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**2012 Standards for Trauma Center Accreditation**

Adult Levels I, II, III

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**Effective Date: October 1, 2012**

## PREFACE

In 1985 Pennsylvania became the eighth state in the country to develop a trauma system through legislation which created The Pennsylvania Trauma Systems Foundation (PTSF). As a nonprofit organization, PTSF serves to accredit hospitals to be trauma centers on a voluntary basis.

During 2011, a small workgroup formed under the auspices of the Rural Trauma Committee and composed of several physicians and nurses met monthly to propose revisions to 2011 Standards for Trauma Center Accreditation. Proposed revisions maintained the legislative mandate that the Pennsylvania standards be based at a minimum on criteria established by the American College of Surgeons, Committee on Trauma (ACS-COT).

Thanks are extended to Daniel Palermo, MD; Simon Lampard, MD; David Scaff, DO; Terri Heller-Wescott, RN; Sarah Mattocks, RN; Heidi Boitnott, RN and Denise Gdula, RN. Although many of the revisions reflect changes to the Level III and Level IV Standards, some of the proposed changes apply to all levels of accreditation.

The continuing focus of the Standards is the provision of optimal clinical care provided to the trauma patient by physicians, nurses and all allied healthcare professionals throughout the continuum of care. This is exemplified through commitment, capacity and ability, and constant vigilance to performance improvement activities.

Changes in the 2012 revisions include:

- 1) Standard V (B) Clarification in the functions of the Trauma Program Medical Director
- 2) Standard X (B) (1) Clarification of the credentialing of nurses in trauma units for a new trauma center
- 3) Standard XIX (C) (2) Clarification of the requirements for Radiologist
- 4) Standard XX (C) Clarification of the requirement for internal defibrillator paddles for Level III Trauma Centers
- 5) Standard XXXII Clarification for the requirements for Spiritual Counseling/Pastoral Care
- 6) Standard XXXIII (D) Additional requirements for a Trauma Performance Improvement and Patient Safety Plan
- 7) Standard XXXVI (D) and (E) Clarification for the Rehabilitative Services for a Level III Trauma Center
- 8) Glossary – Definitions for Core Panel, Research and Transfer Guidelines
- 9) Appendix A: Revisions in the General Guidelines and the Mandatory Transfer Criteria

Specifics regarding any of these revisions can be obtained by contacting the Pennsylvania Trauma Systems Foundation.

Individuals who acquire this document with the intention of becoming a trauma center in the Commonwealth must recognize that criteria specific to the accreditation level being sought must be met prior to making application. For information on becoming a trauma center, please contact the Pennsylvania Trauma Systems Foundation at (717) 697-5512. Information is also available on our website at [www.ptsf.org](http://www.ptsf.org) and [www.ptsf.org/become\\_a\\_trauma\\_center](http://www.ptsf.org/become_a_trauma_center).

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## General Standards

Level I      Level II      Level III

### Standard I—Commitment

A.	There will be demonstrated both personal and institutional commitment by the institution's Board of Director's, administration, medical staff and nursing staff to treat any trauma patient presented to the institution for care.	E	E	E
B.	Methods of demonstrating the commitment to the trauma center/system will include, but not be limited to:			
1.	A Board and Medical Staff resolution that the institution agrees to meet the Pennsylvania Trauma Systems Foundation Standards for Trauma Center Accreditation. This must be reaffirmed every three years.	E	E	E
2.	Participation in operations and integration of a statewide system; submission of patient care data to the Pennsylvania Trauma Systems Foundation for systems management, performance improvement and patient safety and operations research.	E	E	E
3.	Established policies and procedures for the maintenance of the services essential to a trauma center/system as outlined in the Standards for Trauma Center Accreditation.	E	E	E
4.	Assurance that all trauma patients will receive medical care commensurate with the level of the Institution's accreditation.	E	E	E
5.	Commitment of the Institution's financial, human, and physical resources as needed for the trauma program.	E	E	E
6.	Established priority admission for the trauma patient to the full services of the institution. This will include adequate resuscitation facilities and personnel, operating room availability, and intensive care unit availability. Regional Resource and Regional Trauma Centers must assume the responsibility for insuring prompt access for all patients requiring trauma care.	E	E	E
7.	Established and maintained formal written transfer agreements and protocols with other accredited/designated adult and pediatric trauma centers. Established procedures to document and review all transfers to these institutions. All agreements must be reviewed internally at least every three years and updated as required by the terms of the agreements.	E	E	E
8.	Emergency department availability for stabilization and transfer of trauma patients maintained on a continuous 24-hour basis. When the trauma center is unable to provide care, a log of closure or bypass date, time, duration, and cause will be maintained. This information must be reported to the Foundation on an annual basis. The maximum amount of time that a trauma center can be on diversion is 5% or 438 hours per year. The institution must notify the local Public Safety Access Point (PSAP)/911 Center when the institution goes on diversion and when the institution comes off of diversion.	E	E	E
9.	There will be a formal consultation process, identified by the institution, to ensure appropriate twenty-four hour telephone consultation. This process must provide access to the appropriate physician, subspecialty, or allied health professional; and assist with clinical triage and/or patient transfer when necessary.	E	E	D
C.	All accredited trauma centers will support and fully participate in the Pennsylvania Trauma Outcome Study (PTOS) as specified by the Pennsylvania Trauma Systems Foundation. ( <i>References: Standard XV, PTOS Operational Manual</i> )	E	E	E
D.	The institution must be licensed by the Pennsylvania Department of Health.	E	E	E
E.	The institution must be accredited by the Joint Commission on Accreditation of Healthcare Organizations or a recognized state or nationally based accrediting agency for acute care hospitals.	E	E	E

E—Essential  
D—Desired

## General Standards

Level I      Level II      Level III

### Standard II—Capacity & Ability

The Foundation recognizes that experience and cost effectiveness are integral to the efficient establishment of a trauma center/system and that these factors directly relate to the demonstrated capacity and ability to care for major uni-system and multi-system injuries.

A.	There will be demonstrated capacity and ability to care for both major uni-system trauma (such as head trauma) and multi-system trauma for Level I and II Trauma Centers. This must include adequate surgical and intensive care unit capabilities so as not to disrupt other key functions of the institution.	E	E	—
1.	There will be demonstrated capacity and ability to provide adequate surgical and intensive care capabilities that do not disrupt other key functions of the Institution for: • Uni-system trauma patients exclusive of head injury. (See appendix A) • Multi-system trauma patients—stabilize and transfer. (See appendix A)	—	—	E
B.	The institution will develop formal written protocols with neighboring trauma centers to accept patients when bypass is mandatory.	E	E	E
C.	The institution will develop agreements with EMS agencies to assure continuous availability of transportation for unstable trauma patients requiring transfer to a higher-level trauma center.	—	—	E
D.	All institutions which receive pediatric trauma patients must provide, at a minimum, resuscitation and stabilization capabilities for the pediatric trauma patient and, if further resources are available, appropriate surgical management and intensive care unit capabilities.	E	E	E
1.	Formal transfer agreements and protocols must be developed with Level I and Level II Pediatric Trauma Centers for those pediatric trauma patients requiring facilities and/or personnel resources beyond those available at the trauma center.	E	E	E
2.	The institution will assess its pediatric capabilities and establish appropriate guidelines for the transfer of severely injured children to accredited/designated pediatric trauma centers.	E	E	E
E.	Upon re-accreditation, a minimum number of major uni-system/multi-system injury cases will have been treated:			
1.	Level I—600 PTOS qualified patients per year.	E	—	—
2.	Level II—350 PTOS qualified patients per year.	—	E	—
F.	Evidence that the institution has been operating a trauma program that provides:			
1.	The individual trauma surgeon with 50 managed major trauma cases per year OR 35 cases with an ISS of 16 or greater per year in order to maintain skills and proficiency in the care of trauma patients.	E	E	—

Management may include resuscitation and post-resuscitation of a patient, which may include surgery, comprehensive critical care, daily ward care, and discharge planning. Methods of demonstrating this will be a listing and dates of participation of the individual surgeons participating in the General and/or Pediatric Surgical Trauma Call Roster. This listing will also include the number and descriptions of the major uni-system and multi-system trauma patients by fiscal/calendar year and trauma surgeon.

G.	The institution must participate in disaster related activities.	E	E	E
1.	A trauma surgeon must be on the hospital's disaster planning committee.	E	E	E
2.	Hospital drills that test the individual hospital's disaster plan must be conducted at least every 6 months.	E	E	E

**E—Essential**  
**D—Desired**

**General Standards**

Level I      Level II      Level III

**Standard III—Helipad**

- |    |  |   |   |   |
|----|--|---|---|---|
| A. | There will be a lighted helipad in close proximity to the institution’s emergency department. Location of the helipad will permit the trauma resuscitation team to meet the patient and provide direct transfer by gurney to the resuscitation unit. The Commonwealth of Pennsylvania must license the helipad and the Federal Aviation Administration, Eastern Region, must approve the air space. No intermediary vehicles should be employed. | E | E | — |
|----|--|---|---|---|

**NOTE:** *Level III Trauma Centers must have access to a lighted, licensed helipad within one mile of the emergency department with emergency vehicles readily available to provide proper transport.*

- |    |   |   |   |   |
|----|---|---|---|---|
| B. | The Golden Hour for the patient begins at the time of injury, not at the time pre-hospital care is initiated. Therefore, the institution must clearly document that the transport system available from the helipad and/or the ambulance entrance to the institution’s resuscitation room does not adversely affect the timely intervention of definitive care. Methods of providing this information will include: | E | E | E |
| 1. | A diagram of the ground and air transport systems including the distance from the point of origin, i.e., helipad and/or ambulance entrance, to the trauma resuscitation rooms.  | E | E | E |
| 2. | Policies and procedures of the transport and transfer system for patients arriving via the air transport system.  | E | E | E |
| 3. | Listing of the air transport systems used and staff qualifications, consistent with the scope of care delivered.  | E | E | E |

The Pennsylvania Trauma Systems Foundation will individually review significant variations from this standard. The Foundation will critically review capability for continuity of patient life support and safety during transfer. It has been well established that early access to definitive care is essential for determining the final outcome of the severely injured patient.

**E—Essential**  
**D—Desired**

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**General Standards**

Level I      Level II      Level III

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**Standard IV—General Surgery Residency Program**

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<p>There will be a fully accredited hospital residency program in general surgery.</p>	E	D	—
<p>A. If there is a general surgery residency program, there will be educational programs within the surgical residency specifically designed to prepare surgeons to be proficient in the delivery of a high level of trauma care.</p>	E	E	—

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard V—Trauma Program Medical Director

<p>A. The Trauma Program Medical Director will have demonstrated special competence in trauma care and be certified by the American Board of Surgery or the American Board of Osteopathic Surgery.</p>	E	E	E
<p>B. The Trauma Program Medical Director, in conjunction with the hospital’s medical governing board or body, and in collaboration with the Trauma Program Coordinator will have the oversight authority for all trauma patients and administrative authority and responsibility for the trauma program to affect all aspects of trauma care including:</p> <ol style="list-style-type: none"> <li>1. Recommending or removing trauma team privileges.</li> <li>2. Cooperating with nursing administration to support the nursing needs of the trauma program.</li> <li>3. Developing treatment protocols.</li> <li>4. Coordinating the performance improvement and patient safety peer-review process.</li> <li>5. Correcting deficiencies in the trauma care or excluding from trauma call those trauma team members who do not meet criteria.</li> <li>6. Participating in the budgetary process for the trauma program.</li> </ol>	E	E	E
<p>C. The Trauma Program Medical Director, working in conjunction with the chiefs of clinical services, will identify representatives from neurosurgery, orthopedic surgery, emergency medicine, radiology, anesthesia, rehabilitation, and other appropriate disciplines who will participate in the trauma performance improvement and patient safety program and work with the Trauma Program Medical Director to identify physicians from their disciplines who are qualified to be members of the trauma team and will participate in the trauma performance improvement and patient safety program.</p>	E	E	E
<p><b>NOTE:</b> For Level III Trauma Centers, representatives from Neurosurgery are not required to participate in the trauma performance improvement and patient safety program.</p>			
<p>D. Fundamental to the establishment and organization of an institution's trauma program is the recognition that the individual identified as accountable for the operation of this program must be qualified to serve in this capacity. These indicators will be present:</p> <ol style="list-style-type: none"> <li>1. Evidence of qualifications including educational preparation, fellowships, Board certification, and experience.</li> <li>2. A job description and organizational chart depicting the relationship between the Trauma Program Medical Director, hospital governance, administration, and other services.</li> <li>3. Selection process as defined by the institution's medical staff bylaws or rules and regulations.</li> <li>4. Attendance and participation in local, state, and national trauma related activities.</li> <li>5. Participation in trauma educational activities such as the Advanced Trauma Life Support (ATLS) course; teaching at undergraduate, graduate, and postgraduate levels; and training programs within the Department of Surgery.</li> <li>6. Participation in trauma research and publication efforts.</li> <li>7. Credentialed in neurotrauma and orthopedic resuscitation.</li> </ol>	E	E	E
<p><b>NOTE:</b> Neurosurgical capability is not required in a Level III center so neurotrauma credentialing is NOT needed.</p>			
<ol style="list-style-type: none"> <li>8. Evidence of active participation in the resuscitation and/or surgery of multi-system trauma patients.</li> </ol>	E	E	E

**E—Essential**  
**D—Desired**



## General Standards

Level I

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### Standard VI—Physician Credentials, Certifications & Continuing Medical Education

A. Credentialing

- |   |   |   |   |
|---|---|---|---|
| 1. The institution will credential each physician for the appropriate specialty, including trauma care.   | E | E | E |
| 2. When residents are fulfilling standards requirements, they must be fully qualified by the institution, in conjunction with the trauma program, for trauma care by the appropriate specialty. | E | E | E |

B. Delineation/Reevaluation of Privileges

- |  |   |   |   |
|--|---|---|---|
| 1. Trauma call will be limited to those with demonstrated skills, commitment, and experience. Surgical privileges do not necessarily qualify a surgeon to care for or consult on the care of the severely injured. The Trauma Program Medical Director, in conjunction with the hospital’s medical governing board or body, and in association with the liaison/representative from neurosurgery, orthopedic surgery, emergency medicine, radiology, anesthesia, and rehabilitation will utilize the trauma performance improvement and patient safety program to determine each individual attending physician ability to participate on the trauma team. This will be based on a review of each individual attending physician performance in the trauma program. At a minimum, this will occur at least once per site survey cycle. | E | E | E |
|--|---|---|---|

**NOTE:** For Level III Trauma Centers, in this forum neurosurgery is not required.

- |   |   |   |   |
|---|---|---|---|
| 2. Reappointment to the trauma admitting/ consulting staff must be coordinated by the Trauma Program Medical Director in association with the liaison/representative from neurosurgery, orthopedic surgery, emergency medicine, radiology, anesthesia, and rehabilitation and other appropriate disciplines who will work with the Trauma Program Medical Director and based on the following criteria: | E | E | E |
|---|---|---|---|

**NOTE:** For Level III Trauma Centers, in this forum neurosurgery is not required.

- |   |   |   |   |
|---|---|---|---|
| a. Maintenance of good standing in the primary specialty;   | E | E | E |
| b. Evidence of the required continuing medical education in trauma;   | E | E | E |
| c. Documentation of attendance at multidisciplinary conferences, morbidity/ mortality rounds, and/or institution peer-review conferences that deal with the care of injured patients; | E | E | E |
| d. Satisfactory performance in managing trauma patients based on performance assessment and outcome analysis.   | E | E | E |

C. Certifications

- |  |   |   |   |
|--|---|---|---|
| 1. All certifications must be maintained on a continuous basis.  | E | E | E |
| 2. Board Certification: All physicians listed who care for trauma patients will be Board Certified by the appropriate specialty board recognized by the American Board of Medical Specialties, the Bureau of Osteopathic Specialists and Boards of Certification or the Royal College of Physician and Surgeons of Canada. If an individual has not been certified within 5 years after successful completion of an ACGME or Canadian residency, that individual is unacceptable for inclusion on the trauma team until Board Certification is achieved or the PTSF Board of Directors has approved an Alternate Pathway request. (See Glossary for international board certification alternatives.) | E | E | E |
| a. Surgical Specialties  |   |   |   |
| 1. Cardiac Surgery   | E | E | E |

**E—Essential**  
**D—Desired**

<b>General Standards</b>		<u>Level I</u>	<u>Level II</u>	<u>Level III</u>
<b>Standard VI—Physician Credentials, Certifications &amp; Continuing Medical Education</b>				
2.	General Surgery	E	E	E
3.	Neurological Surgery	E	E	E
4.	Obstetric and Gynecologic Surgery	E	E	E
5.	Ophthalmic Surgery	E	E	E
6.	Oral/Maxillofacial Surgery	E	E	E
7.	Orthopedic Surgery	E	E	E
8.	Otorhinolaryngological Surgery	E	E	E
9.	Plastic Surgery	E	E	E
10.	Thoracic Surgery	E	E	E
11.	Urological Surgery	E	E	E
b.	Non-Surgical Specialties			
1.	Anesthesiology	E	E	E
2.	Cardiology	E	E	E
3.	Emergency Medicine	E	E	E
4.	Family Medicine	E	E	E
5.	Gastroenterology	E	E	E
6.	Hematology	E	E	E
7.	Infectious Diseases	E	E	E
8.	Internal Medicine	E	E	E
9.	Nephrology	E	E	E
10.	Neurology	E	E	E
11.	Pathology	E	E	E
12.	Pediatrics	E	E	E
13.	Physiatry	E	E	E
14.	Psychiatry	E	E	E
15.	Pulmonary Medicine	E	E	E
16.	Radiology	E	E	E
3.	Advanced Trauma Life Support (ATLS) Certification			
a.	All members of the General Surgical Trauma Call Roster must maintain at least provider ATLS certification.	E	E	E
b.	The Trauma Program Medical Director must maintain ATLS instructor status.	E	E	D

