Advanced (Level III) Trauma Facility Criteria Guidance

Advanced Trauma Facility (Level III) - provides resuscitation, stabilization, and assessment of injury victims and either provides treatment or arranges for appropriate transfer to a higher level designated trauma facility; provides ongoing educational opportunities in trauma related topics for health care professionals and the public; and implements targeted injury prevention programs.

The purpose of this document is to provide guidance (as examples) on approaches to fulfill each of the criterion included in the Texas Trauma Facility Criteria - Advanced (each criterion is listed and followed by an example of approach to meet criteria). This is provided to assist hospital representatives in working to prepare their facility for Level III designation. For further clarification of any criterion required, please contact a member of Designation Team in the Office of EMS/Trauma Systems Coordination. Contact information is available on the EMS/Trauma Systems website: www.dshs.state.tx.us/emstraumasystems.

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A. TRAUMA PROGRAM		
1. Trauma Service.	*A trauma service represents a structure of care for the injured patient. The service includes personnel and other resources necessary to ensure appropriate and efficient care delivery. This may require a method to identify injured patients, monitor the provision of health care services, make periodic rounds, and hold formal and informal discussions with individual practioners. The reporting structure of the trauma service should be such that personnel have authority to make change throughout the continuum of care in regards to the injured patient.* *The administrative structure of the hospital should demonstrate institutional support and commitment and must include an administrator, medical director and TPM/TNC. Sufficient authority of the trauma program to achieve all programmatic goals should be reflected in the organizational structure.*	**E**
2. An identified Trauma Medical Director (TMD) who: • is a general surgeon • is currently credentialed in Advanced Trauma Life Support (ATLS) or an equivalent course approved by the Department of State Health Services (DSHS). • is charged with overall management of trauma services provided by the hospital. • shall have the authority and responsibility for the clinical oversight of the trauma program. This is accomplished through mechanisms that may include: recommending trauma team privileges; developing treatment protocols; cooperating with the nursing administration to support the nursing needs of the trauma patients;	*Ultimate accountability for over site of the trauma program resides with the trauma medical director.*	**E**

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coordinating the performance improvement (PI) peer review; correcting deficiencies in trauma care or excluding from trauma call those trauma team members who do not meet criteria; coordinating the budgetary process for the trauma program; and should include such things as periodic rounds on all admitted major or severe trauma patients, chairing the trauma PI process and oversight of multidisciplinary trauma conferences. a. The TMD shall be credentialed by the hospital to participate in the resuscitation and treatment of trauma patients using criteria to include such things as board-certification, trauma continuing education, compliance with trauma protocols, and participation in the trauma PI program. b. There shall be a defined job description and organizational chart delineating the TMD's role and responsibilities. c. The TMD shall participate in a leadership role in the hospital, community, and emergency management (disaster) response committee. d. The TMD should participate in the development of the regional trauma system plan.	*TMD job description should include such things as: credentialing requirements, trauma PI responsibilities, and responsibilities of clinical oversight for all trauma patients. The organizational chart should demonstrate an open line between the TMD, the TNC and hospital administration.*	
3. An identified Trauma Nurse Coordinator/Trauma Program Manager (TNC/TPM) who: • Who is a registered nurse. • Has successfully completed and is current in the Trauma Nurse Core Course (TNCC) or Advanced Trauma Course for Nurses (ATCN) or a DSHS-approved equivalent. • Has successfully completed and is current in a nationally recognized pediatric advanced life support course ((e.g. Pediatric Advanced Life Support (PALS) or the Emergency Nurse Pediatric Course (ENPC)) • Shall have the authority and responsibility to monitor trauma patient care from ED admission through operative intervention(s), ICU care, stabilization, rehabilitation care, and discharge, including the trauma PI program. a. There shall be a defined job description and organizational chart delineating the TNC/TPM's role and responsibilities. b. The TNC/TPM shall participate in a leadership role in the	*Trauma nurse coordinator/trauma program manager - a registered nurse with demonstrated interest, education, and experience in trauma care and who, in partnership with the trauma medical director and hospital administration, is responsible for coordination of trauma care at a designated trauma facility. This coordination should include active participation in the trauma performance improvement program, the authority to positively impact care of trauma patients in all areas of the hospital, and targeted prevention and education activities for the public and health care professionals.* *The TNC/TPM assumes the day to day responsibility for process and performance improvement activities as they relate to nursing and ancillary personnel and assists the trauma medical director in carrying out the same functions for the physicians. Ultimate accountability for all activities of the trauma program resides with the medical director.* *The organizational structure of the trauma program should demonstrate an open line between TMD, TPM/TNC and hospital administration. A director/manager level position is recommended. The administrative structure of the hospital should demonstrate institutional support and commitment and*	**E**

