorized to activate the trauma team.
	4.2 The trauma team activation indicators must be readily available in locations where a trauma patient is likely to be initially encountered.

Section	Criteria
5 General Surgery	5.1 If the hospital admits trauma patients as described in Section 10.2, a general surgeon must be continuously on-call and available to respond to the hospital within one hour.
6 Emergency Medicine	6.1 The emergency department must be continuously covered by a physician or advance practice provider. 6.2 If the emergency department provider is off-site, an on-call schedule must identify the provider(s) covering the emergency department.[1] When called, the provider must arrive in the emergency department within 30 minutes of the patient's arrival.
	6.3 When the primary emergency department provider is an advance practice provider, a physician must be on-call and available for consultation by telephone (or similar means[2]) within 30 minutes. 6.4 The physician on-call for consultation must either meet the same trauma training requirements as the Emergency Physician, or practice emergency medicine or trauma surgery at a Level 1 or Level 2 trauma hospital that is verified by the American College of Surgeons.
7 Orthopaedic Surgery	7.1 If the hospital provides emergent orthopaedic surgery or admits patients for the care of surgical orthopaedic injuries, a schedule of the orthopaedic surgeon on-call must be maintained and accessible by emergency department and in-patient staff.

[1] If an advance practice provider is the primary emergency department provider, the on-call schedule must also include the physician provider providing back-up coverage.
[2] Such as telemedicine.

Section	Criteria
8 Blood Bank	8.1 There must be an in-house blood bank stocked with O-negative blood.
	8.2 There must be a policy establishing a procedure for the emergent release of uncross-matched blood that ensures that uncross-matched blood can be released to the emergency department staff immediately. If the blood bank staff is off-site, the policy must include a provision to release uncross-matched blood to the emergency department staff in the absence of the blood bank staff.
9 Radiology	9.1 A radiology technician or technologist must be continuously available, either in-house or on-call.
	9.2 If the hospital admits trauma patients as described in Section 10, a computed tomography technician or technologist must be continuously available, either in-house or on-call.
	9.3 A radiologist must be continuously available, either in-house or off-site.

Section	Criteria
10 Admission	10.1 Trauma patients[3] requiring admission to care for their injuries must be transferred to higher-level trauma hospitals, except that patients with these conditions may be considered for admission following a trauma work-up[4]: ▪ Concussion without evidence of hemorrhage on CT. ▪ Concussion with a traumatic subarachnoid hemorrhage, a GCS motor score of 6 and not taking an anti-coagulant or anti-platelet medication other than aspirin after consultation with a trauma-trained general surgeon[5] or neurosurgeon. ▪ Diminished level of consciousness attributed to a non-traumatic cause. ▪ Thoracic or lumbar transverse or spinous process fracture. ▪ Other acute spinal fracture after consultation with a spine surgeon. ▪ Orthopaedic injuries in the absence of injury to another major organ system (i.e., circulatory, nervous or respiratory). ▪ One or two rib fractures. ▪ Pneumothorax that does not require a thoracostomy. ▪ Those who refuse to be transferred.
	10.2 If a general surgeon is continuously on-call, patients with the following injuries may also be considered for admission: ▪ Pneumothorax requiring a thoracostomy. ▪ Three or more rib fractures, or sternum fracture, or scapula fracture after consultation with a trauma-trained general surgeon[6]. ▪ Those who have undergone an emergent surgical procedure as part of the resuscitation that definitively treats the traumatic condition. The general surgeon must respond to the hospital and assess a patient with a pneumothorax within 18 hours.[7]

[3] Patients admitted for pain control, to care for a medical condition, for palliative care, for physical or occupational therapy, or while awaiting evaluation or placement for a living situation are not considered to be trauma patients.
[4] In accordance with current trauma guidelines such as ATLS, CALS.
[5] "Trauma-trained general surgeon" means a general surgeon that meets the training requirements of Section 12.
[6] "Trauma-trained general surgeon" means a general surgeon that meets the training requirements of Section 12.
[7] When indicated, a thoracostomy should be performed immediately; it should not be delayed while awaiting the arrival of a surgeon.

