Iowa Department of Public Health-Bureau of Emergency Medical Services

Iowa Trauma System Regional (Level II)
Hospital and Emergency Care Facility Categorization Criteria (2013)

Criteria	Requirements	Interpretive Guidelines
GENERAL STANDARDS		
1. Trauma care facility (TCF) commitment	E	1a, b. There must be current (reaffirmed every three years) written documentation of dedicated financial, physical, human resources, community outreach activities, and educational activities(not limited to Trauma Nurse Core Course (TNCC), Advanced Trauma Life Support (ATLS), and/or Rural Trauma Team Development Course (RTTDC)). The preferred commitment documentation should be in letterform, dated, and signed by, at a minimum, a. CEO and Board president b. Medical Staff President, Chief Nursing Officer, Trauma Nurse Coordinator/Trauma Program Manager, Trauma Medical Director, ED Medical Director. c. Commitment to Iowa Trauma System and EMS activities, for example Iowa Trauma Coordinators, American College of Surgeons (ACS), Iowa Chapter Committee on Trauma, Iowa Chapter of American College of Emergency Physicians (ACEP), Iowa Emergency Medical Service Association (IEMSA),Trauma System Advisory Council (TSAC), ~~System Evaluation Quality Improvement Committee (SEQIC)~~, Emergency Medical Service Advisory Committee (EMSAC).
a. Current written resolution supporting the Trauma Care Facility (TCF) from the hospital board and administration.	E	
b. Current written resolution supporting the TCF from the medical and nursing staff.	E	
c. Commitment to State trauma committees.	E	
INSTITUTIONAL ORGANIZATION		
1. Trauma program (TP)	E	1. a, b. Trauma program that includes an administrator, medical director, trauma program manager/coordinator, and trauma PIPS committees. The trauma program's location in the organizational structure of the facility shall be equal in authority and interaction with other departments and or service lines providing patient care. The trauma program shall involve multiple disciplines that transcend departmental hierarchies across the continuum of care. All of this should be shown on an official trauma program/service organizational chart that demonstrates the administrative and medical staff relationships of the TSMD, the TPM/Coordinator, and the trauma PIPS committees. c. To ensure optimal and timely care a multidisciplinary trauma program must continuously evaluate its processes and outcomes.
a. Official organizational chart		
b. Administrative structure	E	
c. Ensures optimal and timely care	E	

E-Essential

D-Desirable

Criteria	Requirements	Interpretive Guidelines
2. Trauma service (TS)	E	The trauma service represents a *structure* of care for the injured patient. The care of the patient with multisystem injuries shall be under the supervision of a trauma/general surgeon assigned to the trauma service. All other injured patients, with the exclusion of isolated hip fractures from a same level fall or minor isolated single system injuries, must be admitted to or seen in consultation by a trauma/general surgeon assigned to the trauma service. For example, patients with isolated simple fractures with low-grade soft tissue injuries may be appropriately treated by an orthopedic surgeon.
3. Trauma team a. Trauma team activation policy	E E	The size of the trauma team may vary from facility to facility depending upon physician specialty resources, hospital resources, severity of the patient's injuries, and methods of patient transportation to the trauma care facility. The highest level trauma team response to a severely injured patient typically includes: 1) general surgeon, 2) emergency physician, 3) surgical and or emergency residents if available, 4) ED nurses, 5) scribe nurse, 6) OR nurse, 7) lab technician, 8) radiology technologist, 9) ICU nurse, 10) anesthesiologist or CRNA, 11) security officer, and 12) chaplain and or social worker. Facilities may use more than one level of trauma team response based on the variables listed above. The minimum criteria for a (major resuscitation) high level trauma team response shall include any of the following: 1) Confirmed blood pressure < 90 at any time in adults and age specific for pediatrics; 2) Respiratory compromise/obstruction and/or intubation; 3) Penetrating wounds to the head, neck, chest, or abdomen; 4) GCS ≤8 with mechanism attributed to trauma. 5) Transfer of patients from another TCF receiving blood to maintain vital signs; 6) Emergency physicians discretion The Trauma Team Activation Protocol/Policy should 1) lists all team members 2) defines response requirements for all team members when a trauma patient is en route or has arrived at the TCF, 3) establishes/identifies the criteria, based on patient severity of injury, for activation of the trauma team, and 4) identifies the person(s) authorized to activate the trauma team. Time critical injuries have been identified in the OOHTTDDP (Box #1 and Box #2) ~~and the Inter-Trauma Care Facility Triage and Transfer Protocol~~.