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hospital, community, and regional emergency management (disaster) response committee.	*must include an administrator, medical director and TPM/TNC.*	
c. This position shall be full-time with a minimum of 80% of the time dedicated to the Trauma program.	*This position shall be 1.0 FTE. Time allotted for the position shall be sufficient to maintain all aspects of the trauma program including concurrent review of medical records, concurrent PI, registry input as well as injury prevention activities, RAC participation, BT/ disaster management, community liaison/committee participation or any activities which enhance optimal trauma care management. Staffing and non-trauma program related duties > 20% may not meet the intent this criteria. Actual time dedicated to the trauma program is volume dependent.*	
d. The TNC/TPM should complete a course designed for his/her role which provides essential information on the structure, process, organization and administrative responsibilities of a PI program to include a trauma outcomes and performance improvement course ((e.g. Trauma Outcomes Performance Improvement Course (TOPIC) or Trauma Coordinators Core Course (TCCC)).		
4. There shall be an identified Trauma Registrar, who is separate from but supervised by the TNC/TPM, who has appropriate training ((e.g. the Association for the Advancement of Automotive Medicine (AAAM) course, American Trauma Society (ATS) Trauma Registrar Course)) in injury severity scaling. Typically, one full-time equivalent (FTE) employee dedicated to the registry shall be required to process approximately 500 patients annually.	*There shall be a defined job description delineating the Trauma Registrar's role and responsibilities. Trauma registrar - person with demonstrated interest, education and experience in abstraction and entry of trauma data into the registry.* *Four hours of registry specific continuing education per year is recommended. Technical support, locally and from the software distributor should be available to assist with these training requirements.* *Recommendations regarding the time requirements are meant to ensure program maintenance, concurrent review and timely registry input.*	**E**
5. Written protocols, developed with approval of the hospital's medical staff, for:	*Standards of care for trauma patients should be established in all patient care areas and should guide the care provided for the pediatric and adult trauma patient. These standards should reflect nationally recognized standards for trauma care. Trauma standards of care are statements of the principles a facility follows when caring for trauma patients; they may include goals and objectives, identified tasks, patient outcome criteria, etc.*	**E**
a. Trauma team activation.	*The Trauma Team Activation Protocol outlines an organized approach delineating specific types of injuries/patient conditions (i.e., physiologic, anatomic and mechanism of injury) which activate the trauma team, lists team members, and defines notification and response times of the team, both in-house and off-site. This protocol must meet approved standards of care. The criteria for a graded (tiered) activation must be clearly defined and continuously evaluated by the trauma PI program.*	
b. Identification of trauma team responsibilities during resuscitation.	*The trauma team consists of physicians, nurses and allied health personnel. The size of the trauma team may vary with hospital size and with the severity of injury, which leads to trauma team activation. The roles of each trauma team member during the initial assessment and emergent care of the trauma patient should be outlined (what each team member does immediately upon arrival of a critical patient to determine priorities of care, the secondary assessment an interventions). This information may be*	

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c. Resuscitation and treatment of trauma patients.	*developed as a separate protocol, or may be included in the Trauma Team Activation Protocol. All team members should coordinate their interventions defined by established principles and guidelines (e.g. TNCC/ATLS). Resuscitation is an intense period of medical care where initial and continuous patient assessment guidelines, concurrent diagnostic and therapeutic procedures, and, at times, even commencement of surgery. Resuscitation is the group of coordinated actions performed to secure airway, support breathing, and restore circulation. Resuscitation protocols should meet nationally accepted standards of care such as TNCC/ ATLS guidelines.*	
d. Triage, admission and transfer of trauma patients.	*An admission policy shall be in place describing the types of patients who are within the scope of facilities capabilities and are consistent with purview of a Level III trauma facility. Hospital Triage Guidelines for Transfer must include a list of injuries/patient conditions beyond the hospital's capability to treat definitively; transfer procedures should begin immediately upon recognition of these types of injuries. All existing state and federal laws related to patient transfer continue to be applicable (e.g. COBRA,EMTALA)*	
6. All major and severe trauma patients shall be admitted to an appropriate surgeon and all multi-system trauma patients shall be admitted to a general surgeon	*Admission of injured patients, including transfers into the facility, must be to a surgical service. Multi-system injury patients should be admitted to general surgery/trauma service; true single system injury patients may be admitted to a specialty surgical service (i.e. a fractured femur may be admitted to orthopedics)* *Injured patients may be admitted to individual surgeons but the structure of the program must allow the trauma director to have oversight authority for the care of these injured patients.*	**E**

B. PHYSICIAN SERVICES		
1. Surgery Departments/Divisions/Services/Sections		
a. General Surgery		**E**
A general surgeon who is providing trauma coverage shall be currently credentialed in ATLS or an equivalent course approved by DSHS.	*Implementation of a formal credentialing process for physicians who are on-call for trauma patients; it should address such issues as board certification, ATLS certification, trauma CME hours, attendance requirements at trauma PI meetings, and compliance with department/division/service section trauma protocols, policies, and procedures.*	**E**
A general surgeon who is providing trauma coverage shall be credentialed by the TMD to participate in the resuscitation and treatment of trauma patients to include requirements such as current board certification/eligibility, an average of 9 hours of trauma-related continuing medical education per year, compliance with trauma protocols, and participation in the trauma PI program. Additionally, the core attending general surgeons that are providing coverage shall attend 50% or greater of multidisciplinary and peer review trauma committee meetings	*Compliance with credentialing components should be monitored at least yearly by the trauma program.*	
A non-board certified general surgeon desiring inclusion in a hospital's trauma program shall meet the American College of	*This criterion is not considered essential until this process has been defined for the Level III trauma center by the ACS.*	

