Standards of Accreditation

ADULT LEVELS I-III

Rev. 01.01.2026

Pennsylvania TRAUMA SYSTEMS Foundation

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Preface

Established by legislation in 1985, the Pennsylvania Trauma Systems Foundation (PTSF) serves as the accrediting body for trauma centers, and creates Standards of Accreditation that mandate how hospitals must function in order to be recognized as accredited trauma centers in the Commonwealth of Pennsylvania. State legislation directs with few exceptions, that at a minimum the PTSF Standards must comply with the current American College of Surgeons Committee on Trauma (ACS-COT) guidelines for trauma centers also known as "Resources for the Optimal Care of the Injured Patient." There have been multiple revisions of the ACS document, with the most recent being: "Resources for Optimal Care of the Injured Patient 2022 Standards." The ACS 2022 Standards focus on the abiding principle that trauma systems are centric to patient safety and optimal outcomes. This includes the spectrum of care from injury-prevention through rehabilitation.

The Pennsylvania Standards of Accreditation are divided into separate documents for Level I, II and III adult centers, Level I and II pediatric centers and Level IV adult centers. The task of oversight and maintenance of the PTSF Standards is the function of the PTSF Standards Committee, comprised of representatives from trauma centers and partnering organizations. On-going revisions will continue to be a collaborative process with final approval of all Standards by the PTSF Board of Directors. It is the goal of the Standards Committee to maintain legally compliant, patient-outcome driven expectations. This aligns with the PTSF mission; "Optimal outcomes for every injured patient" and vision; "We are committed to zero preventable deaths from injury in Pennsylvania." Additional information and resources are located at www.ptsf.org.

- In the event that a hospital needs a temporary or permanent variance from a Standard, please refer to Policy AC-105: Applying for a Variance from a Standard.

- If at any time, an accredited trauma center experiences an operational change, it must be communicated in a timely fashion. Please refer to Policy AC-128: Notification Regarding Changes in Trauma Center Operations for Pursuing & Accredited Trauma Centers.

- PTSF offers both required and optional education for various trauma center roles. For details, please refer to the PTSF Educational Offerings document, located on the PTSF website.

- Information is also available at www.ptsf.org, located within Trauma Accreditation, Standards. This includes a link to submit suggestions for standard revisions or clarifications. Questions about the Standards should be directed to PTSF staff members via email, located on the PTSF website.

Standard 1: Commitment

1. There will be demonstrated commitment, both personal and institutional, by the institution's Board of Directors, administration, and clinical staff to treat any trauma patient presented to the institution for care.

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2. Methods of demonstrating the commitment to the trauma system/center will include but are not limited to:
   - A. A Board and Medical Staff resolution that the institution agrees to meet the Pennsylvania Trauma Systems Foundation (PTSF) Standards for Trauma Center Accreditation.
     - i. This must be reaffirmed every three years.
     - ii. Example of Board Resolution
   - B. Participation in operations and integration of a statewide system including submission of patient care data to the PTSF for systems management, performance improvement and patient safety (PIPS) and operations research.
     - i. All trauma centers will support and fully participate in the Pennsylvania Trauma Outcome Study (PTOS) as specified by the PTSF.
     - ii. All trauma centers will support and fully participate in the Pennsylvania PIPS Central Site as specified by the PTSF. (See Standard 6: PIPS for additional details)
     - iii. All trauma centers will support and fully participate in the National Trauma Data Bank (NTDB) submission process.
   - C. Established policies and procedures for the maintenance of the services essential to a trauma system/center as outlined in the Standards for Trauma Center Accreditation.
   - D. Assurance that all trauma patients will receive medical care commensurate with the level of the institution's accreditation.
   - E. Commitment of the institution's financial, human, and physical resources as needed for the trauma program.
   - F. 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.
   - G. Established and maintained written transfer plans and protocols identifying the destination of other accredited/verified adult, pediatric and specialty trauma services such as burn and dialysis centers if appropriate.
     - i. The decision to transfer an injured patient must be based solely on the needs of the patient, without consideration of their health plan or payor status. Decisions regarding transfer should be made by the Trauma Surgeon only after stabilization of the patient's condition and appropriateness of the receiving facility's resources relative to the patient's needs.
     - ii. These plans must include patient criteria that exceed the capabilities of the trauma center and necessitate transfer, as well as the expected time frame for initiating and accepting a transfer.
       - a. Appendix A: Inter-Facility Transfer & Consultation Requirements for Level III & Level IV Trauma Centers
     - iii. Transfer plans must be reviewed internally at least every three years and updated as necessary.
       - a. The TPMD and TPM must be involved in the review of the transfer plans.
     - iv. There must be established trauma PIPS procedures to document and review all transfers-out cases.

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3. The institution must be licensed by the Pennsylvania Department of Health.

4. The institution must be accredited by the Joint Commission OR by a recognized state or nationally based accrediting agency for acute care hospitals.

5. The institution will engage in meaningful involvement in state and regional trauma system planning, development and operation.
   A. Goals of this involvement are:
      i. Timely and appropriate access to care including specialized care (i.e. Burns, Pediatrics, Brain/ Spinal Cord, Transplant, and Microvascular).
      ii. Coordinated EMS utilization and response including inter-facility transport.
      iii. Integration with local, regional and state disaster preparedness programs.
      iv. Regional Performance Improvement initiatives spanning the entire continuum of care.
      v. Coordinated regional and statewide injury prevention initiatives.
      vi. Regional data collection for the assessment and improvement of overall trauma care within the trauma center's region.
      vii. Financial viability and avoidance of unnecessary duplication of expensive resources within a region.
   B. Methods of achieving these goals may include:
      i. Participation in state and regional advisory committees (i.e. PaCOT, PATNAC).
         a. In a region where no advisory council exists, Level I and II Trauma Centers assume the responsibility and oversight of the council. This includes making recommendations to hospitals, EMS and PTSF regarding issues which impact quality care.
         b. Level III Trauma Centers must participate but not necessarily hold leadership positions.
      ii. Leadership in state and regional medical audit committees (i.e. PIPS Committee, Regional PI meetings).
      iii. Regular collaboration with regional trauma advisory committees, EMS, or other agencies to promote the development of state and regional systems (i.e. PEHSC, Regional EMS Council).
      iv. Participation in medical and legislative education to promote and develop trauma systems.
      v. Participation in state and regional trauma needs assessment and injury surveillance.
      vi. Provision of technical assistance and education to hospitals within the region and their providers to improve system performance (i.e. RTTDC education to non-trauma centers).
      vii. Participation in PTSF Committees (i.e. Outcomes, Registry, Research, PIPS, Standards, Injury Prevention).
      viii. Participation in media and legislative education to promote and develop trauma systems.

6. The institution will establish, within its organization, a defined trauma program including the clinical service. This concept embraces both administrative and physical attributes of the individual trauma center. By this means, successful functioning of the trauma program will be assured and its staffing and direction clearly defined.

7. The trauma program must involve multiple disciplines and transcend normal departmental hierarchies.

8. There will be evidence of strong communication links between the institution's administration, TPMD and TPM to coordinate both long and short term goals of the trauma program.

9. It is the responsibility of the TPMD in collaboration with the TPM and in association with the designated subspecialty liaisons to direct the trauma PIPS program and to integrate it into the institutions overall PIPS program.
   A. See Standard 6: PIPS for additional details.

10. The Department of Nursing or designated representative of Nursing Leadership for the institution will maintain a formal relationship with the trauma program.

11. The following definitions/concepts are vital features of the trauma program and should be clearly integrated:
   A. Bed Capacity
   B. Intensive Care Unit
   C. Operating Room Capacity
   D. Proximity to supporting services (non-surgical services, nursing services, radiology, laboratory, etc.)
   E. Coordination of services including PIPS

12. Hospitals may apply for Level I, II or III trauma center accreditation if they are located more than 25 miles of travel distance from a Level I, Level II or Level III trauma center.
   A. Effective July 2, 2019 based on Act 54 of 2019.
   B. Level I and II trauma centers accredited prior to July 2, 2019 are “grandfathered” and do not need to meet distance requirements.
   C. A hospital seeking to pursue Level I, II or III accreditation may seek a waiver from the 25-mile criteria if conditions outlined in Act 54 are met. Refer to PTSF policy BD-115: Process for Board Approval of Waiver Requests from Hospitals Pursuing Level I, II, or III Trauma Center Accreditation.

13. Level III Trauma Centers must:
   A. Have a formal written agreement with a Level I or II Trauma Center to provide on-going mentoring, collaboration and education.
   B. Comply with the definition of “Comprehensive Emergency Services” as noted in legislation, which includes at least two qualified physicians to staff the Emergency Department during periods of peak utilization.
   C. Peak utilization periods must be clearly defined by the institution.
   D. Be located in a third to eighth class county.
   E. Total, on an annual basis, at least 4,000 inpatient admissions from its emergency department.

14. Trauma Resuscitation Management guidelines must be in place. They must include at a minimum ATLS principles and c-spine clearance.

15. The institution will have a trauma activation policy.
   A. This policy must be reviewed annually at a minimum.

B. This policy must include adequate personnel and defined role expectations as defined by the trauma program.
   i. The highest level of response typically includes:
      a. Anesthesiologist or CRNA
      b. Chaplain or Social Worker
      c. Critical Care Nurse
      d. Emergency Department Nurses
      e. Emergency Physician
      f. General Surgeon
      g. Laboratory Technician
      h. Operating Room Nurse
      i. Radiology Technologist
      j. Respiratory Therapist
      k. Scribe
      l. Security Officer
      m. Surgical and Emergency Residents (if applicable)

C. There must be a policy defining the response time expectations for the attending surgeon.
   i. Level I-II: The highest level of trauma activation requires the response of the full team within fifteen (15) minutes of the arrival of the patient.
   ii. Level III: The highest level of trauma activation requires the response of the full team within thirty (30) minutes of the arrival of the patient.
   iii. If the trauma center has other levels of activations the response time expectations for each level, including trauma consults, must be defined by the trauma program.

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16. For centers whereby the highest-level activation is direct transport to the OR, the second highest activation would apply to the activation criteria.

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17. Highest level trauma alert
   A. The following criteria at a minimum must be included in the institution's activation criteria for highest level trauma alerts for patients with mechanism of injury attributed to trauma:
      i. GCS < 9
      ii. Intubated patients transported from the scene
      iii. Penetrating injury to the head, neck, chest, abdomen or extremity proximal to the elbow or knee
      iv. Respiratory compromise or in need of an emergent airway
      v. Intubated patients transferred from another hospital with ongoing respiratory compromise (excluding transfer in intubated patients who are now stable from a respiratory standpoint)
      vi. Systolic blood pressure < 90 at any time in a patient over 10 years of age
         a. Systolic blood pressure < 70 + (2x age in years) at any time in a patient age 10 or less
      vii. Transfer patients from another hospital who require ongoing blood transfusions
      viii. Emergency physician request to activate beyond listed criteria
   B. Activation is mandatory when any of the above criteria are met. The attending physician or trauma team leader may not decline activation for patients meeting these criteria.
   C. "ED Physician Discretion" is acceptable to list in the institution's activation criteria.

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18. The following criteria should be considered for inclusion in the institution's trauma activation

criteria at some level, for patients with mechanism attributed to trauma:

A. Amputation proximal to wrist or ankle
B. Anticoagulants or Bleeding Disorders
C. Automobile Crash- High Risk:
    i. Death in same passenger compartment
    ii. Ejection (partial or complete)
    iii. Significant intrusion (including roof), >12 inches occupant site or >18 inches any site or need for extrication for entrapped patient
    iv. Child (age 0–9 years) unrestrained or in unsecured child safety seat
D. Chest wall instability, deformity, or suspected flail chest
E. Crushed, degloved, mangled or pulseless extremity
F. Fall from height > 10 feet (all ages), Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
G. GCS </= 13
H. Geriatric specific criteria
    i. Ground level fall patients on antithrombotic agents
    ii. Systolic blood pressure < 110
    iii. Heart rate > 90
    iv. Shock index > 1
    v. Ground level fall patients not on anticoagulants with GCS < 14 and signs of head trauma
I. Partial or Full Thickness Burns ≥ 20% Total Body Surface Area (TBSA) – if not a designated Burn Center
J. Pedestrian/bicycle rider thrown, run over, or with significant impact
K. Pregnancy >20 weeks
L. Rider separated from transport vehicle with significant impact (for example, motorcycle, ATV, horse, electric scooter, etc.)
M. Skull Deformity, suspected skull fracture
N. Suspect two or more proximal long-bone fractures (humerus or femur)
O. Suspected pelvic fracture
P. Suspected spinal cord injury with new motor or sensory loss
Q. Suspicion of child abuse
R. Active bleeding requiring a tourniquet or wound packing with continuous pressure

19. Trauma Activation Criteria reference: ACS National Guidelines for the Field Triage of Injured Patients

Table 1 Hospital Commitment

Resolved, that the XYZ Hospital Board of Directors (or other administrative governing authority) approves the **establishment of a Level __ trauma center (or applies for verification or reverification of a Level __ trauma center"**). The Board commits to maintain the high standards needed to provide optimal care of all trauma patients. The multidisciplinary trauma performance improvement program has the authority to evaluate care across disciplines, identify opportunities for improvement, and implement corrective actions.

Medical Staff Support

Resolved, that the Medical Staff or Executive Committee of XYZ Hospital (or other governing body of the medical staff) supports the establishment of a Level __ trauma center (or "supports verification or reverification of a Level __ trauma center"). This statement acknowledges the commitment to provide specialty care as required to support optimal care of trauma patients. The multidisciplinary trauma performance improvement program has the authority to evaluate care across disciplines, identify opportunities for improvement, and implement corrective actions.

Physician Liaison Commitment

Resolved, that XYZ liaison and trauma surgeons acknowledge and commit to the criterion expectations for a **Level __ trauma center. This includes but is not limited to credentialing, certification, continuing education, and adequate involvement in performance improvement.** The multidisciplinary trauma performance improvement program has the authority to evaluate care across disciplines, identify opportunities for improvement, and implement corrective actions.