Criteria	Requirements	Interpretive Guidelines
		The types of conditions and injuries listed in the physiologic and anatomic sections of this protocol require a trauma alert/activation. Changes in these criteria must be supported by documentation from the trauma PIPS program. The trauma team activation policy shall include both physiological and anatomic criteria for when the general surgeon and the ED physician are expected to meet the patient upon arrival at the ED when given timely notice by EMS. The maximum acceptable response time is 15 minutes. The response time shall be tracked from patient arrival rather than from notification or activation. An 80% surgeon response threshold must be met for the highest level (Level I) activations.
4. Trauma Service Medical Director (TSMD) a. Board-certified general surgeon with a special interest in trauma care b. Current ATLS® c. 24 hours continuing trauma education every four years 1) 8 hours formal 2) 16 hours informal	E E E E	a. A non-boarded surgeon may qualify to serve as TSMD if he/she is a fellow of the ACS. The TSMD or designee should participate in trauma continuing education activities in-house and on an outreach basis up to and including participation as an ATLS® instructor in Iowa. The TSMD shall have "the authority" to affect all aspects of trauma care including, but not limited to: 1) recommending trauma team privileges in cooperation with appropriate disciplines; 2) developing treatment protocols; 3) leading multidisciplinary performance improvement and patient safety committees; 4) correcting deficiencies in trauma care and excluding from trauma call those trauma team members who do not meet criteria; 5) supporting the nursing needs of the trauma patient; and 6) assist in the budgetary process for the trauma program. These roles and responsibilities shall be outlined in a formal job description.
5. Trauma Program Manager (TPM)/Trauma Nurse Coordinator (TNC)/Trauma Coordinator (TC) a. 16 hours of continuing trauma education: 4 hours formal (refresher course in trauma nursing course objectives recommended by TSAC is required), 12 hours informal. b. Trauma program support personnel	E E E	The TPM/TNC/TC is usually a Registered Nurse and responsible for the organization of services and systems necessary for a multidisciplinary approach to the care of the injured patient. The roles and responsibilities of the TPM/TNC/TC shall be outlined in a formal job description. a. Successful completion of trauma nursing course objectives recommended by TSAC and Trauma System Overview. b. Trauma program support personnel might include a trauma registrar, clinical support nurse and secretary. They are to be supervised by the TPM and have a formal job description. Administrative and budgetary support needed for the TPM/TNC/TC depends on the size of the program. As a guideline, one can identify the need for an additional full-time equivalent registrar for each 750-1,000 admissions per year.

Criteria	Requirements	Interpretive Guidelines
6. Trauma committees	E	
a. Trauma program (system) performance committee	E	a. TCFs shall have a multidisciplinary trauma performance (system) Committee, chaired by the TSMD or his/her designee that identifies and corrects trauma program system and service provider issues unrelated to peer review. The committee should work to correct overall program deficiencies and continue to optimize patient care. The committee membership shall include all program-related services. It should meet regularly (minimum quarterly), and take attendance. Minutes that document the issues and any corrections should be developed and provided to the appropriate individuals.
b. Multidisciplinary physician peer review (PIPS) committee	E	b. TCFs shall have a multidisciplinary (physician) peer review committee, chaired by the TSMD or his/her designee. The committee shall be comprised of but not limited to, the TSMD, representatives from general surgery, orthopedic surgery, neurosurgery, emergency medicine, anesthesia, radiology and the TPM/TNC or his/her alternate. There shall be an attendance requirement for physician members/liaisons of ≥ 50% of the total meetings per year for this committee. All physicians involved in the care of any of the trauma patients to be discussed should be invited to attend the meeting. The committee should meet regularly (most often monthly) frequently after the system committee meeting. Minutes should document the discussions and their outcomes. This committee shall review trauma morbidity, mortality (all trauma deaths), complications, sentinel events, physician issues, response times, appropriateness and timeliness of care, and evaluation of care priorities among physician specialists. Included in this process should be a review of the TSMD's cases. It is the responsibility of this committee to identify and resolve specific problems and issues. The committee should be able to demonstrate how loop closure and/or trending will be accomplished to avoid patient care problems in the future. Loop closure may be demonstrated by attendance of the attending physician at the peer review session, through memo, letter or documentation of verbal consultation. Communication in return by the attending physician is part of the loop closure process. This process may trigger new policies/protocols and should have the representatives from the various departments act as a conduit for information back to their respective departments. This review should function under the aegis of the performance improvement program of the TCF and be separate from a single specialty department-based peer review.

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HOSPITAL DEPARTMENTS/DIVISIONS		
1. Surgery	E	There shall be an attendance requirement of ≥ 50% of the total meetings per year for both trauma program performance (system) committee and multidisciplinary physician peer review committee.
2. Neurological surgery	E	The department/division/section of neurosurgery should have a liaison to the trauma service who is a member of both trauma committees. This individual is either the chief/director or his/her designee and is responsible for communication between the TSMD, trauma committee and the members of his/her department/division/section.
3. Orthopedic surgery	E	The department/division/section of orthopedic surgery should have a liaison to the trauma service who is a member of both trauma committees. This individual is either the chief/director or his/her designee and is responsible for communication between the TSMD, trauma committee and the members of his/her department/division/section.
4. Emergency medicine	E	The department/division/section of emergency medicine should have a liaison to the trauma service who is a member of both trauma committees. This individual is either the chief/director or his/her designee and is responsible for communication between the TSMD, trauma committee and the members of his/her department/division/section.
5. Anesthesia	E	The department/division/section of anesthesia should have a liaison to the trauma service who is a member of both trauma committees. This individual is either the chief/director or his/her designee and is responsible for communication between the TSMD, trauma committee and the members of his/her department/division/section.
6. Radiology	E	The department/division/section of radiology should have a liaison to the trauma service who is a member of both trauma committees. This individual is either the chief/director or his/her designee and is responsible for communication between the TSMD, trauma committee and the members of his/her department/division/section