**E—Essential**  
**D—Desired**

## General Standards

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### Standard VI—Physician Credentials, Certifications & Continuing Medical Education

c.	All emergency department physicians who are board certified in emergency medicine must successfully complete the provider ATLS certification prior to participation on the trauma call roster.	E	E	E
1.	All emergency department physicians who are not board certified in emergency medicine must maintain at least provider ATLS certification.	E	E	E
2.	All emergency department physicians who have been granted board certification in emergency medicine (grandfather clause) must successfully complete the provider ATLS certification prior to participation on the trauma call roster.	E	E	E
d.	First responders to the Intensive Care Unit must maintain at least provider ATLS certification. (See glossary for first responder definition.)	E	E	E
4.	Advanced Cardiac Life Support (ACLS): First responders to the Intensive Care Unit must continuously maintain ACLS provider status with renewal every two years. PALS provider status is acceptable for a pediatric ICU. First responders to the Intensive Care Unit who are Board Certified and hold a Certificate in Critical Care (Surgery, Anesthesiology, Internal Medicine, and Pediatrics) are not required to maintain ACLS/PALS provider status.	E	E	E
5.	Pediatric Advanced Life Support: Emergency department physicians participating in pediatric trauma who are not Board Certified in Emergency Medicine or active candidates for Emergency Medicine Board Certification must continuously maintain at least PALS provider status with renewal every two years.	E	E	E
D.	Continuing Medical Education (CME)			
1.	CME credits obtained by completion of the ATLS course will be counted toward meeting the yearly CME requirement. A maximum of ten CME hours as an ATLS instructor may be counted every three years toward the total.	E	E	E
2.	Four (4) CME credits may be obtained after successful completion of board certification and/or board re-certification. The four (4) CME credits will be counted in the same year that the board certification and/or board re-certification occurred.	E	E	E
3.	General surgeons taking trauma call must have evidence of being current in the care of the injured patient. <ul style="list-style-type: none"> <li>▪ Acquisition of 16 hours of trauma related CME (8 hours for a Level III) per year or 48 hours (24 in a Level III) in 3-years. <b>OR</b></li> <li>▪ By demonstrating participation in an internal educational process conducted by the trauma program based on the principles of practice based learning and the performance improvement and patient safety program</li> </ul>	E	E	E
4.	The Trauma Program Medical Director must have evidence of trauma-related external CME of 16 hours annually, or 48 hours in 3-years. Two of those hours (6 over three years) must be pediatric trauma related. <ul style="list-style-type: none"> <li>▪ For Level III Centers the Trauma Program Medical Director must have evidence of trauma-related external CME of 8 hours annually, or 24 hours in 3-years, Two of those hours, (6 over three years) must be pediatric trauma related.</li> </ul>	E	E	E
5.	Emergency Medicine <ul style="list-style-type: none"> <li>▪ The Liaison representative from emergency medicine must have evidence of trauma-related external CME of 16 hours annually (8 hours for a Level III) or 48 hours (24 in a Level III) in 3-years.</li> <li>▪ Other emergency medicine physicians who participate on the trauma team also must be knowledgeable and current in the care of injured patients. This may be met by: <ul style="list-style-type: none"> <li>○ Documenting acquisition of 16 hours of trauma related (8 hrs. for Level III) CME per year <b>OR</b>,</li> <li>○ By demonstrating participation in an internal educational process conducted by the trauma program based on principles of practice based learning and the PIPS program</li> </ul> </li> </ul>	E	E	E

**E—Essential**  
**D—Desired**

## General Standards

Level I

Level II

Level III

### Standard VI—Physician Credentials, Certifications & Continuing Medical Education

	<u>Level I</u>	<u>Level II</u>	<u>Level III</u>
6. Neurosurgery	E	E	—
<ul style="list-style-type: none"> <li>▪ The Liaison representative from neurosurgery must have evidence of trauma-related external CME of 16 hours annually or 48 hours of trauma-related external CME in 3-years.</li> <li>▪ Other neurosurgeons who participate on the trauma team also must be knowledgeable and current in the care of injured patients. This may be met by:               <ul style="list-style-type: none"> <li>○ Documenting acquisition of 16 hours of trauma related CME per year <b>OR</b>,</li> <li>○ By demonstrating participation in an internal educational process conducted by the trauma program based on principles of practice based learning and the PIPS program</li> </ul> </li> </ul>			
7. Orthopedic Surgeons	E	E	E
<ul style="list-style-type: none"> <li>▪ The Liaison representative from Orthopedic Surgery must have evidence of trauma-related external CME of 16 hours annually (8 for Level III centers) or 48 hours in 3-years (24 for Level III centers).</li> <li>▪ Other Orthopedic Surgeons who participate on the trauma team also must be knowledgeable and current in the care of injured patients. This may be met by:               <ul style="list-style-type: none"> <li>○ Documenting acquisition of 16 hours of trauma related CME per year (8 for Level III centers) or,</li> <li>○ By demonstrating participation in an internal educational process conducted by the trauma program based on principles of practice based learning and the PIPS program.</li> </ul> </li> </ul>			
8. Visiting professors and invited speakers may be considered in fulfilling the external CME requirements. Visiting professors and invited speakers are defined as: person(s) who are recognized for their expertise in a trauma related area by virtue of their publications, research, or membership on national, professional, or governmental committees. The program could be presented in general trauma or sub-specialty trauma surgery, critical care medicine, surgical infection, or other trauma related topics.	E	E	E
9. The Trauma Program Medical Director is responsible for determining, validating, and recording which visiting professor(s) and invited speaker(s) are acceptable in fulfilling external CME requirements.	E	E	E
10. The program content as well as proof of the CME credits awarded must be available at the time of site survey.	E	E	E
11. The following indicates the total number of external CME credits that can be fulfilled by visiting professor(s) and/or invited speaker(s), and/or teleconferencing, and/or the Internet per year:			
a. Trauma Program Medical Director	E	E	E
<ul style="list-style-type: none"> <li>▪ 6 CME per year/18 CME per three years for Level I &amp; II and 3 CME per year /9 CME per three years for Level III</li> </ul>			
b. General Surgeons	E	E	E
<ul style="list-style-type: none"> <li>▪ 4 CME per year/12 CME per three years for Level I &amp; II and 2 CME per year /4 per three years for Level III</li> </ul>			
c. Emergency Medicine	E	E	E
<ul style="list-style-type: none"> <li>▪ 4 CME per year/12 CME per three years for Level I &amp; II and 2 CME per year /4 per three years for Level III</li> </ul>			
d. Orthopedic Surgeons	E	E	E
<ul style="list-style-type: none"> <li>▪ 4 CME per year/12 CME per three years for Level I &amp; II and 2 CME per year /4 per three years for Level III</li> </ul>			

**E—Essential**  
**D—Desired**

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**General Standards**

Level I

Level II

Level III

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**Standard VI—Physician Credentials, Certifications & Continuing Medical Education**

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<ul style="list-style-type: none"> <li>e. Neurosurgeons           <ul style="list-style-type: none"> <li>▪ 4 CME per year/12 CME per three years for Level I &amp; II</li> </ul> </li> </ul>	E	E	—
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E—Essential  
 D—Desired

**General Standards**

Level I      Level II      Level III

**Standard VII—Advanced Practitioners**

<p>A. Advanced Practitioners may, under the direction of a physician have a defined role in trauma patient care. The extent of the involvement must be determined by the Trauma Program Medical Director in compliance with Pennsylvania law and hospital policy, and be consistent with the Pennsylvania Trauma Systems Foundation Standards for Trauma Center Accreditation. This must include a formal, institution specific orientation to the trauma program.</p>	E	E	E
<p>B. All Advanced Practitioners who have a defined role in trauma patient care must be knowledgeable and current in the care of injured patients. This may be met by:</p> <ul style="list-style-type: none"> <li>▪ Documenting acquisition of 12 hours (6 for a Level III center) of trauma related CME/CEU per year <b>OR</b>,</li> <li>▪ By demonstrating participation in an internal educational process conducted by the trauma program based on principles of practice based learning and the PIPS program.</li> </ul> <p style="margin-left: 40px;">1. For Advanced Practitioners who are involved in the resuscitation phase of trauma care, the completion of ATLS every four years is required as a portion of the credentialing process for the trauma program.</p> <p style="margin-left: 40px;">Note: CME/CEU credits for ATLS will be counted toward meeting the yearly CME/CEU requirement.</p>	E	E	E
<p>C. There must be evidence of ongoing trauma skills proficiency and trauma clinical competence. It is the responsibility of the institution to measure skills proficiency in an ongoing manner deemed most appropriate for the institution. This can be accomplished through such mechanisms as annual reviews and performance evaluations.</p>	E	E	E
<p>D. All Advanced Practitioners who have a defined role in trauma patient care must participate in the trauma performance improvement and patient safety program as defined by the Trauma Program.</p>	E	E	E

**NOTE:** CME language was changed to CEU in January 2010. CEUs will be required in 2011.

**General Standards**

**Standard VIII—Trauma Program Coordinator/Manager**

A.	There will be a Trauma Program Coordinator/Manager who is a registered nurse and is responsible for monitoring, promoting and evaluating all trauma-related activities associated with the trauma program in cooperation and conjunction with the Trauma Program Medical Director. This must be a full time (1 FTE) position.	E	E	E
<i>NOTE: The date of implementation for the full time Trauma Coordinator/Manager position for a Level III trauma center is January 1, 2011.</i>				
B.	The institution's organization must define the structural role of the Trauma Program Coordinator/Manager to include responsibility, accountability, and authority.	E	E	E
C.	These indicators will be present:			
1.	Evidence of qualifications including educational preparation, certification, and clinical experience.	E	E	E
2.	A job description and organizational chart depicting the relationship between the Trauma Program Coordinator and other services, especially the Department of Nursing.	E	E	E
3.	A selection process defined by the institution's personnel policies.	E	E	E
4.	Attendance and/or participation in local, state, and national trauma-related activities.	E	E	E
5.	Participation in trauma educational activities external to the institution's staff development programs.	E	D	D
6.	Evidence of an effective working relationship with the Trauma Program Medical Director.	E	E	E
7.	Participation in multidisciplinary trauma research.	E	D	D

**E—Essential**  
**D—Desired**

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**General Standards**

Level I

Level II

Level III

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**Standard IX—Nursing Services**

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|----|--|---|---|---|
| A. | The Department of Nursing or designated representative of nursing care delivery for the institution will maintain a formal relationship with the trauma program.   | E | E | E |
| B. | The nursing trauma plan must include the ability to immediately mobilize qualified nursing resources from inpatient areas for initial multi-resuscitation efforts. | E | E | E |

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard X—Nursing Credentials, Certifications and Continuing Education

A.	Trauma Nurse Course is required. ( <i>Reference: Pennsylvania Trauma Nursing Core Curriculum, Appendix B</i> )	E	E	E
B. Credentialing				
1.	All registered nurses functioning in a department that routinely admits trauma patients will be credentialed by the institution in trauma nursing within one year of assignment to the department. Fifty percent of the registered nurses who were assigned to the department prior to trauma center accreditation must be credentialed in trauma nursing within one year of trauma center accreditation. Within two years of accreditation all nurses must be credentialed.	E	E	E
a.	Emergency Department	E	E	E
b.	Operating Room: All registered nurses who have the potential to provide care to trauma patients.	E	E	E
c.	Post-Anesthesia Care Unit: The hospital must document the number of times the PACU is used as an ICU for trauma patients. The institution must determine the need for PACU registered nurses to comply with the ICU trauma nurse course requirement.	E	E	E
d.	Intensive Care Units (ICU) for Trauma Patients	E	E	E
e.	Intermediate Care Step-Down Units for Trauma Patients	E	E	E
f.	Medical/Surgical Units which regularly receive trauma patients	E	E	E
g.	Burn Unit	E	E	E
2.	There must be evidence of ongoing skills proficiency, i.e., clinical competence. It is the responsibility of the institution to measure skills proficiency in an ongoing manner deemed most appropriate for the institution. This can be accomplished through such mechanisms as annual reviews and performance evaluations.	E	E	E
C. Certifications				
1.	Advanced Cardiac Life Support (ACLS): All registered nurses assigned to the following departments must successfully obtain and continuously maintain at least ACLS provider status within two years of assignment. Registered nurses who were assigned to the departments prior to trauma center accreditation must successfully obtain and continuously maintain at least ACLS provider status within two years of that accreditation. Nurses trained in Pediatric Advanced Life Support are required to be readily available to care for the pediatric trauma patient.	E	E	E
a.	Emergency Department	E	E	E
b.	Post-Anesthesia Care Unit: This requirement can be met if registered nurses assigned to this department successfully completed the cardiac component of the institution's own critical care course.	E	E	E
c.	Intensive Care Units for Trauma Patients	E	E	E
d.	Intermediate Care/Step-Down Units for Trauma Patients	E	E	E
e.	Burn Unit	E	E	E
2.	CEN Certification: At least 50% of the emergency department nursing staff employed in this department three years or more should be certified by the Emergency Nurses Association (ENA) within two years following provisional accreditation.	E	E	D
	The Flight Nursing Certification (CFRN) is acceptable for meeting this requirement for certification of registered nurses (flight nurses) who function in the emergency department.			

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard X—Nursing Credentials, Certifications and Continuing Education

3.	CCRN/CNRN Certification	E	E	D
a.	At least 50% of the ICU nursing staff employed in this department three years or more should be certified by AACN or AANN within two years following provisional accreditation.	E	E	D
b.	At least 50% of the Intermediate Care/Step-Down Unit nursing staff employed in this department three years or more should be certified by AACN or AANN within two years following provisional accreditation.			
c.	At least 50% of registered nurses employed in the burn unit three years or more should be certified by AACN within two years following provisional accreditation.	E	E	D
d.	Numbers 2, 3a, 3b and 3c of the Standard may also be met by successfully completing other trauma related courses including ATCN, ENPC, TNCC, and PHTLS within three years of employment.	E	E	D
D.	Continuing Education (CE)			
1.	All registered nurses must have evidence of continuing education or staff development every year. <ul style="list-style-type: none"> <li>▪ At least eight hours for Level I and Level II Centers.</li> <li>▪ At least four hours for Level III Centers.</li> </ul> Four of the yearly hours may be obtained by documented attendance at and participation in the Trauma Conference. In addition, ACLS, APLS, PALS, or ABLIS may be counted towards <u>four</u> of the yearly hours as follows: four hours for a 2-day provider course and two hours for a 1-day re-certification course.	E	E	E
a.	Emergency Department	E	E	E
b.	Operating Room	E	E	E
c.	Post-Anesthesia Care Unit	E	E	E
d.	Intensive Care Units for Trauma Patients	E	E	E
e.	Intermediate Care/Step-Down Units for Trauma Patients	E	E	E
f.	Medical/Surgical Units which regularly receive trauma patients	E	E	E
g.	Burn Unit	E	E	E
2.	Certified registered nurse anesthetists assigned to trauma patients must have evidence of 8 trauma-related contact hours (0.8 continuing education units) every year. The American Association of Nurse Anesthetists or any other recognized professional nursing or medical organization must approve the continuing education units.	E	E	E
3.	The Trauma Program Coordinator/Manager must have evidence of continuing education (CE) related to trauma care and the trauma system. Evidence of continuing education must include 8 hours of trauma-related continuing education every year for Level I and Level II Centers, 4 hours for Level III Centers. All hours must be received outside of the institution	E	E	E
a.	Six of the yearly CE hours must be accredited by a professional nursing organization that provides nursing continuing education credits, i.e., PNA, ENA, AACN, AANN, AORN, etc.	E	E	E
b.	Visiting professors and invited speakers may be considered in fulfilling the external CE requirements. Visiting professors and invited speakers are defined as: person(s) who are recognized for their expertise in a trauma related area by virtue of their publications, research, or membership on national, professional, or governmental committees. The program could be presented in trauma nursing, general trauma or sub-specialty trauma surgery, critical care medicine, surgical infection, or other trauma related topics.	E	E	E
1.	A total of 4 external CE credits can be fulfilled by visiting professor(s) and invited	E	E	E

**E—Essential**  
**D—Desired**

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**General Standards**

Level I      Level II      Level III

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**Standard X—Nursing Credentials, Certifications and Continuing Education**

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speaker(s) per year for Level I and Level II Centers; 2 external CE credits for Level III Centers.			
c. The Trauma Program Coordinator/Manager, in conjunction with the Trauma Program Medical Director, is responsible for determining, validating, and recording which visiting professor(s) and invited speaker(s) are acceptable in fulfilling CE requirements.	E	E	E
d. The program content as well as proof of the CE credits awarded must be available at the time of site survey.	E	E	E

**E—Essential**  
**D—Desired**

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**General Standards**

Level I      Level II      Level III

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**Standard XI (intentionally left blank\*)**

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\*Effective with the 2010 version of the Pennsylvania Trauma Systems Foundation “Standards for Trauma Center Accreditation,” Standard XI Certified Registered Nurse Practitioners was incorporated into Standard VII Physician Assistants—and renamed as: Advanced Practitioners. For consistency, the Standards were NOT re-numbered.

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**General Standards**

Level I      Level II      Level III

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**Standard XII—Post-Discharge Follow-Up**

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<p>The institution will document in the patient's medical record a post-discharge plan including the need for rehabilitative or other services, as appropriate, for the severity of the case. This is to include:</p>	E	E	E
<p>A. A copy of the discharge summary of trauma care will be sent to the patient's private physician where appropriate.</p>	E	E	E
<p>B. Evidence of appropriate social work intervention and involvement in post-discharge plan development.</p>	E	E	E

**E—Essential**  
**D—Desired**

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**General Standards**

Level I      Level II      Level III

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**Standard XIII—Trauma Prevention Programs/Public Education**

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<p>The institution will demonstrate a leadership role in trauma prevention programs. These trauma prevention programs need to be both internal and external to the institution and reflect the trauma trends identified through the institution's trauma registry and/or identified community needs. The programs can be presented collectively with other institutions and organizations.</p>	E	E	D
<p>A. The institution must demonstrate evidence of a job description and salary support for a prevention coordinator. In a level I or II center, the prevention coordinator must be a separate person from the trauma program manager. The Trauma Prevention Coordinator must directly report thru the Trauma Program administrative structure.</p>	E	E	—
<p>B. The institution must demonstrate collaboration with or participation in national, regional, state, or local injury prevention programs</p>	E	E	E

**E—Essential**  
**D—Desired**

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**General Standards**

Level I      Level II      Level III

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**Standard XIV—Emergency Medical Services Involvement**

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A.	The institution must be able to document active involvement in its regional Emergency Medical Services (EMS) system.	E	E	E
B.	Physicians, nurses, and administrative personnel will be involved in various EMS programs.	E	E	E
C.	The institution will demonstrate involvement in regional EMS programs by the following:			
1.	Participation in Emergency Medical Technician and/or Paramedic training programs, when appropriate. This may also include First Responder, Rescue, and Pre-hospital RN programs.	E	E	D
2.	Participation in jointly sponsored accredited continuing educational programs.	E	E	D
3.	Provision of opportunities for appropriate clinical experience.	E	E	D
4.	Participation in the EMS system performance improvement and patient safety mechanisms.	E	E	E
5.	Assistance in the development of regional policies and procedures.	E	E	D

**E—Essential**  
**D—Desired**

**General Standards**

Level I      Level II      Level III

**Standard XV—Trauma Registry**

A.	The institution will maintain a Trauma Registry.	E	E	E
B.	The trauma registry must include, at a minimum, all of the data elements included in the Pennsylvania Trauma Outcome Study (PTOS). ( <i>Reference: PTOS Operational Manual.</i> )	E	E	E
1.	Demographic Data	E	E	E
2.	Pre-hospital Data	E	E	E
3.	Process of Acute Care	E	E	E
4.	Clinical Data	E	E	E
5.	Outcome Data	E	E	E
6.	Final Anatomical Diagnoses	E	E	E
7.	Procedure Codes	E	E	E
8.	Payer Class	E	E	E
9.	Performance Improvement and Patient Safety Data	E	E	E
10.	Standard Report Utilization	E	E	E
C.	There will be evidence of regular and active interface with the trauma program. The registry must be responsive to the needs of the Trauma Program Medical Director and support the trauma program.	E	E	E
1.	The trauma registry/staff will maintain a formal relationship with the trauma program.	E	E	E
2.	There will be documentation of attendance of Trauma Registry Staff at multidisciplinary conferences and/or peer review conferences that deal with the review and analysis of trauma registry data.	E	E	E
D.	A clearly identified person will have the authority, responsibility, and accountability for directing and maintaining the trauma registry and its data submission to the Pennsylvania Trauma Systems Foundation in a timely manner.	E	E	E
1.	The trauma registry program will have a staffing plan. The plan must include a workload analysis that defines personnel needs necessary to comply with PTOS data submission requirements. Included in this plan is consideration of, at a minimum, one registry program FTE per 500 - 1000 trauma admissions per year OR one registry FTE per 500 PTOS submissions per year.	E	E	E
2.	The trauma registry at a minimum, 85% of cases must be entered within 42 days of discharge.	E	E	E
3.	There must be a plan for ensuring that the data entered into the trauma registry is accurate and reflect the observations made on the patient. This plan must also reflect compliance with PTOS Operations Manual and definitions for data entry.	E	E	E
4.	Data must be submitted to the National Trauma Data Bank	E	E	E
E.	The Trauma Registry staff will optimally have a core set of skill requirements including: anatomy and physiology, medical terminology, ICD-9-CM coding, computer competency, database management, and/or a degree in a health related field/allied profession. Job responsibilities of the trauma registrar will include but are not limited to the following components: database management, education, performance improvement and patient safety, technical skill, site survey participation, interface with outside agencies, committee work, and research.	E	E	E

**NOTE:** *The PTSF recognizes concurrent data abstraction as a best practice.*

**E—Essential**  
**D—Desired**

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**General Standards**

Level I      Level II      Level III

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**Standard XV—Trauma Registry**

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F.	The Trauma Registry staff must have evidence of continuing education related to the trauma registry. This requirement can be fulfilled by attendance at PTSF Registry Conferences.	E	E	E
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E—Essential  
D—Desired

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**General Standards**

Level I

Level II

Level III

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**Standard XVI—Organ & Tissue Donation**

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The institution will comply with Pennsylvania law regarding organ and tissue donation request, procurement, and documentation.