Standard 2: Capacity & Ability

1. There will be demonstrated capacity and ability to immediately evaluate, stabilize, treat and if indicated transfer both uni-system and multi-system trauma patients.
   A. This must include adequate surgical and intensive care unit capabilities so as not to disrupt other key functions of the institution.
   B. Level III TC – exclusive of head injury for uni-system trauma.
      i. Appendix A: Inter-Facility Transfer & Consultation Requirements for Level III & IV Trauma Centers

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2. A minimum number of annual major uni-system/multi-system injury cases will have been treated:
   A. Level I & II – 600 PTOS qualified patients per year

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3. Any adult Trauma Center caring for pediatric patients must review the care of every pediatric patient though the PIPS program.
   A. Pediatrics is defined as less than fifteen (15) years of age. (Fourteen (14) and younger).
   B. Adult Trauma Centers annually caring for one hundred (100) or more pediatric patients must comply with the following:
      i. Pediatric emergency department area which may include dedicated pediatric rooms or mobile pediatric carts with pediatric equipment that can turn a room into an appropriate pediatric room.
      ii. Pediatric intensive care area which may include a dedicated pediatric intensive care unit or mobile pediatric carts with pediatric equipment that can turn a room into an appropriate pediatric room.
         a. Appropriate pediatric resuscitation equipment including
            - Tool or chart that relies on weight (kilograms) used to assist clinicians in determining equipment size and correct medication dosing by weight and total volume
            - Pediatric doses of medication
            - Pediatric-specific defibrillation pads
            - Pediatric monitoring equipment
            - Pediatric bag-mask device, endotracheal tubes, laryngoscope blades, tracheostomy tubes, difficult airway supplies and/or kit, suction catheters, nasopharyngeal airways, oropharyngeal airways, non-rebreather masks, and nasal cannula
            - Pediatric chest tubes
            - Pediatric central venous catheters, intravenous and intraosseous needles, infusion devices with the ability to regulate the rate and volume of infusate (including low volumes)
      iii. The count of 100 or more pediatric patients includes PTOS pediatric patients who were admitted, remained at the hospital in observation status and dead on arrival. Pediatric patients transferred to another trauma center or pediatric patients with isolated burns are excluded in the count.
      iv. Appendix B: Transfer Guidelines for Adult Level I and II Trauma Centers to Pediatric Centers
   C. See Standard 28:Pediatrics for additional details.

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4. The policy(s) for admission of the trauma patient to the institution must be in place. This must include at a minimum: criteria for admission, most common units admitted to, non-trauma service admissions, and special populations such as pediatrics, burns, geriatrics and obstetrics if applicable.

A. Level III: Must include the types of neurotrauma injuries that may be treated at the center and be approved by the TPMD.

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5. The trauma center must assess the clinical capabilities of the institution and have a protocol documented plan which explains the types of patients requiring transfer to a higher-level trauma center.
   A. The decision to transfer an injured patient must be based solely on the needs of the patient, without consideration of their health plan or payor status. Decisions regarding transfer should be made by the Trauma Surgeon only after stabilization of the patient's condition and appropriateness of the receiving facility's resources relative to the patient's needs.
   B. Documented transfer plan must include:
      i. Process for the initiation of transfer, including roles and responsibilities of the referring facility and referral center (including responsibilities for requesting transfer and communication).
      ii. Expected time frame for initiating and accepting a transfer.
      iii. Process for selecting the appropriate facility based on patient injury (i.e. pediatrics, burns, closest higher- level facility) including a list of predetermined referral centers for outgoing transfers.
      iv. Process for selecting the appropriate staffed transport service to match the patient's acuity level.
      v. Process for patient transfer including informed consent.
      vi. Plan for transfer of patient medical record and radiology studies.
      vii. Plan for transfer of copy of signed transport consent.
      viii. Plan for transfer of patient personal belongings.
      ix. Plan for provision of directions and referral institutions information to the family.

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6. Early transfer is strongly considered for pediatric patients exceeding the institution's capabilities.
   A. There will be established and maintained formal transfer agreements and protocols with accredited Pediatric Trauma Centers.
      i. Agreements must be reviewed internally at least every three years and updated as required by the terms of the agreements.
   B. Appendix B: Transfer Guidelines for Adult Level I and II Trauma Centers to Pediatric Centers

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7. Early transfer or early burn patient referral is strongly considered for patients meeting the American Burn Association Criteria for Referral to a Burn Center.
   A. Institutions with an organized burn unit must use the established criteria of the American Burn Association.
   B. There will be established and maintained formal transfer agreements and protocols with accredited Burn Centers.
      i. Agreements must be reviewed internally at least every three years and updated as required by the terms of the agreements.
   C. Children with burns should be transferred to a burn center verified to treat children. In the absence of a regional pediatric burn center, an adult burn center may serve as a second option for the management of pediatric burns.
   D. American Burn Association Guideline for Burn Patient Referral to a Burn Center:
      i. Immediate Consultation with Consideration for Transfer

- Partial thickness burns of greater than 10 percent of the total body surface area
- Deep partial thickness burns that involve the face, hands, feet, genitalia, perineum, or major joints
- Full thickness burns in any age group
- All high voltage (≥1,000V) electrical injuries and lightning injury
- All chemical injuries
- All patients with suspected inhalation injury
- Patients with thermal burns and other comorbidities
- Patients with thermal burns and concomitant trauma injuries. 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.
- All pediatric (≤ 14 years, or <30 kg) burns may benefit from burn center referral due to pain, dressing change needs, rehabilitation, patient/caregiver needs, or non-accidental trauma
- Thermal burns with poorly controlled pain

ii. Consultation Recommendation

- Partial thickness burns less than 10 percent TBSA
- All potentially deep burns of any size
- Patients with signs of potential inhalation injury such as facial flash burns, singed facial hairs, or smoke exposure
- Low voltage (<1,000V) electrical injuries should receive consultation and consideration for follow-up in a burn center to screen for delayed symptom onset and vision problems

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8. There must be acute hemodialysis capability. This may include intermittent hemodialysis or any form of Continuous Renal Replacement Therapy (CRRT) to support patients with acute renal failure
   A. Level III: A transfer agreement with an accredited trauma center with hemodialysis capability must be in place.

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9. Agreements with EMS agencies must be established to facilitate timely transportation for trauma patients requiring transfer out for all levels of anticipated care.

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10. Trauma Center availability for stabilization and transfer of trauma patients must be maintained on a continuous, 24-hour basis. The hospital must have a trauma diversion protocol approved by the TPMD. When the trauma center is unable to provide care:
    A. The trauma surgeon must be involved in the decision regarding bypass/diversion every time the center begins and/or ends the event.
    B. A log of event; including time, duration and cause, must be maintained.
    C. The institution must notify the Public Safety Access Point (PSAP/911) Center when going on and when coming off of the event.
    D. This information must be reported to the PTSF on an annual basis.
       i. The maximum amount of time that a trauma center can be on diversion is four hundred (400) hours per year.
    E. The Trauma PIPS program must evaluate every bypass/diversion event at the trauma operations committee.
    F. Diversion is defined as the time during which the trauma center is not accepting trauma patients from the scene or via interfacility transfer.

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11. Formal trauma specific protocols must be in place to assure:
    A. The Emergency Department plan for an influx of trauma patients prior to the institution of the facility-wide disaster plan.
    B. A facility-wide plan for traumatic disaster management.
        i. The trauma program must be integrated into the hospital's disaster plan to ensure a robust surgical response.
        ii. This disaster plan must include:
            a. Plan to immediately mobilize qualified nursing resources from inpatient areas for initial multi-resuscitation efforts.
            b. Bypass protocols with neighboring trauma centers.
                - The Trauma Program Medical Director (TPMD) must be involved in the development and periodic review of the trauma center's bypass/diversion protocol.
            c. The surgical response must include an outline of the critical personnel, means of contact, initial surgical triage (including subspecialty triage when appropriate), and coordination of secondary procedures.

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12. The Trauma Center must meet the disaster related requirements of the Joint Commission, regardless if Joint Commission accredited.
    A. Joint Commission resources

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13. The institution must participate in disaster-related planning activities.
    A. A trauma surgeon, as designated by the TPMD, must be a member and participate on the hospital's disaster committee.
        i. Level I & II: This individual must successfully complete the Disaster Management and Emergency Preparedness (DMEP™) or eDMEP at least once.
        ii. This individual is responsible for the development of a surgical response to a mass casualty event.
            a. The surgical response must outline the critical personnel, means of contact, initial surgical triage (including subspecialty triage when appropriate), and coordination of secondary procedures.
    B. Level I: An Orthopedic Surgeon who provides care to injured patients must be a member of the hospital's disaster committee.
    C. The trauma center must participate in regional disaster/emergency management committees, health care coalitions, and regional mass casualty exercises.
    D. The trauma program must participate in two hospital drills or disaster plan activations per year that include a trauma response with the goal of refining the hospital's response to mass casualty events.
        i. Actual plan activations may substitute for drills.
        ii. Tabletop exercises are acceptable.

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14. There will be a formal consultation process, to ensure appropriate 24 hour telephone consultation, with hospitals requesting the transfer of trauma patients. This communication may occur through a transfer center. This process must include:
    A. Access to the appropriate physician or subspecialist
        i. Level I-III: Direct contact of the physician at the trauma center by a physician at the referring hospital.

ii. Level IV: Direct contact of the physician at the trauma center by a physician or advanced practitioner at the referring hospital

B. Assistance with clinical triage and decision making.

C. Assistance with patient transfer arrangements when indicated.

15. The trauma center must have a provider and equipment immediately available to establish an emergency airway.

A. The emergency airway provider must be capable of advanced airway techniques, including surgical airway.

Standard 3: Trauma Program Medical Director (TPMD)

1. The TPMD, in conjunction with the hospital's medical governing board or body, and in collaboration with the Trauma Program Manager (TPM) will have the oversight authority for all trauma patients and administrative authority and responsibility for the trauma program to affect all aspects of care for trauma including:
   A. An organizational chart, depicting the relationship between the TPMD, hospital governance, administration and other services.
   B. Development and evaluation of treatment protocols including but not limited to:
      i. Patient / Clinical Management Guidelines
      ii. Institution Diversion / Bypass Protocol
   C. Coordination of the Trauma PIPS peer-review process.
   D. Participating in the budgetary process for the trauma program.
   E. Determining and validating educational forums and submissions for CME requirements.
   F. Maintenance of an effective working relationship with the Trauma Program Manager.
   G. Cooperation with nursing administration to support the nursing needs of the trauma program.

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2. Fundamental to the establishment and organization of the institution's trauma program is the recognition that the individual identified as accountable for the operation of the program must be qualified to serve in this capacity. The following indicators for the TPMD role must be present:
   A. Full-time FTE and dedicated to the trauma program
      i. May not direct more than one trauma program
   B. Demonstration of special competence in trauma care and be a board certified or board eligible general surgeon.
      i. Recognized boards are those recognized by the American Board of Medical Specialties, American Osteopathic Association or Royal College of Physicians and Surgeons of Canada.
         a. Examples of other governing boards not recognized include but are not limited to the National Board of Physicians and Surgeons, American Board of Podiatric Medicine, American Board of Foot and Ankle Surgery, and American Board of Cosmetic Surgery.
         b. TPMDs with Board certification by any other governing board are not eligible for an alternate pathway.
   C. Be credentialed by the hospital to provide trauma care.
   D. Participation in the trauma call schedule including the resuscitation and/or surgery of multi-system trauma patients
   E. Evidence of qualifications including educational preparation and clinical expertise with trauma patients.
      i. A minimum of four years of experience in the care of the acute trauma patient is required.
         a. Fellowship can be included in years of experience.
         b. Residency cannot be included in years of experience.
      ii. A Fellowship in Surgical Critical Care, Trauma or Acute Care Surgery is required for Level I and II centers.
         a. For Level III's a fellowship is preferred; however, in lieu of a fellowship, the following additional qualifications must be met and submitted as a variance for consideration.
         - Completion of the Advanced Trauma Operative Management (ATOM) and/or Advanced Surgical Skills for Exposure in Trauma (ASSET) course.
         - Completion of a Trauma Program Medical Director Course such as the TCAA's TPMD Course or the STN's Optimal Course or equivalent.
         - Advanced Trauma Life Support (ATLS) Instructor Status.
         - Participation in a mentoring Level I or Level II Accredited Trauma Program's

multidisciplinary peer-review performance improvement meeting.
    - Maintain a minimum of 50 percent attendance.
- A signed letter of attestation from a TPMD at a mentoring Level I or II Accredited Trauma Program confirming a formal mentorship agreement.
    - Must be reaffirmed every year

F. Attendance and participation in local, state, regional and national trauma related activities.
   i. Level I: Must hold active membership in at least one national trauma organization and have attended at least one meeting during a three year period.
   ii. Level II: Must hold active membership in at least one regional, state, or national trauma organization and have attended at least one meeting during a three year period.
   iii. Membership in the Pennsylvania COT is not equivalent to membership in a national trauma organization.
   iv. Attendance at the annual Trauma Quality Improvement Program conference is not equivalent to attending a trauma organization's member meeting.

G. Participation in trauma educational activities such as Advanced Trauma Life Support (ATLS) course; teaching at undergraduate, graduate and post-graduate levels; and training programs within the Department of Surgery.

H. Maintain ATLS Instructor Status
   i. Level III: Maintain ATLS Provider Status

I. Evidence of external trauma-related CME of twelve (12) hours annually or thirty-six (36) hours over three years.
   i. Two (2) of those hours (six (6) over three years) must be pediatric related
   ii. Not eligible for IEP
   iii. Participation in the STN-TOPIC Course (or equivalent PI Course) within one year of appointment.
      a. Rural TOPIC is not an approved Performance Improvement process course for Level I-III trauma centers.
   iv. If at a pursuing hospital undergoing an initial site survey, the TPMD must have at least 12 hours of trauma-related CME during the reporting period.