Criteria	Requirement	Interpretive Guidelines
CLINICAL CAPABILITIES		
1. Published on-call schedule	E	Published and posted call schedules must specifically identify the physician's on-call and back-up call for general/trauma surgeons and as required for neurosurgeons and orthopedic surgeons. The call schedules shall be posted in all areas of the TCF caring for the trauma patient (ED, ICU or medical floor).
a. General surgery	E	The active involvement of the trauma/general surgeon is crucial to optimal care of the injured patient in all phases of management. The trauma/general surgeon is expected to be in the emergency department upon arrival of the time critical injured patient. The 24-hour in-house availability of the trauma/general surgeon is the most direct method for providing this involvement. Alternate methods of providing this involvement are acceptable. In trauma care facilities with residency programs, evaluation and treatment may be started by a team of surgeons that will include post graduate year 4 (PGY4) or more senior surgical residents who are members of that facilities residency program. This may allow the attending surgeon to take call from outside the facility. Local criteria must be established to define conditions requiring the attending surgeon's immediate facility presence. The attending surgeon's participation in major therapeutic decisions, operative procedures are mandatory. Compliance with these criteria and their presence in the emergency department for major resuscitations must be monitored by the trauma Performance Improvement Patient Safety (PIPS) program. In trauma care facilities without residency programs, local conditions may allow the surgeons to be rapidly available on short notice. Under these circumstances local criteria must be established that allow the general surgeon to take call from outside the facility, but with clear commitment on the part of the facility and the surgical staff that the general surgeon will be present in the emergency department at the time of arrival of the trauma patient to supervise resuscitation and major therapeutic decisions, provide operative treatment, and be available to care for trauma patients in the ICU. Compliance with this requirement and applicable criteria must be monitored by the trauma PIPS program. The presence of the trauma/general surgeon in the emergency department at the time of arrival of the patient is expected for all high level trauma alert activations when the hospital was given timely notice by out-of-hospital providers as to the expected arrival of the patient. If the hospital is not given timely notice by out-of-hospital providers as to the expected arrival of the

Criteria	Requirement	Interpretive Guidelines
		patient it is expected that the trauma team respond immediately upon notification of a high level trauma alert. The maximum acceptable response time is 15 minutes, tracked from patient arrival rather than from notification or activation. The program must demonstrate that the surgeon's presence is in compliance at least 80% of the time for the highest level activations.
b. General surgery call schedule 1). Published call and back-up Call schedule 2). Dedicated to single hospital when on first/primary call	E E E	Required
c. Anesthesia	E	Anesthesia services must be available in-house 24 hours a day. This requirement may be fulfilled by anesthesiology chief residents or Certified Registered Nurse Anesthetists (CRNAs). When anesthesiology chief residents or CRNAs are used to fulfill the anesthesiology availability requirements, the staff anesthesiologist on call must be advised, promptly available at all times, and present for operative procedures. With regard to anesthesia, requirements may be fulfilled when local conditions assure that the staff anesthesiologist will be in the hospital at the time of arrival of the trauma patient. During the interim period prior to the arrival of the staff anesthesiologist an in-house certified registered nurse anesthetist (CRNA) capable of assessing emergent situations in trauma patients, and initiating and providing any indicated treatment will be available. In some hospitals without a CRNA in-house, local conditions may allow anesthesiologists to be rapidly available on short notice. Under these circumstances, local criteria must be established to allow anesthesiologists to take call from outside the hospital and to define conditions requiring the anesthesiologist's immediate presence at the bedside. The availability of the anesthesia services and the absence of delays in airway control or operative anesthesia must be documented by the trauma or hospital PIPS program.
d. Emergency medicine	E	Emergency medicine residents may be used to fulfill this requirement however, supervision must be provided by an in-house attending emergency physician 24 hours per day.