E

E

E

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XVII—Trauma Program

A.	The institution will establish within its organization a defined trauma program including a clinical service. The clinical service will be comprised of the trauma core panel and general surgeons who are taking trauma call.	E	E	E
1.	This concept embraces both administrative and physical attributes of individual trauma centers. By this means, successful functioning of the trauma program will be assured and its staffing and direction clearly defined.	E	E	E
2.	It is the responsibility of the Trauma Program Medical Director in collaboration with the Trauma Program Coordinator, and in association with the liaisons/ representatives from neurosurgery, orthopedic surgery, emergency medicine, radiology, anesthesia, and rehabilitation, and other appropriate disciplines to direct the trauma performance improvement and patient safety program and to integrate it into the institution's overall performance improvement program.	E	E	E
<b>NOTE:</b> <i>Level III trauma centers do not need Neurosurgical representation.</i>				
3.	The definitions of bed capacity, intensive care unit, operating room capability, and proximity to supporting services (surgical and non-surgical services, nursing services, radiology, laboratory, etc.) are vital features of the trauma program concept.	E	E	E
4.	The intent is to ensure the coordination of services and performance improvement and patient safety for the trauma patient.	E	E	E
B.	There will be evidence of strong communication links between the institution's administration, the Trauma Program Medical Director, and the Trauma Program Coordinator/Manager to coordinate both long and short-term goals of the trauma program.	E	E	E
C.	A protocol will be in place to ensure that:	E	E	E
1.	All adult and pediatric trauma patients who are admitted or transferred and have a severe and major multi-system injury are immediately evaluated stabilized and transferred appropriately.	E	E	E
2.	All adult and pediatric trauma patients who are admitted or transferred and have severe and major uni-system injury are immediately evaluated by the trauma service and admitted to the trauma service or an appropriate surgical service.	E	E	E
3.	All adult and pediatric trauma patients who are admitted or transferred and have a mechanism of injury suggestive of significant risk of serious injury are promptly evaluated by the trauma service.	E	E	E

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XVIII—Surgical Specialties Availability & Responsibility

A.	Published on-call and back-up schedules must be maintained for:			
1.	Trauma surgery must be dedicated to a single hospital when on call.	E	E	D
	NOTE: In Level III facilities even though general surgeons can take primary call at multiple locations the facility must still have evidence of a plan in place regarding how the hospital will handle a scenario whereby the surgeon is unavailable; published back-up call schedules however are not required.			
2.	Neurological surgery must be dedicated to one hospital or have a published back-up call schedule.	E	E	—
3.	Orthopedic surgery must be dedicated to one hospital or have a published back-up call schedule.	E	E	D
	NOTE: In Level III facilities even though orthopedic surgeons can take primary call at multiple locations the facility must still have evidence of a plan in place regarding how the hospital will handle a scenario whereby the surgeon is unavailable; published back-up call schedules however are not required.			
4.	If a published back-up call schedule is not utilized, the Trauma Performance Improvement and Patient Safety Program must be able to monitor compliance to ensure that there is no delay in treatment/clinical care.	E	E	E
5.	Published on call schedules must be maintained for all other surgical specialists (Reference Standard XVIII, D, 1-11).	E	E	D
B.	The attending surgeon’s participation in the major therapeutic decisions, presence in the emergency department for major resuscitations, and presence at operative procedures is mandatory. Compliance with these criteria and their appropriateness must be monitored by the hospital’s trauma performance improvement and patient safety program. The responsible attending surgeon or attending surgical specialist on call must be present in the operating room for major surgical procedures related to their specialty.	E	E	E
1.	For Level I and II centers, it is expected that the surgeon will be in the emergency department on patient arrival, with adequate notification from the field. The maximum acceptable response time is 15 minutes, tracked from patient arrival. The program must demonstrate that the surgeon’s presence is in compliance at least 80% of the time.	E	E	-
2.	For Level III centers, it is expected that the surgeon will be in the emergency department on patient arrival, with adequate notification from the field. The maximum acceptable response time is 30 minutes, tracked from patient arrival. The program must demonstrate that the surgeon’s presence is in compliance at least 80% of the time.	-	-	E
3.	The following criteria must be included in each institutions activation criteria for highest-level alerts. <sup>1</sup>	E	E	E
	a. Confirmed blood pressure <90 at any time in adults and age specific hypotension in children;			
	b. Gunshot wounds to the neck, chest, or abdomen;			
	c. GCS <8 with a mechanism related to trauma;			
	d. Transfer from other hospitals receiving blood to maintain vital signs;			
	e. Respiratory compromise/obstruction and /or intubation in a patient who was not transferred from another facility;			
	f. Emergency physician’s discretion.			
4.	The Core Trauma Surgeon Group must take at least 60% of the total trauma call hours each month. Must be defined by the Trauma Medical Director.	E	E	E
5.	Trauma Surgeons must be attending general surgeons, dedicated to one hospital when on call and back-up coverage must be promptly available.	E	E	D

<sup>1</sup> For centers whereby the highest-level activation is direct transport to the OR, the second highest activation would apply.

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XVIII—Surgical Specialties Availability & Responsibility

a.	This requirement may be fulfilled by senior residents in general surgery (PGY-4 or above). A PGY-4 or 5 surgical resident may be approved to begin resuscitation while awaiting the arrival of the attending surgeon, but cannot be considered as a replacement for the attending surgeon in the emergency department. They must be able to deliver surgical treatment immediately and to provide the control and leadership for the care of the trauma patient.	E	E	—
b.	General surgery residents, PGY-4 or above, must have completed at least three years of clinical, general surgery.	E	E	E
c.	For general surgical trauma operative procedures, the responsible attending trauma surgeon must be present in the operating room unless surgical staff specialists are performing the surgical procedures. The on-going resuscitation and management of the trauma patient while in the operating room, remains the responsibility of the surgical trauma team in collaboration with the anesthesia team.	E	E	E
1.	This requirement for the attending trauma surgeon's presence should not result in delay for initiating urgently needed operative procedures.	E	E	E
2.	The initial assessment and evaluation of the severely injured patient is the responsibility of the attending trauma surgeon. The emergency physician works closely with the attending trauma surgeon, and is a member of the trauma team. Each institution must define the role of the emergency physician on the trauma team. Performance of various diagnostic and resuscitative procedures may be shared, especially in training institutions. These responsibilities must be agreed upon and approved by the Trauma Program Medical Director. When the attending general surgeon is not immediately available, the attending emergency physician assumes control until the attending general surgeon arrives.	E	E	E
3.	It is expected that the institution will have available, to the site surveyors, evidence of attending general surgery responses.	E	E	E
4.	All general surgery-attending physicians taking trauma call must actively participate with the trauma performance improvement and patient safety program. Each member of the core group of general surgeons must attend a minimum of 50% of the trauma peer review meetings. Acceptable attendance must be documented.	E	E	E
5.	If the Trauma Performance Improvement and Patient Safety Program identifies a patient occurrence not resolved at discharge, data/information must be requested to provide loop closure and track patient outcomes. The institution will determine the number and type of occurrences to be tracked.	E	E	E
C.	Neurological Surgery - must be dedicated to one hospital when on call. If not dedicated to one hospital when on-call then a published back-up call schedule or formal contingency plan must be in place. (See glossary)	E	E	—
a.	Current trauma care involves the active participation and support of the Neurosurgical service. In order to provide continuous Neurosurgical coverage/care, more than one neurosurgeon must be on staff and participating in the trauma program.	E	E	—
b.	An attending neurosurgeon or designee must be promptly available and dedicated to this institution's trauma program when on call. If the attending neurosurgeon is not in house when on call, they must be promptly available to come in house when requested.	E	E	—
c.	Neurosurgeons taking trauma call must be qualified and credentialed to treat all trauma patients, including pediatric trauma patients.	—	—	—

**E—Essential**  
**D—Desired**

**General Standards**

Level I      Level II      Level III

**Standard XVIII—Surgical Specialties Availability & Responsibility**

d.	The in-house Neurosurgical requirement may be fulfilled by a Neurosurgical resident in at least the second year of clinical Neurosurgical experience, or the attending trauma surgeon, or the general surgery resident (PGY-4 or above) who has special competence, as attested to in writing by the Chief of Neurosurgery and/or the Trauma Program Medical Director in consultation with the Chief of Neurosurgery, in the care of patients with neural trauma. The surgeon must be capable of initiating measures toward stabilizing the patient and initiating diagnostic procedures. Special competence recognition for trauma surgeons does not relieve the neurosurgeon of the responsibility for prompt in-house response.	E	E	—
e.	Neurotrauma outcome is often a time-related factor from the time of injury. Appropriateness of the Neurosurgical response time is the responsibility of the trauma center. It is expected that the institution will have available, to the site surveyors, evidence of review of appropriate Neurosurgical response.	E	E	—
f.	The neurosurgery service must actively participate with the overall trauma performance improvement and patient safety program as directed by the trauma program.	E	E	—
g.	A neurosurgical representative to the multidisciplinary committee must attend a minimum of 50% of the multidisciplinary peer review committee meetings. Acceptable attendance must be documented.	E	E	—
1.	If the Trauma Performance Improvement and Patient Safety Program identifies a patient occurrence not resolved at discharge, data/information must be requested to provide loop closure and track patient outcomes. The institution will determine the number and type of occurrences to be tracked.	E	E	—
D.	Orthopedic Surgery - must be dedicated to one hospital when on call or have a published back-up call schedule.	E	E	D
a.	Current trauma care involves the active participation and support of the orthopedic surgical service. In order to provide continuous orthopedic coverage/ care, more than one orthopedic surgeon must be on staff and participating in the trauma program.	E	E	E
b.	An attending orthopedic surgeon or designee must be promptly available in-house and dedicated to this institution's trauma program when on-call. The staff orthopedic surgeon must be on-call and promptly available to come in-house when requested by the trauma surgeon, general surgical resident, or the orthopedic surgical resident.	E	E	—
1.	For Level III Centers, orthopedic physicians do not need to be dedicated to one hospital while on call, but must be promptly available.	—	—	E
c.	The in-house orthopedic surgical requirement may be fulfilled by an orthopedic surgical resident in at least the second year of clinical orthopedic surgery experience, or the attending trauma surgeon or general surgery resident (PGY-4 or above) who has special competence, as attested to in writing by the Chief of Orthopedics and/or the Trauma Program Medical Director in consultation with the Chief of Orthopedics, in the care of patients with orthopedic trauma. The surgeon must be capable of initiating measures toward stabilizing the patient and initiating diagnostic procedures. Special competence recognition for trauma surgeons does not relieve the orthopedic surgeon of the responsibility for prompt in-house response.	E	E	—
d.	Orthopedic trauma outcome is often a time-related factor from time of injury. Appropriateness of the orthopedic response time is the responsibility of the trauma center. It is expected that the institution will have available, to the site surveyors, evidence of review of appropriate orthopedic response.	E	E	E
e.	The orthopedic service must actively participate with the overall trauma performance improvement and patient safety program as directed by the trauma program.	E	E	E
f.	An orthopedic surgery representative to the multidisciplinary committee must attend a minimum of 50% of the multidisciplinary peer review committee meetings. Acceptable attendance must be documented.	E	E	E
1.	If the Trauma Performance Improvement and Patient Safety Program identifies a patient occurrence not resolved at discharge, data/ information must be requested to provide loop	E	E	E

**E—Essential**  
**D—Desired**

**General Standards**

Level I      Level II      Level III

**Standard XVIII—Surgical Specialties Availability & Responsibility**

closure and track patient outcomes. The institution will determine the number and type of occurrences to be tracked.

E. On-Call and Promptly Available:

1. Cardiac Surgery	E	D	—
2. Hand Surgery	E	D	—
3. Vascular Re-implantation Capabilities	E	D	—
4. Obstetric and Gynecologic Surgery	E	E	D
5. Ophthalmic Surgery	E	E	D
6. Oral/Maxillofacial Surgery	E	E	D
7. Otorhinolaryngological Surgery	E	E	D
8. Plastic Surgery	E	E	D
9. Thoracic Surgery	E	E	D
10. Urological Surgery	E	E	D

F. If the Trauma Performance Improvement and Patient Safety Program identifies a patient occurrence not resolved at discharge, data/ information must be requested to provide loop closure and track patient outcomes. The institution will determine the number and type of occurrences to be tracked.

**E—Essential**  
**D—Desired**



## General Standards

Level I      Level II      Level III

### Standard XIX—Non-Surgical Specialties Availability & Responsibility

a.	When neither anesthesia residents nor licensed CRNA's are used to fulfill in-house anesthesia requirements, the staff anesthesiologist must be in-house (on-call for Level III Centers) and available 24 hours a day.	E	E	D
b.	When anesthesia residents and/or CRNA's are used to fulfill availability requirements, the staff anesthesiologist on-call will be notified and will be promptly available in-house for all operative procedures. Note: The institution will determine when the attending anesthesiologist will respond in-house for the resuscitative phase of care based on patient condition.	E	E	D
1.	A 30-minute response time is required for Level III Centers for CRNA response.	—	—	E
2.	The staff anesthesiologists may not supervise more than two CRNA's/residents on major trauma cases at one time.	E	E	D
3.	An anesthesiology team of sufficient number and experience must be available to support the immediate surgical needs of all trauma patients, including pediatric trauma patients.	—	—	—
4.	Trauma programs changing to CRNA's to fulfill in house anesthesia requirements must monitor this change via trauma performance improvement and patient safety program and have information available for the site surveyors' review.	E	E	—
5.	The anesthesia service must actively participate with the overall trauma performance improvement and patient safety program as directed by the trauma program.	E	E	E
6.	An anesthesia representative to the multidisciplinary committee must attend a minimum of 50% of the multidisciplinary peer review committee meetings. Acceptable attendance must be documented.	E	E	E
D.	Radiology: An attending radiologist capable of diagnostic, invasive, and therapeutic procedures must be promptly available 24 hours a day.	E	E	E
1.	Requirements may be fulfilled by senior radiology residents (PGY-3 or above and must have completed one year of clinical radiological training) who are capable of performing emergent radiograph interpretation of trauma patients and any indicated treatment.	E	E	—
a.	When radiology residents are used to fulfill availability requirements, the staff radiologist on-call will be notified and will be promptly available for consultation and interpretation of radiographs, performance of complex imaging studies or interventional procedures.	E	E	—
2.	The institution will establish protocols defining the role of the radiologist and define the relationship between the trauma surgeons, emergency medicine physicians, and other members of the trauma team.	E	E	E
3.	The radiology service must participate actively with the overall trauma performance improvement and patient safety program as directed by the trauma program.	E	E	E
<b>NOTE:</b> <i>The institution must be able to demonstrate evidence of a formal plan and process to comply with this standard.</i>				
E.	On-call and promptly available in-house from inside or outside the institution:			
1.	Cardiology	E	E	D
2.	Family Medicine	E	E	D
3.	Gastroenterology	E	E	D
4.	Hematology	E	E	D
5.	Infectious Disease	E	E	D
6.	Internal Medicine	E	E	D

**E—Essential**  
**D—Desired**

**General Standards**

Level I      Level II      Level III

**Standard XIX—Non-Surgical Specialties Availability & Responsibility**

7. Nephrology	E	E	D
8. Neurology	E	D	D
9. Pathology	E	E	D
10. Pediatrics	E	E	D
a. There must be written protocols to clearly define the pediatrician's responsibilities and relationship to other trauma team members.	—	—	—
11. Physiatry	D	D	D
12. Psychiatry	E	D	D
13. Pulmonary Medicine	E	E	D
F. If the Trauma Performance Improvement and Patient Safety Program identifies a patient occurrence not resolved at discharge, data/ information must be requested to provide loop closure and track patient outcomes. The institution will determine the number and type of occurrences to be tracked.	E	E	D