J. Participation in the PTSF Site Survey / Accreditation Preparation education within the year prior to their first survey.

K. Chair and maintain 75% attendance at the Trauma PIPS:
   i. Multidisciplinary Peer Review PI Meeting.

L. Multidisciplinary Trauma Program Operational Meeting. Level I: Participate in trauma research and publication efforts.
   i. Level II and III: Participation in research and publication efforts are not a requirement.

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3. The TPMD, in conjunction with the chiefs of clinical services, will identify representatives from the following subspecialty areas to formally participate in the PIPS program:
   A. Anesthesia
   B. Emergency Medicine
   C. Critical Care – If critical care unit is not independently directed by a surgeon (I/II)
   D. Neurosurgery
      i. Level III: Only if Neurosurgical care is provided
   E. Orthopedics
   F. Radiology
   G. Additional subspecialists as defined by the PIPS plan

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4. The TPMD must have authority to:
   A. Ensure providers meet all requirements and adhere to institutional standards of practice.
   B. Recommend or remove trauma team privileges:
      i. The TPMD must perform an annual assessment of the trauma panel providers in the form of Ongoing Professional Practice Evaluation (OPPE) and Focused Professional Practice Evaluation (FPPE) as indicated by findings of the PIPS process.
         a. This includes responsibility and authority for determining each general surgeons ability to participate on the trauma panel
         b. For Surgical and Non-Surgical specialties, this may be done in conjunction with the respective division chiefs, trauma liaisons or department chairs.
   C. Correct deficiencies in trauma care and/or exclude from trauma call those trauma team members who did not meet criteria, including across departments and other administrative units.

Standard 4: Trauma Program Manager

1. There will be a Trauma Program Manager (TPM) who has oversight of the trauma program.
   A. TPMs play an essential role in the delivery of optimal and equitable trauma care to all patients.
   B. Responsible for monitoring, promoting, and evaluating all trauma related activities in cooperation and collaboration with the TPMD.
   C. The organization must define the structural role of the TPM to include responsibility, accountability, and authority. The organizational chart must depict the relationship with the TPMD, hospital governance, administration, and other services.

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2. The TPM must have an effective working relationship with the TPMD.

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3. There must be a job description that defines sufficient authority and clearly outlines the responsibilities of the TPM. Qualifications and activities should include the following:
   A. Clinical Activities
      i. Develop and implement clinical protocols and practice management guidelines
   B. Educational Responsibilities
      i. Provide educational opportunities for staff development
   C. Oversight of the Trauma Registry
   D. Oversight of the Performance Improvement Program
   E. Leadership and Administrative Responsibilities
      i. Involved in the budgetary process for the trauma program
   F. Supervision of the Trauma Registry/Registrars and Performance Improvement Coordinator(s)
   G. Consultant and Liaison Activities
      i. Serve as a liaison to administration and represent the trauma program on hospital and regional committees to enhance trauma care
   H. Research (Level I)
   I. Community and National involvement in trauma care systems

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4. The TPM must:
   A. Be a Full Time 1.0 FTE
   B. Be dedicated to the Trauma Program
   C. Be a Registered Nurse with a minimum of a Bachelor of Science in Nursing degree
      i. Master's degree is preferred
   D. Have evidence of qualifications including educational preparation, certification, and clinical experience in the care of injured patients.
      i. Measures of competency for TPMs can include:
         a. Attainment and maintenance of an advanced certification by an accredited organization, such as the Board of Certification for Emergency Nursing (BCEN). Examples of advanced certifications include TCRN, CEN, CPEN, CCRN, PCCN, CPN, CFRN and CNRN
         b. Advanced Trauma Care for Nurses (STN-ATCN) certification and/or faculty
         c. Three (3) years as an RN at a trauma center in the care of the injured patient
   E. Co-Chair and maintain 75% attendance at the Trauma PIPS:
      i. Multidisciplinary Peer Review PI Meeting
      ii. Multidisciplinary Trauma Program Operational Meeting
   F. Trauma Centers wishing to utilize a TPM that does not meet these qualifications should refer to Policy AC-105: Applying for a Variance from a Standard for additional details.

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5. The TPM must have evidence of continuing education related to trauma care and the trauma system. This includes:
   A. Thirty-six (36) hours over three (3) years or twelve (12) hours annually of trauma-related continuing education
   B. A minimum of 50 percent of the required educational hours must be external
      i. 50 percent of the external hours may be met by visiting professors and invited speakers
   C. Participation in the STN-TOPIC Course (or equivalent PI course) within one (1) year of appointment.
      i. Rural TOPIC is not an approved Performance Improvement process course for Level I-III trauma centers.
   D. Recommend participation in Advanced Trauma Care for Nurses (STN-ATCN) and a trauma program management course supported by a national organization such as the Optimal Trauma Center Organization and Management Course (STN-Optimal).

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6. The TPM must:
   A. Attend and/or participate in local, state, regional, and national trauma related activities.
      i. Level I and II: Must hold active membership in at least one national trauma organization.
      ii. Level I and II: Must attend at least one national organization conference during a three-year period. TQIP is acceptable.
   B. Participation in the PTSF Site Survey/Accreditation Preparation education within the year prior to their first survey.
   C. Level I: Participate in multidisciplinary trauma research.

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7. The TPM in conjunction with the TPMD is responsible for determining and validating which educational forums are acceptable in fulfilling continuing education requirements.

Standard 5: Registry

1. The institution will maintain a Trauma Registry which will include, at a minimum, all of the data elements included in the Pennsylvania Trauma Outcome Study (PTOS)
   A. Refer to PTOS Manual found on TraumaHQ powered by IQVIA™ - Library
   B. Demographic Data
   C. Pre-hospital Data
   D. Process of Acute Care
   E. Clinical Data
   F. Outcome Data
   G. Final Anatomical Diagnoses
   H. Procedure Codes
   I. Payer Class
   J. Performance Improvement and Patient Safety Data
   K. Standard Report Utilization

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2. There will be evidence of regular and active interface with the trauma program. The registry must be responsive to the needs of the TPMD, TPM and support the trauma program.
   A. The trauma registry staff will maintain a formal relationship with the trauma program.

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3. A clearly identified person will have authority, responsibility and accountability for direction and maintaining the trauma registry and its data submission to the PTSF in a timely manner.
   A. At trauma centers with multiple registry FTEs, a registry structure should include an identified individual(s) with a portion (% of effort) of their FTE dedicated for administrative duties to oversee registry operations, quality (data validation), data analytics, and education.
   B. The trauma registry, at a minimum, must maintain 85% of the cases submitted within 42 days of discharge.
      i. Refer to Policy TR-110: Timeliness of Submissions to the Central Site Policy
   C. Concurrent data abstraction is recognized as best practice.

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4. The Trauma registry will have a staffing plan. This plan must:
   A. Include a workload analysis for all trauma programs supported that defines the personnel needs necessary to comply with data submission requirements.
      i. Trauma centers must take into account the additional tasks, beyond the abstraction and entry of patient data, that are assigned to the registrar and will decrease the amount of time dedicated to the meticulous collection of patient data. Additional staff will be required to perform these tasks to ensure the integrity and quality of registry data, which are used for prevention, PIPS, and other essential aspects of the trauma program. This can include:
         a. Committee participation
         b. Database management
         c. Education
         d. Interface with outside agencies
         e. PIPS participation
            - Trauma Registry representation should be maintained at multidisciplinary conferences that deal with the review and analysis of trauma registry data
         f. Research assistance

- Additional registrars may be needed to support trauma center research through report generation and abstraction of additional customized elements. One consideration would be to determine a percentage of registry effort per faculty/fellow, especially if the faculty's academic appointment requires a certain volume of publications for advancement.

g. Accreditation survey preparation
h. Report generation
i. Data analysis
j. Electronic downloads
k. Data validation

B. At a minimum, 0.5 Registrar FTE per every 200-300 trauma contacts per year
   i. The count of trauma contacts is defined as all patients who meet PTOS inclusion criteria, NTDS inclusion criteria (not already counted in the PTOS inclusion), and those patients who meet inclusion criteria for hospital, local, and regional purposes.
   ii. Data collection may be outsourced to off-site personnel with the expectation that
      a. Data remains readily available for local performance improvement activities.
      b. The center maintains oversight of data quality and ensures that opportunities for data quality improvement are identified and actioned.

C. Include at least one Registrar with a current certification as a Certified Abbreviated Injury Scale Specialist (CAISS) offered by AAAM.
   i. Recommend minimum 1 year of experience with AIS prior to certification.
   ii. A trauma program with Registrars with less than 1 year of registry experience must have a plan in place to achieve CAISS within 3 years of appointment.
   iii. A CAISS certified Registrar with FTEs attributed to a combined adult/pediatric trauma program can meet the CAISS requirement for each of those programs.
   iv. Additional trauma program personnel, including but not limited to Performance Improvement Coordinators and Injury Prevention Coordinators, with 0.5 FTE dedicated to the trauma registry, can meet this standard.

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5. The Trauma Registry staff will optimally have a core set of skill requirements including: anatomy and physiology, medical terminology, ICD Coding (version in use), computer competency, database management and/or degree in health related field/allied health. At minimum, registry staff should have a basic understanding of anatomy/physiology and medical terminology prior to attending an AIS class.

   A. Within one year of appointment, the Registrar will complete:
      i. Basic Trauma Registry Course
         a. The PTSF Basic Registry Course is available at https://www.elearningconnex.com/ptsf/
         b. ATS Trauma Registrar Course
         c. Other equivalent courses are acceptable based upon objectives.
         d. Previous completion of the PTSF Intermediate or Advanced Registrar Course fulfills this requirement.
      ii. The Association for the Advancement of Automotive Medicine (AAAM) Abbreviated Injury Scale (AIS) Course corresponding to the AIS coding version utilized within the PTOS submission software.
         a. Registrars must complete an updated AIS Coding Course within one year of implementation of a new AIS coding version within PTOS.
   B. Within 6 months of appointment, the Registrar will complete an ICD course.

i. Complete an ICD course, or ICD refresher course every five years, as evidenced by a certificate.
ii. The course should correspond to the ICD version utilized within the PTOS submission software.

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6. The Trauma Registrar must have evidence of continuing education related to the trauma registry. This includes:
   A. Eight hours of continuing education annually or 24 hours over three years.
      i. This requirement can be fulfilled by attendance at PTSF Registry Conferences, internal, external and/or online opportunities.
      ii. If at a pursuing hospital undergoing an initial site survey, each registrar must have at least eight hours of continuing education during the reporting period.
      iii. For registrars appointed to the position during the survey cycle, trauma-related CE requirements will be prorated based on start date.
   B. Registrars maintaining a Certified Specialist in Trauma Registries (CSTR) certification are not required to maintain continuing education logs.

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7. There must be a written data quality plan for ensuring that the data entered into the trauma registry is accurate and reflects the observations made on the patient.
   A. This plan must reflect compliance with PTOS Operations Manual and definitions for data entry
   B. At minimum, the plan must require quarterly review of data quality.
   C. The plan should allow for a continuous process that measures, monitors, identifies and corrects data quality issues and ensures the fitness of data for use.
      i. An inter-rater reliability approach may be used, which includes re-abstraction of patient records.
      ii. Data validation may be internal or external.
      iii. Reports may be used for data validation, for example, Data Completeness, Peer Review, Quarterly Reports, or custom reports
   D. The trauma center must demonstrate compliance with employing the data quality plan.
   E. The plan must include a minimum accuracy expectation and plan for improvement if a Registrar is below the internal accuracy expectation.

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8. Data must be submitted to and in compliance with the National Trauma Data Bank (NTDB).

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9. The trauma program must ensure that appropriate measures are in place to meet confidentiality requirements of the data.

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10. Trauma Centers must create a facility-specific data hierarchy for all required elements in the PTOS Manual, to allow for consistent data abstraction.

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11. The trauma program should utilize an electronic data transfer process to reduce keystroke entry and promote a focus on injury coding, event capture and data validation.

Standard 6: Performance Improvement & Patient Safety (PIPS) Program

1. The goals of the trauma performance improvement and patient safety (PIPS) program are to:
   A. Monitor the process and outcome of patient care including adverse and unexpected events.
   B. Ensure the quality and timely provision of such care.
   C. Improve the knowledge and skills of trauma care providers.
   D. Provide the institutional structure and organization to promote performance improvement and patient safety.

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2. The PIPS program must be independent of, but integrated into the hospital's overall performance improvement (PI)program. This includes:
   A. A clearly defined reporting structure, as demonstrated by an organizational chart showing the trauma PI program and overall hospital PI program's relationship.
   B. A method for provision of feedback as demonstrated by a bidirectional flow of information between the trauma PI program and the hospital PI program.
      i. The trauma PI program must have a means to report events and actions to the hospital PI program so that events are aggregated across the organization.
      ii. The hospital PI program must provide feedback and loop closure to the trauma PI program.
   C. The trauma PI program must be empowered to identify opportunities for improvement and develop actions to reduce the risk of patient harm, irrespective of the department, service, or provider.
   D. Authority of the TPMD to set qualifications for the trauma service members, including individuals in specialties that are routinely involved in the care of trauma patients.
      i. The TPMD must have authority to recommend changes for the trauma panel based on the PIPS program. See Standard 3: TPMD for additional details.

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3. There must be a comprehensive written Performance Improvement Plan that includes:
   A. An organizational chart demonstrating the structure of the trauma PIPS process, with a clearly defined relationship to the hospital PI program.
   B. Authority and empowerment by the hospital governing body for the TPMD and TPM to lead the PI program and transcend service lines.
   C. Trauma credentialing requirements.
   D. Roles and responsibilities for PI.
   E. Event identification process encompassing all phases of care from prehospital care to hospital discharge.
      i. Process for verification and validation of events:
         a. Process for retrospective review.
         b. Process for concurrent review.
   F. Process for data collection, use of indicators, opportunities for improvement (OFI), hospital events, and audit filters, as defined in the PTOS Manual and/or the PIPS Manual.
   G. Levels of review, congruent with the TOPIC curriculum, further defined by the PIPS plan:
      i. Primary: Typically TPM, Trauma PI Coordinator, Registry or designee
      ii. Secondary: Typically TPM, PI Coordinator and TPMD
      iii. Tertiary: Typically multidisciplinary forum
      iv. Quaternary: Typically hospital (high-level) committee, system level or external review
      v. Each level of review must be defined, including:
         a. Which cases are to be reviewed.
         b. Who performs the review.

c. When cases can be closed or must be advanced to the next level of review.