Section	Criteria
10	10.3 Patients may be admitted only if, in the event of deterioration, emergent transfer would result in the patient arriving at the definitive care facility within 120 minutes from the time deterioration is discovered.[8]
Admission	10.4 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 will arrive at definitive care within 120 minutes from the time deterioration is discovered.

[8] Hospitals unable to meet this criterion due to their geographic distance from a definitive care hospital should contact trauma system staff to discuss a waiver.

Section	Criteria
11 Transfer	11.1 The hospital must have a policy directing the internal processes to emergently transfer a trauma patient from the emergency department or an in-patient area to definitive care that lists: ▪ The anatomical and physiological criteria that, when present, result in immediate transfer; ▪ The criteria must include orthopaedic surgical conditions and must specifically address how time-sensitive orthopaedic conditions such as a threatened limb, compartment syndrome, dislocated knee and dislocated native hip (i.e., not arthroplasty) will be managed within one hour. ▪ The primary and alternate ground and aeromedical transfer services along with contact information. ▪ The supplies, records and personnel that will accompany the patient.
	11.2 Designated trauma hospitals may not transfer adult or pediatric patients to undesignated hospitals. *Exception: Patients may be transferred to a Veterans Administration medical center.*
	11.3 The hospital must have transfer agreements with trauma hospitals capable of caring for major trauma patients definitively, including agreements with at least two hospitals capable of caring for burn patients, and at least one agreement with a designated Level 1 or Level 2 Pediatric Trauma Hospital.

Section	Criteria
12 General Surgeon Training	12.1 If the hospital admits trauma patients as described in Section 10.2, general surgeons must have successfully completed ATLS and/or CALS (including the Benchmark Lab or Trauma Module Course) within the last four years. General surgeons must re-take their ATLS or CALS before or during the month in which it expires.[9]
13 Emergency Physician Training[12]	13.1 If the emergency physician is currently board-certified or board-eligible with an American Board of Emergency Medicine (ABEM)-approved[10] or American Osteopathic Board of Emergency Medicine (AOBEM) certification, then the physician is required to have successfully completed an ATLS or CALS course (including Benchmark Lab or Trauma Module Course) once. 13.2 If the emergency physician is not board-certified or board-eligible with an ABEM-approved or AOBEM certification, then the physician must have successfully completed ATLS and/or CALS (including the Benchmark Lab or Trauma Module Course) within the last four years. Emergency physicians must re-take their ATLS or CALS before or during the month in which it expires.[11]

[9] There is no grace period for either ATLS or CALS training. The CALS lab component must, too, be re-taken before or during the month in which it expires.
[10] Includes physicians board-certified in Pediatric Emergency Medicine by the American Board of Pediatrics.
[11] There is no grace period for either ATLS or CALS training. The CALS lab component must, too, be re-taken before or during the month in which it expires.
[12] This requirement does not apply to those who are called in to assist the attending provider during an unusual and rare event, such as an MCI.

Section	Criteria
14 ED Advance Practice Provider Training[14]	14.1 Advance practice providers must have successfully completed ATLS and/or CALS (including the Benchmark Lab or Trauma Module Course) within the last four years. Providers must re-take their ATLS or CALS before or during the month in which it expires.[13]

[13] There is no grace period for either ATLS or CALS training. The CALS lab component must, too, be re-taken before or during the month in which it expires.
[14] This requirement does not apply to those who are called in to assist the attending provider during an unusual and rare event, such as an MCI.