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XX—Emergency Department

A. Personnel				
1. Physician Staff				
a. It is the responsibility of the institution to ensure that emergency physicians who have demonstrated special capabilities through commitment, continuing education, and experience, including a demonstrated ability to operate pediatric equipment, staff the emergency department.	E	E	E	
b. A designated physician director with evidence of active participation in daily emergency department patient care and administrative duties of the emergency department.	E	E	E	
2. Nursing Staff				
a. It is the responsibility of the institution to ensure that the emergency department is staffed by registered nurses who have demonstrated special capabilities through commitment, continuing education, and experience, including, where applicable, a demonstrated ability to operate pediatric equipment.	E	E	E	
b. A minimum of two registered nurses per shift (one RN for Level III Centers) who actively function(s) in trauma resuscitation and who have completed the trauma nurse course.	E	E	E	
1. For Level III Centers, one nurse per shift must have ACLS certification.	—	—	E	
c. The Emergency Department shall have a staffing plan that reflects the trending, severity of injury, arrival of multiple trauma patients, and staffing/skill mix required to ensure the appropriate clinical care of trauma patients.	E	E	E	
d. Documentation: Nursing documentation for the major uni-system/multi-system trauma patient must be on a trauma flow sheet.	E	E	E	
B. Resuscitation				
1. There will be a designated trauma resuscitation area in the emergency department, which will remain open 24 hours a day. The designated trauma resuscitation area must be of adequate size to accommodate the full trauma resuscitation team.	E	E	E	
2. Adequate facilities and personnel will be available within the emergency department to simultaneously care for two or more major uni-system or multi-system trauma patients. Backup areas must be immediately available.	E	E	E	
3. There will be a designated pediatric area. Appropriate pediatric equipment and drugs must be available.	E	E	E	
C. Equipment will be readily available in the appropriate array of sizes for resuscitation and life support of the critically or seriously injured trauma patient, adult and pediatric, will include, but not be limited to:				
1. Airway control and ventilation equipment, including laryngoscopes, endotracheal tubes, bag-mask resuscitators, sources of oxygen, and mechanical ventilator. This equipment must be immediately available.	E	E	E	
2. Pulse oximeter	E	E	E	
3. End-tidal CO <sub>2</sub> determination	E	E	E	
4. Suction devices	E	E	E	
5. Electrocardiograph and defibrillator with pediatric and adult paddles, both internal and external <b>(Note: Level III Trauma Centers must have adult and pediatric internal paddles only if open thoracotomies are performed in the Emergency Department)</b>	E	E	E	

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XX—Emergency Department

6.	Apparatus to establish central venous pressure monitoring	E	E	
7.	All standard intravenous fluids and administration devices, including intravenous catheters and IO devices	E	E	E
8.	Sterile surgical sets for standard emergency department procedures such as:			
	a. Airway control/cricothyrotomy	E	E	E
	b. Venous cut-down	E	E	E
	c. Chest tube insertion	E	E	E
	d. Central line insertion	E	E	E
	e. Thoracotomy	E	E	E
	f. Peritoneal Lavage	E	E	E
9.	Naso/Oro Gastric tubes	E	E	E
10.	Drugs and supplies necessary for emergency care, including pediatric drug dosages	E	E	E
11.	Temperature control and warming devices for:	E	E	E
	a. The patient			
	b. Parenteral fluids			
	c. Blood			
	d. The trauma resuscitation area			
12.	Skeletal immobilization devices, including capability for cervical spine immobilization and traction	E	E	E
<b>NOTE:</b> <i>Level III Centers do not need C-Spine traction</i>				
13.	Arterial catheters	E	E	D
14.	Two-way communication with emergency transport system vehicles	E	E	E
15.	Ultrasound	D	D	D
16.	High volume rapid infuser	E	E	E
17.	Portable or overhead X-ray equipment readily available to the resuscitation area 24 hours/day	E	E	E
18.	The space and resuscitation equipment must be prepared for treatment of children as well as of adults. Equipment unique to the control of the pediatric airway must be available. Reference materials for pediatric drugs, dosages, and cardiac resuscitation must be displayed or immediately available.	E	E	E

**E—Essential**  
**D—Desired**

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**General Standards**

Level I    Level II    Level III

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**Standard XXI—Clinical Lab Services**

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A.	There will be provisions to provide and receive the following laboratory test results 24 hours a day:	E	E	E
1.	Micro capabilities for routine pediatric blood determinations	E	E	E
2.	Standard analyses of blood, urine, and other body fluids	E	E	E
3.	Blood typing and cross-matching	E	E	E
4.	Coagulation studies	E	E	E
5.	Blood gases and pH determinations	E	E	E
6.	Serum and urine osmolality	E	E	D
7.	Microbiology	E	E	E
8.	Drug and alcohol screening	E	E	E
B.	There will be a written protocol stating that the trauma patient receives priority in request handling.	E	E	E
C.	There will be a comprehensive blood bank or access to a community central blood bank and adequate hospital storage facilities which will include a clinically driven Massive Transfusion Policy	E	E	E

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XXII—Radiological Capabilities

A.	Diagnostic information must be communicated in a written form and in a timely manner:	E	E	E
1.	Critical information that is deemed to immediately affect patient care must be verbally communicated to the trauma team.	E	E	E
2.	The preliminary report should be permanently recorded.	E	E	E
3.	The final report must accurately reflect the chronology and content of communications with the trauma team, including changes between the preliminary and final interpretation.	E	E	E
4.	Changes in interpretation must be monitored through the PIPS program	E	E	E
B.	Radiological services, 24-hour coverage by in-house technicians.	E	E	E
C.	Angiography	E	E	D
1.	Conventional catheter angiography available 24 hours a day.	E	E	D
D.	Sonography for the trauma patient will be available 24 hours a day with a maximum response time of 30 minutes.	E	E	E
E.	Nuclear Scanning for the trauma patient will be available 24 hours a day.	D	D	D
F.	Computerized Tomography Scanning	E	E	E
1.	Computerized tomography scanning must be available for the trauma patient without delay 24 hours a day.	E	E	E
a.	In-house availability	E	D	D
b.	Out of House availability with a maximum technician response time of 30 minutes.	—	E	E
c.	A protocol must be in place to give the trauma patient priority and immediate access to the scanner for initiation of studies in a timely manner.	E	E	E
d.	Those institutions without the 24-hour in-house CT technician requirement must monitor the availability and the response time as a performance improvement and patient safety audit on a continuous basis and have documentation available at the time of the site survey.	E	E	E
2.	The trauma surgeon, neurosurgeon, and emergency physician, all of whom have been properly credentialed by the institution, will have the ability to initiate computerized scans.	E	E	E
3.	Protocols must be in place, which assure a continuing review of computerized tomographic availability when indicated for the trauma patient. This will include the policy and procedure for the bypass or transfer of trauma patients when CT capability is unavailable due to planned maintenance or mechanical failure.	E	E	E
G.	A Magnetic Resonance Imaging (MRI) scanner will be available on site.	E	E	D
	<b>NOTE:</b> <i>If a Level III Center does not have a magnetic resonance imaging scanner (MRI) readily available on the premises, then a formal protocol must be established for the early transfer of suspected complex spine and/or spinal cord injuries to a higher level of trauma care.</i>			
H.	Priority Handling: There will be a written protocol stating that the trauma patient receives priority in request handling, particularly portable studies.	E	E	E
I.	Personnel: Adequate physician and nursing personnel must be available to accompany the trauma patient. These providers must be appropriately trained and must be able to resuscitate and fully monitor the trauma patient in all areas. Documentation of care during the time that the trauma patient is physically present in the department and during transportation to and from the Radiology Department must be available.	E	E	E

**E—Essential**  
**D—Desired**

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**General Standards**

Level I      Level II      Level III

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**Standard XXII—Radiological Capabilities**

J.	Resuscitation and Monitoring Equipment: There will be resuscitation and monitoring equipment readily available for trauma patients of all ages while in the Radiology Department.	E	E	E
K.	The trauma PIPS program must ensure that appropriately trained providers accompany trauma patients and that the appropriate resuscitation and monitoring occurs while in all areas of the radiology department.	E	E	E

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XXIII—Operating Room Requirements

i. Personnel				
1.	The operating room will be adequately staffed in-house and immediately available 24 hours a day. When the first team is in surgery, the second on-call team will be in-house.	E	E	D
a.	The operating room on-call team will have 30 minutes response time. No back-up team is needed.	—	—	E
2.	The availability of staffed operating rooms must be sufficient to support the immediate surgical needs of all trauma patients, including pediatric trauma patients.	—	—	—
3.	It is the responsibility of the institution to ensure that the operating room is staffed by registered nurses who have special capabilities through commitment, continuing education, and experience, including, where applicable, the ability to operate pediatric equipment.	E	E	E
B.	Equipment will be readily available in the appropriate array of sizes for resuscitation and life support of the critically or seriously injured trauma patient, adult and pediatric (as necessary), will include, but not be limited to:			
1.	Cardiopulmonary bypass capability	E	D	—
2.	Operating microscope	E	D	—
3.	Thermal control and warming devices for:	E	E	E
a.	The patient			
b.	Parenteral fluids			
c.	Blood			
d.	The room			
4.	X-ray capability, including c-arm image intensifier with technologist available 24 hours a day	E	E	E
5.	Endoscopes, all varieties	E	E	D
6.	Craniotomy instruments	E	E	—
7.	Monitoring equipment	E	E	E
8.	Invasive and non-invasive monitoring equipment to include intracranial pressure monitoring	E	E	E
a.	Level III Centers do not need ICP monitoring.	—	—	E
9.	Pediatric anesthesia equipment	E	E	E
10.	Cardiac output equipment	E	E	E
11.	Defibrillator and monitor with pediatric and adult paddles, both internal and external	E	E	E
12.	Instrumentation, i.e., blood pressure cuffs, chest tubes, nasogastric tubes, and urinary drainage apparatus specific to the pediatric patient ranging in age from neonate to adolescent	E	E	E
13.	Equipment appropriate for fixation of long bone and pelvic fractures	E	E	E
14.	High volume rapid infuser	E	E	E

**E—Essential**  
**D—Desired**

**General Standards**

Level I      Level II      Level III

**Standard XXIV—Post Anesthesia Care Unit**

Surgical and/or trauma intensive care unit(s) are acceptable.

A.	Registered nurses and other essential personnel available 24 hours a day.	E	E	E
B.	It is the responsibility of the institution to ensure that the post-anesthesia care unit is staffed by registered nurses who have demonstrated special capabilities through commitment, continuing education, and experience, including, where applicable, the ability to operate pediatric equipment.	E	E	E
C.	Equipment will be readily available in the appropriate array of sizes for resuscitation and life support of the critically or seriously injured trauma patient, adult and pediatric (as necessary), will include, but not be limited to:			
1.	Airway control and ventilation equipment including laryngoscopes, endotracheal tubes, bag-mask resuscitators, sources of oxygen, and mechanical ventilator. This equipment must be immediately available.	E	E	E
2.	Pulse oximeter	E	E	E
3.	End-tidal CO <sub>2</sub> determination	E	E	E
4.	Suction devices	E	E	E
5.	Electrocardiograph and defibrillator with pediatric and adult paddles, both internal and external be promptly available	E	E	E
6.	Apparatus to establish central venous pressure monitoring	E	E	E
7.	All standard intravenous fluids and administration devices, including intravenous catheters	E	E	E
8.	Sterile surgical sets for emergency procedures such as thoracotomy	E	E	E
9.	Drugs and supplies necessary for emergency care, including pediatric drug dosages.	E	E	E
10.	Temperature control and warming devices for:	E	E	E
a.	The patient			
b.	Parenteral fluids			
c.	Blood			
d.	Physical space/location/room			
11.	Intracranial pressure monitoring devices promptly available.	E	E	—
12.	Temporary transvenous pacemaker promptly available.	E	E	E
13.	Equipment for the continuous monitoring of temperature, hemodynamics, and gas exchange both invasive and non-invasive.	E	E	E
14.	Pulmonary function measuring devices.	E	E	E
D.	The hospital must document the number of times the PACU is used as an ICU for trauma patients. The institution must determine the need for ICU equipment to be available in the PACU.	E	E	E

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XXV—Intensive Care Units (ICU) for Trauma Patients

The management of the severely traumatized patient in the critical care environment is the most crucial phase of trauma care following initial resuscitation. During this period of therapy, the severely injured patient is most vulnerable to multi-system deterioration. The ability to assess and initiate rapid intervention is paramount.

A.	The ICU resources will be concentrated in a single unit or be in multiple specialty units.	E	E	E
B.	There will be a pediatric intensive care unit or ICU with specific beds available to become pediatric trauma beds.	E	E	—
C.	There will be a commitment to the dedication of beds for trauma care.	E	E	E
D.	Personnel			
1.	Physician Staff	E	E	E
a.	There will be a designated surgical director, or for medical/surgical units, co-director.	E	E	E
1.	The designated surgical director is responsible for the quality of care and administration of the trauma ICU. The surgical director should have obtained critical care training during residency or fellowship and must have expertise in the perioperative and post-injury care of the critically injured patient. A Certificate of Added Qualifications in surgical Critical Care from the American Board of Surgery would best demonstrate this expertise. It can also be fulfilled with documentation of active participation during the preceding 12 months in ICU administration and quality management activities, and direct involvement in the ICU care of patients.	E	E	E
2.	In a medical/surgical ICU, a trauma surgeon must be responsible for policy setting, administration, and clinical care for trauma ICU patients.	E	E	E
b.	It is the responsibility of the institution to ensure that physicians who have demonstrated special capabilities through commitment, continuing education, and experience to care for the adult and pediatric trauma patient staff the ICU. When admitting pediatric trauma patients to an ICU, the physicians must demonstrate an ability to operate pediatric equipment.	E	E	E
1.	In a Regional Resource Trauma Center (Level I), there must be a surgically directed, dedicated, ICU physician team 24 hours per day. This ICU team can be staffed from different specialties as determined by critical care credentials consistent with the medical staff privileging process of the institution.	E	D	D
2.	In a Level II and III trauma center, a surgeon must have at a minimum an administrative role in the ICU structure. An ICU team is not essential; however, arrangements for 24-hour coverage of all trauma patients are necessary for emergencies and routine care.	—	E	E
c.	The primary admitting trauma surgeon who assumes initial responsibility for the care of the trauma patient should maintain control over all aspects of care. All orders should be written in collaboration with the primary surgeon or designee.	E	E	E
1.	The surgically directed ICU team will provide 24-hour bedside care to the trauma patient. Protocols should establish a formal role and relationship for and between the primary trauma surgeon and the ICU team.	E	D	—
2.	In some cases, transfer of responsibility to a surgical specialist may be appropriate, if such transfer of responsibility is mutually acceptable to both the primary admitting surgeon and the specialist.	E	E	E
3.	Non-surgical specialists should be consulted as necessary; however, at no time should the surgeon relinquish primary care of the critically ill trauma patient to non-surgical specialists.	E	E	E
d.	In addition to overall responsibility for patient care by the patient's primary admitting trauma surgeon, there must be 24-hour in-house ICU physician coverage.	E	E	—

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XXV—Intensive Care Units (ICU) for Trauma Patients

1.	At a minimum, a physician (PGY-1 or above) will be on duty in the ICU 24 hours a day or immediately available from inside the institution.	E	E	—
2.	The ICU first responder must be formally oriented to the trauma program and ICU.	E	E	—
3.	The ICU first responder must be promptly supervised by the in-house general trauma surgeon <sup>1</sup> in charge of the trauma patient. (Not applicable if the ICU first responder is an attending physician.) <i>(Reference: Standard XVIII, Surgical Specialties Availability, C1.)</i>	E	E	—
4.	This coverage for emergencies is not intended to replace the primary admitting trauma surgeon in caring for the patient in the ICU; it is to ensure that the patient's immediate needs will be met while the primary surgeon is being contacted.	E	E	—
e.	A tiered medical response will be established to ensure immediate interventions for unplanned situations. While the ultimate responsibility for the treatment plan is that of the primary admitting surgeon, on-site assessments and initial interventions must be planned in a systematic and documented approach.	E	E	E
1.	The trauma performance improvement and patient safety program must periodically review this response system and the supervision of the ICU first responder. It is expected that the institution will have available to the site surveyors, evidence of review of an appropriate ICU first responder system.	E	E	E
2.	The trauma performance improvement and patient safety review of ICU care must include review of all adverse and unexpected events.	E	E	E
2.	Nursing Staff	E	E	E
a.	It is the responsibility of the institution to ensure that the ICU is staffed by registered nurses who have special capabilities as demonstrated through commitment, continuing education, and experience, including, where applicable, the ability to operate pediatric equipment.	E	E	E
b.	The ICU shall have a staffing plan that reflects the trending, severity of injury, arrival of multiple trauma patients, and staffing/skill mix required to ensure the appropriate clinical care of trauma patients or the workload of the nurse which will indicate the number of nursing staff needed with a planned minimum nurse-patient ratio of 1:2 on each shift to adequately provide patient care.	E	E	E
c.	Nursing documentation will be on a 24-hour patient flow sheet.	E	E	E
d.	The pediatric trauma patient will receive nursing care provided by a registered nurse who is specialized in pediatric nursing as demonstrated by the institution's credentialing process in pediatric critical care nursing.	E	E	E
e.	The PICU or designated area in the existing ICU/trauma unit must have 24-hour capability to care for the pediatric patient.	E	E	E
F.	Equipment will be readily available in the appropriate array of sizes for resuscitation and life support of the critically or seriously injured trauma patient, adult and pediatric (as necessary), will include, but not be limited to:			
1.	Airway control and ventilation equipment including laryngoscopes, endotracheal tubes, bag-mask resuscitators, sources of oxygen, and mechanical ventilator. This equipment must be immediately available.	E	E	E
2.	Pulse oximeter	E	E	E
3.	End Tidal CO <sub>2</sub>	E	E	E

**E—Essential**  
**D—Desired**

**General Standards**

Level I      Level II      Level III

**Standard XXV—Intensive Care Units (ICU) for Trauma Patients**

4.	Suction devices	E	E	E
5.	Electrocardiograph and defibrillator with pediatric and adult paddles, both internal and external promptly available.	E	E	E
6.	Apparatus to establish central venous pressure monitoring	E	E	E
7.	All standard intravenous fluids and administration devices, including intravenous catheters	E	E	E
8.	Sterile surgical sets for emergency procedures such as thoracotomy, cut-down, etc.	E	E	E
9.	Gastric lavage equipment	E	E	E
10.	Drugs and supplies necessary for emergency care, including pediatric drug dosages	E	E	E
11.	Temperature control and warming devices for:	E	E	E
	a. The patient			
	b. Parenteral fluids			
	c. Blood			
	d. Patient room			
12.	Intracranial pressure monitoring devices	E	E	—
13.	Electronic transvenous pacemaker	E	E	E
14.	Electronic hemodynamic monitoring	E	E	E
15.	Pulmonary function measuring devices	E	E	E
16.	Patient weighing devices	E	E	E
17.	Arterial lines	E	E	E
18.	Pulmonary Artery catheters	E	E	E

**E—Essential**  
**D—Desired**

**General Standards**

Level I      Level II      Level III

**Standard XXVI—Intermediate Care/Step-Down Units**

Each institution must define the areas considered intermediate care/step-down units.

A.	Equipment will be readily available in the appropriate array of sizes for resuscitation and life support of the critically or seriously injured trauma patient will be available. Availability of equipment (intensive care unit, medical surgical unit) will be dependent on the acuity level of trauma patients cared for in the intermediate care/step-down units.	E E	E E	— —
B.	It is the responsibility of the institution to ensure that the Intermediate Care/Step-Down Unit is staffed by registered nurses who have special capabilities as demonstrated through commitment, continuing education, and experience, including, where applicable, the ability to operate pediatric equipment.	E	E	—
C.	The Intermediate Care/Step-Down Unit shall have a staffing plan that reflects the trending, severity of injury, arrival of multiple trauma patients, and staffing/skill mix required to ensure the appropriate clinical care of trauma patients or the workload of the nurse which will indicate the number of nursing staff needed with a planned minimum nurse-patient ratio of 1:4 on each shift to adequately provide patient care.	E	E	—

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XXVII—Medical/Surgical Units

These are general medical/surgical nursing unit beds, not intensive care or intermediate care/step-down unit beds. Pediatric trauma patients should be cared for in an age-related nursing unit. Trauma centers with Additional Qualifications in Pediatric Trauma will have a pediatric floor or unit staffed by trained and appropriately credentialed professionals.