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Surgeons (ACS) guidelines as specified in its most current version of the "Resources For Optimal Care Of the Injured Patient", Alternate Criteria section. Communication shall be such that the attending general surgeon shall be present in the ED at the time of arrival of the major or severe trauma patient; maximum response time of the attending surgeon shall be 30 minutes from trauma team activation. This system shall be continuously monitored by the trauma PI program. In hospitals with surgical residency programs, evaluation and treatment may be started by a team of surgeons that shall include a PGY4 or more senior surgical resident who is a member who is a member of that hospital's residency program. The attending surgeon's participation in major therapeutic decisions, presence in the emergency department for major resuscitations, and presence at operative procedures are mandatory. Compliance with these criteria and their appropriateness shall be monitored by the trauma PI program. When the attending surgeon is not activated initially and it has been determined by the emergency physician that an urgent surgical consult is necessary, maximum response time of the attending surgeon shall be 60 minutes from notification to physical presence at the patient's bedside. This system shall be continuously monitored by the trauma PI program. There shall be a published on-call schedule for obtaining general surgery care. There shall be a documented system for obtaining general surgical care for situations when the attending general surgeon on-call is unavailable. Ideally, the surgeon is on-call only at one institution; otherwise, a published back-up call schedule shall be in place in the emergency department. This system shall be continuously monitored by the trauma PI program.	*The general surgeon shall be activated on EMS notification of a patient meeting criteria or on arrival of those patients meeting criteria who arrive without prior notification. Response by the general surgeon shall be no longer than 30 minutes from the time of notification.* *A formal call protocol shall be established and address the following issues: a posted call roster, response time, and posted back - up call schedule for a surgeon on-call at multiple facilities. A protocol for bypass and or diversion shall be established proactively for occasions when general surgery is not available to respond to Trauma Team Activation involving a major and/or severely injured trauma patient. An organized system shall be established for notification of appropriate personnel and pre-hospital providers to facilitate the routing of patient to an appropriate facility. The performance improvement program will continuously monitor this system.*	
b. Orthopaedics		**E**

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An orthopaedic surgeon who is providing trauma coverage shall be credentialed by the TMD to participate in the resuscitation and treatment of trauma patients to include requirements such as current board certification/eligibility, compliance with trauma protocols, and participation in the trauma PI program. Additionally, the orthopaedic surgeon representative to the multidisciplinary trauma committee shall have an average of 9 hours of orthopaedic-related continuing medical education per year and attend 50% or greater of multidisciplinary and peer review trauma committee meetings.		**E**
A non-board certified orthopaedic surgeon desiring inclusion in a hospital's trauma program shall meet ACS guidelines as specified in its current addition of "Resources For Optimal Care Of the Injured Patient", Alternate Criteria section.	*Until this process is further defined by the ACS for Level III facilities, this criterion is not applicable.*	
An orthopaedic surgeon providing trauma coverage shall be promptly available (physically present) at the major or severe trauma patient's bedside within 30 minutes of request by the attending trauma surgeon or emergency physician from inside or outside hospital. This system shall be continuously monitored by the trauma PI program		
When the orthopaedic surgeon is not activated initially and it has been determined by the emergency physician or trauma surgeon that an urgent surgical consult is necessary, maximum response time of the orthopaedic surgeon shall be 60 minutes from notification to physical presence at the patient's bedside. This system shall be continuously monitored by the trauma PI program.		
There shall be a published on-call schedule for obtaining orthopaedic surgery care. There shall be a documented system for obtaining orthopaedic surgery care for situations when the attending orthopaedic surgeon on call is unavailable. Ideally, the orthopaedic surgeon is on-call only at one institution; otherwise, a published back-up plan shall be in place in the	*A formal call protocol shall be established and address the following issues: a posted call roster, response time, and posted back-up call schedule for a surgeon on-call at multiple facilities. The performance improvement program will continuously monitor this system.*	

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emergency department. This system shall be continuously monitored by the trauma PI program.		
c. Neurosurgery	**Neurosurgery is not a required service for Level III Trauma Facilities. However if this service is available, the following requirements must be met.*	**D***
A neurosurgeon who is providing trauma coverage shall be credentialed by the TMD to participate in the resuscitation and treatment of trauma patients to include requirements such as current board certification/eligibility, compliance with trauma protocols, and participation in the trauma PI program. Additionally, the neurosurgeon representative to the multidisciplinary trauma committee shall have an average of 9 hours of trauma-related continuing medical education per year and attend 50% or greater of multidisciplinary and peer review trauma committee meetings.		
A non-board certified neurosurgeon desiring inclusion in the hospital's trauma program shall meet ACS guidelines as specified in it's current addition of "Resources for Optimal Care of the Injured Patient", alternate criteria section.	*Until this process is further defined by the ACS for Level III facilities, this criterion is not applicable.*	
A neurosurgeon providing trauma coverage shall be promptly available (physically present) at the major or severe trauma patient's bedside within 30 minutes of an emergency request by the attending trauma surgeon or emergency physician from inside or outside the hospital. This system shall be continuously monitored by the trauma PI program.	*When there is no neurosurgical coverage, the program must have a plan, approved by the trauma director, that determines for which types and severity of neurologic injury patients should remain at the facility. If the facility does treat neurotrauma, a performance improvement program must convincingly demonstrate appropriate care.*	
When the neurosurgeon is not activated initially or was not consulted as an emergency and it has been determined by the emergency physician or trauma surgeon that a urgent neurosurgical consult is necessary, maximum response time of the neurosurgeon shall be 60 minutes from the notification to physical presence at the patients bedside. This system shall be continuously monitored by the trauma PI program.		
There shall be a published on-call schedule for obtaining neurosurgical care. There shall be a documented system for	*A formal call protocol shall be established and address the following issues: a posted call roster, response time, and posted back-up call schedule for a surgeon on-call at multiple facilities. The*	