Section	Criteria
15 Registered Nurse Training[15]	15.1 Registered nurses scheduled or expected to cover the emergency department must have successfully completed Trauma Nursing Core Course (TNCC), Comprehensive Advanced Life Support (CALS) Provider Course, Advanced Trauma Care for Nurses (ATCN), or in-house training that meets the following objectives: ▪ Identify the common mechanisms of injury associated with blunt and penetrating injuries. ▪ Describe and demonstrate nursing trauma assessment to identify typical injuries associated with common mechanisms of injury ▪ List appropriate interventions for injuries identified in the nursing assessment. ▪ Associate signs and symptoms with physiological changes in the patient. ▪ Describe the ongoing assessment to evaluate the effectiveness of interventions. ▪ Review the hospital's trauma admission and transfer policies.
	15.2 If the hospital admits patients as described in Section 10 to treat an injury or to monitor the patient for deterioration, registered nurses assigned to patient floors where those patients are admitted must have successfully completed Trauma Nursing Core Course (TNCC), Comprehensive Advanced Life Support (CALS) Provider Course, Advanced Trauma Care for Nurses (ATCN), Trauma Care After Resuscitation (TCAR), Course in Advanced Trauma Nursing (CATN), or in-house training relating to the conditions treated or monitored that meets the following objectives: ▪ Identify the common mechanisms of injury associated with blunt and penetrating injuries. ▪ Describe nursing trauma assessment to identify typical injuries associated with common mechanisms of injury ▪ List appropriate interventions for injuries identified in the nursing assessment. ▪ Associate signs and symptoms with physiological changes in the patient. ▪ Describe the ongoing assessment to evaluate the effectiveness of interventions. ▪ Review the hospital's trauma admission and transfer policies.

[15] This requirement does not apply to those who are called in to assist during an unusual and rare event, such as an MCI.

Section	Criteria
16 Licensed Practical Nurse Training[16]	16.1 Licensed practical nurses scheduled or expected to cover the emergency department must have successfully completed Comprehensive Advanced Life Support (CALS) Provider Course, Advanced Trauma Care for Nurses (ATCN), an audit of Trauma Nursing Core Course (TNCC), or in-house training that meets the following objectives: ▪ Identify the common mechanisms of injury associated with blunt and penetrating injuries ▪ Recognize common signs and symptoms of injuries. ▪ Identify data needed for the ongoing monitoring of a trauma patient. ▪ Demonstrate role-specific trauma care competencies. ▪ Examine the role-specific practice parameters for trauma care as defined by the hospital. ▪ Review the hospital's trauma admission and transfer policies.
	16.2 If the hospital admits patients as described in Section 10 to treat an injury or to monitor the patient for deterioration, licensed practical nurses assigned to patient floors where those patients are admitted must have successfully completed Comprehensive Advanced Life Support (CALS) Provider Course, Rural Trauma Team Development Course (RTTDC), Trauma Care After Resuscitation (TCAR), an audit of a Trauma Nursing Core Course (TNCC), or in-house training relating to the conditions treated or monitored that meets the following objectives: ▪ Identify the common mechanisms of injury associated with blunt and penetrating injuries ▪ Recognize common signs and symptoms of injuries. ▪ Identify data needed for the ongoing monitoring of a trauma patient. ▪ Describe role-specific trauma care competencies. ▪ Examine the role-specific practice parameters for trauma care as defined by the hospital. ▪ Review the hospital's trauma admission and transfer policies.

[16] This requirement does not apply to those who are called in to assist during an unusual and rare event, such as an MCI.

Section	Criteria

17
Performance Improvement Process
	17.1 The performance improvement process must, at a minimum:
	▪ Establish methods to identify and resolve clinical care issues that are inconsistent with Advanced Trauma Life Support, Comprehensive Advanced Life Support, Trauma Nursing Core Course and Rural Trauma Team Development Course principles.
	▪ Provide for the review or surveillance of trauma cases that meet the trauma registry inclusion criteria to identify potential clinical care issues and to measure performance against the minimum thresholds.
	▪ Establish the frequency of case finding, case review and performance monitoring.
	▪ Incorporate performance-related information received from receiving hospitals about patients transferred.
	▪ Include documentation of:
	  ▪ Compliance with performance thresholds;
	  ▪ Findings from case reviews;
	  ▪ Actions undertaken to correct clinical care issues identified during case reviews; and
	  ▪ Resolution of clinical care issues.