A. Nursing Staff	E	E	E
1. It is the responsibility of the institution to ensure that the medical/surgical units that regularly receive trauma patients are staffed by registered nurses who have demonstrated special capabilities through commitment, continuing education, and experience, including, where appropriate, a demonstrated ability to operate pediatric equipment.	E	E	E
2. The Medical/Surgical Unit(s) shall have a staffing plan that reflects the trending, severity of injury, arrival of multiple trauma patients, and staffing/skill mix required to ensure the appropriate clinical care of trauma patients or the workload of the nurse which will indicate the number of nursing staff needed to adequately provide patient care.	E	E	E
B. Equipment	E	E	E
1. The equipment will support the current status of trauma patients of all ages and be readily available.	E	E	E
2. Availability of the equipment will be dependent upon the patient's condition, patient's age, and the immediacy with which equipment can be made available.	E	E	E
3. Equipment in the appropriate array of sizes for resuscitation and life support of the trauma patient will include, but not be limited to:	E	E	E
a. Airway control and ventilation equipment, including laryngoscopes, endotracheal tubes, bag-mask resuscitators, and sources of oxygen	E	E	E
b. Suction devices	E	E	E
c. Electrocardiograph and defibrillator with external adult paddles, promptly available	E	E	E
d. All standard intravenous fluids and administration devices including intravenous catheters	E	E	E
e. Drugs and supplies necessary for emergency care, including pediatric drug dosages	E	E	E

**E—Essential**  
**D—Desired**

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**General Standards**

Level I

Level II

Level III

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**Standard XXVIII—Acute Hemodialysis Capability**

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A.	There must be acute hemodialysis capability.	E	D	D
B.	There must be a written transfer protocol to an accredited trauma center that has hemodialysis capability.	—	E	E

**E—Essential**  
**D—Desired**

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**General Standards**

Level I

Level II

Level III

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**Standard XXIX—Organized Burn Care**

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- |  |   |   |   |
|--|---|---|---|
| A. Transfer Agreement: A formal written transfer agreement with a burn center/hospital with a burn unit.   | E | E | E |
| B. Early transfer or early burn patient referral will be strongly considered for patients meeting the American Burn Association Criteria for Referral to a Burn Center | E | E | E |

The institution that has an organized burn unit must use the established criteria of the American Burn Association.

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**General Standards**

Level I      Level II      Level III

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**Standard XXX—Neurotrauma Management Capability**

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A.	There must be acute spinal cord/brain injury management capability or formal written transfer agreements in effect with regionally recognized spinal cord injury treatment centers.	E	E	—
1.	There must be formal written transfer agreements in effect with regionally recognized spinal cord/column & brain injury treatment centers.	—	—	E
B.	Early transfer will be considered in circumstances where a recognized spinal cord or brain injury rehabilitation center exists in the region.	E	E	—
1.	Early transfer will be considered for all cases whereby a brain or spinal cord injury is suspected.	—	—	E

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XXXI—Social Work Capabilities

	Level I	Level II	Level III
A. Availability	E	E	E
1. Social work intervention will be available to all major trauma patients and their families from the time of admission to the facility until the time of discharge. This is to include evidence of appropriate social work intervention, involvement, and coordination of post-discharge plan development and rehabilitation.	E	E	E
2. There will be a social worker designated as accountable for ensuring that all trauma social work services are being provided in a cohesive manner.	E	E	D
a. There will be evidence of appropriate:	E	E	D
1. Qualifications, for example, educational preparation, certification, and clinical experience.	E	E	D
2. A job description and organizational chart defining the structural role and relationship of the dedicated social worker within the institution and to the trauma service.	E	E	D
3. Active participation in local, state, and national trauma social work activities.	D	D	D
4. Educational activities external to the institution's staff development program.	D	D	D
5. Active participation in trauma multidisciplinary forums/groups/ committees.	E	E	D
3. The institution will define the protocol to ensure that there are adequate social work capabilities available to assist in the support of the patient's family and significant others during this time. This may include:	E	E	E
a. Identifying the trauma patient and locating family or legal next-of-kin.			
b. Contacting family and providing crisis intervention counseling upon arrival and throughout hospitalization.			
c. Facilitating the information flow between the trauma team, patient, and family.			
d. Coordinating resource referrals.			
e. Assisting with the process of organ donation in the event of death.			
f. Providing grief counseling, when appropriate.			
g. Timely access to information related to insurance verification and financial resource availability.			
The above services may be provided in conjunction with other members of the hospital staff.			
4. The social worker should be educated at the Master of Social Work level. At a minimum, a bachelor' degree in social work is required.	E	E	E
B. Every admitted trauma patient suspected of abuse must be evaluated by social work, investigating cause of injury/abuse and coordinating discharge planning/referral(s).	E	E	E
▪ Elder abuse,			
▪ Domestic abuse,			
▪ Child abuse,			
▪ Substance abuse			
○ The institution must have a mechanism to identify patients who are at risk for substance abuse. This may be part of the injury prevention coordinator job description.	E	E	D
○ The institution must provide an intervention for patients identified as at risk for substance abuse. This may be part of the injury prevention coordinator job description.	E	D	D

**E—Essential**  
**D—Desired**

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**General Standards**

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**Standard XXXI—Social Work Capabilities**

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C.	Continuing Education: Social workers who are associated with the trauma program will have evidence of a minimum of eight hours of trauma-related continuing education every year.	E	E	D
D.	Space Requirements: There will be a separate interview area for social work.	E	E	E

**E—Essential**  
**D—Desired**

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**General Standards**

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**Standard XXXII—Spiritual Counseling/Pastoral Care**

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The opportunity for spiritual counseling/pastoral should be available. This can be accomplished by providing a listing of spiritual leaders promptly available to the institution. Ideally, spiritual counseling/pastoral care will have a defined role in the trauma program.

E

E

E

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XXXIII—Trauma Performance Improvement and Patient Safety Programs

The goals of a trauma performance improvement program and patient safety (PIPS) program are to monitor the process and outcome of patient care, to ensure the quality and timely provision of such care, to improve the knowledge and skills of trauma care providers, and to provide the institutional structure and organization to promote performance improvement and patient safety.

A.	Trauma PIPS view trauma patients both concurrently and retrospectively. Trauma performance improvement and patient safety programs must be integrated into the institution's overall performance improvement program and reported to the institution's governing body. Performance improvement and patient safety must be supported by a reliable method of data collection, which consistently gathers valid and objective information necessary to identify opportunities for improvement.	E	E	E
B.	The institution must provide resources to support the trauma performance improvement and patient safety (PIPS).	E	E	E
1.	There will be a Trauma Performance Improvement and Patient Safety Coordinator who is a registered nurse and is responsible for monitoring, promoting and evaluating all trauma-related performance improvement and patient safety activities associated with the trauma program in cooperation and conjunction with the Trauma Program Medical Director and Trauma Program Manager/Coordinator. This person should be housed within the organizational structure of the trauma program.	D	D	D
a.	The institution's organization must define the structural role of the Trauma PI Coordinator to include responsibility, accountability, and authority.	E	E	E
b.	Evidence of qualifications including educational preparation, certification, and clinical experience.	E	E	E
c.	A job description and organizational chart depicting the relationship between the Trauma PI Coordinator and the trauma program.	E	E	E
d.	A selection process defined by the institution's personnel policies.	E	E	R
e.	Evidence of an effective working relationship with the Trauma Program Medical Director and the Trauma Program Manager/Coordinator.	E	E	E
C.	There must be a Performance Improvement Plan that includes:	E	E	E
	1. Authority/Scope of Trauma Program			
	2. Trauma Credentialing requirements			
	3. Roles and responsibilities for Performance Improvement review			
	4. Process for			
	a. Problem identification, including methods of data collection (i.e. chart review, patient rounds) and use of indicators and audit filters			
	b. Retrospective and concurrent review			
	c. Analysis (i.e. Performance Improvement forums and meetings)			
	d. Preventability classification			
	e. Action plan development / implementation / reevaluation			
	5. Development of and use of patient management guidelines to guide and assess appropriateness of care			
D.	There must be specific pediatric audit filters. Severely injured children must be reviewed internally for appropriateness of care and the appropriateness of the decision not to transfer the patient to a Pediatric Regional Resource Trauma Center or Pediatric Resource Trauma Center in recognition of the institution's pediatric capabilities as specified in Standard II, D.			
E.	There must be specifically designed audit filters for the pediatric trauma patient and early identification of suspected child abuse.	E	E	E
F.	A multidisciplinary forum(s) for (PIPS) review is necessary. The Trauma Program Medical Director, in collaboration with the Trauma Program Coordinator, will have a leadership role in all forums. Minutes must be maintained for all meetings. The goals of multidisciplinary review include:	E	E	E

**E—Essential**  
**D—Desired**

**General Standards**

Level I      Level II      Level III

**Standard XXXIII—Trauma Performance Improvement and Patient Safety Programs**

1.	Review of the performance of the trauma program. This can be accomplished by a multidisciplinary committee, which should include representatives from all phases of care. The following aspects will be addressed: all deaths, all transfers, morbidities, (PIPS) issues, systems issues, clinical management guideline issues, and provider specific issues.	E	E	E
a.	The trauma program will utilize and monitor compliance with the trauma patient management guidelines.	E	E	E
b.	Trauma admissions will be reviewed through the (PIPS) process. Audit filters may be utilized. They can be selected from the audit filters contained in the PTOS Registry, identified based on institutionally specific opportunities for improvement, or a combination of both. All phases of care will be reviewed over a period of time identified by the institution. The institution will demonstrate that actions taken as a result of issues identified in the (PIPS) process created a measurable improvement.	E	E	E
c.	Utilization, tissue, and procedure review will be performed in concurrence with the institution's (PIPS) process	E	E	E
d.	The (PIPS) program will evaluate resource utilization and cost-effectiveness of the trauma program.	E	E	E
e.	Programs that admit more than 10% of injured patients to non-surgical services must demonstrate the appropriateness of that practice through the performance improvement and patient safety process.	E	E	E
2.	Provide education—this can be accomplished by a periodic trauma case review or didactic conference and should include appropriate disciplines.	E	E	E
3.	CME, CE, and internal education programs should be linked to the trauma performance improvement and patient safety program and provide didactic programs covering identified areas of concern.	E	E	E
4.	Provide peer review—the peer review process can be in committee or conference format and must include a multi-specialty physician review of provider performance. Both provider specific morbidities and mortalities must be reviewed, trended, and reported to the Trauma Program Medical Director.	E	E	E
G.	Documentation of performance improvement and patient safety must be available to demonstrate the multidisciplinary approach to the performance improvement and patient safety program and will include where appropriate: 1) problem identification; 2) analysis; 3) preventability; 4) action plan; 5) implementation; and 6) reevaluation. The institution's process of case identification, discussion, and action must be easily identified and available for presentation to the Pennsylvania Trauma Systems Foundation and site surveyors.	E	E	E
H.	Complete anatomical diagnosis of injury is essential to assessment of quality of care. A postmortem examination should, therefore, be sought in all trauma-related deaths.	E	E	E
I.	Completed pre-hospital trip form reports (patient care records - PCR), when available, will be present for review by the trauma program as part of the performance improvement and patient safety process.	E	E	E

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XXXIV—Trauma Research Program

<p>A. The institution will have a designated trauma research director Trauma Program Medical Director or one of the trauma surgeons, who remains clinical active in trauma care and demonstrate current (two years) involvement in and commitment to research in trauma care.</p> <p>B. The institution must have formal regularly scheduled trauma research meetings.</p> <p>C. The institution must have an identifiable Institutional Review Board process, active research protocols, physicians and allied health professionals involved in extramural educational presentations, and an adequate number of peer-reviewed scientific publications.</p> <p>D. Four (4) extramural educational presentations are required each year. These must be presented outside the institution.</p> <p>E. Methods of demonstrating the trauma center/system involvement and commitment to research will include, but not be limited to:</p> <p style="margin-left: 20px;">1. Publications must appear in peer-reviewed journals included in Index Medicus. In a three-year cycle, the minimum acceptable number is twenty (20) trauma related publications. This must include a minimal activity of one trauma or trauma related publication from members of the general surgery trauma team and 1 from each of the three (3) of nine (9) disciplines listed; neurosurgery, emergency medicine, orthopedic surgery, radiology, anesthesia, critical care medicine, pre-hospital, burns and rehabilitation. Other surgical, non-surgical, nursing or allied health professional or work done in collaboration with other trauma centers and participation in multi-center investigations may be included in the peer review publications and can contribute to the minimal acceptable number of publications.</p>	<p>E</p> <p>E</p> <p>E</p> <p>E</p> <p>E</p>	<p>D</p> <p>D</p> <p>D</p> <p>D</p> <p>D</p>	<p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p>
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**OR**

2. Publications must appear in peer-reviewed journals included in Index Medicus. In a three-year cycle, the minimum acceptable number is ten (10) trauma related publications. This must include a minimal activity of one trauma or trauma related publication from members of the general surgery trauma team and 1 from each of the three (3) of nine (9) disciplines listed; neurosurgery, emergency medicine, orthopedic surgery, radiology, anesthesia, critical care medicine, pre-hospital, burns and rehabilitation. Other surgical, non-surgical, nursing or allied health professional or work done in collaboration with other trauma centers and participation in multi-center investigations may be included in the peer review publications and can contribute to the minimal acceptable number of publications.

**AND**

Of the seven (7) listed trauma related scholarly activities, four (4) must be demonstrated

- a. Leadership in major trauma organizations including membership in trauma committees of any regional and national trauma organization
- b. Peer-reviewed funding for trauma research.
- c. Evidence of dissemination of knowledge to include review articles, book chapters, etc.
- d. Display of scholarly application of knowledge as evidenced by case reports or reports of clinical series in journals include in MEDLINE
- e. Participation as a visiting professor or invited lecturer at national or regional conferences
- f. Support of resident participation in institution-focused scholarly activity, including laboratory experiences, clinical trials, etc.
- g. Mentorship of residents and fellows, as evidenced by the development of a trauma fellowship program or successful matriculation of graduating residents into trauma fellowship programs

**E—Essential**  
**D—Desired**

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**General Standards**

Level I      Level II      Level III

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**Standard XXXV—Continuing Education Programs**

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A.	There will be formal internal programs in continuing education concerning the treatment of trauma patients of all ages provided by the institution for:			
1.	Physicians	E	E	E
2.	Registered nurses	E	E	E
3.	Allied health personnel	E	E	E
B.	There will be formal external programs in continuing education concerning the treatment of trauma patients of all ages provided by the institution for:			
1.	Physicians	E	D	D
2.	Registered nurses	E	D	D
3.	Allied health personnel	E	D	D
4.	Pre-hospital providers	E	E	D
C.	Must provide or participate in an ATLS course at least annually	E	D	—

**E—Essential**  
**D—Desired**

**General Standards**

Level I      Level II      Level III

**Standard XXXVI—Trauma Rehabilitative Services**

A.	All trauma patients will be screened for short and long term recovery and treatment plans/goals. Where appropriate, a documented, comprehensive, trauma recovery plan will be an integral part of the patient's medical record.	E	E	E
1.	The trauma rehabilitation plan developed for the trauma patient will be in place within 72 hours of the patient's admission. A physician with a special interest and training in Physical Medicine and Rehabilitation most often assumes leadership of the rehabilitation team. However, this does not proscribe physicians in the other disciplines, such as general surgery, neurosurgery, or orthopedic surgery from having a leadership role providing they have the skill, training, dedication, and are recognized by the institution, as an expert in rehabilitation.	E	E	E
2.	A referral will be made to the physiatrist or the appropriate medical specialist when indicated.	E	E	D
B.	If the patient is transferred to another institution for rehabilitation, outcome, and follow-up must be formally requested.	E	E	E
1.	If the Trauma Performance Improvement and Patient Safety Program identifies a patient occurrence not resolved at discharge, data/ information must be requested to provide loop closure and track patient outcomes. The institution will determine the number and type of occurrences to be tracked.	E	E	E
C.	The nutritional requirements of all trauma patients must be screened and evaluated with appropriate feedback and recommendations to the attending trauma surgeon or designee. This must be completed within 72 hours of admission.	E	E	D
D.	Additional specialty services, such as physical therapy, occupational therapy, speech therapy, neuropsychology (mild brain injury), psychosocial, family support programs and pain services will have defined roles in the recovery and rehabilitative care of the trauma patient.	E	E	
E.	Physical Therapy services will have a defined role in the recovery and rehabilitative care of the trauma patient. Occupational and Speech Therapy are desired.			E

**E—Essential**  
**D—Desired**

## General Standards

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### Standard XXXVII—Case Management Capabilities

A.	Case management will be available to all trauma patients and their families from time of admission to the facility to time of discharge. This is to include evidence of the appropriate coordination of clinical trauma care, discharge planning, and follow-up care.	E	E	D
B.	If there is an identified case manager, case management will be provided to all trauma patients and all services will be provided in a cohesive manner.	D	D	D
1.	The case manager must be hospital based and have evidence of regular and active interface with the trauma program.	E	E	D
2.	The case manager will have evidence of appropriate qualifications, for example, educational preparation, certification(s), and clinical experience.	E	E	D
3.	There will be evidence of a job description and organizational chart depicting the relationship between the case manager and the trauma program.	E	E	D
4.	The case manager will participate in local, state, and national trauma related activities.	D	D	D
5.	Case managers who have a defined role in the trauma program will have evidence of 8 hours of trauma continuing education every year.	E	E	D
C.	When there is no identified case manager, a policy/protocol will be defined to ensure the presence of adequate case management capabilities. This evidence may include but is not limited to:	E	E	D
1.	Involvement with the multidisciplinary trauma team to coordinate the overall plan of care for the trauma patient.	E	E	D
2.	Involvement with the trauma performance improvement and patient safety program.	E	E	D
3.	Involvement with the trauma performance improvement and patient safety program to assist in the development of patient management guidelines.	E	E	D
4.	Involvement with institutional departments such as admissions, utilization review, finance, nursing, rehabilitation, home health care, and social work to appropriately plan for the discharge/disposition of the trauma patient.	E	E	D

**NOTE:** *The above services may be provided by case managers or by qualified members of the multidisciplinary trauma team.*

**E—Essential**  
**D—Desired**

## General Standards

Level I      Level II      Level III

### Standard XXXVIII—Geriatric Trauma Patient Care<sup>2</sup>

A. Abuse

Every admitted and transferred geriatric trauma patient suspected of abuse (physical, mental, sexual, psychological) must be evaluated by a qualified individual, investigating cause of injury and coordinating discharge planning. If the patient is transferred the results of any abuse screening must be forwarded to the receiving institution.	E	E	E
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**NOTE:** *March 2011 is the implementation date for forwarding abuse screening.*

B. Education of Trauma Center Personnel

Continuing Education must be driven by the trauma center registry data specific to geriatric patients in terms of types of injury and predominate age groups.	E	E	D
---	---	---	---

- |   |   |   |   |
|---|---|---|---|
| 1. All physicians participating in the adult trauma program must have evidence of geriatric trauma-related CME hours. This includes general surgeons, neurosurgeons, orthopedic surgeons, emergency medicine, radiologist, anesthesiologist, and physiatrists.  | D | D | D |
| 2. All advanced practitioners with a defined role in adult trauma patient care must have evidence of geriatric trauma-related CME/CEU hours every year.   | D | D | D |
| 3. All registered nurses who work in the following units: Emergency Department, Operating Room, Post-Anesthesia Care Unit, Intensive Care Unit for adult trauma patients, Intermediate Care/Step-Down Units for adult trauma patients, Medical/Surgical Units which regularly receive adult trauma patients, and adult Burn Unit: | D | D | D |
| a. Must have evidence of geriatric trauma-related continuing education hours each year.   | D | D | D |
| b. Must have evidence of age related clinical competency (reference JCAHO).   | E | E | E |

C. Performance Improvement and Patient Safety

- |   |   |   |   |
|---|---|---|---|
| 1. Trauma performance improvement and patient safety programs must review geriatric trauma patients both concurrently and retrospectively in terms of clinical and systems issues. The use of audit filters may be useful for this process. | D | D | D |
| 2. The trauma program will develop geriatric trauma patient management guidelines (protocols) that include resuscitation, critical care, and rehabilitation.  | D | D | D |

D. Prevention

- |   |   |   |   |
|---|---|---|---|
| 1. The trauma center must use its trauma registry to identify the pattern, frequency, and risks for injury to the geriatric population group within the community and use this as a guide (along with community resources) to formulate geriatric trauma prevention programs. | D | D | D |
|---|---|---|---|

<sup>2</sup> In 1998, approximately 21% of Pennsylvania Trauma Outcome Study (PTOS) trauma patients who were admitted to trauma centers were over age 55. Pennsylvania has the second largest aged population in the United States and the largest rural aged population in the country. Therefore, the significance of the aged trauma patient requires the addition of this Geriatric Trauma Patient Care Standard.