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obtaining neurosurgical care for situations when neurosurgeon on-call is not available. Ideally, the neurosurgeon is on-call only at one institution; otherwise, a published back-up plan shall be in place in the emergency department. This system shall be continuously monitored by the trauma PI program.	*performance improvement program will continuously monitor this system.*	
d. Ophthalmic Surgery		**D**
e. Otorhinolaryngologic Surgery		**D**
f. Thoracic Surgery		**D**
g. Urologic Surgery		**D**
2. Non-surgical Specialties Availability		
a. **Emergency Medicine** - this requirement may be fulfilled by a physician credentialed by the hospital to provide emergency medical services In-house 24 hours a day. Any emergency physician who is providing trauma coverage shall be credentialed by the TMD to participate in the resuscitation and treatment of trauma patients of all ages to include requirements such as current board certification/eligibility, compliance with trauma protocols, and participation in the trauma PI program. Additionally, the Emergency Medicine representative to the multidisciplinary trauma committee shall have an average of 9 hours of trauma-related continuing medical education per year and attend 50% or greater of multidisciplinary and peer review trauma committee meetings. An Emergency Medicine board-certified physician who is providing trauma coverage shall have successfully completed an ATLS Student Course or a DSHS-approved ATLS equivalent course. Current ATLS verification is required for all physicians who work in the emergency department and are not board certified in Emergency Medicine.	*Documentation to fulfill this requirement shall be available at the time of survey.*	**E**
b. Radiology - On-call and promptly available within 30 minutes	*The use of teleradiology may fulfill this requirement. Reading turn around times shall be monitored in*	**E**

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of request from inside or outside the hospital. This system shall be continuously monitored by the trauma PI program.	*the trauma PI program. Should the physical presence of a radiologist be requested by a member of the trauma team, the response time of the radiologist shall be no longer than 30 minutes.*	
c. Anesthesiology - On-call and promptly available within 30 minutes of request from inside or outside the hospital. This system shall be continuously monitored by the trauma PI program. Requirements may be fulfilled by a member of the anesthesia care team credentialed by the TMD to participate in the resuscitation and treatment of trauma patients that may include requirements such as board certification, trauma continuing education, compliance with trauma protocols, and participation in the trauma PI program. The anesthesiology physician representative to the multidisciplinary trauma committee that provides trauma coverage to the facility shall attend 50% or greater of multidisciplinary and peer review trauma committee meetings.		**E**
d. Cardiology		**D**
e. Hematology		**D**
f. Nephrology		**D**
g. Pathology		**D**
h. Family Medicine – The patient's primary care physician should be notified at an appropriate time.		**D**
i. Internal Medicine- The patient's primary care physician should be notified at an appropriate time.		**D**
j. Pediatrics – The patient's primary care physician should be notified at an appropriate time.		**D**

C. NURSING SERVICES (for all Critical Care and Patient Care Areas)		
1. All nurses caring for trauma patients throughout the continuum of care have ongoing documented knowledge and skill in trauma nursing for patients of all ages to include trauma specific orientation, annual clinical competencies, and continuing education. 2. Written standards on nursing care for trauma patients for all units (i.e.	*An organized, trauma related, orientation shall be in place for nurses assigned to the emergency room and all in-patient units caring for trauma patients, including a skills checklist. Staff attendance at trauma related continuing education presentations shall be documented. There shall e a documented process to demonstrate maintenance of specific skills related to trauma patient care. It is recommended that low volume/ high risk procedures are included in annual clinical competency assessments.* *Written description of institutionally specific standards of nursing care shall be available such that any*	**E**

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ED, ICU, OR, PACU, general wards) in the trauma facility shall be implemented.	*nurse who may be in your facility will have a clear understanding of the expectations of care.*	**E**
3. A validated acuity-based patient classification system is utilized to define workload and number of nursing staff to provide safe patient care for all trauma patients throughout their hospitalization.	*An acuity-based patient classification protocol utilized to meet the patients' needs, define workload and appropriate number of nursing staff to provide safe optimal care for all trauma patients throughout their hospitalization.*	**E**
4. A written plan, developed by the hospital, for acquisition of additional staff on a 24 hour basis to support units with increased patient acuity, multiple emergency procedures and admissions (i.e. written disaster plan).	*The hospital disaster plan may be used to fulfill this criterion. The plan shall be current, functional and appropriate. During the site survey questions will be asked about the hospital's participation in disaster drills (facility wide, local and/or regional).*	**E**
5. 50% of nurses caring for trauma patients certified in there are of specialty (e.g. CEN, CCRN, CNOR).		**D**