H. Analysis including forums and meetings.
   i. Multidisciplinary PIPS Committee must be defined, including specifying required members and responsibilities.
I. Utilization of TraumaHQ powered by IQVIA™ to operationalize PI activities.
J. Classification of events: This includes determination of the effects of events based on an institutional defined system such as but not limited to: TraumaHQ powered by IQVIA™ Terminology, such as Determination and Acceptability.
   i. The full PI classification elements in TraumaHQ powered by IQVIA™ PIPS Record must be utilized in the classifications of all deaths at a minimum as defined in the PIPS Manual.
K. Action plan development and implementation.
L. Process for reevaluation and determining issue resolution, improvements of outcomes and/or patient safety (loop closure).
M. The process for integrating/incorporating benchmark reports such as TQIP into the PI program.
N. An annual process for identification of priority areas for PI, based on audit filters, event reviews, and benchmarking reports. Annual priority focus areas must be data driven.

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4. Benchmarking Data is required
   A. The submission to the PTSF PIPS Central Site is required (not risk-adjusted).
      i. Effective January 1, 2017, all death cases will be submitted.
      ii. Cases must be closed and submitted within 90 days of the death date.
         a. Cases may be updated and resubmitted if additional information is obtained after the initial submission, such as autopsy results. Resubmitted cases do not count against submission requirements.
      iii. Refer to Policy TO-100: Timeliness of Submission to the PIPS Central Site Policy
   B. Submission to the National Trauma Data Bank (NTDB) is required. (Not risk-adjusted).
   C. Participation in risk-adjusted benchmarking is required.
      i. Pennsylvania Trauma Outcome Study (PTOS) participation is required.
      ii. TQIP participation is required by Level I, II and III Accredited Trauma Centers.
         a. Submission is optional for Pursuing Centers; however, participation is expected within the provisional (first) year after initial accreditation.
   D. Submission to the PA-TQIP Collaborative is required for (and limited to) Level I and II Accredited Trauma Centers.
   E. The trauma program must use the results to determine whether there are opportunities for improvement in patient care and registry data quality.

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5. The PIPS plan must be reviewed annually.

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6. The TraumaHQ powered by IQVIA™ must be utilized for all trauma related performance improvement activities. This includes:
   A. Documenting event identification, including effective use of audit filters.
   B. Documenting analysis and verification of identified events.
   C. Documenting corrective actions.
   D. Evidence of loop closure.
   E. Strategies for sustained improvement measured over time.

7. Issues that must be reviewed but are not limited to are:
   A. System and process issues such as documentation and communication.
   B. Clinical care, including identification and treatment of immediate life-threatening injuries (ATLS).
   C. Transfer decisions.
   D. Non-surgical trauma admissions (NSA)
      i. NSA must be reviewed by the TPMD in secondary review at a minimum if one of the following is met:
         a. NSA without trauma or other surgical consultation
         b. NSA with ISS > 9
         c. NSA with identified opportunities for improvement
      ii. NSA may be closed in primary review if none of the above items are met, there are trauma or other surgical consultations, ISS ≤ 9, and without identified opportunities for improvement.
      iii. The trauma program could consider utilization of the Nelson tool to review NSA.

8. There will be adequate trauma program personnel support to ensure evaluation of all aspects of trauma care and fully implement the PIPS plan.

9. There will be a 1.0 FTE dedicated to the PIPS function
   A. This may be met by identifying one individual as the PIPS Coordinator or by combining other role responsibilities of various staff members who specifically have performance improvement components in their job description, as long as the minimal total FTE equals 1.0.
      i. If multiple staff members comprise the PI role:
         a. One individual must be identified as the PIPS Coordinator/Liaison.
         b. Clear job descriptions and delineations of responsibilities must be present.
         c. All participants must maintain the standard requirements including specialized educational courses. The total continuing education hours; however, are not compounded. For example, if an RN registrar is functioning as a part of the PI role, they must obtain the eight hours of continuing education, the required Registry Courses and TOPIC. They do not need sixteen hours of continuing education.
         d. Any RN fulfilling any component of the PI Role/FTE must maintain 75% attendance at the Trauma PIPS meetings.
   B. This individual(s) will be responsible for monitoring, promoting and evaluating all trauma-related PIPS activities and:
      i. Be accountable and housed within the organizational structure of the trauma program, reporting directly to the TPM.
         a. The job description of the PI Coordinator must include: responsibility, accountability and authority.
      ii. Include evidence of qualifications including educational preparation, certification and clinical experience.
      iii. Registered Nurse (RN) licensure is required. Have evidence of continuing education related to trauma care and the trauma system.
         a. Including Eight (8) hours of trauma-related continuing education per year.
         b. Participation in the STN-TOPIC Course (or equivalent PI course) within one year of appointment.
            - Rural TOPIC is not an approved Performance Improvement process course for Level I-III trauma centers.

c. Participation in the PTSF PI Part 1: Theory & Overview within one year of appointment.
d. Recommend participation in the PTSF Site Survey / Accreditation Preparation education within the year prior to their first survey.

iv. Attendance and/or participation in local, regional, state, and national trauma-related activities.
v. Maintain 75% attendance at the Trauma PIPS:
a. Multidisciplinary Peer Review PI Meeting.
b. Multidisciplinary Trauma Program Operational Meeting

C. Level III: Role/FTE requirement is reflective of volume.
i. Level III trauma centers with greater than 500 registry submissions must have at a minimum a 0.5 FTE with all requirements as above.
ii. Level III trauma centers with less than 500 registry submissions may include the PI Coordinator responsibilities within the Trauma Program Manager job description.
a. Trauma programs must assure that PI issues are addressed timely and accurately if this is option is utilized.

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10. Additional PIPS support FTEs including job description/role responsibility assignments should be allocated based upon trauma contact volume.
A. Recommend additional 0.5 FTE allocation for every additional 500-750 trauma contacts above 1,000.
i. Participation in the STN-TOPIC Course within one year of appointment.
ii. Participation in the PTSF PI Part 1: Theory & Overview within one year of appointment.
iii. Maintain 75 percent attendance at the Trauma PIPS:
a. Multidisciplinary Peer Review PI Meeting
b. Multidisciplinary Trauma Program Operational Meeting
iv. Eight hours of trauma-related continuing education per year.
11. In trauma programs utilizing a Trauma Program Performance Improvement Medical Director or Trauma Program Associate Medical Director role, the following components must be maintained. This role is optional and not required.
A. A Physician with Board Certification/Board Eligibility in specialty field
B. A job description which defines roles and responsibilities
C. Inclusion in the PIPS plan
D. Demonstration of a collaborative working relationship with the TPMD, reflecting the TPMD has ultimate authority over the PIPS process
E. Evidence of external trauma related CME of twelve (12) hours annually or thirty-six (36) hours over three years (not exempt from maintaining a CME log)
i. Participation in the STN-TOPIC Course (or equivalent PI Course) within one year of appointment into this role
a. Rural TOPIC is not an approved Performance Improvement process course for Level I-III trauma centers.
F. Maintain 75% attendance at the Trauma PIPS:
i. Multidisciplinary Peer Review PI Meeting
ii. Multidisciplinary Trauma Program Operational Meeting

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12. A multidisciplinary forum for (PIPS) Peer review focus is required.

A. The following aspects will be addressed and trended: deaths, transfers, morbidities, (PIPS) issues, systems issues, clinical management guideline issues, and provider specific issues- including specific morbidities and mortalities.
B. The goal of this meeting is to have robust case discussion among multidisciplinary peers. The following participation is required:
    i. The TPMD, in collaboration with the TPM and Trauma PI Coordinator, will have the leadership role.
        a. The TPMD must chair this meeting.
        b. The TPMD, TPM and PI Coordinator must maintain 75% attendance.
    ii. All General Surgeons participating in trauma care must participate.
        a. General Surgeons must maintain 50% attendance.
        b. The TPMD must ensure that general surgeons who miss the meeting receive and acknowledge the receipt of critical information generated.
    iii. All Advanced Practitioners supporting the general surgical team and having a defined role in trauma care must participate.
        a. APs must maintain 50% attendance.
    iv. Subspecialty liaisons must include:
        a. Anesthesia
        b. Emergency Medicine
        c. Critical Care – If critical care unit is not independently directed by a surgeon (I/II)
        d. Neurosurgery (Required for Level I and II; Only if applicable for Level III)
        e. Orthopedics
        f. Radiology
        g. Additional subspecialists as defined by the PIPS plan.
    v. The Subspecialist Liaisons must
        a. Maintain a minimum of 50% attendance.
            - This attendance benchmark may be met by the liaison and/or a second identified representative of the Subspecialty Group.
                - If this role is shared, both participants must meet the CME requirements.
            - Fifty percent is the actual attendance rate and does not include excused absences or other reasons for non-attendance.
            - Attendance must be monitored on a continual basis.
        b. It is the responsibility of the liaison to communicate critical information to the subspecialty group.
    vi. In Trauma Centers with both an Adult and Pediatric accredited program:
        a. There must be separate adult and pediatric trauma multidisciplinary PIPS meetings with distinct minutes.
        b. There must be a representative (TPMD or Designee) from the adult/pediatric program attending the other program's meeting, and ensure dissemination of communication is sent to the other panel members.
    vii. Peer-review meeting attendance may be waived / pro-rated for military deployment, medical leave and missionary work. The center must provide documentation to support the excused absence. Vacation, patient care, illness and contracted-but not working that month, are not excused absences and may not be prorated. TPMD/Liaison providing a review of the meeting minutes to the absent provider cannot be counted as attendance at the meeting. Per Diem providers, providers rotating from another hospital, and Locum Tenens providers may not have attendance expectations prorated based on amount of call taken.
C. Meeting minutes and attendance log must be maintained.

D. Meeting must be scheduled at regular intervals to assure that the volume of case review can occur in a timely fashion.
E. Attendance may be met through teleconferencing and/or videoconferencing as long as it facilitates active participation.

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13. All cases of traumatic injury related mortality (dead on arrival, died in ED or inpatient, and withdrawal of life-sustaining care) must be reviewed and classified for potential opportunities for improvement.
    A. The best practice for review of traumatic injury related mortality is through tertiary review. At a minimum, all traumatic injury related mortalities must go through secondary review and mortalities with opportunities for improvement must go through tertiary review.
    B. Deaths must be categorized as:
        i. Event/mortality with an opportunity for improvement
            a. A death should be designated as "mortality with opportunity for improvement" if any of the following criteria are met (examples below are non-exhaustive):
                i. Anatomic injury or combination of severe injuries but may have been survivable under optimal conditions
                ii. Standard protocols were not followed contributing to mortality
                iii. Provider care was suboptimal contributing to mortality
                iv. P(s) ≥ 0.25 by TRISS methodology
        ii. Event/mortality without an opportunity for improvement
        iii. Undetermined opportunity for improvement
    C. Recommend reviewing patients discharged to hospice to ensure there were no opportunities for improvement in care that might have significantly changed the clinical course that ultimately led to the decision for hospice care.

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14. If individual subspecialty services/departments have department and/or hospital-based peer or case review meetings in addition to the required trauma PIPS peer-review meeting, those meeting minutes or outcomes must be made available to the PIPS program.

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15. A multidisciplinary forum to address trauma program operational issues is required.
    A. The TPMD, in collaboration with the TPM and Trauma PI Coordinator, will have a leadership role.
        i. The TPMD, TPM and PI Coordinator must maintain 75% attendance.
        ii. In trauma programs utilizing a Trauma Program Performance Improvement Medical Director / Associate Medical Director, 75% attendance must be maintained.
    B. Attendees should include representatives from all phases of care provided to injured patients, including ancillary personnel, as defined by the PIPS plan.
    C. The focus must be on system/hospital related operational issues.
    D. Meeting minutes and attendance log must be maintained.
    E. This meeting must be scheduled at regular intervals to assure that issue discussion can occur in a timely fashion.

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16. PIPS programs should provide education. This can be accomplished by a periodic trauma case review or didactic conference and should include appropriate disciplines.
    A. CME, CE and IEP's should be linked to the PIPS program.

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17. Outside agencies (EMS, first responders, injury prevention, and disaster) and facilities (transferring

and ancillary) should be engaged, as defined by the institution, in the PIPS process. There must be a process of reviewing and providing feedback to:

A. EMS agencies related to transportation, transfer, accuracy of triage and clinical care.
B. Referring providers related to the care and outcomes of their patients and any potential opportunities for improvement in initial care.

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18. Completed pre-hospital and inter-facility patient care records – PCR must be sought, and when available, present for review by the trauma program as part of the PIPS process.

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19. Complete anatomical diagnosis of injury is essential to assessment of quality of care. A postmortem examination report (autopsy) should be sought, and when available, present for review in all trauma related deaths.

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20. If the PIPS program identifies a patient tracked event not resolved at discharge, data/information must be requested to track patient outcomes and achieve loop closure.

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21. The PIPS program will provide feedback to referring facilities including:
    A. Anatomical diagnosis, including ISS.
    B. Outcomes.
    C. Opportunities for improvement including but not limited to:
        i. Radiology issue for rescanning/re-imaging due to inability to view films.

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22. The PIPS program will seek feedback from facilities where patients are transferred to including:
    A. Anatomical diagnosis, including ISS.
    B. Outcomes.
    C. Opportunities for improvement.