**E—Essential**  
**D—Desired**

## GLOSSARY

AACN	American Association of Critical Care Nurses
AANN	American Association of Neuroscience Nurses
ACEP	American College of Emergency Physicians
ACGME	Accreditation Council for Graduate Medical Education
ACLS verification	Verification by the American Heart Association of Advanced Cardiac Life Support course completion
ACS COT	American College of Surgeons Committee on Trauma
Admission	The formal acceptance by a hospital of patients who are to receive physician, dentist, or allied services while lodged in the hospital and all PTOS qualifiers will be included as admissions. In addition, those patients receiving full trauma team activation, as defined by the pediatric Trauma Program and kept within the hospital on a 23 hour protocol or clinical management guideline can be counted as an admission. During this period of observation, the pediatric trauma patient must reside in an area staffed by pediatric trauma credentialed registered nurse(s).
Advanced Practitioner	A physician assistant or CRNP that has a defined role in the care of the trauma patient.
AIS	Abbreviated Injury Scale - An anatomic severity scoring system
Allied Health Professional	Occupations whose primary function is to provide health services to promote health. Preparations for such occupations range from on-the-job training to post-graduate education. The occupations include those that have direct patient care responsibilities, such as physical therapists and occupational therapists, and those with little or no direct patient contact, such as medical laboratory technologists, community health educators, and medical record practitioners. ( <i>Medical Record Management, 9<sup>th</sup> Edition</i> )
ALS	Advanced Life Support including techniques of resuscitation, such as intubation, intravenous access, and cardiac monitoring

## GLOSSARY

American Burn Association Burn Center Referral Criteria	<p>Burn injuries that should be referred to a burn center include the following:</p> <ol style="list-style-type: none"><li>1. Partial-thickness burns of greater than 10% of the total body surface area</li><li>2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints</li><li>3. Third-degree burns in any age group</li><li>4. Electrical burns, including lightning injury</li><li>5. Chemical burns</li><li>6. Inhalation injury</li><li>7. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality</li><li>8. Any patients with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient's condition may be stabilized initially in a trauma center before transfer to a burn center. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols.</li><li>9. Burned children in hospitals without qualified personnel or equipment for the care of children</li><li>10. Burn injury in patients who will require special social, emotional, or rehabilitative intervention</li></ol>
AORN	Association of Operating Room Nurses
APLS Course	Advanced Pediatric Life Support Course jointly developed and sponsored by the American College of Emergency Physicians and American Academy of Pediatrics which covers the knowledge and skills necessary for the initial management of pediatric emergencies, including trauma.
ATCN	Advanced Trauma Care for Nurses sponsored by Society of Trauma Nurses and recognized by the American College of Surgeons Committee on Trauma.
ATLS Course	Advanced Trauma Life Support Course of the American College of Surgeons
Available	Immediately accessible for providing care to the trauma patient
BLS	Basic life support techniques of resuscitation, which may include simple airway maneuvers, administration of oxygen, and intravenous access.
Board - certified	Physicians certified by appropriate specialty boards recognized by the American Board of Medical Specialties, a Canadian board, or other equivalent foreign board. (Revised effective 01-01-04)
Burn Unit	A special care unit that possesses the facilities, equipment, and personnel specifically for the care of burn patients and adhering to the standards of the American Burn Association (ABA).
Bypass	A procedure put into effect by a trauma center when the facility is unable to provide the level of care demanded by trauma center accreditation and patients are referred to other accredited trauma centers

## GLOSSARY

Case Management	Case management is a collaborative process which assesses, plans, implements, coordinates, monitors, and evaluates the options and services to meet an individual's health needs, using communication and available resources to promote quality, cost effective outcomes. ( <i>National Case Management Task Force, Feb. 92</i> )
Category I CME	<p>Category I is a formal learning activity, which adheres to the ACCME (American Council for Continuing Medical Education) essentials and is accepted by the Pennsylvania Trauma Systems Foundation. Category I CME can only be awarded by a CME accredited provider. The following are meetings that could be acceptable if Category I CME credits are provided:</p> <ol style="list-style-type: none"><li>1. American Association for the Surgery of Trauma (AAST)</li><li>2. American Burn Association</li><li>3. Eastern Association for the Surgery of Trauma (EAST)</li><li>4. Western Trauma Association</li><li>5. Las Vegas Trauma Conference</li><li>6. ACSCOT Point/Counterpoint</li><li>7. Missouri Trauma Conference (December)</li><li>8. Pan-American Trauma Association</li><li>9. ACSCOT Fall Meeting</li><li>10. Shock Society Annual Meeting</li><li>11. Society of Critical Care Medicine Annual Meeting</li><li>12. Orthopedic Trauma Association</li><li>13. American Academy of Orthopedic Surgeons</li><li>14. National American Trauma Society Annual Meeting</li><li>15. Pennsylvania American Trauma Society Annual Meeting</li><li>16. Philadelphia Trauma Conference (December)</li><li>17. Pennsylvania ACSCOT Resident Paper Competition</li><li>18. Regional ACSCOT Resident Paper Competition</li><li>19. National ACEP Scientific Assembly</li><li>20. Congress of Neurological Surgeons national meeting</li><li>21. American Association of Neurological Surgeons national meeting</li><li>22. American Academy of Orthopedic Surgeons national meeting</li></ol> <p>Submit the program if there is any doubt or if the conference is not listed above.</p>
CCRN	Critical Care Registered Nurse certification by the American Association of Critical Care Nurses
CEN	Certified Emergency Nurse certification by the Emergency Nurses Association
CFRN	Certified Flight Registered Nurse certification by the National Flight Nurse Association

## GLOSSARY

CME	Continuing Medical Education - Defined educational activities for practicing physicians, often resulting in approved credit hours from the AMA, state medical society, a medical school, or hospital. Continuing medical education consists of educational activities that serve to maintain, develop, or increase the knowledge, skills, professional performance and relationships that a physician uses to provide services for patients, the public, or profession. The content of CME is that body of knowledge and skills generally recognized and accepted by the profession as within the basic medical sciences, the discipline of clinical practice, and the provision of health care to the public. Both category I & category II CME can be used to comply with the standard for total CME hours.
CNRN	Certified Neuroscience Registered Nurse certification by the American Association of Neuroscience Nurses
Co-morbidity	Significant cardiac, respiratory, or metabolic diseases that stimulate the triage of trauma patients to trauma centers; also known as pre-existing conditions.
Comprehensive Trauma Rehabilitation Plan	A documented course of treatment prescribed by a physician (in most cases a physiatrist) which the trauma patient follows to assist in integration into the community
Continuing Education	Planned educational activities intended to enrich the educational and experiential background of the health professional
Continuous Basis	Required certification(s) must be current and maintained with no time lapse between the date of expiration and the date of re-certification
Core Panel	The group of trauma surgeons who take trauma call for a hospital. Any trauma/general surgeon taking more than 10% of the total trauma call will be considered a member of the core panel.
Credentialed	A process in which individual institutions recognize appropriate education and training for physicians and registered nurses with specialized skills
CRNP	Certified Registered Nurse Practitioner
D	Desired requirement(s) for accredited trauma centers in Pennsylvania. This means the standard is not required for trauma center accreditation; however this could be a goal to strive for.
Demonstrated Capacity	Documentation of the adequacy of the institution's capacity to provide care at the level stated, including methodology for prioritization of services throughout the institution, to meet patient needs
Demonstrated Commitment	Provision of evidence, visible and written, which clearly demonstrates an institution-wide commitment to trauma care

**E—Essential**  
**D—Desired**

## GLOSSARY

Designee - Neurosurgery	The in-house neurosurgical requirement may be fulfilled by a neurosurgical resident in at least the second year of clinical neurosurgical experience, or the attending trauma surgeon or the general surgery resident (PGY-4 or above) who has special competence, as attested to in writing by the Chief of Neurosurgery and/or the Trauma Program Medical Director in consultation with the Chief of Neurosurgery, in the care of patients with neural trauma.
Designee - Orthopedics	The in-house orthopedic requirement may be fulfilled by an orthopedic resident in at least the second year of clinical orthopedic experience, or the attending trauma surgeon or the general surgery resident (PGY-4 or above) who has special competence, as attested to in writing by the Chief of Orthopedics and/or the Trauma Program Medical Director in consultation with the Chief of Orthopedics, in the care of patients with orthopedic trauma.
E	Essential requirement(s) for accredited trauma centers in Pennsylvania. This means the standard is required for trauma center accreditation.
Emergency	A sudden, generally unexpected occurrence or set of circumstances demanding immediate attention.
Emergency Medical Technician (EMT)	An individual who is trained to provide emergency medical services and is certified as such by the Pennsylvania Department of Health in accordance with the current national standard curriculum for basic Emergency Medical Technicians as set forth in the rules and regulations promulgated by the Pennsylvania Department of Health.
Emergency Medical Technician—Paramedic (EMT/P)	Emergency Medical Technician specifically trained to provide advanced life support and who is certified as such by the Pennsylvania Department of Health in accordance with the current national standard curriculum for Emergency Medical Technicians - Paramedics as set forth in the rules and regulations promulgated by the Pennsylvania Department of Health.
EMS System	Emergency Medical Services System. The arrangement of personnel, facilities, and equipment for the effective and coordinated delivery of emergency medical services required for prevention and management of incidents which occur as the result of a medical emergency, an accident/crash, a natural disaster, or a similar situation.
ENA	Emergency Nurses Association
ENPC	Emergency Nursing Pediatric Course sponsored by ENA.
External Education Presentation	CME/CE approved lectures, seminars, or courses given by the staff of the Trauma Program, Medical, Nursing, or Allied Health Professions involved with the trauma program. These can include offerings such as ATLS, PALS, EMS symposium or staff participation as an invited presenter in CME/CE recognized programs.
First Responder to the ICU	A physician who is in-house and available in the ICU for emergencies 24 hours a day. This physician will NOT be the emergency department physician or the on-call trauma surgeon. A first responder to the ICU must be a PGY-1 (in the second half of the first year and having completed ATLS and ACLS) or above.

**E—Essential**  
**D—Desired**

## GLOSSARY

Foundation	A private, non-profit organization recognized by PA Law “Act 1985-45” for the accreditation of trauma centers throughout the state of PA.
General Surgical Accredited Residency Program	A program approved by either the Accreditation Council for Graduate Medical Education or the American Osteopathic Association.
General Surgical Trauma Call Roster	A publicized listing of attending level surgeons assigned to trauma care, including dates of coverage and back-up surgical physician(s).
Geriatric Patient	The patient age 55 and over.
ICD - 9	The ninth edition of “ <i>International Classification of Diseases</i> ” - a standard coding system that includes all injuries and disease processes.
ICP	Intracranial pressure, often monitored in patients with severe injuries to the brain.
Immediately Available	Implies the physical presence of the health care professional in a stated location at the time of need by the trauma patient.
In-House CT Scanner	In-house computerized tomography (CT) scanner does NOT include mobile services, guaranteed service contracts with other institutions with in-house CT scanners, or CT scanners in use at remote buildings or areas of the institution requiring transportation of the patient from the main building to the CT scanner.
Institution	The hospital facility, administration and physical plant, applying for and maintaining trauma center accreditation. The accreditation process does not review or accredit ALL hospitals within the health network/system. Accreditation only applies to the individual institution under review.
Interdisciplinary	The collaboration of professionals who formulate an optimal plan of patient care.
Inter-hospital Transfer	The transfer of a patient from a resource-limited facility to a trauma center able to provide a higher level of care.
Intermediate Care Step Down Unit(s)	Each institution will define the areas considered intermediate care/step down units by the patient admission criteria. Appropriate education for the staff will be determined. The minimum education provided must be the trauma nurse course and the required hours of continuing education (i.e., 8 hours for an all adult unit).
Internal Educational Process	A process whereby trauma clinical care updates that included sub-specialty specific information is provided to the sub-specialists within that group on an annual basis. It will be up to the individual facilities to define this process. At a minimum the education must be one hour in length and there must be evidence of attendance. Examples may include but are not limited to: <ul style="list-style-type: none"><li>▪ Documentation of a subspecialty specific, trauma clinical care update as a self learning module or</li><li>▪ Attendance of formal subspecialty specific, trauma clinical care update lecture.</li></ul>
Intervention	Raises awareness of risks and motivation of the individual toward acknowledgement of a potential problem.

**E—Essential**  
**D—Desired**

## GLOSSARY

IRB	Institutional Review Board
ISS	Injury Severity Score - the sum of the squares of the Abbreviated Injury Scale scores of the three most severely injured body regions.
Liaison	A physician with credentials in the appropriate specialty with expertise and interest in trauma care. This person optimally should be the chairperson of the specialty department.
Licensed Helipad	Licensed by the Bureau of Aviation, Pennsylvania Department of Aviation. Air space approved by the Federal Aviation Administration.
Major Uni-system/Multi-system Trauma Patient	The patient with severe multi-system or major uni-system injury, the extent of which may be difficult to ascertain, but which has the potential of producing mortality or major disability.
Managed Major Trauma Case	A case involving resuscitation and post-resuscitation care of a patient that may include surgery, comprehensive critical care, daily Medical/Surgical unit care, and discharge planning under the direction of an attending trauma surgeon.
Mechanism of Injury	The source of forces that produce mechanical deformations and physiologic responses that causes an anatomic lesion or functional change in humans.
Morbidity	The relative incidence of complications related to disease.
Mortality	The proportion of deaths to population.

## GLOSSARY

Neurological Surgery contingency plan	<p>Formally arranged contingency plans in case the capability of the neurosurgeon, hospital, or system is overwhelmed. “A published back-up call schedule is ideal. Some alternative models are as follows:</p> <ul style="list-style-type: none"><li>▪ When the volume of neurotrauma is low, a backup call schedule is not essential if in a single trauma center or two trauma centers within the same community covered by a single neurosurgeon, fewer than 25 emergency neurosurgical trauma procedures (excluding ICP monitors) are done within 24 hours of admission per year, between the two centers.</li><li>▪ In communities where neurosurgeon availability is limited, it may occasionally be necessary to redirect neurotrauma cases to a similar or higher-level accredited trauma center with available neurosurgical coverage within that community, if redirection can be accomplished promptly. This alternative requires a predefined neurotrauma diversion plan known to emergency medical services and all members of the trauma team. This system must be thoroughly developed and function so that the care of the injured patient is not compromised by the lack of availability of a neurosurgeon at the receiving center.</li><li>▪ The trauma surgeon may be trained appropriately by the neurosurgical liaison and periodically credentialed by the hospital in the initial evaluation of patients with neurotrauma, interpretation of CT scans, brain resuscitation, and appropriate emergency procedures. In such situations, the trauma surgeon must be fully capable of managing neurotrauma patients until neurosurgical coverage becomes available or until the patient is in sufficiently stable condition for transport to a facility where neurosurgical coverage is available.</li><li>▪ In a trauma center with accredited neurosurgical residency training programs, a senior post graduate-year 5 or greater neurosurgery resident may serve as the backup</li></ul>
NFNA	National Flight Nurses Association
Orientation	Time period provided to acquaint new personnel with the physical facilities, philosophies, policies, role expectations, procedures, and skills required in the new environment.
Participation	The act of an individual(s) sharing or receiving information, with active involvement.
PTNCC	Pennsylvania Trauma Nursing Core Curriculum © 1992, Pennsylvania Trauma Systems Foundation
PALS	Pediatric Advanced Life Support Course developed and sponsored by the American Heart Association and the American Academy of Pediatrics. This course covers the knowledge and skills necessary for the initial management of pediatric emergencies, including trauma.
Pastoral Care	The delivery of spiritual or religious support usually by qualified spiritual leaders such as ministers, priests, rabbis, etc.
Patient Management Guidelines	The standardized specifications for care developed by a formal process that incorporates the best scientific evidence of effective care with expert opinion.