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On-call and promptly available 24 hours/day	E	The trauma PIPS program shall clearly define the expected response and monitor availability of the staff specialists on call.
a. Neurologic surgery 1)Dedicated to one hospital or backup call schedule required	E	Neurotrauma care must be promptly and continuously available for severe TBI and spinal cord injury and for less severe head injuries or injuries of the spine, when necessary. It is essential that Trauma Care Facility have a reliable neurosurgeon on-call schedule with a formal contingency plan for the care of neurotrauma patients if the capability of the neurosurgeon(s), hospital, or system to care for these patients is overwhelmed. In communities where the number of neurosurgeons are limited or required to cover more than one TCF at a time, a plan shall be in place that defines how neurotrauma patients are managed; specifically what patient may be managed at this TCF or which patients need to be transferred. The care of these patients shall be monitored as part of the Performance Improvement Patient Safety (PIPS) program. The plan will remain acceptable as long as PIPS confirms optimal delivery of neurotrauma care and outcome. The contingency plan for the care of neurotrauma patients shall include one of the following models for providing back-up neurosurgical call: 1. In TCFs with an accredited neurosurgical residency-training program, the neurosurgery resident may provide back up call, and/or, 2. A trauma/general surgeon, who has been credentialed in the initial management of neurotrauma as determined by the director of neurosurgery, may provide initial triage and back-up call, and/or 3. A plan to transfer the neurotrauma patient to a similar or higher level Trauma Care Facility capable of caring for neurotrauma patients. This plan must include communication with EMS regarding neurosurgical coverage. The above back-up call models may be acceptable as long as PIPS confirms optimal delivery of neurotrauma care and outcome. Neurosurgeons taking neurotrauma call should recognize and support the clinical care parameters established in the Brain Trauma Foundation: “Guidelines for the Surgical Management of Traumatic Brain Injury,” and other articles found in Supplemental Readings page 47-48, Chapter 8, Clinical Functions: Neurosurgery in the Committee on Trauma, American College of Surgeons, “Resources for Optimal Care of the Injured Patient: 2006.” (“Green Book”)

Criteria	Requirements	Interpretive Guidelines
b. Orthopedic surgery	E	The orthopedic surgeon is on-call at only one institution and is promptly available.
1). Dedicated to one hospital or backup plan is required	E	The trauma PIPS program must confirm the timely and optimal delivery of orthopedic care and outcome.
	E	Patients who have multiple fractures with major soft tissue injuries (including amputations, major pelvic, acetabular, intraarticular and spinal column) require rapid consultation with specialty orthopedic surgical services. These patients may require specialized orthopedic care and may be referred to a specialized facility that is capable of taking care of these patients. A formal policy shall be established as to how these patients are treated or referred at your institution.
	E	Musculoskeletal trauma usually requires a prolonged recovery phase because of the extended healing time of the soft tissue and bony injury. Physical, mental, and vocational rehabilitation will maximize both functional and psychological outcome. A referral plan for rehabilitation is required for patients with musculoskeletal trauma.
c. Cardiac surgery	D	**If the trauma care facility has any of these other specialties then the multidisciplinary trauma PIPS program must continuously evaluate its processes and outcomes to ensure optimal and timely care.**
d. Hand surgery	E	
e. Microvascular/replant surgery	D	
f. Obstetrics/gynecologic surgery	E	
g. Ophthalmic surgery	E	
h. Oral/maxillofacial	E	
i. Plastic surgery	E	
j. Critical care medicine	E	
k. Radiology	E	
l. Thoracic surgery	E	

Criteria	Requirements	Interpretive Guidelines
CLINICAL QUALIFICATIONS		
1. Formal credentialing policy for the trauma program	E	Each trauma care facility shall have a formal credentialing policy for general/trauma surgeons, emergency medicine physicians, neurosurgeons, and orthopedic surgeons participating on the trauma service that establishes trauma-specific credentials that exceed those required for general hospital privileges. The formal credentialing policy shall include at a minimum, but not be limited to: 1. Board certification, 2. Physician peer review committee attendance, 3. Trauma program performance committee attendance, 4. ATLS®, 5. Continuing Trauma Education.
Criteria	**Requirements**	**Interpretive Guidelines**
2. General/trauma surgeon	E	The trauma surgeon shall act as the team leader upon his/her arrival at the patient's bedside.
a. Board certification	E	
b. Physician peer review committee attendance ≥ 50%	E	*It is recommended that each facility has their own requirements for the Trauma program performance (systems) committee attendance by the trauma surgeon core group. There should be at least a representative from the trauma surgeon core group at each meeting.
c. Trauma program performance (systems) committee attendance	E*	
d. ATLS® (All general surgeons on the trauma team must have successfully completed the ACS ATLS® course at least once. Surgeons who are not boarded in general surgery must be current in ATLS®).	E	Board certification in a surgical specialty recognized by the American Board of Medical Specialties, the American Board for Osteopathic Specialties, the Royal College of Physicians and Surgeons of Canada, or other appropriate foreign board is acceptable. Alternate criteria to board certification may be considered **Alternate Criteria:** the non-board-certified surgeon must have completed an approved surgical residency program, be licensed to practice medicine and approved for surgical privileges by the trauma care facility's credentialing committee. The surgeon must also meet all criteria established by the trauma director to serve on the trauma team and the trauma director must attest to this surgeon's experience and quality of patient care as part of the recurring granting of trauma team privileges consistent with the trauma care facility's policy. This individual is expected to meet all other qualifications for members of the trauma team.
e. 24 hours continuing trauma education every 4 years 1) 8 hours formal 2) 16 hours informal	E E	Trauma/general surgeons should attend multidisciplinary performance improvement and patient safety committees.