D. PATIENT CARE AREAS/UNITS		
1. Emergency Department		
a. Designated physician director.		**E**
b. Physician with special competence in the care of critically injured patients, who is designated member of the trauma team and physically present in the emergency department (ED) 24 hours per day.* ** Neither a hospital's telemedical capabilities nor the physical presence of physician assistants (PAs) or clinical nurse specialists/nurse practitioners (CNSs/NPs) shall satisfy this requirement. Additionally, PAs/NPs and telemedicine-support physicians who participate in the care of major/severe trauma patients shall be credentialed by the hospital to participate in the resuscitation and treatment of said trauma patients, to include requirements such as board certification/eligibility, an average of 9 hours of trauma-related continuing medical education per year, compliance with trauma protocols, and participation in the trauma PI program.*		**E**
c. The ED physician shall be activated on EMS communication with the ED or after a primary assessment of patients who arrive to the ED by private vehicle for the severe or major	*The ED physician shall be activated upon recognition of any criteria meeting trauma team activation criteria. It is expected that major/severe trauma patients are met on arrival by the ED physician with a maximum response time of 30 minutes. The trauma surgeon as well as the full trauma team shall be activated on recognition of any criteria meeting the highest level of activation.*	**E***

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trauma patient. Response time shall not exceed thirty minutes from notification (this criterion shall be monitored in the trauma PI program).		
d. A minimum of two registered nurses who have trauma nursing training shall participate in initial major trauma resuscitation.	*Trauma nurse training refers to TNCC/ATCN or any trauma specific education provided by the facility. This criterion does not eliminate the need for at least one RN with the requirements described in D. 1. f.*	**E**
e. Nurse staffing in the initial resuscitation are based on patient acuity and trauma team composition is based on historical census and acuity data.		**E**
f. At least one member of the registered nursing staff responding to the trauma team activation for a major or severe trauma resuscitation has successfully completed and holds current credentials is an advanced cardiac life support course* (e.g. ACLS or hospital equivalent), a nationally recognized pediatric advanced life support course (e.g. PALS or ENPC) and TNCC or ATCN or a DSHS approved equivalent. *A free-standing children's facility is exempt from the ACLS requirement.	** This refers to nurses participating in the initial resuscitation phase.*	**E**
g. Nursing documentation for trauma patients is systematic and meets the trauma registry guidelines.	*Guidelines shall be in place which facilitates organized, thorough and concise documentation of the care provided to trauma patients. This documentation shall include the information in the "Texas Hospital Standard Data Set: Essential Data Elements".*	**E**
h. 100% of nursing staff have successfully completed and hold current credentials in an advanced cardiac life support course (e.g. ACLS or hospital equivalent), a nationally recognized pediatric advanced life support course (e.g. PALS or ENPC) and TNCC or ATCN or a DSHS-approved equivalent, within 18 months of date of employment in the ED or date of designation.** ***Requirements for a free-standing children's facility: 100% of nursing staff who care for trauma patients have successfully completed and hold current credentials in ENPC or in a nationally recognized pediatric advanced life support course and TNCC or ATCN or a DSHS-approved equivalent, within 18 months of date of employment in the ED or date of*	*There shall be formal documentation of course completion by emergency nursing staff.* *** Refers to nurses participating in the initial resuscitation phase.*	**E**

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designation.		
i. Two-way communication with all pre-hospital emergency medical services vehicles.	*The ability to communicate with ambulances transporting patients to the hospital must be maintained. This criterion may be accomplished by utilizing a telephone, cellular telephone, radio or other device.*	**E**
j. Equipment and services for the evaluation and resuscitation of, and to provide life support for, critically or seriously injured patients of all ages shall include but not be limited to:	*Documentation of staff proficiency for all equipment in the trauma resuscitation area is a necessity.*	**E**
1) Airway control and ventilation equipment including laryngoscope and endotrachial tubes of all sizes, bag-valve-mask devices (BVMs), pocket masks, oxygen		**E**
2) Mechanical ventilator		**E**
3) Pulse oximetery		**E**
4) Suction device		**E**
5) Electrocardiograph-oscilloscope-defibrillator		**E**
6) Internal age-specific paddles		**E**
7) Supraglottic airway management devise (e.g. LMA)		**D**
8) Central venous pressure monitoring equipment	*8) A manometer will satisfy this requirement*	**E**
9) All standard intravenous fluids and administration devices, including large-bore intravenous catheters and a rapid infuser system		**E**
10) Sterile surgical sets for procedures standard for emergency room such as thoracostomy, venous cutdown, central line insertion, thoracotomy, diagnostic peritoneal lavage, airway control/cricothyrotomy, etc.		**E**
11) Drugs and supplies necessary for emergency care		**E**
12) Cervical stabilization device		**E**
13) Length based body weight & tracheal size evaluation system (such as Broselow tape) and resuscitation medications and equipment that are dose appropriate for all ages		**E**
14) Long bone stabilization device	*14) Both adult and pediatric long bone stabilization devices shall be available to the emergency department and may not be shared with EMS.*	**E**
15) Pelvic stabilization device	*15) Any proven method of pelvic stabilization is acceptable (bed sheet, pelvic binder, etc). However, staff proficiency in the method chosen is a necessity.*	**E**
16) Thermal control equipment for patients and a rapid warming device for blood and fluids.		**E**