**E—Essential**  
**D—Desired**

## GLOSSARY

Pediatric Trauma Patient	<p>For the purposes of PTOS submission: trauma patients less than 15 years of age.</p> <p>Trauma Centers should determine the age definition of a pediatric trauma patient for their individual institutions.</p>
Performance Improvement and Patient Safety	<p>Performance improvement emphasizes a continuous, multidisciplinary effort to measure, evaluate, and improve the process of care and its outcome. The patient safety program evaluates the overall care process to see whether it minimizes risk of harm related to the care process itself. (ACS COT 2010)</p>
Phases of Care	<p>Pre-hospital, resuscitative care, operative care, post-anesthesia care, critical care, post-resuscitative care (intermediate care/step-down unit, medical surgical unit) rehabilitative care</p>
PHTLS	<p>Pre-hospital Trauma Life Support sponsored by National Association for Emergency Medical Technicians in cooperation with the American College of Surgeons Committee on Trauma</p>
PICU	<p>Pediatric Intensive Care Unit</p> <p>Typically the PICU is geographically separated from adult intensive care units. A board certified Pediatric Critical Care Medicine Specialist is the medical director and provides oversight of other physicians providing care in the PICU as well as other care providers including residents, advanced practice nurses and others. Modern PICU's have their own performance improvement and patient safety processes whereby data is collected and analyzed to assess performance based on national standards. Pediatric Critical Care Medicine specialists provide concurrent care for injured children cooperatively with the pediatric trauma surgeons, neurosurgeons and other surgical specialists. The overall care of the pediatric trauma patient is the responsibility of the pediatric trauma surgeon, but the concurrent care model utilizing Pediatric Critical Care Medicine care specialists is an indispensable part of a process that provides the highest level of care and the best outcomes.</p>
Post Graduate Year (PGY)	<p>Classification system for residents in post-graduate training. The number indicates the year the resident is in during their post-medical school residency program; for example, PGY-1 is one year after graduation from medical school.</p>
Promptly	<p>Implies the physical presence of health professionals in a stated location within a short period of time, which is defined by the Trauma Program Medical Director and continuously monitored by the performance improvement and patient safety program.</p> <p>Note: An exception to the physical presence requirement would be for radiologists using digital electronic equipment. In this case the medical record must reflect the delivery of the radiologist reading to the trauma team in a clinically appropriate time, as monitored by the performance improvement and patient safety program.</p>
PSNA	<p>Pennsylvania State Nurses Association</p>
PTOS	<p>Pennsylvania Trauma Outcome Study. - A centralized statewide registry organized to compile and maintain statistics on mortality and morbidity for major uni-system or multi-system trauma patients.</p>

## GLOSSARY

Readily Available	Implies the physical presence of required equipment in the stated unit within a short period of time. This should be monitored and addressed by the performance improvement and patient safety program as necessary.
Rehabilitation	Services that seek to return a trauma patient to the fullest physical, psychological, social, vocational, and educational level of functioning of which he/she is capable, consistent with physiologic or anatomic impairments and environmental limitations.
Research	<p>Systematic investigation designed to produce new knowledge applicable to the care of injured patients. All research articles submitted for consideration (Standard XXXIV) must meet the following requirements:</p> <ol style="list-style-type: none"><li>1) A Level I trauma surgeon's research cannot be counted at another center.</li><li>2) An article can be included if the trauma program can prove that it was from a peer reviewed journal if it is not in the Index Medicus/Medline.</li><li>3) Resident's papers competition papers that are not published can be counted as scholarly activity, not research.</li><li>4) Research <b>conducted and completed</b> prior to employment—but published after a change in employment—cannot be counted in the total number at the new place of employment. Research <b>conducted but not completed</b> prior to a change in employment may be counted at both hospitals.</li><li>5) Research completed by a consortium of hospitals can be counted at each hospital if data and trauma registry/trauma program resources are utilized in the completion of the research project.</li></ol>
Response Time	The interval between notification and arrival of the general surgeon or surgical specialist in the emergency center, operating room, or ICU.
Resuscitation	The intense period of patient assessment and medical care to save life or limb.
RTS	Revised trauma score - a pre-hospital/emergency center scoring system in which numerical values are assigned to differing values of Glasgow Coma Score, systolic blood pressure, and respiratory rate.
Special Competency	Physicians with specialized education and training in selected areas of care.
Spiritual Counseling	See Pastoral Care.
Staff Development	<p>Educational activities, which allow for acquisition, maintenance, and/or increased competence in job knowledge, skills, and responsibilities.</p> <p>Promotes the professional development of staff through the utilization of orientation, in-service education, and continuing education activities.</p>
Timely	A period of time deemed appropriate or suitable by the Trauma Program Medical Director and continuously monitored by the performance improvement and patient safety program.
TNCC	Trauma Nurse Core Courses sponsored by the Emergency Nurse's Association that can be used toward fulfilling the certification component of Standard X. (This does not take the place of the Trauma Nurse Core Curriculum as noted in Appendix B.

## GLOSSARY

Transfer Guidelines	<p>Established and maintained formal transfer agreements or guidelines should contain at a minimum the following components:</p> <ol style="list-style-type: none"><li>1. Defined process for the initiation of transfer, including roles and responsibilities of the referring facility and referral center (including responsibilities for requesting transfer and communication).</li><li>2. Process for selecting the appropriate facility based on patient injury (i.e., Pediatrics, Burns, closest higher level facility).</li><li>3. Process for selecting the appropriate staffed transport service to match the patient's acuity level.</li><li>4. Process for patient transfer including informed consent.</li><li>5. Plan for transfer of patient medical record.</li><li>6. Plan for transfer of copy of signed transport consent</li><li>7. Plan for transfer of personal belongings of the patient</li><li>8. Plan for provision of directions and referral institution's information to family</li></ol>
Trauma Center	<p>A specialized hospital facility distinguished by the immediate availability of specialized surgeons, physician specialists, anesthesiologists, nurses, and resuscitation and life support equipment on a 24-hour basis for severely injured patients or those at risk for severe injury.</p>
Trauma Credentialed Registered Nurse	<p>Professional registered nurse who has successfully completed the Trauma Nurse Course and fulfills education requirements mandated by the PTSF standards for trauma center accreditation. He/she must demonstrate and maintain clinical proficiency by integrating his/her knowledge and skills by regularly providing care to the trauma patient.</p>
Trauma Fellowship	<p>Formal advanced post-residency training in the care of injured patients. (See Appendix C of the <i>"Resources for Optimal Care of the Injured Patient: 1999"</i>)</p>
Trauma Nurse Course	<p>A basic trauma nurse course designed by the trauma center but which complies with the Pennsylvania Trauma Nurse Core Curriculum © 1992. (See Appendix B.)</p>
Trauma Prevention Programs	<p>Internal institutional and external outreach educational programs designed to increase awareness of methods for prevention and/or avoidance of trauma-related injuries.</p>
Trauma Program Coordinator	<p>A registered nurse with responsibility for coordination of all activities on the trauma service who works in collaboration with the Trauma Program Medical Director. In some programs this person may have management responsibilities and have the title of Trauma Program Manager.</p>
Trauma Program Manager	<p>See Trauma Program Coordinator.</p>
Trauma Program Medical Director	<p>Physician designated by the institution and medical staff to coordinate trauma care.</p>
Trauma Registry	<p>Database to provide information for analysis and evaluation of the quality of patient care, including epidemiological and demographic characteristics of trauma patients.</p>

## GLOSSARY

Trauma-Related Continuing Medical Education (CME)	Any approved CME (continuing medical education) or CE (continuing education) that enhances the ability of the provider to manage a trauma patient.
Trauma Resuscitation Area	A space used for trauma resuscitations. It must be of adequate size to accommodate the full trauma resuscitation team and equipment.
Trauma Resuscitation Team	Major trauma resuscitations require a multidisciplinary team of health care providers who work in synergy to rapidly assess and treat the patient. The trauma attending or appropriate designee must lead the team. A formal team configuration must be defined by the institution and monitored for effectiveness.
Trauma Team	A group of health care professionals organized to provide care and monitor the trauma patient in a coordinated and timely fashion.
TRISS	Trauma Score/Injury Severity Score - the likelihood of patient survival based on regression equation that includes patient age, ISS, RTS, and the type of injury (blunt or penetrating).

## Appendix A: Required Inter-Facility Transfer & Consultation

### General Guidelines

To facilitate transfer, timely consultation is required with a Level I or Level II receiving trauma center surgeon. The attending trauma surgeon of the referring facility should initiate the consult. (An EM physician may initiate the consult if the trauma surgeon is unavailable.) Consultation with the attending trauma surgeon is required in the determination of the necessity of transfer and the circumstance of transfer, including but not limited to additional diagnostic/therapeutic issues, availability of resources, weather conditions.

When transfer is necessary, the patient must be transferred to a Level I/II trauma center. If the patient's condition exceeds the institution's capabilities, the patient should be transferred to the closest level I/II trauma center. Transport to a trauma center other than the closest trauma center is permitted if the difference in time to arrival between the closest center and other center is no more than 10 minutes.

In the event that patients meeting the mandatory transfer requirements below are not transferred, evidence must be presented to the site survey team on survey day showing review of those cases through the Performance Improvement process, including appropriateness of care and patient outcome.

**Mandatory transfer is required for Level III trauma centers caring for the critically injured adult and pediatric trauma patient with any of the following conditions:**

- 1) Pelvic fractures with unrelenting hemorrhage
- 2) Aortic tears
- 3) Any patient requiring damage control laparotomy
- 4) Significant head injuries (intracranial bleeding or GCS  $\leq$  10), spinal cord injury with neurological deficit, or unstable spine fractures.
- 5) Significant multi-system trauma as defined by:
  - a) Chest Injury (as part of multi-system injuries)
    - i) Multiple rib fractures  $>$  4 unilaterally or  $>$  2 bilaterally
    - ii) Hemothorax
  - b) Abdominal injury (as part of multi-system injuries)
    - i) Significant intra or retro peritoneal bleeding
    - ii) Hollow organ or solid visceral injury
- 6) Bilateral femur fracture or pelvic fracture complicated by significant chest and/or abdominal injuries as defined above
- 7) Trauma patient on mechanical ventilation for  $>$  2 days.
- 8) Life threatening complications, such as acute renal failure coagulopathy or acute myocardial infarction etc.
- 9) Significant preexisting conditions with single or multi-system injuries.

**Consideration for Transfer: Patients receiving anticoagulant therapy that places the patient at significant risk for intracranial hemorrhage or intracranial bleeding.**

**Mandatory Consult is required for patients with bilateral pulmonary contusions requiring ventilation.**

**In addition to the above conditions, pediatric considerations for transfer include:**

1. Pediatric trauma patients  $\leq 14$  years of age injured seriously enough to require hospital admission should be considered for transfer to a Pediatric Trauma Center (Pediatric Regional Resource Center or Trauma Center with Additional Qualifications in Pediatric Trauma).
2. It is MANDATORY to transfer to a Pediatric Trauma Center trauma patients  $\leq 14$  years of age who meet the following criteria:
  - a. Require admission to an ICU.
  - b. Exhibit signs of traumatic brain injury (structural abnormality on x-ray or CT, sustained GCS  $< 15$  for greater than 2hrs, or neurological deterioration.)
  - c. Are being treated non-operatively for solid organ injuries.
3. When transfer is necessary, pediatric trauma patients should be preferentially transferred to a Pediatric Trauma Center unless, in the judgment of the referring physician, transfer would excessively delay life-saving care that could be provided at a closer Level I or Level II facility.

## Appendix B: Pennsylvania Trauma Nursing Core Curriculum

### PREFACE

Care of the trauma patient has evolved since 1985, when the Pennsylvania Trauma Systems Foundation (PTSF) Board of Directors approved the initial Standards for Trauma Center Accreditation based upon the American College of Surgeons report *Hospital Resources for the Optimal Care of the Injured Patient*. The 1986 PTSF Standards included the Pennsylvania Trauma Nursing Core Curriculum (PATNCC) that focused on education for registered nurses directly involved with trauma patient care. In 1991, the curriculum was expanded and clarified to include the educational needs and responsibilities of registered nurses in providing care to trauma patients across the continuum of the hospital admission. This included all phases of care from time of injury and pre-hospital care to acute in hospital care, including in hospital rehabilitation and discharge planning.

Building on the 1991 foundation, the Ad Hoc Committee for Trauma Nurse Course Revision 1999 reformatted the curriculum to facilitate an evidence-based approach for trauma nursing credentialing. Successful completion of the Pennsylvania Trauma Nursing Curriculum (PTNC) is one component of PTSF standards for trauma nurse credentialing. This curriculum, which is attached, establishes minimum content for the basic Trauma Nurse Course. *A Comprehensive Curriculum for Trauma Nursing, 2<sup>nd</sup> Edition* by E.W. Bayley & S.A. Turcke is one suggested resource that can be used as a reference for expanding course content. Additionally, each trauma center will need to consider their specific patient population, registered nurse audience, protocols and guidelines, teaching methodologies, time frame, and evaluation process when developing their own basic trauma course. The Trauma Nurse Course is considered one part of the trauma center's overall competence plan which also includes hospital and unit-based orientation, ongoing competency skills, specialty nursing certification, periodic performance evaluation, etc.

It is an expectation that each trauma center will review their course content on a regular basis at least every two years. The content should support evidence-based practice with the integration of data from the institution's trauma registry, national guidelines, current literature, and benchmarking efforts. This course must be accredited by a recognized professional nursing organization, for example, PSNA, ENA, AACN, or AORN.

Reference: *Standard X: Nursing Credentials, Certifications, and Continuing Education, Standards for Trauma Center Accreditation.*

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## PURPOSE

To introduce registered nurses responsible for caring for the trauma patient to the Pennsylvania Trauma Systems Foundation (PTSF), to the *Standards for Trauma Center Accreditation*, and to key areas of evidence based nursing practice that support PTSF in its mission to reduce death and disability from traumatic injury and improve patient outcomes.

OBJECTIVES	CONTENT
<b>TRAUMA SYSTEMS</b>	
1. Describe the Pennsylvania Trauma Systems Foundation (PTSF) and its standards and accreditation process.	<ul style="list-style-type: none"> <li>A. Quasi-governmental agency - PTSF</li> <li>B. Standards for Trauma Center Accreditation</li> <li>C. Accreditation/Verification process</li> <li>D. Entry of patient into system</li> <li>E. Triage Guidelines</li> <li>F. Performance improvement</li> </ul>
2. Describe how institution-specific practices relate to the PTSF standards requirements.	<ul style="list-style-type: none"> <li>A. Institution specific credentialing</li> <li>B. Institution specific Performance Improvement process</li> <li>C. Trauma Program Structure                             <ul style="list-style-type: none"> <li>1. Clinical</li> <li>2. Administrative</li> </ul> </li> <li>D. Trauma Registry</li> <li>E. Clinical Practice Guidelines</li> <li>F. Trauma Resuscitation Team</li> <li>G. Multidisciplinary Acute Care Team</li> <li>H. Plan of Care</li> <li>I. Outcome measurements</li> </ul>
<b>PREHOSPITAL</b>	
1. Identify the purpose and role of Emergency Medical Services (EMS) and availability within the region.	<ul style="list-style-type: none"> <li>A. Access EMS</li> <li>B. Purpose of EMS</li> <li>C. Scene Management</li> <li>D. Medical Command</li> <li>E. EMS Documentation</li> <li>F. Disaster preparedness/Mass Casualties</li> </ul>

OBJECTIVES	CONTENT
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E—Essential  
D—Desired

**SYSTEMATIC ASSESSMENT/ MANAGEMENT**

**RESUSCITATIVE PHASE**

<p>1. Define predictable clinical manifestations relative to mechanism of injury.</p>	<p>A. Mechanism of Injury/ Kinematics</p> <ol style="list-style-type: none"> <li>1. Blunt</li> <li>2. Penetrating</li> <li>3. Injuries due to burns/cold</li> <li>4. Hazardous environment</li> </ol>
<p>2. Outline a basic trauma nursing assessment in collaboration with the ATLS® standardized approach.</p>	<p>A. Primary Survey</p> <ol style="list-style-type: none"> <li>1. Airway</li> <li>2. Breathing</li> <li>3. Circulation</li> <li>4. Disability</li> <li>5. Exposure</li> </ol> <p>B. Secondary Survey</p> <ol style="list-style-type: none"> <li>1. AMPLE history with mechanism of injury: <b>A</b>llergies, <b>M</b>edications, <b>P</b>ast illnesses/ <b>P</b>regnancy, <b>L</b>ast meal, <b>E</b>vents/ <b>E</b>nvironment</li> <li>2. Physical exam of:             <ol style="list-style-type: none"> <li>a. Head and Maxillofacial</li> <li>b. Cervical Spine and Neck</li> <li>c. Chest</li> <li>d. Abdomen</li> <li>e. Peritoneum, Rectum, Vagina</li> <li>f. Musculoskeletal                 <ol style="list-style-type: none"> <li>1) Extremities</li> <li>2) Pelvis</li> </ol> </li> <li>g. Neurologic                 <ol style="list-style-type: none"> <li>1) Spine</li> <li>2) Cord</li> <li>3) Central Nervous System</li> </ol> </li> <li>h. Skin integrity</li> </ol> </li> </ol> <p>C. Tertiary Nursing Assessment</p> <ol style="list-style-type: none"> <li>1. Replication of primary and secondary surveys</li> <li>2. Ongoing evaluation of response to interventions</li> <li>3. Recognition of subtle signs and symptoms of decompensation</li> <li>4. End points of resuscitation</li> </ol>

<b>OBJECTIVES</b>	<b>CONTENT</b>
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E—Essential  
D—Desired

<b><i>PERIOPERATIVE PHASE</i></b>	
1. Describe the perioperative phase as it relates to the operative management of traumatic injury and to predisposition of complications (occurrences).	A. Operative priorities B. Potential complications from operative procedures C. Evidence preservation
<b><i>POST ANESTHESIA RECOVERY PHASE</i></b>	
1. Discuss the patient's response to anesthetic agents in relation to the injury and to operative management.	A. Anesthetics B. Assessment and monitoring patient response
<b><i>ACUTE CARE PHASE</i></b>	
<i>SUGGESTED TEACHING METHOD: Use a case study that demonstrates the use of data from the trauma registry, the performance improvement process, and patient outcomes.</i>	
1. Recognize signs, symptoms and management strategies of shock.	A. Classifications B. Signs and symptoms C. Management 1. Massive transfusion concerns
2. Describe the pathophysiology, clinical manifestations, and medical and nursing management of systems trauma during the acute phase of care, including issues for discharge planning (See A - H).	A. Head trauma 1. Mechanism of injury 2. Pathophysiology 3. Clinical manifestations, assessment 4. Treatment, interventions, nursing care 5. Pain management a. Pharmacologic and non-pharmacologic approaches b. Age-specific interventions c. Outcome evaluation 6. Signs and symptoms of potential decompensation - life threatening 7. Complications (occurrences) - identify by using institution-specific data 8. Nutrition 9. Discharge planning 10. Performance improvement B. Maxillofacial trauma 1. Mechanism of injury 2. Pathophysiology 3. Clinical manifestations and assessment 4. Treatment, interventions, and nursing care
3. Identify significant performance improvement data that affects current practice in trauma care.	
<b>OBJECTIVES</b>	<b>CONTENT</b>