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23. The trauma program must develop, utilize and evaluate evidence based clinical practice/patient management guidelines, protocols and algorithms.
    A. The guidelines, protocols or algorithms must be reviewed and updated at least every three years.
    B. Compliance with these guidelines must be monitored by PIPS.
    C. The guidelines, protocols, or algorithms may be developed or revised in response to new evidence or opportunities for improvement.
    D. The required clinical guidelines are listed in Appendix D.

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24. To ensure a culture of trust critical to improving overall quality and equitable trauma care across the state of Pennsylvania, PA trauma centers submitting to the PIPS Central Site, PA TQIP Collaborative and PTOS must comply with confidentiality requirements established by the PTSF.
    A. These references are located on the PTSF web site: Performance Improvement.

PIPS Indicators

PI Program must monitor the following at a minimum

- Hospital Event and Audit Filters as defined by PTSF PTOS manual
- Significant complications and adverse events
- Trauma Center volumes
- Compliance with prehospital triage criteria, as dictated by regional protocols
- Delays or adverse events associated with prehospital trauma care
- Categorization of level of activation
- Compliance with Activation Criteria
  - By level of response
- Over/Under triage trended rate
  - Utilize Matrix Method at minimum
  - Recommend utilizing Need for Trauma Intervention (NFTI)
- Transfer In/Out
  - Appropriateness/Rationale of transfer
  - Timeliness of transfer
  - Follow-up communication
- Compliance with sending and/or receiving follow-up
- Outcome review
- Diversion Report
- Timeliness of submission to the PTSF Central Site Portal
- PIPS Meetings attendance
- Mortality
  - All traumatic injury related deaths
  - By ISS subgroup
  - Dead on Arrival: no resuscitation efforts in ED
  - Died in ED despite resuscitation efforts
  - Died in-hospital
  - Total Mortality Rate
  - Mortality Rate by age distribution
- Transfers to hospice
- Screening for substance misuse, brief intervention, and referral for treatment
- Mental health screening compliance
- Level III and IV: Delays in care due to the unavailability of ED physician (specifically when covering in-house emergencies)
- Lack of availability of essential equipment for resuscitation or monitoring
- Response time to trauma activations
  - Level I, II and III: Trauma Surgeon
  - Level IV: Emergency Physician
- Delay in response for emergent assessment
  - Anesthesiology
  - General Surgery
  - Neurosurgery
  - Orthopedic Surgery

- Neurotrauma care at Level III trauma centers
- All Non-Surgical Trauma Admissions
  - Recommend utilizing the Nelson tool
- Compliance with policies related to timely access to the OR for urgent surgical intervention
  - Operating Room availability
  - Operating Room & PACU: Back-up team response time and utilization
- Unplanned transfer to a higher level of care within the institution
- Delays in response to the ICU for patients with critical needs
- Delays in providing rehab services
- Timeliness of laboratory testing/blood availability
  - MTP Activations and appropriateness of component ratios
  - Turnaround time for Massive Transfusion Protocol (MTP) activations
- Delay in access to time sensitive diagnostic or therapeutic interventions
  - For example, if responding from outside center: CT, General Radiology, MRI
  - Interventional Radiology
- Radiology errors of interpretations or discrepancies between the preliminary and final reports
- Delayed recognition of or missed injuries
- Organ donation rate
- Adult Trauma Centers: Pediatric patients (Every)
  - Appropriateness of transfer or admission
  - Timeliness of care
  - Adequacy of care

*The PI indicators should be monitored according to the level of accreditation.

Matrix Method

A method for calculating overtriage and undertriage rates

	Not Major Trauma	Major Trauma	Total
Highest level activation	A	B	C
Midlevel activation	D	E	F
No activation	G	H	I

$$\text{Overtriage} = \frac{A}{C} \times 100$$

$$\text{Undertriage} = \frac{(E + H)}{(F + I)} \times 100$$

Considerations for Performance Improvement Tracking

The following indicators may be appropriate for the PIPS program to monitor dependent on level of accreditation. This list is not all inclusive.

1. Any Opportunity for Improvement event in TraumaHQ powered by IQVIA™ PIPS Record
2. Resource utilization and cost-effectiveness of the trauma program
3. Registry inter-rater reliability/error rate
4. Practice Management Guideline Compliance
5. Morbidity
6. Autopsy report availability
7. Admissions per surgeon/physician
8. ISS per surgeon/physician
9. Provider specific issues
10. Timeliness of back-up trauma surgeon call responsiveness
11. Subspecialty Call schedules / Back-up call schedules and responsiveness
12. Level III: Appropriateness of neurosurgical care
13. Resident oversight
14. Pre-Hospital compliance with destination protocols
15. ED Length of Stay
16. Incidence of PACU utilization in lieu of ICU recovery
17. Timeliness of response to emergency/unplanned situations in ICU
18. Incidence of delay in intra-hospital transfer to a higher level of care
19. Level III: All ICU and Step-Down Unit admissions or transfers for appropriateness of admission/care
20. Level IV: All admissions for appropriateness of admission/care
21. Turnaround time for blood component therapy
22. Appropriate patient care team presence and monitoring during transport
23. CT availability issues
24. Incidence of delay to CT
25. Rescan/Reimage due to technical difficulties of opening films from referring facility
26. Pastoral Care: Availability
27. Rehabilitation Services (PMR/PT/OT/ST/Nutrition)
    a. Timeliness of assessment
28. Social Work/Case Management: Availability and involvement in care
29. Geriatric Specific Indicators including abuse

Calculating Multidisciplinary Peer Review Meeting Attendance

Each mandatory participant must maintain minimum attendance requirements. Attendance must be monitored on a continual basis. All scheduled meetings must be included in the calculation of meeting attendance.

$$\frac{\text{\# of meetings attended}}{\text{\# of scheduled meetings}} \times 100 = \text{\% attendance}$$

Excused absences are limited to military deployment, medical leave, and missionary work, which requires supportive documentation. Absences due to vacation, patient care, and illness are not excused. Providers contracted but not working a particular month are not excused for the month not worked. Per Diem providers, providers rotating from another hospital, and Locum Tenens providers cannot have attendance expectations prorated based on amount of call taken. TPMD/Liaison providing a review of the meeting minutes to the absent provider cannot be counted as attendance at the meeting.

The number of scheduled meetings can be prorated if a participant started or left their position, was appointed, or unappointed as liaison, or had a contract start or end during the calendar year. In these situations, only those meetings after the start date or prior to the end date are included in the number of scheduled meetings.

Examples of how to calculate annual attendance:

1. A Locum Tenens contracted to work January to June is required to attend 3 meetings if there are 6 monthly meetings, even if they only work 1 of the months. If the same Locum Tenens has a 2nd separate contract at the same facility November to December, they would be required to attend 4 meetings of the 8 monthly meetings held during their contracts.
2. Hospital A has 1 Trauma Surgeon on medical leave for 4 months. As a replacement for this Trauma Surgeon, the staffing plan during the 4 months includes utilizing Trauma Surgeons from Hospital B. Each Trauma Surgeon from Hospital B will be required to attend 50% of the meetings at Hospital A, which is 2 of the monthly meetings during the 4-month timeframe.
3. A Health System requires all Trauma Surgeons to be credentialed at every hospital within the system, but each Trauma Surgeon is assigned to 1 Trauma Center. The Trauma Surgeons from Hospital A are not on call for Hospital B, and the staffing plan does not include utilization of Trauma Surgeons from the other Trauma Center. Trauma Surgeons credentialed but not on the primary trauma call roster are not expected to participate in multidisciplinary peer review committee meetings.
4. If Hospital A from example #3 has a change to their staffing plan on May 1st that includes Dr. Smith from Hospital B on the trauma call roster while also remaining on the trauma call roster for Hospital B, Dr. Smith would be expected to participate in 50% of meetings at Hospital A and 50% of meetings at Hospital B. Hospital A will begin tracking Dr. Smith's attendance beginning on his start date on the trauma call roster. Therefore, if both hospitals hold monthly meetings, Dr. Smith would be expected to attend 4 meetings at Hospital A and 6 meetings at Hospital B to meet the Standards.

Standard 7: Continuing Education Programs

1. The trauma PIPS program and registry data should drive and evolve into education.
   A. This should include age-related clinical competency as determined by the trauma program.

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2. There will be formal programs in continuing education provided annually by the institution concerning the treatment of trauma patients of all ages to the following internal audiences:
   A. Physicians
   B. Registered Nurses
   C. Allied Health Personnel

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3. For Level I and II Trauma Centers: There will be programs in continuing education provided by the institution concerning the treatment of trauma patients of all ages for each of the following external audiences. This may be fulfilled by multidisciplinary programs.
   A. This intended audience must include:
      i. Physicians
      ii. Registered Nurses
      iii. Allied Health Personnel
      iv. Pre-hospital Providers

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4. Defined providers may participate in an Internal Educational Program (IEP) to meet the continuing education requirements.
   A. See Physician and Advanced Practitioner Standards for applicable providers.
   B. Examples of an IEP may include the following: in-services, case-based learning, educational conferences, grand rounds, internal trauma symposia and in-house publication dissemination of information gained from a local conference or an individual's recent publication (through trained analysis).
   C. IEP's should include presentations and discussions on a quarterly basis at a minimum.
   D. The total hours acquired through an IEP should be functionally equivalent to 12 hours of CME annually.

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5. The TPMD and the TPM have ultimate authority to validate educational forums and submissions for CME requirements. This includes the approval of all contact hours.

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6. New providers will have education requirements prorated based on start date/calendar year.

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7. Level I trauma centers must provide or participate in at least one ATLS course annually.

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8. In Trauma Centers with both an Adult and Pediatric Accredited program, personnel requiring continuing education must complete a minimum of three hours specific to pediatric trauma care (of the 12 required annual continuing education hours).

Standard 8: Injury Prevention, Public Education & Outreach

1. The institution will demonstrate a leadership role and engage in trauma prevention programs. These programs must be:
   A. Internal and external to the institution.
   B. Reflective of the trauma trends identified through the institution's trauma registry, local epidemiological data, and/or community needs.
      i. Implement at a minimum two activities annually with specific objectives, goals, and timeframes for completion that address separate major causes of injury in the community as supported by trauma related data.
         a. Each of the prevention initiatives' specific objectives, goals, and timeframes for completion should be documented in advance of implementation so that the trauma center can describe the success relative to the stated goals.
   C. Presented collectively with other institutions and organizations.

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2. The institution must demonstrate evidence of a job description and salary support for a prevention coordinator.
   A. Level I & II: This position must be someone other than the TPM or PI personnel.
      i. Level III: Role may be integrated into TPM or PI personnel responsibilities.
   B. This position must directly report through the trauma program administrative structure.

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3. The TPMD, or trauma surgeon designee and the TPM must have a demonstrated role with injury prevention program planning and development.

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4. The institution must demonstrate collaboration with, or participation in, national, state and local injury prevention programs.

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5. The institution must provide a means of referral and access to the trauma centers injury prevention and educational resources.

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6. The clinical staff must be familiar with, and participate in, trauma injury prevention education.

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7. Trauma Patients must undergo screening for suspected or confirmed abuse. The institution must:
   A. Have a policy/procedure/guideline that defines the abuse screening and management of patients with suspected or confirmed child abuse, elder abuse, intimate partner violence, and sex trafficking.
      i. ACS COT Best Practice Guideline for recognition of abuse
   B. Report abuse in compliance with Pennsylvania law and hospital policy/procedure/guideline.

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8. Providers participating in the care of the injured patients should have access to trauma-informed care training.

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9. There must be a Screening, Brief Intervention and Referral for Treatment (SBIRT) protocol.
   A. Screening for substance misuse (alcohol and drugs) must be performed and documented for 80% of all admitted injured patients (PTOS) age 12 and greater, regardless of trauma team activation level including non-activations, and regardless of admitting service.
      i. Screening methods are at the discretion of the individual trauma center but must include a validated tool or blood/urine laboratory testing.

a. Examples of screening methods are available in the Best Practice Guidelines Screening and Intervention for Mental Health Disorders and Substance Use and Misuse in the Acute Trauma Patient

B. 80% of admitted injured patients (PTOS) age 12 and greater who have screened positive for substance misuse must receive a brief intervention by appropriately trained staff prior to discharge, and this intervention must be documented.
   i. At a minimum an intervention must be offered.
   ii. Appropriately trained staff will be determined and credentialed by the institution. This may include nurses, social workers, etc.

C. Eligible patients must include at a minimum alive and participatory patients.

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10. Level III: While it is noted that Neurosurgery / Neurosurgical capabilities are not required for a Level III trauma program, mild Traumatic Brain Injuries are common and often seen and treated in this venue.
    A. The clinical management guideline for the mild traumatic brain injured (TBI) patient must be developed and should include appropriate screening and referral.

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11. The trauma center must meet the mental health needs of the trauma patient.
    A. Must have a protocol to screen patients at high risk for psychological sequelae with subsequent referral to a mental health provider.
       i. The protocol must include a structured approach to identify patients at high risk for mental health problems, specifically post-traumatic stress disorder and/or depression.
    B. ACS COT Best Practice Guidelines Screening and Intervention for Mental Health Disorders and Substance Use and Misuse in the Acute Trauma Patient

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12. The institution should be involved in the Stop the Bleed initiative.

Table 2 Suggestions for Planning Optimal Injury Prevention and Violence Intervention Strategies with the Greatest Impact

- **Utilize available data:** Identify high rates of injury and the populations in which these injuries occur. Analyze data to determine the mechanisms of injury, injury severity, and contributing factors. Utilize multiple injury and death data sources to reflect the true burden of injury.
- **Target at-risk populations:** Identify, understand, and target efforts toward at-risk populations while being sensitive to generational differences, as well as cultural, religious, and other established customs. Engage target population as a key stakeholder in development, implementation, and evaluation of the intervention.
- **Leverage partnerships:** Make use of other trauma centers, prehospital organizations, public health and violence prevention organizations, law enforcement agencies, schools, churches, and others interested and involved in community injury prevention efforts.
- **Choose effective or well-informed intervention strategies:** New intervention program development, assessment, and implementation are complex and time consuming. Not all proven interventions work in every population. Evidence-informed interventions may still require adaptation for demographic and risk factor differences.
- **Develop a plan:** Logic models are a best-practice method to plan intervention strategies and should be utilized to outline the intervention effort, including delineating risk and protective factors.
- **Evaluate:** Develop surveillance and monitoring tools to assess not only the available performance indicators of the trauma center's prevention efforts but also the prevention effectiveness. Evaluation efforts should start at program inception with a feasibility assessment and include intermediate and long-term outcomes.
- **Communicate:** Partner with local print and broadcast media and be prepared for many opportunities for trauma center leaders to serve as a reliable source of injury prevention information. Understand your stakeholders and the at-risk populations and articulate your prevention message based upon their vantage point.
- **Advocate:** Elected and appointed leaders can help implement prevention efforts if the trauma center understands their goals and ways to work with them to create effective laws promoting prevention.