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17) Non-invasive continuous blood pressure monitoring devices		**E**
18) Qualitative end tidal CO2 monitor		**E**
k. X-ray capability		**E**
1) In-house technician 24-hours a day or on-call and promptly available within 30 minutes of request. This system shall be continuously monitored by the trauma PI program.		
l. Psychosocial Support Services – These services shall be promptly available within 30 minutes of request.		**D**
2. Operating Suites		
a. Operating room services - shall be available 24 hours a day. With advanced notice, the Operating Room should be opened and ready to accept a patient within 30 minutes. This system shall be continuously monitored by the trauma PI program.		**E**
b. Equipment – special requirements shall include but not be limited to:		**E**
1) Thermal control equipment for patient and for blood and fluids		**E**
2) X-ray capabilities including c-arm image intensifier with technologist available 24 hours a day		**E**
3) Endoscopes, all varieties, and bronchoscope		**E**
4) Equipment for long bone and pelvic fixation		**E**
5) Rapid infuser system		**E**
6) Appropriate monitoring and resuscitation equipment		**E**
7) The capability to measure pulmonary capillary wedge pressure		**E**
8) The capability to measure invasive systemic arterial pressure		
3. Post-Anesthesia Care Unit (surgical intensive care unit is acceptable)		

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a. Registered nurses and other essential personnel 24 hours a day. b. Appropriate monitoring and resuscitation equipment. c. Pulse oximetry d. Thermal control equipment for patients and a rapid warming device for blood and fluids	*Registered nurse and/or other essential personnel will be available 24 hours a day, either in house or on call.*	**E** **E** **E** **E**
4. Intensive Care Capability		
a. Designated surgical director or surgical co-director who is responsible for setting policies and administration related to trauma ICU patients. A physician who is providing this coverage must be a surgeon who is credentialed by the TMD to participate in the resuscitation and treatment of trauma patients to include requirements such as board certification/board-eligibility, trauma continuing medical education, compliance with trauma protocols, and participation in the trauma PI program.		**E**
b. Physician, credentialed in critical care by the trauma director, on duty in ICU 24 hours a day or immediately available from in-hospital. Arrangements for 24-hour surgical coverage of all trauma patients shall be provided for emergencies and routine care. This system shall be continuously monitored by the trauma PI program.	*A physician who is providing this coverage should be credentialed by the TMD and respond upon notification to the Intensive Care Unit. This requirement may be full filled by an in-house Emergency physician.*	**E***
c. Registered Nurse-patient minimum ratio of 1:2 on each shift for patients identified as critical acuity.	*A validated acuity-based patient classification protocol utilized to meet the patients needs, define workload and appropriate number of nursing staff to provide safe optimal care for all trauma patients throughout their hospitalization*	**E**
d. Appropriate monitoring and resuscitation equipment.		**E**
e. Pulse oximetry.		**E**
f. Thermal control equipment for patients and a rapid warming device for blood and fluids.		**E**
g. The capability to measure pulmonary capillary wedge pressure.		**E**
h. The capability to measure invasive systemic arterial pressure.		**E**

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E. CLINICAL SUPPORT SERVICES		
1. Respiratory Services In-House and available 24 hours a day.		**E**
2. Clinical Laboratory Service		
a. Services available 24 hours per day.		**E**
b. Standard analyses of blood, urine, and other body fluids, including microsampling.	*b. Laboratory tests such as CBC and blood chemistries, urinalysis, stool and gastric guiac should be available.*	**E**
c. Blood typing and cross-matching, to include massive transfusion and emergency release of blood policies.	*c. The laboratory should have a procedure in place to release uncross matched blood.*	**E**
d. Comprehensive blood bank or access to a community central blood bank and adequate hospital storage facilities.	*d. Immediate access to an adequate supply of blood products should be maintained by the laboratory and a plan should exist for the procurement of additional blood products as necessary. The definitions of "adequate" should be determined by the historical data of the facility.*	**E**
e. Coagulation studies.	*e. Coagulation studies such as prothrombin time (PT) and partial thromboplastin (PTT) should be available.*	**E**
f. Blood gases and pH determinations.	*f. The capability to perform analyses of arterial/venous blood to ascertain gas and pH values should exist.*	**E**
g. Microbiology.		**E**
h. Drug and alcohol screening: results should be included in all trauma PI reviews.	*h. Toxicology screens need not be immediately available but are desirable. If available, results should be included in all performance improvement reviews.*	**E**
i. Infectious disease Standard Operating Procedures	*i. The capability to provide optimal equipment (gloves, sharps containers, goggles, gown, etc.) and guidelines for compliance of OSHA standards.*	**E**
j. Serum and urine osmolality		**D**
3. Special Radiological Capabilities		
a. Sonography		**E**
b. Computerized tomography In-house CT technician 24-hours per day or on-call and promptly available within 30 minutes of request. This system		**E**