Criteria	Requirements	Interpretive Guidelines
3. Emergency medicine a. Board certification b. Physician (representative) peer review committee attendance > 50% c. Trauma program performance committee attendance d. ATLS® (all emergency medicine physicians must have successfully completed the ATLS® course at least once. Physicians who are certified by boards other than emergency medicine who treat trauma patients in the emergency department are required to have current ATLS® status). e. 24 hours continuing trauma education every 4 years 1) 8 hours formal 2) 16 hours informal	E E E E E E	Qualification for trauma care for any emergency physician is board certification, regular participation in the care of injured patients and attendance at ≥ 50% of the physician (liaison) peer review committee meetings. The emergency physician (liaison) should also attend trauma program performance committee meetings. All physicians providing emergency trauma care are expected to have successfully completed an ATLS student course. Current ATLS verification is required for all physicians who work in the ED and are boarded in a specialty other than emergency medicine. Board certification in a specialty recognized by the American Board of Medical Specialties, the American Board for Osteopathic Specialties, the Royal College of Physicians and Surgeons of Canada, or other appropriate foreign board is acceptable. Alternate criteria to board certification may be considered. Alternate Criteria: the non-board-certified emergency physician must have completed an approved residency program, be licensed to practice medicine and approved for emergency medicine privileges by the trauma care facility's credentialing committee. The emergency physician must also meet all criteria established by the trauma director and emergency medicine director to serve on the trauma team. The trauma director and emergency medicine director must attest to this physician's experience and quality of patient care as part of the recurring granting of trauma team privileges consistent with the trauma care facility's policy. This individual is expected to meet all other qualifications for members of the trauma team.
4. Neurosurgery a. Current board certification b. Physician (liaison) peer review committee attendance ≥ 50% c. Trauma program performance (systems) committee attendance	E E E E	Board certification in a surgical specialty recognized by the American Board of Medical Specialties, a Canadian board, or other appropriate foreign board is acceptable. Alternate criteria to board certification may be considered. **Alternate Criteria:** the non-board-certified surgeon must have completed an approved surgical residency program, be licensed to practice medicine and approved for surgical privileges by the trauma care facility's credentialing committee. The surgeon must also meet all criteria established by the trauma director to serve on the trauma team. The trauma director and neurological surgeon liaison/director must attest to this surgeon's experience and quality of patient care as part of the recurring granting of trauma team privileges consistent with the trauma care facility's policy. This individual is expected to meet all other qualifications for members of the trauma team. The neurosurgeon liaison or his/her designee should attend multidisciplinary performance improvement and patient safety committees.

Criteria	Requirement	Interpretive Guidelines
5. Orthopedic Surgery a. Current board certification b. Physician (liaison) peer review committee attendance ≥ 50% c. Trauma program performance(system) committee attendance	E E E E	Qualification for trauma care for any orthopedic surgeon is board certification, regular participation in the care of musculoskeletal injured patients and attendance at ≥ 50% of the physician (liaison) peer review committee meetings. The orthopedic surgeon liaison or his/her designee should attend trauma program performance (system) committee meetings. Board certification in a surgical specialty recognized by the American Board of Medical Specialties, American Board for Osteopathic Specialties, a Canadian Board, or other appropriate foreign board is acceptable. Alternate criteria to board certification may be considered. **Alternate Criteria:** the non-board-certified surgeon must have completed an approved surgical residency program, be licensed to practice medicine and approved for surgical privileges by the trauma care facility's credentialing committee. The surgeon must also meet all criteria established by the trauma director to serve on the trauma team. The trauma director and orthopedic surgeon liaison/director must attest to this surgeon's experience and quality of patient care as part of the recurring granting of trauma team privileges consistent with the trauma care facility's policy. This individual is expected to meet all other qualifications for members of the trauma team.
FACILITY RESOURCE CAPABILITIES		
1. Volume Performance		
a. Presence of surgeon at resuscitation b. Presence of surgeon at operative procedures	E E	
2. Emergency Department		
a. Designated physician director b. Registered nurses available 24 hours per day	E E	b. Nursing personnel staffing the ED are required to be physically present in the ED prior to the arrival of the trauma patient to ensure that the room and equipment are available and ready. Nurses acting in this capacity, as defined by the TCF's trauma alert policy, shall have current trauma training equivalent to the trauma course objectives approved by the department and they shall maintain appropriate CEUs in trauma care. Nurses have one year from the date of joining the TCF's trauma team to successfully complete the required trauma training. Continuing trauma education (CEUs) are required every four years to include but not be limited to, 4 hours formal and 12 hours informal (Refer to 641-137(147A)).