Table 3 **Suggested Methods for Tracking and Reporting of Injury Prevention Activities**

- Description of the mechanism of injury or root causes and risk factors of injury targeted by prevention programs
- Dates and locations of intervention events
- Trauma center resources
- Personnel hours (paid and volunteered)
- Trauma center expenses
- Community partners and their personnel hours
- Other sources of financial support
- Media exposure
- Involvement of elected and appointed officials
- Public policy initiatives or legislation
- Number of community members reached with prevention message or service
- Available outcome data related to the prevention activity and its target
- Strategic evaluation program, from inception to long-term outcomes

Standard 9: Research: Level I Trauma Centers Only

1. The hospital administration of a Level I trauma center must demonstrate support for the research program.
   A. Level I trauma centers have an important role in advancing the knowledge and science relevant to the care of the injured patient. Advancements in the field might fall within many different domains including, but not limited to, the biological sciences, translational research, comparative effectiveness research, or implementation science.
   B. Methods to demonstrate support of the research program may include:
      i. Basic laboratory space
      ii. Sophisticated research equipment
      iii. Advanced information systems
      iv. Biostatistical support
      v. Salary support for basic and translational scientists, or seed grants for junior investigators

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2. The institution will have a designated trauma research director.
   A. This may be the TPMD or a Trauma Surgeon who:
      i. Remains active in trauma care.
      ii. Demonstrates current (two years) involvement and commitment to research in trauma care.

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3. The institution must have formal regularly scheduled trauma research meetings.

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4. The institution must have an identifiable Institutional Review Board (IRB) process, active research protocols and allied health professionals involved in extramural educational presentations and an adequate number of peer-review scientific publications.

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5. Four extramural educational presentations are required each year.
   A. All four must be presented to external audiences.
   B. At least one activity per survey cycle must be by a trauma program physician faculty member as a visiting professor, invited lecturer, or speaker at a regional, national, or international trauma conference.
   C. Three presentations can be by a physician, advanced practitioner, nurse or clinical pharmacist.
   D. See Standard 7: Continuing Educational Programs for additional details.

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6. Trauma Centers must produce a minimum of ten trauma related publications within a three year period.
   A. Methods of demonstrating the trauma center involvement and commitment to research will include a combination of publications from:
      i. Three trauma or trauma related publications authored by adult or pediatric trauma surgeons.
         AND
      ii. One from a minimum of three of the twelve listed below:
         a. Anesthesia
         b. Basic Sciences
            • Must involve topics directly related to the pathophysiology of injury
         c. Cardiothoracic Surgery
         d. Critical Care
         e. Emergency Medicine
         f. Neurosurgery
         g. Nursing

h. Orthopedics
i. Plastics/Maxillofacial Surgery
j. Radiology
k. Rehabilitation
l. Vascular Surgery

iii. Trauma related articles authored by members of other disciplines or work done in collaboration with other trauma centers and in participation in multicenter investigations may be counted in the remainder of the articles.

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7. Research guidelines include:
   A. Publications must appear in indexed peer-review journals.
      i. Publications not included in indexed peer-reviewed journals may be submitted to the PTSF for review on a case-by-case basis.
   B. Authors from the trauma center must meet accepted authorship requirements of the International Committee of Medical Journal Editors.
   C. In combined Level I adult and pediatric trauma centers, a minimum of one-half of the pediatric program's research requirements must focus on the pediatric population. Similarly, a minimum of one-half of the adult program's research requirements must focus on the adult population.
   D. A Level I trauma surgeon's research cannot be counted at another trauma center.
      i. Research conducted and completed prior to employment – but published after a change in employment – cannot be counted toward the new place of employment.
      ii. Research conducted but not completed prior to a change in employment may be counted at both trauma centers.
   E. Research activity must be performed at the trauma center.
      i. Research completed by a consortium of hospitals can be counted at each hospital if data and trauma/registry program resources are utilized in the completion of the research project.
   F. A case series must include more than five trauma patients.
   G. Maximum of one publication from acute care surgery may be included.

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8. Support of residents or fellows in at least one of the following scholarly activities must be demonstrated:
   A. Laboratory experiences
   B. Clinical trials
   C. Resident trauma paper competitions at the state, regional, or national level
   D. Resident trauma research presentations

Standard 10: Physicians

1. The institution will credential each physician for the appropriate specialty, including trauma care.
   A. Compliance with these criteria and their appropriateness is essential and must be monitored by the trauma PIPS program.

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2. Trauma call will be limited to those with demonstrated skills, commitment and experience.
   A. The TPMD, in conjunction with the hospital's medical governing board or body and in association with identified subspecialty liaisons, will utilize the trauma PIPS program to determine each individual attending physician's ability to participate on the trauma team.
      i. This will be based on an annual review of each provider's performance in the trauma program.
      ii. Surgical privileges do not necessarily qualify a surgeon to care or consult on the care of the severely injured.
   B. Reappointment to the trauma admitting/consulting staff must be coordinated by the TPMD and based on the following criteria:
      i. Maintenance of good standing in the primary specialty.
      ii. Evidence of the required continuing medical education in trauma.
         a. Physicians who maintain Board Certification/Board Eligibility in their required specialty do not have to maintain additional continuing medical education.
            - Not applicable to the Trauma Program Medical Director
            - Not applicable to Physicians with an Alternate Pathway
            - Not applicable to the Trauma Program Performance Improvement Medical Director/ Associate Medical Director
         b. The TPMD is responsible for determining if submitted CME is acceptable in meeting the trauma related requirements.
         c. CME credits obtained by completion of the ATLS course may be counted towards yearly CME requirement.
            - ATLS-Instructor hours may be counted as a maximum of ten (10) CME credits in a rolling three year period.
         d. Obtaining Board Certification and/or Re-Certification may count as thirty-three (33) hours of continuing education credit for the year that board certification/re-certification occurred.
         e. An Internal Educational Process (IEP) may be identified by the trauma program as a means of fulfilling CME requirements.
            - See Standard 7: Continuing Education Programs for details.
         f. In Trauma Centers with both an Adult and Pediatric Accredited program, a minimum of 4 hours (of 12) of the required annual continuing education must be related to pediatric trauma care.
      iii. Documentation of attendance at multidisciplinary conferences, morbidity/mortality round and/or institution peer-review conferences that deal with the care of injured patients.
      iv. Satisfactory performance in managing trauma patients based on performance assessment and outcome analysis.

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3. Physicians at Level I and Level II Trauma Centers must be board certified/board eligible.
   A. Level I & II: board certification/board eligibility in the appropriate specialty board is required for Anesthesiology, Emergency Medicine, General Surgery, Neurosurgery, Orthopedic Surgery and Radiology. See specific subspecialty areas for additional details.

i. Other surgical and non-surgical specialties must be a board certified or board eligible physician with credentialled expertise (privileges at the institution through the institution's credentialing process for the specialty) in the specific specialty. See Other Surgical Specialties and Other Non-Surgical Specialties for additional details.

B. Level III board certification/board eligibility required for Emergency Medicine, General Surgery and Orthopedic Surgery. See specific subspecialty areas for additional details. All certifications must be maintained on a continuous basis.

C. Recognized boards are those recognized by the American Board of Medical Specialties, American Osteopathic Association or Royal College of Physicians and Surgeons of Canada.

i. Examples of other governing boards not recognized include but are not limited to the National Board of Physicians and Surgeons, American Board of Podiatric Medicine, American Board of Foot and Ankle Surgery, and American Board of Cosmetic Surgery.

ii. Physicians with board certification by any other governing board must apply for an alternate pathway per Policy AC-129: Process for Use of Non-Board Certified Physicians: Alternate Pathway.

a. Physicians participating in an alternate pathway approved prior to January 1, 2026, must complete 36 hours in three years or 12 hours annually of trauma-related CME. For pediatric trauma care, nine of 36 hours must be pediatric-specific CME.

- Recommend maintenance of ACLS (or equivalent course) certification. PALS certification is acceptable for pediatric ICU.

b. Physicians participating in an alternate pathway approved after January 1, 2026, must maintain the following:

- 36 hours in three years or 12 hours annually of trauma-related CME. For pediatric trauma care, nine of 36 hours must be pediatric-specific CME.
- All general surgeons, all neurosurgeons, all orthopedic surgeons, all emergency medicine physicians, and the anesthesiology liaison:
  - Current ATLS certification.
  - Active membership in at least one national or regional trauma organization and must have attended at least one meeting during the reporting period.
  - Attendance of 50 percent or more at the trauma multidisciplinary PIPS committee meetings during the reporting period.
- Processes and outcomes of care comparable to that of other physicians.
- Recommend maintenance of ACLS (or equivalent course) certification. PALS certification is acceptable for pediatric ICU.

iii. Providers must be deemed board eligible by their appropriate board. If no longer board eligible, that individual is unacceptable for inclusion on the trauma team.

SUBSPECIALTY LIAISONS

4. Liaisons will be identified in the following areas: Anesthesiology, Emergency Medicine, Intensive Care Unit (if not surgically directed), Neurosurgical (I/II), Orthopedic, Radiology and other appropriate disciplines as defined by the trauma program, who will participate in the PIPS program. The Liaison will:

A. Be a single identified person.

B. Be Board Certified/Eligible in specialty and either Chief of the corresponding service or specifically designated by both the TPMD and the Chief of Service.

i. Level I: The Orthopedic Surgeon Liaison must have completed an orthopedic traumatology fellowship approved by the Orthopaedic Trauma Association (OTA).

a. Trauma centers with both adult and pediatric trauma programs may share the adult OTA-approved orthopedic traumatology fellowship trained Liaison.
b. Trauma centers wishing to have an Orthopedic Surgeon Liaison who has not completed an OTA-approved orthopedic traumatology fellowship must obtain a variance from this standard. Refer to Policy AC-105: Applying for a Variance from a Standard. The request for the variance must demonstrate the Liaison meets the following criteria:
   - At least 50 percent of the Orthopedic Surgeon's practice is dedicated to providing care to orthopedic trauma patients.
   - Active trauma committee membership in a regional, national, or international organization (outside of hospital or institution) and attendance at one member meeting during the reporting period.
   - Participation in peer-reviewed publications/research in orthopedic trauma over the past three years.
   - Participation in trauma-related educational activities as an instructor or educator (outside of hospital or institution) in the past three years.

C. Attend at least a 50% attendance at the multidisciplinary PIPS meeting.
   i. This attendance benchmark may be met by the liaison and/or a second identified representative of the Subspecialty Group.
      a. Level I and II: Both the primary Liaison and second identified representative must be a physician.
      b. Level III: Both the primary Liaison and second identified representative must be a physician from each subspecialty except Anesthesia. The primary Anesthesia Liaison must be an Anesthesia Physician. The second Anesthesia representative may be an Anesthesia Physician or CRNA.
      c. If this role is shared, both participants must meet the CME requirements when applicable.
   ii. Fifty percent is the actual attendance rate and does not include excused absences or other reasons for non-attendance.
   iii. Attendance must be monitored on a continual basis.
D. Update specialty group on trauma related issues.

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5. Level I & II: There must be a Geriatric Provider Liaison to the trauma service.
   A. The Geriatric Provider Liaison must be one of the following clinicians:
      i. Geriatrician
      ii. Physician with expertise and focus in geriatrics
      iii. Advanced Practitioner with certification, expertise, and a focus in geriatrics.
   B. The role of the liaison is to assist in the development and implementation of geriatric protocols and to be available for patient consultation.

ANESTHESIOLOGY

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6. It is the responsibility of the institution to ensure that Anesthesiologists who have demonstrated through commitment, continuing education and experience are available. This includes 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. This includes:
   A. Level I & II: Board certification or board eligible

i. Level III: Board certification or board eligibility is required for liaison only. Board certification is not required for all other anesthesiologists.
ii. Physicians without appropriate board certification or eligibility must apply for an alternate pathway per Policy AC-129: Process for Use of Non-Board Certified Physicians: Alternate Pathway.
    a. Physicians participating in an alternate pathway approved prior to January 1, 2026, must complete 36 hours in three years or 12 hours annually of trauma-related CME. For pediatric trauma care, nine of 36 hours must be pediatric-specific CME.
    b. Physicians participating in an alternate pathway approved after January 1, 2026, must maintain the following:
        - 36 hours in three years or 12 hours annually of trauma-related CME. For pediatric trauma care, nine of 36 hours must be pediatric-specific CME.
        - Liaison:
            - Current ATLS certification
            - Active membership in at least one national or regional trauma organization and must have attended at least one meeting during the reporting period.
            - Attendance of 50 percent or more at the trauma multidisciplinary PIPS committee meeting during the reporting period.
        - Processes and outcomes of care comparable to that of other physicians.
    c. In lieu of CME, demonstration of completion of the trauma program (IEP) is acceptable. See Standard 7: Continuing Education Programs for additional details.