E—Essential  
D—Desired

***ACUTE CARE PHASE (continued)***

	<ul style="list-style-type: none"> <li>5. Pain management           <ul style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ul> </li> <li>6. Signs and symptoms of potential decompensation - life threatening</li> <li>7. Complications (occurrences) - identify by using institution-specific data</li> <li>8. Nutrition</li> <li>9. Discharge planning</li> <li>10. Performance improvement</li> <li>C. Spinal cord injury           <ul style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Pathophysiology</li> <li>3. Clinical manifestations and assessment</li> <li>4. Treatment, interventions, and nursing care</li> <li>5. Pain management               <ul style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ul> </li> <li>6. Signs and symptoms of potential decompensation - life threatening</li> <li>7. Complications (occurrences) - identify by using institution-specific data</li> <li>8. Nutrition</li> <li>9. Discharge planning</li> <li>10. Performance improvement</li> </ul> </li> <li>D. Chest trauma           <ul style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Pathophysiology</li> <li>3. Clinical manifestations and assessment</li> <li>4. Treatment, interventions, and nursing care</li> <li>5. Pain management               <ul style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ul> </li> </ul> </li> </ul>
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OBJECTIVES	CONTENT
<i>ACUTE CARE PHASE (continued)</i>	
	<ul style="list-style-type: none"> <li>6. Signs and symptoms of potential decompensation - life threatening</li> <li>7. Complications (occurrences) - identify by using institution-specific data</li> <li>8. Nutrition</li> <li>9. Discharge planning</li> <li>10. Performance improvement</li> <li>E. Abdominal trauma               <ul style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Pathophysiology</li> <li>3. Clinical manifestations and assessment</li> <li>4. Treatment, interventions, and nursing care</li> <li>5. Pain management                   <ul style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ul> </li> </ul> </li> <li>6. Signs and symptoms of potential decompensation - life threatening</li> <li>7. Complications (occurrences) - identify by using institution-specific data</li> <li>8. Nutrition</li> <li>9. Discharge planning</li> <li>10. Performance improvement</li> <li>F. Genitourinary trauma               <ul style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Pathophysiology</li> <li>3. Clinical manifestations and assessment</li> <li>4. Treatment, interventions, and nursing care</li> <li>5. Pain management                   <ul style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ul> </li> </ul> </li> <li>6. Signs and symptoms of potential decompensation</li> <li>7. Complications (occurrences) - identify by using institution-specific data</li> </ul>

OBJECTIVES	CONTENT
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E—Essential  
 D—Desired

***ACUTE CARE PHASE (continued)***

	<ul style="list-style-type: none"> <li>8. Nutrition</li> <li>9. Discharge planning</li> <li>10. Performance improvement</li> </ul> <p>G. Musculoskeletal trauma</p> <ul style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Pathophysiology</li> <li>3. Clinical manifestations and assessment</li> <li>4. Treatment, interventions, and nursing care</li> <li>5. Pain management               <ul style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ul> </li> <li>6. Signs and symptoms of potential decompensation</li> <li>7. Complications (occurrences) - identify by using of institution specific data</li> <li>8. Nutrition</li> <li>9. Discharge planning</li> <li>10. Performance improvement</li> </ul> <p>H. Injuries due to burns or cold</p> <ul style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Pathophysiology</li> <li>3. Clinical manifestations and assessment</li> <li>4. Treatment, interventions, nursing care</li> <li>5. Pain management               <ul style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ul> </li> <li>6. Signs and symptoms of potential decompensation - life threatening</li> <li>7. Complications (occurrences) - identify by using of institution-specific data</li> <li>8. Nutrition</li> <li>9. Discharge planning</li> <li>10. Performance improvement</li> </ul>
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<b>OBJECTIVES</b>	<b>CONTENT</b>
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E—Essential  
 D—Desired

<b><i>ACUTE CARE PHASE (continued)</i></b>	
4. Discuss nursing interventions to meet the spiritual, cultural, and psychosocial needs of the trauma patient and family.	A. Assessment and plan for the patient and family 1. Spiritual 2. Cultural 3. Psychosocial
<b><i>REHABILITATIVE PHASE</i></b>	
1. Discuss rehabilitation issues in relation to traumatic injuries.	A. Rehabilitation goals B. Strategies to reduce self-care deficits 1. Positioning 2. Therapies 3. Pain management C. Community and financial resources D. Equipment and assistive devices E. Discharge planning 1. Interdisciplinary team members 2. Begins on admission 3. Goals F. Americans with Disabilities Act
2. Analyze the standard approach to determine rehabilitation outcome measurements.	A. Functional Independence Measurement Score 1. Meaning 2. Importance B. Post discharge outcomes C. Additional scoring methods
<b>PREVENTION STRATEGIES</b>	
1. Identify strategies for trauma prevention	A. Pre-injury 1. Community outreach 2. Education 3. Registry data  B. Post-injury 1. Patient, family education 2. Substance abuse counseling 3. Resources 4. Registry data
<b>OBJECTIVES</b>	<b>CONTENT</b>
<b>PEDIATRIC CONSIDERATIONS</b>	
<i>NOTE: This specific course content can be presented as a separate focus or integrated throughout the course curriculum.</i>	

E—Essential  
D—Desired

*SUGGESTED TEACHING METHOD: Use a case study that demonstrates the utilization of data from the trauma registry, the performance improvement process, and patient outcomes.*

1. Define the pediatric population in relation to age and guardianship issues.	A. PTSF age definition B. Institution-specific age definition Guardianship issues
2. Relate the common causes of mortality and morbidity to mechanisms of injury in the pediatric trauma patient.	A. Pediatric mechanism of injury/Kinematics 1. Blunt 2. Penetrating 3. Injuries due to burns or cold 4. Hazardous environment
3. Outline a basic pediatric trauma nursing assessment in collaboration with the ATLS® standardized approach.	A. Primary Survey 1. Airway 2. Breathing 3. Circulation 4. Disability 5. Exposure B. Secondary Survey 1. AMPLE history with mechanism of injury: Allergies, Medications, Past illnesses/ Pregnancy, Last meal, Events/ Environment 2. Physical exam of: a. Head and Maxillofacial b. Cervical Spine and Neck c. Chest d. Abdomen e. Peritoneum, Rectum, Vagina f. Musculoskeletal 1) Extremities 2) Pelvis g. Neurologic 1) Spine 2) Cord 3) Central Nervous System h. Skin integrity

OBJECTIVES	CONTENT
<b>PEDIATRIC CONSIDERATIONS (continued)</b>	
	C. Tertiary Nursing Assessment 1. Replication of primary and secondary surveys

E—Essential  
D—Desired

	<ol style="list-style-type: none"> <li>2. Ongoing evaluation of response to interventions</li> <li>3. Recognition of subtle signs and symptoms of decompensation</li> <li>4. End points of resuscitation</li> </ol>
<ol style="list-style-type: none"> <li>4. Describe the pathophysiology, clinical manifestations, and medical and nursing management of systems trauma for the pediatric patient during the acute phase of care, including issues for discharge planning (<i>See A-H</i>).</li> <li>5. Identify significant performance improvement data that effects current practice in trauma care.</li> </ol>	<ol style="list-style-type: none"> <li>A. Head trauma             <ol style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Growth and development implications</li> <li>3. Pathophysiology</li> <li>4. Clinical manifestations and assessment</li> <li>5. Treatment, interventions, and nursing care</li> <li>6. Pain management                 <ol style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ol> </li> <li>7. Signs and symptoms of potential decompensation - life threatening</li> <li>8. Complications (occurrences) - identify by using institution-specific data</li> <li>9. Nutrition</li> <li>10. Discharge planning</li> <li>11. Performance improvement</li> </ol> </li> <li>B. Maxillofacial Trauma             <ol style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Growth and development implications</li> <li>3. Pathophysiology</li> <li>4. Clinical manifestations and assessment</li> <li>5. Treatment, interventions, and nursing care</li> <li>6. Pain management                 <ol style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ol> </li> </ol> </li> </ol>

<b>OBJECTIVES</b>	<b>CONTENT</b>
<b>PEDIATRIC CONSIDERATIONS (continued)</b>	
	<ol style="list-style-type: none"> <li>7. Signs and symptoms of potential decompensation - life threatening</li> <li>8. Complications (occurrences) - identify by</li> </ol>

E—Essential  
D—Desired

	<p>using institution specific data</p> <ol style="list-style-type: none"> <li>9. Nutrition</li> <li>10. Discharge planning</li> <li>11. Performance improvement</li> </ol> <p>C. Spinal cord injury</p> <ol style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Growth and development implications</li> <li>3. Pathophysiology</li> <li>4. Clinical manifestations and assessment</li> <li>5. Treatment, interventions, and nursing care</li> <li>6. Pain management                         <ol style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ol> </li> <li>7. Signs and symptoms of potential decompensation - life threatening</li> <li>8. Complications (occurrences) - identify by using of institution-specific data</li> <li>9. Nutrition</li> <li>10. Discharge planning</li> <li>11. Performance improvement</li> </ol> <p>D. Chest Trauma</p> <ol style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Growth and development implications</li> <li>3. Pathophysiology</li> <li>4. Clinical manifestations and assessment</li> <li>5. Treatment, interventions, and nursing care</li> <li>6. Pain management                         <ol style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ol> </li> </ol>
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OBJECTIVES	CONTENT
<b>PEDIATRIC CONSIDERATIONS (continued)</b>	
	<ol style="list-style-type: none"> <li>7. Signs and symptoms of potential decompensation - life threatening</li> <li>8. Complications (occurrences) - identify by using institution-specific data</li> <li>9. Nutrition</li> <li>10. Discharge planning</li> </ol>

E—Essential  
 D—Desired

	<ul style="list-style-type: none"> <li>11. Performance improvement</li> </ul> <p>E. Abdominal trauma</p> <ul style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Growth and development implications</li> <li>3. Pathophysiology</li> <li>4. Clinical manifestations and assessment</li> <li>5. Treatment, interventions, and nursing care</li> <li>6. Pain management               <ul style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ul> </li> <li>7. Signs and symptoms of potential decompensation - life threatening</li> <li>8. Complications (occurrences) - identify by using institution-specific data</li> <li>9. Nutrition</li> <li>10. Discharge planning</li> <li>11. Performance improvement</li> </ul> <p>F. Genitourinary trauma</p> <ul style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Growth and development implications</li> <li>3. Pathophysiology</li> <li>4. Clinical manifestations and assessment</li> <li>5. Treatment, interventions, and nursing care</li> <li>6. Pain management               <ul style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ul> </li> </ul>
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OBJECTIVES	CONTENT
<b>PEDIATRIC CONSIDERATIONS (continued)</b>	
	<ul style="list-style-type: none"> <li>7. Signs and symptoms of potential decompensation</li> <li>8. Complications (occurrences) - identify by using of institution-specific data</li> <li>9. Nutrition</li> <li>10. Discharge planning</li> <li>11. Performance improvement</li> </ul>

E—Essential  
 D—Desired

	<p>G. Musculoskeletal</p> <ol style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Growth and development implications</li> <li>3. Pathophysiology</li> <li>4. Clinical manifestations and assessment</li> <li>5. Treatment, interventions, and nursing care</li> <li>6. Pain management             <ol style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ol> </li> <li>7. Signs and symptoms of potential decompensation</li> <li>8. Complications (occurrences) - identify by using institution-specific data</li> <li>9. Nutrition</li> <li>10. Discharge planning</li> <li>11. Performance improvement</li> </ol> <p>H. Injuries due to burns or cold</p> <ol style="list-style-type: none"> <li>1. Mechanism of injury</li> <li>2. Growth and development implications</li> <li>3. Pathophysiology</li> <li>4. Clinical manifestations and assessment</li> <li>5. Treatment, interventions, and nursing care</li> <li>6. Pain management             <ol style="list-style-type: none"> <li>a. Pharmacologic and non-pharmacologic approaches</li> <li>b. Age-specific interventions</li> <li>c. Outcome evaluation</li> </ol> </li> </ol>
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OBJECTIVES	CONTENT
<b>PEDIATRIC CONSIDERATIONS (continued)</b>	
	<ol style="list-style-type: none"> <li>7. Signs and symptoms of potential decompensation - life threatening</li> <li>8. Complications (occurrences) - identify by using institution-specific data</li> <li>9. Nutrition</li> <li>10. Discharge planning</li> <li>11. Performance improvement</li> </ol>
6. Discuss nursing interventions to meet the developmental, emotional, cultural,	<p>A. Assessment and plan for the patient and family</p> <ol style="list-style-type: none"> <li>1. Spiritual</li> </ol>

E—Essential  
D—Desired

psychosocial, and spiritual needs of the child and family.	2. Cultural 3. Psychosocial
<b>GERIATRIC CONSIDERATIONS</b>	
<i>NOTE: This specific course content can be presented as a separate focus or integrated throughout the course curriculum.</i>	
<i>SUGGESTION: Use a case study technique method that demonstrates the utilization of data from the trauma registry, performance improvement process, and patient outcomes.</i>	
1. Define the geriatric trauma patient based on physiologic changes related to the aging process.	A. Definition of geriatric patient B. Systematic review of physiologic changes C. Pre-Injury Assessment 1. Physiologic 2. Social 3. Environmental 4. Mental status
2. Describe the common causes of injury and prevention strategy in the geriatric trauma population.	A. Common mechanism of injury B. Prevention Strategies
3. Define the legal issues related to geriatric trauma patients.	A. Guardianship B. Consent C. Advanced directives
<b>OBSTETRICAL CONSIDERATIONS</b>	
1. Describe the normal physiologic changes of pregnancy and how the changes relate to clinical management of traumatic injury.	A. Anatomic and physiologic changes of pregnancy B. Mechanism of injury during pregnancy C. Assessment, diagnosis, and management D. Common complications

OBJECTIVES	CONTENT
<b>ABUSE</b>	
1. Describe the patterns of injury that are suggestive of abuse.	A. Common injuries B. Patterns of injury
2. Identify screening and reporting responsibilities in abuse Situations.  3. Identify the nurse's role in the assessment and reporting of suspected abuse and neglect.	A. Substance abuse B. Child abuse 1. Types 2. Warning signs 3. Legal responsibilities C. Domestic abuse 1. Types 2. Warning signs 3. Legal responsibilities D. Geriatric abuse E. Social work role
<b>CRISIS INTERVENTION</b>	
1. Describe strategies of crisis intervention for the patient, family and caregiver.	A. Stages of coping B. Interventions C. Stress management techniques D. Critical Incident Stress Management (CISM) E. Post Traumatic Stress Disorder
<b>ETHICAL CONSIDERATIONS</b>	
1. Describe a decision making process that may be used to address ethical issues.	A. Role of ethics committee B. Responsibility of caregivers C. End-of-life decisions
<b>ORGAN PROCUREMENT</b>	
1. Define the process of evaluation for organ and tissue donation.	A. Request law B. Brain death: institution specific C. Non-heart beating donors D. Role of organ procurement organization

## ESSENTIAL TRAUMA SPECIFIC SKILLS

- Pre-hospital packaging
- Spine immobilization
- Trauma nursing assessment using the ATLS® approach
- Documentation
- Unit specific skills including orientation and competency

**Reference:** Bayley, E.W. & Turcke, S.A. (Eds), 1998. *A Comprehensive Curriculum for Trauma Nursing, 2<sup>nd</sup> Edition.*

## Appendix C: Transfer Guidelines: Adult Trauma Centers (Level I, II, and III) to Pediatric Trauma Centers

Pediatric trauma patients less than or equal to 14 years of age may benefit from resources and care available at Pediatric Trauma Centers (PTCs). PTCs need specialized pediatric resources typically available in children's hospitals and are therefore usually located in such hospitals. "Children's hospital" is understood to mean a free standing children's hospital or a separate administrative entity within a larger hospital organization such as a children's hospital within a hospital or a full service general hospital with comprehensive pediatric inpatient subspecialty services. Pediatric Surgeons are a requirement for the care of injured children in PTCs. The presence of a modern pediatric intensive care unit (PICU) utilizing the services of pediatric critical care medicine (PCCM) specialists in cooperation with pediatric trauma surgeons is also a distinguishing characteristic of trauma care at PTCs. PTCs should be used to the fullest extent feasible within the trauma system. Adult Trauma Centers must have transfer agreements in place with pediatric trauma centers. (Reference 2006 ACS ORD) For some injured children transfer would be mandatory barring extenuating circumstances such as weather, transport capabilities and the regional deployment of resources pertaining to the needs of multiple injured patients. Each decision to transfer takes into consideration the enhanced care provided at institutions with dedicated resources for the care of injured children and the inconvenience to families when they are geographically remote from their place of residence and support structures.

**A. Transfer to a Pediatric Trauma Center:** Pediatric trauma patients less than or equal to 14 years of age who meet the following criteria should be transferred to a pediatric trauma center:

1. Persistent physiologic derangements, shock, hemodynamically unstable, ongoing transfusion needs. The decision to transfer should be consistent with the best practices of trauma care and under some circumstances may require immediate onsite neurosurgical treatment such as decompression of an expanding epidural hematoma, thoracic, abdominal, and pelvic or extremity procedures required to control hemorrhage, such as laparotomy for hemoperitoneum with hemodynamic instability.
2. Traumatic brain injury (significant structural abnormality on x-ray or CT, sustained GCS less than or equal to 13 for greater than two hours, or neurologic deterioration.
3. Intubation and mechanical ventilation not expected to be weaned and extubated within 24 hours.
4. Children with special needs and those with other co-morbid conditions such as congenital heart disease, chronic lung disease or other disease processes that will benefit from the multidisciplinary care available at a pediatric trauma center.

**B. Consider Transfer to a Pediatric Trauma Center:** Pediatric trauma patients less than or equal to 14 years of age who meet the following criteria should be considered for transfer to a pediatric trauma center:

1. Non-operative management of solid organ injuries.
2. Any assessment of "negative points" on the Pediatric Trauma Score ("negative points are assigned for: less than 10 kg, airway unmaintainable, systolic blood pressure less than 50 mmHg, coma, major open or penetrating wound, open or multiple fractures.)
3. Injury Severity Score > 9
4. Victim or non-accidental injury that requires additional resources including a child protection team.
5. When it is anticipated that the complexity of ongoing care will exceed the capabilities of the local resources at the adult trauma center.

## **Appendix D: Summary of the Standards for Adult Trauma Centers Treating Injured Children**

(abstracted from Level I, II, III adult trauma standards):

Adult trauma centers treating injured children (ATCTIC) must achieve a high level of care for pediatric patients. ATCTICs should have the following characteristics. Description of the resources, credentialing, and PIPS elements that pertain to ATCTIC are found within the adult standards and are abstracted below for your reference

### **A. Resources**

1. There is a pediatric acute care inpatient area with dedicated resources for both trauma patients and other pediatric patients.
2. PALS trained nurses should be readily available in this area.
3. Age-specific emergency equipment must be readily available in the emergency department, the operating room and in the acute care areas of the hospital where pediatric trauma patients are cared for.
4. If pediatric patients are admitted to an intensive care unit setting for observation, there must be specific equipment and resources for pediatric patients.
5. Pediatric consultation must be readily available.

### **B. Credentialing**

1. A portion of the CME/update for trauma providers each year must include a review of pediatric trauma care at the institution.
2. The trauma program medical director must include within the 16 hours per year of external trauma CME, two hours per year (six hours every three years) of pediatric trauma CME.
3. PALS certification is desirable for all members of the trauma team.

### **C. Performance Improvement and Patient Safety (PIPS)**

1. The PIPS program will review all children cared for at an adult trauma center that treats injured children. Ideally this would include all children admitted to the adult trauma center and not only PTOS patients.
2. The PIPS program for an adult trauma center that treats injured children may include external review.

**Appendix E: (Pennsylvania Trauma Systems Stabilization Act; Act 15 of 2004)**

**The General Assembly of Pennsylvania  
HOUSE BILL No. 100  
Session Of 2003**