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shall be continuously monitored in the trauma PI program. c. Angiography of all types		**D**
d. Nuclear scanning		**D**

F. SPECIALIZEDCAPABILITIES/SERVICES/UNITS		
1. Acute Hemodialysis Capability Transfer agreement if no capability		**E**
2. Organized Burn Care Established criteria for care of major or severe burn patients and/or a process to expedite the transfer of burn patients to a burn center or higher level of care to include such things as written protocols, written transfer agreements, and a regional trauma system transfer plan for patients needing a higher level of care or specialty services.	*A physician providing this coverage shall be credentialed by the hospital to participate and direct trained staff in the care of the burn patient. The facility shall ensure the proper equipment is available and readily accessible.*	**E***
3. Spinal Cord/Head Injury Rehabilitation Management Capability a. In circumstances where a designated spinal cord injury rehabilitation center exists in the regions, early transfer should be considered; transfer agreements should be in effect.	*A formal transfer agreement and/or protocol should describe the process for preparation and movement of a head injured patient to a designated head injury rehabilitation center for definitive care.*	**E**
b. In circumstances where a moderate to severe head injury centers exists in the region, transfer should be considered in selected patients; transfer agreements should be in effect.	*A formal transfer agreement and/or protocol should describe the process for preparation and movement of a spinal cord patient to a designated spinal cord injury rehabilitation center for definitive care.*	**E**
4 Rehabilitation Medicine Physician-directed rehabilitation service, staffed by personnel trained in rehabilitation care and equipped properly for care of the critically injured patient, or transfer agreement when medically feasible to a rehabilitation facility and a process to expedite the transfer of rehabilitation patients to include such things as written protocols, written transfer agreements, and a regional trauma system transfer plan for patients needing a higher level of care or specialty services.	*A physician providing this coverage should be credentialed by the hospital to participate and direct trained staff in the rehabilitative care of the trauma patient. The facility shall ensure the proper equipment is available and readily accessible. A formal transfer agreement and/or protocol should establish patient criteria for transfer and describe the process for preparation and movement of a patient to a rehabilitation facility.*	**E***
a. Physical therapy.		**E**
b. Occupational therapy.		**E**
c. Speech therapy.		**E**
d. Social Services.		**E**

G. PERFORMANCE IMPROVEMENT		
1. Track Record:		**E**

Advanced (Level III) Essential Criteria	Guidance	
On Initial Designation: a facility must have completed at least six months of audits on all qualifying trauma records with evidence of "loop closure" on identified issues. Compliance with internal trauma policies must be evident. On Re-designation: a facility must show continuous PI activities throughout its designation and a rolling current three year period must be available for review at all times.		
2. Minimum inclusion criteria: All trauma team activations (including those discharged from the ED), all trauma deaths or dead on arrivals (DOAs), all major and severe trauma admissions for greater than 23 hours; transfers-in and transfers-out; and readmissions within 48 hours after discharge.	*These patients, at a minimum, shall be evaluated through the trauma PI program.*	**E**
3. An organized trauma PI program established by the hospital, to include a pediatric-specific component and trauma audit filters (see "Advanced Trauma Facility Audit Filters" list.)	*This function may be integrated into the hospital's infrastructure. The Trauma Medical Director's active involvement in the PI program shall be evident*	**E**
a. Audit of trauma charts for appropriateness and quality of care.	*Charts shall be audited to assure quality of care and/or deviations from standards of care that may or may not be addressed by audit filters. All issues identified in the audit process shall be addressed through the trauma PI program. Charts shall also be reviewed to assure effective use of resources and appropriate referral of potential organ/tissue donors.*	**E**
b. Documented evidence of identification of all deviations from trauma standards of care, with in-depth critical review.		**E**
c. Documentation of actions taken to address all identified issues.		**E**
d. Documented evidence of participation by the TMD.		**E**
e. Morbidity and mortality review including decisions by the TMD as to whether or not standard of care was met.		**E**
f. Documented resolutions "loop closure" of all identified issues to prevent future recurrences.		**E**
g. Special audit for all trauma deaths and other specified cases, including complications, utilizing age-specific criteria.	*The medical records of all trauma deaths and other identified cases shall be critically reviewed, in depth; to assure that appropriate, complete care was delivered according to identified standards of care*	**E**