B. Level I & II: The Anesthesiology Service must maintain in-house 24-hour availability and be dedicated to one hospital when on call.
    i. Level III: must maintain 24-hour on-call coverage/availability at all times but do not need to be in house. Back-up call is not required.
C. Level I & II: Published on-call and back-up call schedules must be maintained.
D. Anesthesiology services must be available for severely injured patients, emergency operations and airway management as requested by the trauma team.
    i. The institution will determine when the attending anesthesiologist will respond in-house for the resuscitative phase of care based on patient condition.
    ii. The trauma program must define the parameters of emergent response outside of the resuscitative and operative phases of care, based on level of acuity. For example, emergent consult in the ICU scenarios.
        a. The emergent response must be within 30 minutes.
    iii. Requirements may be fulfilled by senior anesthesia residents (PGY-4/CA3) or licensed certified nurse anesthetists (CRNA's) who are capable of assessing emergent situations and providing any indicated treatment for trauma patients.
        a. When anesthesia residents and/or CRNA's are used to fulfill availability requirements, the staff anesthesiology on-call will be notified.
        b. The staff anesthesiologist may not supervise more than two residents or CRNA's on major trauma cases at one time.
        c. CRNA's should reference the Advanced Practitioner Standard for continuing education requirements.
    iv. The Anesthesiologist involved in the emergent operating room case must be immediately available. See Standard 17: Operating Room for additional details.
        a. Level I & II: within 15 minutes

b. Level III: within 30 minutes

E. The Anesthesiology Service must actively participate with the overall trauma PIPS program
   i. This includes the Anesthesiology Liaison's participation in the multidisciplinary PIPS peer review meeting.
   ii. Level III: The primary Anesthesiology Liaison must be an Anesthesia Physician. The second Anesthesiology representative may be an Anesthesia Physician or CRNA

EMERGENCY MEDICINE

7. It is the responsibility of the institution to ensure that emergency physicians who have demonstrated through commitment, continuing education and experience staff the emergency department. This includes:
   A. Board certification or board eligible
      i. Level I & II: Must be in emergency medicine or pediatric emergency medicine.
         a. Physicians who completed primary training in a specialty other than emergency medicine or pediatric emergency medicine prior to 2016 may participate in trauma care.
      ii. Level III: Emergency medicine, pediatric emergency medicine, or a specialty other than emergency medicine.
      iii. Physicians without appropriate board certification or eligibility must apply for an alternate pathway per Policy AC-129: Process for Use of Non-Board Certified Physicians: Alternate Pathway.
         a. Physicians participating in an alternate pathway approved prior to January 1, 2026, must acquire 12 hours annually or 36 hours in three years of trauma-related CME.
         b. Physicians participating in an alternate pathway approved after January 1, 2026, must maintain the following:
            - 36 hours in three years or 12 hours annually of trauma-related CME. For pediatric trauma care, nine of 36 hours must be pediatric-specific CME.
            - Current ATLS certification
            - Active membership in at least one national or regional trauma organization and must have attended at least one meeting during the reporting period.
            - Attendance of 50 percent or more at the trauma multidisciplinary PIPS committee meeting during the reporting period.
            - Processes and outcomes of care comparable to that of other physicians.
         c. In lieu of CME, demonstration of completion of the trauma program (IEP) is acceptable. See Standard 7: Continuing Education Programs for additional details.
   B. ATLS Certification
      i. Emergency Physicians board certified in Emergency Medicine must take ATLS at least one time.
      ii. ATLS must be continuously maintained if not board certified in Emergency Medicine.
   C. Credentialed by the hospital to be qualified to provide pediatric care if they are not pediatric providers.
   D. There must be a designated Emergency Department Physician Director with evidence of active participation in daily emergency department administrative duties.
      i. Level I & II: Must be board certified or board eligible in Emergency Medicine or Pediatric Emergency Medicine.
         a. Physicians who completed primary training prior to 2016 and are board certified in a

specialty other than emergency medicine or pediatric emergency medicine may serve as the emergency department director.

E. The emergency department staffing will ensure immediate and appropriate care of the trauma patient.
   i. A physician with special competence in the care of the critically injured trauma patient must be physically present in the emergency department 24 hours a day.
      a. During daily periods of peak utilization, staffing by a minimum of two physicians within the Emergency Department is required.
         • The trauma program must define peak hours, supported by data, and reevaluate annually at a minimum.
   ii. Published on-call and back-up call schedules must be maintained.
      a. Level III: Back-up call is not required.

F. Emergency Physicians responsibilities outside of the emergency department.
   i. Level I & II: A board certified or board eligible Emergency Medicine physician must be present in the emergency department 24/7/365 with no gaps in coverage.
   ii. Level III: must be physically present in the Emergency Department except in such instances when he/she must occasionally leave for periods not to exceed 45 minutes to address in-house emergencies.

G. 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 trauma attending surgeon, and is a member of the trauma team.
   i. When the trauma surgeon is not immediately available, the attending emergency physician assumes control until the attending trauma surgeon arrives.
      a. This responsibility can be met by an emergency medicine resident, PGY 3 or above, who has completed at least two years of emergency medicine experience.
   ii. There must be a protocol/policy defining the shared roles and responsibilities of Trauma Surgeons and Emergency Medicine physicians for trauma resuscitation and clearly established responsibilities of the Emergency Medicine Physician on the trauma team. The protocol/policy must be approved by the TPMD.
   iii. Performance of various diagnostic and resuscitative procedures may be shared, especially in training institutions.
      a. These responsibilities must be agreed upon and approved by the TPMD.

H. The Emergency Medicine Department must actively participate with the overall trauma PIPS program.
   i. This includes the Emergency Departments Liaison's participation in the multidisciplinary PIPS peer review meeting.
      a. An Emergency Medicine physician must respond to the highest level of trauma alert.
      b. In an Emergency Department where a trauma surgeon is present in the ED at all times, the EM Physician is not required to respond to highest level activations.
      c. This responsibility can be met by an emergency medicine resident, PGY 3 or above, who has completed at least two years of emergency medicine experience.

GENERAL SURGERY

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8. It is the responsibility of the institution to ensure that general surgeons who have demonstrated through commitment, continuing education and experience are available. This includes:
   A. Board certification or board eligible

i. Physicians without appropriate board certification or eligibility must apply for an alternate pathway per Policy AC-129: Process for Use of Non-Board Certified Physicians: Alternate Pathway.
   a. Physicians participating in an alternate pathway approved prior to January 1, 2026, must acquire 12 hours annually or 36 hours in three years of trauma-related CME.
   b. Physicians participating in an alternate pathway approved after January 1, 2026, must maintain the following:
      - 36 hours in three years or 12 hours annually of trauma-related CME. For pediatric trauma care, nine of 36 hours must be pediatric-specific CME.
      - Active membership in at least one national or regional trauma organization and must have attended at least one meeting during the reporting period.
      - Processes and outcomes of care comparable to that of other physicians.
   c. In lieu of CME, demonstration of completion of the trauma program (IEP) is acceptable. See Standard 7: Continuing Education Programs for additional details.

B. Maintain ATLS certification.
C. General Surgeons who are involved in the care of trauma patients must have privileges in general surgery.
D. General Surgeons on call for trauma are encouraged to participate in the operative and critical care of patients with urgent and emergent surgical problems.
E. All general surgery attending physicians taking trauma call must actively participate in the trauma PIPS program.
   i. Every general surgeon participating on the trauma call roster, regardless of the amount of call, must attend in a minimum of 50% of the multidisciplinary trauma peer review meetings. See Standard 6: PIPS for additional details
      - Back-up Trauma Surgeons who only serve in this capacity on the back-up call schedule, and not on the primary trauma call roster, are not expected to participate in 50% of multidisciplinary peer review committee meetings.
F. Level I & II: Trauma surgeons must be in-house and dedicated to one hospital when on call.
   i. In-house expectations may be fulfilled by senior residents in general surgery (PGY-4 or above).
      a. The PGY-4 or above surgical resident may be approved to begin resuscitation while awaiting the arrival of the attending surgeon, but cannot be considered a replacement for the attending surgeon in the emergency department/resuscitation area.
         - They must be able to deliver surgical treatment immediately and provide the control and leadership for the care of the injured patient.
         - They must have completed at least three years of clinical, general surgery.
         - The presence of such a resident may allow the attending surgeon to take call from outside of the hospital.
         - The resident's response does not count toward the attending surgeon's response expectation.
         - See Standard 19: ICU for additional details.
G. Published on-call and back-up schedules must be maintained.
   i. The expected response time parameters for the back-up trauma attending must be further defined by the trauma program; however, a 30-minute response time for the emergent request is expected.
   ii. Level III trauma centers must have continuous general surgical coverage. A trauma surgeon call schedule must be in place. There also must be a documented back-up call schedule or

iii. documented back-up plan for trauma surgery.

H. 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.
   i. For highest level trauma alerts, the attending surgeon must be at the patient's bedside in the emergency department trauma resuscitation area.
      a. The maximum acceptable response time tracked from patient arrival.
         - Level I & II: 15 minutes.
         - Level III: 30 minutes.
      b. Compliance of surgeon's response must be monitored. Each trauma surgeon must maintain at least an 80% compliance rate.
      c. For centers where the highest level of activation is direct transport to the OR, the second highest activation would apply to the activation criteria.
   ii. 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.
      a. 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.
         - This requirement for the attending trauma surgeon's presence should not result in delay for initiating urgently needed operative procedures

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ICU ATTENDING/CC INTENSIVIST (If not led by a Surgeon)

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9. There will be a surgically directed ICU physician team.
   A. Level I: The Director of the ICU must be a Surgeon.
      i. Level II & III: A Surgeon may be the Co-Director of the ICU.
   B. Level I & II: The surgical director or co-director must be board certified or board eligible in surgical critical care.
      i. This role may be fulfilled by the qualified TPMD.
      ii. The surgical director or co-director is not eligible for an alternate pathway.
      iii. Level III: Board certification or board eligibility in surgical critical care is not required.
   C. The Surgical Director or Co-Director must have completed a fellowship in Surgical Critical Care, Trauma or Acute Care Surgery.
   D. The Surgical Director/Co-Director is responsible for the quality of care and administration of the trauma ICU. This includes policy setting, development of pathways and protocols for the care of the trauma patient and participation in the clinical care of trauma ICU patients.
   E. The ICU service must actively participate with the overall trauma PIPS program.
      i. This includes the ICU Director or Liaison's participation in the multidisciplinary PIPS peer review meeting.
   F. 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 patients staff the ICU.
   G. Level I: Must have a dedicated ICU physician team 24 hours per day.
      i. This team can be staffed from different specialties as determined by critical care credentials consistent with the medical staff privileging process of the institution.

H. Level II and III: An ICU team is not essential; however, arrangements for 24-hour coverage of all trauma patients are necessary for routine care.
   i. Level III: Coverage may include a surgeon, intensivist, hospitalist, or Advanced Practitioner.
I. If the trauma attending is providing ICU coverage, a back-up ICU attending must be identified and readily available.
J. See Standard 19: ICU for additional details and response parameters.

NEUROLOGICAL SURGERY

10. It is the responsibility of the institution to ensure that Neurosurgeons who have demonstrated through commitment, continuing education and experience are available. Neurosurgeons are required at Level I and II trauma centers. Neurosurgeons are not required for Level III trauma centers, however, if a Level III center has Neurosurgery involved in the care of trauma patients for brain or spine injuries, it must meet the requirements for Level II centers.
   A. Board certification or board eligible
      i. Physicians without appropriate board certification or eligibility must apply for an alternate pathway per Policy AC-129: Process for Use of Non-Board Certified Physicians: Alternate Pathway.
         a. Physicians participating in an alternate pathway approved prior to January 1, 2026, must acquire 12 hours annually or 36 hours in three years of trauma-related CME.
         b. Physicians participating in an alternate pathway approved after January 1, 2026, must maintain the following:
            - 36 hours in three years or 12 hours annually of trauma-related CME. For pediatric trauma care, nine of 36 hours must be pediatric-specific CME.
            - Current ATLS certification
            - Active membership in at least one national or regional trauma organization and must have attended at least one meeting during the reporting period.
            - Attendance of 50 percent at the trauma multidisciplinary PIPS committee meeting during the reporting period.
            - Processes and outcomes of care comparable to that of other physicians.
         c. In lieu of CME, demonstration of completion of the trauma program (IEP) is acceptable. See Standard 7: Continuing Education Programs for additional details.
      ii. Level III centers with participating neurosurgeons in any form of trauma patient care, are held accountable to the complete neurosurgical standard, including CME, PIPS and Liaison participation.
   B. Neurosurgeons must be qualified and credentialed to treat all trauma patients, including pediatric patients.
      i. It is acceptable for institutions to credential both neurosurgeons and orthopedic surgeons to treat spine injuries or share spine call.
   C. Published 24/7/365 on-call schedules must be maintained without gaps in coverage.
      i. Neurosurgery must be dedicated to one hospital or have a published back-up call schedule.
         a. If a published back-up call schedule is not utilized, the PIPS program must monitor compliance to ensure that there is not a delay in clinical care.
      ii. To provide continuous coverage/care, more than one neurosurgeon must be on staff and participating in the care of trauma patients.
   D. An attending neurosurgeon or designee must be available to respond when on-call as requested

by the trauma team leader.

i. The trauma program must define the parameters of emergent consult based on level of acuity.
   a. At a minimum, the parameters must include:
      - Severe traumatic brain injury (GCS less than 9) with head CT evidence of intracranial Trauma
      - Moderate traumatic brain injury (GCS 9–12) with head CT evidence of potential intracranial mass lesion
      - Neurologic deficit as a result of potential spinal cord injury (applicable to spine surgeon, whether a neurosurgeon or orthopedic surgeon)
      - Trauma surgeon discretion/request for emergent consult
   b. The emergent consult must be within 30 minutes.
      - May occur remotely (e.g., viewing CT, MRI, etc.).
   c. Neurosurgical provider response times must be documented.

ii. The neurosurgical designee requirement may be fulfilled by a neurosurgical resident in at least the second year of clinical neurosurgical experience, or an advanced practitioner who has special competence, as attested to in writing by the chief of neurosurgery and/or the TPMD in consultation with the chief of neurosurgery, in the care of patients with neurotrauma.
   a. The designee must be capable of initiating measures towards stabilizing the patient and initiating diagnostic procedures.
   b. The attending neurosurgeon must be involved in clinical decision-making for care of neurotrauma patients. Special competence recognition for trauma surgeons does not relieve the neurosurgeon of the responsibility for prompt in-house response.
   c. The intent of this standard is to assure the subspecialist's surgical expertise is promptly available when requested for a subset of emergent patients.
   d. If a designee is utilized, the trauma program must define parameters for and monitor the compliance with expectations of the attending's involvement.
      - Communication between the designee and the attending during this emergent period must be documented in the medical record to demonstrate compliance and communication with the attending neurosurgeon.