	17.2 Case finding and primary case review[17] must occur, at a minimum, every two weeks. 17.3 Medical director review of trauma cases must occur, at a minimum, monthly.
	17.4 The hospital must establish a tertiary case review process to review potential clinical care issue identified by the trauma program leaders.[18] 17.5 If the hospital admits trauma patients as described in Section 10.2, the general surgeon must attend at least 50% of the scheduled tertiary case review meetings.

[17] "Primary case review" is typically the initial review completed by the trauma program manager.
[18] "Tertiary case review" is committee review led by the trauma medical director. Examples of methods to conduct tertiary review include in-house committee of providers, in-house multidisciplinary committee, integrated hospital system committee, referred to the regional trauma advisory committee or referred to an organization outside of the hospital.

Section	Criteria
17 Performance Improvement Process	17.6 The scope of case review must include care provided in the emergency department, in-patient units and all areas and departments of the hospital that provide or affect trauma care.
	17.7 Results of the trauma case reviews that identify opportunities to improve clinical care must be communicated with the medical providers.
	17.8 The trauma performance improvement process may be integrated with the hospital's quality improvement processes, but the trauma program leaders must retain oversight over the program's performance improvement initiatives. Potential clinical care issues referred to other bodies within the hospital or health system, such as peer review, or other organizations must be made available to the trauma program leadership.
	17.9 The trauma program must monitor imaging-interpretation turnaround times and review missed diagnoses identified from over-read reports.

Section	Criteria
18 Performance Thresholds	18.1 The following performance thresholds must be maintained or exceeded: ▪ Time from patient arrival to emergency department provider arrival at hospital ≤30 minutes when the emergency department provider is off-site: 80% ▪ Trauma team activated when criteria met: 80% ▪ Time from patient arrival until transportation ordered <30 minutes when a physiological TTA criterion is met and patient transferred for trauma care; or time from when a physiological TTA criterion is discovered until transportation ordered <30 minutes when patient transferred for trauma care: 80% ▪ Airway successfully secured when GCS ≤8: 90% 18.2 If the hospital admits trauma patients as described in Section 10.2, the following performance threshold must also be maintained or exceeded: ▪ General surgeon arrival at bedside within 18 hours as required in Section 10.2: 80%
	Compliance with performance thresholds are calculated based on a full calendar year.
19 Trauma Registry	19.1 The hospital must submit data as defined by the State Trauma Advisory Council within 60 days of the patients' discharge or transfer. 19.2 Data imported from other sources must be submitted in a manner and format that is acceptable to MDH.

Section		Criteria
20 Required Equipment[19]	20.1 Emergency Department	Airway control and ventilation equipment Arterial tourniquet Pulse oximetry Suction device and supplies EKG monitor and defibrillator Crystalloid IV fluids and administration sets IV catheters from 14-22 Ga. Drugs necessary for emergency trauma care Nasal gastric & oral gastric tubes Cervical collars Pediatric length-based resuscitation tape or reference manual Blanket warmer or overhead radiant heater Warming cabinet for IV fluids or inline IV fluid warmer Rapid IV fluid infuser system (may use pressure bag) End-tidal CO_2 detector (may be disposable) Method to communicate with EMS Mechanism for IV flow-rate control Intraosseous needles and administration sets Supplies for surgical airway & thoracostomy Mechanism for pelvic stabilization

[19] For pediatric sizes, ensure that there is one size for each age/size category of the length-based resuscitation tape or reference manual.

Section	Criteria	
Required Equipment[20]	20.2 Imaging Dept.	Airway control and ventilation equipment Suction device and suction supplies
	If the hospital admits trauma patients described in Section 10, the following equipment is also required:	
	20.3 In-patient Unit	Equipment for monitoring and resuscitation

[20] For pediatric sizes, ensure that there is one size for each age/size category of the length-based resuscitation tape or reference manual.