Advanced (Level III) Essential Criteria	Guidance	
h. Multidisciplinary hospital trauma PI committee structure in place.		**E**
4 Multidisciplinary trauma conference for PI activities, continuing education and problem solving to include documented nurse and pre-hospital participation.		**E**
a. Regular periodic multidisciplinary trauma conferences that include all members of the trauma team should be held. This conference shall be for the purpose of PI through critiques of individual cases.		**E**
b. Feedback regarding trauma patient transfers-in from EDs and in-patient units shall be provided to all transferring facilities.		**E**
c. Trauma registry- data shall be forwarded to the state trauma registry on at least a quarterly basis.	*Establish and implement criteria for inclusion of trauma cases into the trauma registry. The hospital shall collect data in a facility and/or regional trauma registry, including the components of the "Texas Hospital Standard Data Set". The data included in the "Texas Hospital Standard Data Set" shall be forwarded to the state trauma registry on at least a quarterly basis. Monthly submissions of data to the trauma registry are recommended. (See Standard 19) Minimum criteria are defined by the State EMS/Trauma Registry as all patients with at least one injury ICD-9 diagnosis code between 800.00 and 959.9, including 940 - 949(burns), excluding 905 - 909 (late effects of injuries), 910 - 924 (blisters, contusions, abrasions, and insect bites), 930 - 939 (foreign bodies), AND who were admitted OR who died after receiving any evaluation or treatment or who died after receiving any evaluation or treatment or were dead on arrival OR who transferred into or out of the hospital.*	**E**
d. Documentation of severity of injury (by Glasgow Coma Scale, revised trauma score, age, injury severity score) and outcome (survival, length of stay, ICU length of stay) with monthly review of statistics.		**E**
e. Participation with the regional advisory council's PI program, including adherence to regional protocols, review of pre-hospital trauma care, submitting data to the RAC as requested including such things as summaries of transfer denials and transfers to hospitals outside of the RAC.		**E**

Advanced (Level III) Essential Criteria	Guidance	
f. Times of and reasons for diversion must be documented and reviewed by the trauma PI program.	*A Level III Trauma Facility is available to provide resuscitation, stabilization, and assessment of injury victims and either provides treatment or arranges for appropriate transfer to a higher level designated trauma facility 24 hours per day/seven days a week. Diversion of such patients to other facilities should be made rarely and only when resources are not available in the emergency department to stabilize and transfer these patients. All denials of trauma transfers in as well as request for trauma diversion/bypass shall be reviewed in the trauma PI program. Reasons for trauma diversion shall be identified in policy format and closely monitored in the trauma PI program.*	**E**
g. Published on-call schedule must be maintained for general surgeons and neurosurgeons, orthopaedics surgeons, anesthesia, radiology, and other major specialists if available.	*Compliance with on-call coverage for essential services shall be monitored in the trauma PI process.*	**E**
h. Performance improvement personnel – dedicated to and specific for the trauma program.	*Staff dedication to this position should be volume dependent and ensure the maintenance of concurrent review.*	**E**

I. REGIONAL TRAUMA SYSTEM Must participate in the regional trauma system per RAC requirements.		**E**

TRANSFERS		
1. A process to expedite the transfer of applicable major and severe trauma patients to include such things as written protocols, written transfer agreements, and a regional trauma system transfer plan for patients needing higher level of care of specialty services.	*Written agreements between hospital help to ensure the consistent and efficient movement of patients into and out of the facility, allow for review of the structure of the transfer process with the goal of performance improvement, and results in mutual educational benefit for both institutions. The value of these agreements is to design a process prior to its necessity that allows the injured patient to receive the specialty care needed rapidly. Written transfer agreements with all facilities to whom patients are transferred and from whom patients are received, signed by both parties, are preferred. Verbal agreements with these facilities will fulfill the criteria. It is the expectation that a Level III facility is available 24/7 to accept injured patients into the facility from lower levels of care (depending on capability and capacity).*	**E**
2. A system for establishing an appropriate landing zone in close proximity to the hospital (if rotor wing services are available.)		**E**

J. OUTREACH PROGRAM		
1. Provide education to and consultations with physicians of the community and outlying areas.	*A protocol that provides telephone and on-site communication with physicians of the community and outlying areas for consultation on issues regarding care and treatment of trauma patients.*	**E**
2. A defined individual to coordinate the facility's community outreach programs for the public and professionals is evident.	*Hospital staff shall participate in activities, which provide education and information to the public in relation to trauma.*	**E**

Advanced (Level III) Essential Criteria	Guidance	

K. PUBLIC EDUCATION/INJURY PREVENTION		
1. A public education program to address the major injury problems within the hospital's service area. Documented participation in a RAC injury prevention program is acceptable.	*The hospital shall be participating in activities, which provide education and information to the public in relation to trauma. CPR classes, babysitter classes, bicycle helmet or safety restraint awareness and/or education and presentations on trauma system development and the Regional Advisory Council (RAC. are a few examples of acceptable activities Participation in RAC sponsored activities may fulfill the criteria. Representatives of the hospital shall be attending the Regional Advisory Council (RAC. Meetings of their Trauma Service Area. They should also be participating in RAC committees, as appropriate, to assist in the development of the regional trauma system and regional trauma system plan.*	**E**
2. Coordination and/or participation in community/RAC injury prevention activities.		**E**

L. TRAINING PROGRAMS	*Educational opportunities should be made available to all levels of staff (i.e. physicians, nurses, allied health professionals) by the hospital, based on needs identified in the trauma PI program.*	
1. Formal programs in trauma continuing education provided by hospital for staff based on needs identified from the performance improvement program for: a. Staff physicians b. Nurses c. Allied health personnel, including mid-level providers such as physician assistants and nurse practitioners d. Community physicians e. Pre-hospital personnel	*Both internal and external programs meet the intent of this criterion.*	**E**

M. RESEARCH		
Trauma registry performance improvement activities	*Trauma patient statistics shall be incorporated into the PI process through collecting of data and documentation of severity of injury (by revised trauma score, age, injury severity score) and outcome (survival, length of stay, ICU length of stay).* .	**E**