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c. Equipment for patients of all ages:	E	Physician designee means any registered nurse licensed under Iowa Code chapter 152, or any physician assistant licensed under Iowa Code chapter 148C and approved by the board of physician assistant examiners. The physician designee acts as an intermediary for a supervising physician in accordance with written policies and protocols in directing the actions of emergency medical care personnel providing emergency medical services.
1. Airway control & ventilation	E	
2. Pulse oximetry	E	
3. Suction devices	E	
4.Electrocardigraph/oscilloscope defibrillator	E	
5. Internal paddles	D	
6. CVP monitoring equipment	E	6. CVP monitoring to be available in Intensive Care Unit, or other areas of the hospital.
7. Standard IV fluids & adm. sets	E	
8. Large-bore intravenous catheters	E	
9. Sterile surgical sets for:	E	
a) Cricothyrotomy	E	
b) Thoracostomy	E	
c) Venous cutdown	D	
d) intraosseous (IO)	E	
e) Central line insertion	E	
f) Thoracotomy	E	
g) Peritoneal lavage	E	
10. Arterial catheters	E	
11. Drugs for emergency care	E	
12. X-ray availability 24 hours/day	E	
13. Spinal immobilization devices	E	
14. Pelvic immobilizer	E	
15. Pediatric resuscitation tape	E	
16. Thermal control equipment	E	
a). for patient	E	
b) for blood and fluids	E	
17. Rapid infuser system	E	19. On-line medical control (two-way communication) shall be available to all out-of-hospital service programs in the TCF area, with physician and/or physician designees trained in receiving patient reports and giving orders for patient treatment interventions and/or TCF destination decisions.
18. Qualitative end-tidal CO2 determination	E	
19. Communication with EMS vehicles	E	
20. Availability of ultrasound	E	

Criteria	Requirements	Interpretive Guidelines
3. Operating Room		
a. Immediately available 24 hours per day	E	An operating room must be adequately staffed and available when needed in a timely fashion in a regional TCF. The need to have an in-house OR team will depend on a number of factors, including patient population served, ability to share responsibility for OR coverage with other hospital staff, out-of-hospital EMS communication, and the size of the community served by the TCF. If an out-of-hospital OR team is used, then the teams expected response must be clearly defined and monitored by the trauma PIPS program. The PIPS program should evaluate operating room availability and delays when an on-call team is used.
b. Personnel		
1) In-house 24 hours/day	D	
2) Available 24 hours/day	E	
c. Age specific equipment		
1) Cardiopulmonary bypass	D	
2) Operating microscope	D	
3)Thermal control equipment -		
a) For patient	E	
b) For fluids & blood	E	
4) X-ray capability with c-arm image intensifier	E	
5) Endoscopes and bronchoscope	E	
6) Craniotomy instruments	E	
7) Equipment for long bone and pelvic fixation	E	
8) Rapid infuser system	E	
4. Postanesthesia Care Unit (PACU)		
a. Registered nurses available 24 hours/day	E	The PIPS process should ensure that the PACU has necessary equipment to monitor and resuscitate patients. The PIPS program should document that PACU nurses are available and delays are not occurring.
b. Equipment for monitoring and resuscitation	E	
1) Pulse oximetry	E	
2) Thermal control	E	
c. Intracranial pressure monitoring equipment	E	
d. CO_2 monitoring	E	

Criteria	Requirements	Interpretive Guidelines
5. Intensive or Critical Care Unit		
a. Surgical ICU service physician in-house 24 hours/day b. Surgically directed and staffed ICU service c. Designated surgical director or surgical co-director d. Registered nurses with trauma education e. Equipment for monitoring and resuscitation f. Intracranial monitoring equipment g. Pulmonary artery monitoring equipment	D D E E E E E	5 a. b. An ICU physician/team in-house 24/7 is not essential. However, there must be a plan developed by the surgical director/co-director for all trauma patients for prompt emergency and routine care 24/7. c. A surgical director or co director who is responsible for setting policies and administration related to trauma ICU patients is essential. The trauma service must assume and maintain responsibility 24/7 for the care of the multiply injured patient admitted to the ICU. It may be appropriate for the general/trauma surgeon to seek consultation from an intensivist for complicated or long-term management of the patient and to secure in-house coverage. Local conditions may allow the general surgeons to be rapidly available on short notice for the care of ICU trauma patients. Under these circumstances, a formal plan, outlining these local criteria must be established to allow the general surgeon to take call from outside the facility. Compliance with the established criteria must be monitored by the trauma PIPS program.
6. Respiratory Services		
a. Available in-house 24 hours/day	E	
7. Radiological Services (Available 24 hours per day)	E	
a. In-house radiology technologist b. Angiography c. Sonography d. Magnetic resonance imaging e. Computed tomography 1) In-house CT technologist f. Integration of trauma and radiology PIPS programs	E E E D E D E E	The CT technologist may take call from outside of the facility as long as the trauma PIPS program clearly defines the technologists expected response and monitors this response regularly. The trauma and radiology PIPS program should monitor issues common to the use of radiology services in trauma care facilities. Collaboration and participation by a radiology liaison on the trauma program performance (system) committee is essential. Process and outcome measures should include, but not be limited to the frequency and type of missed, incorrect, or delayed diagnosis; the recommendation of nonessential diagnostic radiology tests; the complications related to interventional procedures; and delays in acquisition of critical imaging procedures on

Criteria	Requirements	Guidelines
		severely injured patients The PIPS program must also ensure that trauma patients are accompanied by appropriately trained providers, that appropriate resuscitation and monitoring occurs during transportation to and while in the radiology department and that procedures are promptly available.
8. Clinical Laboratory Service (Available 24hours per day)		
a. Standard analyses of blood, urine, and other body fluids, including microsampling when appropriate	E	The trauma and laboratory PIPS program should monitor issues common to the use of laboratory services in trauma care facilities. Collaboration and participation by laboratory and blood bank representatives on the trauma program performance (system) committee is essential. The PI program must ensure that blood products, tests and results are promptly available.
b. Blood typing and cross-matching	E	
c. Coagulation studies	E	
d. Comprehensive blood bank or access to a community central blood bank and adequate storage facilities	E	
e. Blood gases and pH determinations	E	
f. Microbiology	E	
g. Integration of trauma and laboratory PIPS programs	E	
h. Massive transfusion policy	E	A clinically relevant, evidenced based massive transfusion policy is required.
9. Acute Hemodialysis		
a. In-house	D	
b. Transfer plan/agreement	E	Well defined transfer plans are essential.
10. Organized burn Care (Burn Center)		
a. Stabilization/treatment guidelines	E	The stabilization/treatment guidelines shall be appropriate for physicians and nurses.
b. In-house or transfer plan/agreement to a burn center	E	Developed by the TSMD and the PIPS committees. As part of the transfer plan for burn care, the TCF should have a formal agreement with a burn center.
11. Acute Spinal Cord Management		
a. Stabilization/treatment guidelines	E	The stabilization/treatment guidelines shall be appropriate for physicians and nurses.
b. In-house management or transfer plan/agreement.	E	Developed by the TSMD and the PIPS committees.

Criteria	Requirements	Interpretive Guidelines
REHABILITATION SERVICES		
1. In-house or transfer plan to an approved rehabilitation facility	E	Trauma care facilities shall have a formal policy that integrates the trauma and rehabilitation services to include, at a minimum:
2. Physical therapy	E	a. patient population,
3. Occupational Therapy	E	b. time to consultation (pre-assessment),
4. Speech therapy	E	c. formal documentation of pre-assessment,
5. Social services	E	d. formal participation on the trauma program
6. Formal policy integrating the trauma and rehabilitation service	E	performance (system) committee. This process shall be monitored by the trauma PIPS program.
PERFORMANCE IMPROVEMENT		
Trauma performance improvement and patient safety (PIPS) program	E	A formal trauma performance improvement and patient safety program and plan are required. The overall responsibility of concurrent and retrospective review of the care of trauma patients lies with the TSMD and TPM/TNC/TC in conjunction with the trauma performance improvement (system) committee and the physician multidisciplinary peer review committee. A mechanism needs to be established by which all physicians caring for trauma patients in the TCF are involved in peer review of the care. Utilization of trauma registry data should facilitate the entire PIPS and peer review process.
1. In-house trauma registry	E	
a. Trauma registry PIPS activities	E	
b. Participation in state registry	E	
c. Participation in NTDB	E	
d. Participation in TQIP	D	
2. Multidisciplinary physician peer review and documentation of all trauma care including morbidity and mortality at the TCF with documented loop closure	E	The multidisciplinary performance improvement patient safety program shall consist of a minimum of the following: 1. Defined population of trauma patients to be monitored (trauma registry); 2. Set of indicators/audit filters (trauma registry);
a. Work with SEQIC	E	3. Frequency of review;
b. Nursing	E	4. Multidisciplinary physician involvement;
c. Trauma surgeon response times to trauma activations	E	5. Standard of care and evidence based data; and 6. Demonstration of loop closure and resolution
3. Trauma program performance (systems) committee	E	
a. Periodic review of all trauma policies, procedures and guidelines	E	
b. Review of out-of-hospital	E	

Criteria	Requirements	Interpretive Guidelines
trauma care. c. Review of times and reasons for trauma related transfers d. Review of times and reasons for trauma related bypass/diversion based on TCF policy	E E	During the multidisciplinary physician peer review of trauma patient morbidity & mortality, the committee physicians should regularly review and discuss: 1) Results of trauma peer review activities; 2) Summaries of individual physician peer reviews; 3) Problematic cases including complications; and 4) All trauma deaths identifying each death as mortality without opportunity for improvement (non-preventable), anticipated mortality with opportunity for improvement (possibly preventable), unanticipated mortality with opportunity for improvement (preventable). The findings of the peer review process must be communicated by the TSMD to the physician(s) involved in the care by memo, letter or chart review form, personal contact or by the practitioner's meeting attendance. Response to this communication by the involved practitioners is expected. This is a part of the loop closure/resolution process in the TCF's trauma PIPS program. Included in this review should be review of the TSMD's care of patients by one or more of his/her physician peers. The peer review process and minutes of the peer review committee should be confidential and in accordance with facility and medical staff policy. Summaries of the TCF's PIPS activities should be reported regularly to the hospital's PIPS program. The TNC/TC/TPM shall distribute committee minutes to all members of the trauma team.

Criteria	Requirements	Interpretive Guidelines
CONTINUING EDUCATION/OUTREACH		
1. ATLS® instructor participation in state programs.	D	It is strongly recommended that Regional TCFs have ATLS® instructor participation in state programs.
2. Trauma continuing education programs provided for:		2a. Continuing education for trauma team members Physicians and non-physician medical providers (ARNP, PA):
a. Staff/community physicians	E	
b. Nurses	E	Eight hours of the required continuing trauma education are to be formal, i.e., standardized
c. Allied health	E	educational settings (conferences) with a curriculum. These formal hours may be developed by
d. Out-of-hospital personnel	E	the host TCF, collaboration with other State TCFs, or a program developed and offered by an out-of-state provider of education.
	E	The provider and/or credentialing agency must document attendance in educational trauma topics in order to maintain and enhance knowledge and skills that are centered around the assessment and management of the trauma patient in all age groups. *Highly Recommended Objectives To Meet in Continuing Education Programs: 1) Communication and/or demonstration of the systematic initial assessment and treatment. 2) Within the primary survey, determine and demonstrate airway patency and cervical spine control, breathing and ventilation, circulatory status with hemorrhage control, neurologic status, exposure and environmental control. 3) Discussion and/or demonstration of the management techniques in the resuscitation phase, based on findings from the primary survey. Major skills to maintain include airway and ventilation management , needle and tube thoracostomy, shock resuscitation, neurologic assessment and scoring. 4) Integration of the history of the trauma event, patient's past medical history, and current findings with anticipated injuries. 5) Discussion/outline of the definitive care necessary to stabilize each patient in preparation for possible transport to a trauma center or to the closest appropriate facility. 6) Establishment and discussion of transport plans with other members of the trauma

Criteria	Requirements	Interpretive Guidelines
		team, based on patient status and resources in that region, including EMS modes of transport and scope of practice. 7) Within the secondary assessment findings, given a radiographic image, identify fractures and associated injuries. Discussion and demonstration of immobilization techniques with subsequent referral if necessary. *these objectives may easily be met within the Advanced Trauma Life Support (ATLS)® program. Sixteen hours of the required continuing trauma education may be informal, determined and approved by the trauma care facility from any of the following: 1. Multidisciplinary trauma case reviews; 2. Multidisciplinary trauma conferences; 3. Multidisciplinary trauma mortality and morbidity reviews; 4. Multidisciplinary trauma committee meetings; 5. Trauma peer review meetings; 6. Any trauma care facility committee meeting with a focus on trauma care evaluation; and 7. Critical care education such as ACLS®, PALS, NRP, APLS(1) or equipment inservices.
3. Multidisciplinary trauma conference		3. Trauma care facilities shall provide at a minimum, one multidisciplinary trauma conference annually. The purpose of the multidisciplinary trauma conferences is to provide an educational forum for all practitioners involved in the care of trauma patients. This may be accomplished in a variety of ways. One way to provide this conference is to have it coincide with the TCF's trauma committee meetings with presentation of actual trauma cases. Invite all members of the trauma team/service to the conference. A local/regional trauma conference might be held yearly with invitations to all individuals involved in local/regional trauma care. Continuing education credits should be offered to all individuals that attend.

Criteria	Requirements	Interpretive Guidelines
PREVENTION		
1. Injury control studies	D	
2. Collaboration with other institutions	D	
3. Monitor progress/effect of prevention programs	D	
4. Designated prevention coordinator for injury control	E	4. Designated prevention coordinator may have dual responsibilities. Formal job description is required.
5. Outreach activities	E	
6. Information resources for public	E	
7. Collaboration with existing national, regional, state prevention programs.	E	
8. Coordination and/or participation in community prevention activities.	E	
RESEARCH		
1. Trauma registry PI activities	E	
2. Research committee	D	
3. Identifiable IRB process	D	
4. Extramural educational presentations	D	
5. Number of scientific publications	D	
ORGAN PROCUREMENT		
Organ Procurement Policy	E	
TRANSFER AGREEMENTS PLANS/PROTOCOL		
a. As a transferring facility	E	
b. As a receiving facility	E	

Criteria	Requirements	Interpretive Guidelines
PEDIATRICS		
1. Trauma surgeons credentialed for pediatric trauma care 2. Pediatric emergency department area 3. Pediatric resuscitation equipment immediately available in all patient care areas 4. Microsampling 5. Pediatric-specific PI program 6. Pediatric intensive care unit	E E E E E E E	1. The TSMD should decide what credentials are needed for the trauma surgeons to provide trauma care to pediatric patients. This is to be based on the training and experience of the surgeons taking trauma call and the availability of pediatric surgeons with trauma experience. Credentialing requirements need to be documented for each surgeon. 2. It is not required to have a separate emergency department for pediatrics. 6. This criteria may be satisfied by a transfer agreement.
		Criteria adopted from the American College of Surgeons Committee on Trauma (2006) *Resources for Optimal Care of The Injured Patient.* Chicago, Il: American College of Surgeons. Revised by the Trauma System Advisory Council, Categorization and Verification Subcommittee (Chair-Thomas Foley, M.D., FACS) Reviewed and approved by the Trauma System Advisory Council