E. The neurosurgeon on call must be present in the operating room for major surgical procedures related to their specialty.

F. The trauma center must provide a contingency plan in case the capability of the neurosurgeon, hospital or system is encumbered or overwhelmed and unable to meet standards of care for the neurotrauma patient with time-sensitive injuries. This plan must include the following:
   i. Emergency Medical Services (EMS) notification of advisory status/diversion, if applicable.
   ii. Evaluation of timely and appropriate care during event.
   iii. Monitoring the efficacy of the process and each instance by the PIPS program.

G. There must be an acute spinal cord/brain injury management capability or formal transfer agreements in effect with regionally recognized spinal cord injury treatment centers.
   i. Level III: A plan must be approved by the TPMD that determines which types of neurosurgical injuries may remain and which should be transferred.
      a. In general, all patients requiring intracranial pressure monitoring and with more significant brain injuries should be transferred to a higher level trauma center.
      b. Formal transfer agreements are required.

c. Appendix A: Interfacility Transfer and Consultation Requirements for Level III and IV Trauma Centers

H. The neurosurgery service must actively participate with the overall trauma PIPS program
   i. This includes the neurosurgical Liaison's participation in the multidisciplinary PIPS peer review meeting.

ORTHOPEDIC SURGERY

11. It is the responsibility of the institution to ensure that Orthopedists who have demonstrated through commitment, continuing education and experience are available. This includes:
   A. Board certification or board eligible
      i. Physicians without appropriate board certification or eligibility must apply for an alternate pathway per Policy AC-129: Process for Use of Non-Board Certified Physicians: Alternate Pathway.
         a. Physicians participating in an alternate pathway approved prior to January 1, 2026, must acquire 12 hours annually or 36 hours in three years of trauma-related CME.
         b. Physicians participating in an alternate pathway approved after January 1, 2026, must maintain the following:
            - 36 hours in three years or 12 hours annually of trauma-related CME. For pediatric trauma care, nine of 36 hours must be pediatric-specific CME.
            - Current ATLS certification
            - Active membership in at least one national or regional trauma organization and must have attended at least one meeting during the reporting period.
            - Trauma multidisciplinary PIPS committee meeting attendance rate of 50 percent or more during the reporting period.
            - Processes and outcomes of care comparable to that of other physicians.
         c. In lieu of CME, demonstration of completion of the trauma program (IEP) is acceptable. See Standard 7: Continuing Education Programs for additional details.
   B. Level I Trauma Centers must have orthopedic care oversight by an individual who has completed a fellowship in orthopedic traumatology approved by the Orthopaedic Trauma Association (OTA).
      i. Adult and pediatric trauma programs may share an OTA fellowship-trained liaison only if the liaison is credentialed to provide care for adult patients at the adult trauma center and pediatric patients at the pediatric trauma center.
   C. Published 24/7/365 on-call schedules must be maintained without gaps in coverage.
      i. In order to provide continuous coverage/care, more than one orthopedist must be on staff and participating in the care of trauma patients.
      ii. The Trauma Center must provide a contingency plan in case the capability of the orthopedic surgeon, hospital or system is encumbered or overwhelmed and unable to meet standards of care for the orthopedic trauma patient with time-sensitive injuries. This plan must include the following:
         a. Emergency Medical Services (EMS) notification of advisory status/diversion, if applicable.
         b. Evaluation of timely and appropriate care during event.
         c. Monitoring the efficacy of the process and each instance by the PIPS program.
   D. Level I & II: Orthopedic surgery must be dedicated to one hospital or have a published back-up call schedule.
      i. Level III: Orthopedic surgeons can take primary call at multiple locations however the

center must have a plan in place regarding how to handle a scenario whereby the surgeon is unavailable. Published back-up call schedules; however, are not required.

ii. If a published back-up call schedule is not utilized, the PIPS program must monitor compliance to ensure that there is not delay in clinical care.

E. An attending orthopedic surgeon or designee must be available to respond in-house and dedicated to the trauma program when on-call as requested by the trauma team leader.

i. The trauma program must define the parameters of emergent consult based on level of acuity.

a. At a minimum, the parameters must include:

- Hemodynamically unstable, secondary to pelvic fracture
- Suspected extremity compartment syndrome
- Fractures/dislocations with risk of avascular necrosis (e.g., femoral head or talus)
- Vascular compromise related to a fracture or dislocation
- Trauma surgeon discretion

b. The response to the emergent consult must be at the bedside within 30 minutes of request.

c. The time is measured from time of request until orthopedic surgery arrival at bedside.

ii. The orthopedic surgery designee requirement may be fulfilled by an orthopedic resident in at least the second year of clinical orthopedic experience, or an advanced practitioner who has special competence, as attested to in writing by the chief of orthopedics and/or the TPMD in consultation with the chief of orthopedics, in the care of patients with orthopedic trauma.

a. The designee must be capable of initiating measures towards stabilizing the patient and initiating diagnostic procedures.

b. The attending orthopedic surgeon must be involved in clinical decision-making for care of the orthopedic trauma patients. Special competence recognition for trauma surgeons does not relieve the orthopedic surgeon of the responsibly for prompt in-house response.

c. The intent of this standard is to assure the subspecialist's surgical expertise is promptly available when requested for a subset of emergent patients.

d. If a designee is utilized, the trauma program must define parameters for and monitor the compliance with expectations of the attending's involvement.

- Communication between the designee and the attending during this emergent period must be documented in the medical record in order to demonstrate compliance and communication with the attending orthopedic surgeon.

F. The Orthopedist on call must be present in the operating room for major surgical procedures related to their specialty.

G. Operating rooms must be promptly available to allow for emergent orthopedic operations on musculoskeletal injuries such as open fracture debridement and stabilization, external fixator placement and compartment syndrome decompression.

i. A system must be organized so that musculoskeletal trauma cases can be scheduled without undue delay and not at inappropriate hours that might conflict with more urgent surgery or other elective procedures.

H. The following orthopedic related practice management guidelines must be in place:

i. Unstable pelvic and acetabular fractures.

a. Must include treatment guidelines for patients who are hemodynamically unstable attributed to pelvic ring injuries

ii. Long bone fracture management.

a. Must include treatment guideline for patient with multiple injuries, for example, should

include time to fixation and damage control versus definitive fixation strategies

iii. Open fracture management.
   a. Must include treatment guideline for open extremity fractures, for example, should include time to antibiotics, time to OR for operative debridement, and time to wound coverage.

iv. Geriatric Patient hip fractures management
   a. For example, should include expected time to OR

I. The Orthopedic service must actively participate with the overall trauma PIPS program.
   i. This includes the Orthopedic Liaison's participation in the multidisciplinary PIPS peer review meeting.

RADIOLOGY

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12. It is the responsibility of the institution to ensure that Radiologists who have demonstrated through commitment, continuing education and experience staff the radiology department. This includes:
   A. Liaison: Board certification or board eligible
      i. The liaison without appropriate board certification or eligibility must apply for an alternate pathway per Policy AC-129: Process for Use of Non-Board Certified Physicians: Alternate Pathway.
         a. The liaison participating in an approved alternate pathway must:
            - Acquire 12 hours annually or 36 hours in three years of trauma-related Continuing Medical Education (CME). For pediatric trauma care, nine of 36 hours must be pediatric-specific CME.
               - In lieu of CME, demonstration of completion of the trauma program (IEP) is acceptable. See Standard 7: Continuing Education Programs for additional details.
            - Maintain processes and outcomes of care comparable to that of other physicians.
   B. Attending radiologists must be available within 30 minutes in person or by tele-radiology for the interpretation of radiographs.
   C. Level I & II: Radiologist able to perform complex imaging studies or interventional procedures must be available.
      i. The emergent response expectation for the interventionalist to begin an endovascular or interventional radiology procedure is 60 minutes. The trauma program must identify the emergent patient classification parameters based on patient acuity, which must include, at a minimum, hemorrhage control.
         a. Patients requiring an emergent response for hemorrhage control are those where blood transfusion has been initiated and there is a confirmed blood pressure less than 90 mmHg at any time prior to angioembolization in adults, or age-specific hypotension in children.
         b. The response time is tracked from request to arterial puncture.
      ii. This role may be fulfilled by Vascular surgeons, Neurosurgeons, Neurologists, Cardiologists or Senior Radiology Residents (PGY-3 or above and must have completed one year of clinical radiological training) who are credentialed and capable of performing emergent radiographs, performance of complex imaging studies or interventional procedures.
         a. When radiology residents are used to fulfill availability requirements, the staff radiologist on-call will be notified and will be promptly available.
   D. Published on-call schedules must be maintained.
   E. 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.

F. The radiology department must actively participate with the overall trauma PIPS program.
   i. This includes the radiology Liaison's participation in the multidisciplinary PIPS peer review meeting.

OTHER SURGICAL SPECIALTIES

13. Other surgical specialists must be available at the bedside for trauma patients when requested.
   A. Level I: Prepared to manage the most complex trauma patients and must have continuously available a full spectrum of surgical specialists.
   B. Level II: Must have continuous surgical specialists described for Level I centers and may transfer highly complex/low-volume patients.
   C. Level III: Must have the commitment of the general and orthopedic surgeons. Individuals from other surgical specialties committed to the care of injured patients are desirable.
   D. Regardless of the surgical or admission capabilities, every trauma center must immediately evaluate, stabilize, treat and, if indicated, transfer trauma patients that exceed the capabilities of the trauma center. Every trauma center must have transfer plans in place defining cases that exceed the capabilities of the trauma center and necessitate transfer.
   E. Level I & II Other Surgical Specialties expertise:
      i. Must be board certified or board eligible with credentialled expertise (privileges at the institution through the institution's credentialing process for the surgical specialty) in the specific surgical specialty.
         a. Recognized boards are those recognized by the American Board of Medical Specialties, American Osteopathic Association or Royal College of Physicians and Surgeons of Canada.
            - Examples of other governing boards not recognized include but are not limited to the National Board of Physicians and Surgeons, American Board of Podiatric Medicine, American Board of Foot and Ankle Surgery, and American Board of Cosmetic Surgery.
         b. Physicians with board certification by any other governing board must apply for an alternate pathway per Policy AC-129: Process for Use of Non-Board Certified Physicians: Alternate Pathway
            - Physicians participating in an approved alternate pathway must maintain:
               - 36 hours in three years or 12 hours annually of trauma-related CME. For pediatric trauma care, nine of 36 hours must be pediatric-specific CME.
                  - In lieu of CME, demonstration of completion of the trauma program (IEP) is acceptable. See Standard 7: Continuing Education Programs for additional details.
            - Processes and outcomes of care comparable to that of other physicians.
      ii. Published 24/7/365 on-call schedules must be maintained for all surgical specialties without gaps in coverage.
      iii. Cardiac surgery: If cardiopulmonary bypass equipment is not immediately available, a contingency plan, including immediate transfer to an appropriate center and PIPS review of all patients transferred must be in place.
      iv. Craniofacial expertise
         a. Level I: Must have surgeons with craniofacial expertise capable of diagnosing and managing acute facial fractures of the entire craniomaxillofacial skeleton, including the skull, cranial base, orbit, midface, and occlusal skeleton.
         b. Level II: Must have surgeons with craniofacial expertise and may transfer highly complex/ l

low-volume patients. If highly complex/low-volume patients are transferred, a transfer plan and PIPS review of all patients transferred must be in place.

c. Coverage can be a combination of any of the following specialists: otolaryngology, oral maxillofacial surgery, or plastic surgery. This can include a single specialty covering all injuries, a rotating schedule, or involvement of specific expertise depending on the nature of the injuries.

v. Hand surgery
vi. Obstetric and gynecologic surgery
vii. Otorhinolaryngological surgery
viii. Plastic surgery
ix. Replantation expertise or must have in place a triage and transfer plan with a trauma center with replantation expertise.
   a. Replantation expertise is defined as the capability to replant a severed limb, digit, or other body part (e.g., ear, scalp, or penis). This includes critical revascularization or care of a mangled extremity.
   b. The triage and transfer plan should ensure optimal care with a goal of minimizing time to replantation.
x. Soft tissue expertise
   a. Level I: Soft tissue coverage expertise that is capable of addressing comprehensive soft tissue coverage of wounds, including microvascular expertise for free flaps. Also including all open fractures, soft tissue coverage of a mangled extremity, and soft tissue defects of the head and neck.
   b. Level II: Must have soft tissue coverage expertise and may transfer highly complex/low volume patients.
      - If highly complex/low-volume patients will be transferred, a transfer plan and PIPS review of all patients transferred must be in place.
xi. Thoracic surgery
xii. Urological surgery
xiii. Vascular surgery

F. Level I & II: Ophthalmology services must have continuous 24/7/365 availability or a contingency plan to ensure ophthalmic trauma care.
   i. Cannot be a surgeon with ophthalmology expertise.
   ii. If a contingency plan is used, it should ensure optimal and timely care.

G. The surgeon on call must be present in the operating room for major surgical procedures related to their specialty.
   i. Compliance and appropriateness must be monitored by the trauma PIPS program.

H. Surgical specialists may be asked to participate in the trauma performance improvement process at the direction of the trauma program.

OTHER NON-SURGICAL SPECIALTIES

14. The complexity of the management of many seriously injured patients may require continuous support from medical specialists and their respective support teams.
   A. Level I & II: Other non-surgical specialists participating in the care of the injured patient must be board certified or board eligible with credentialled expertise (privileges at the institution through the institution's credentialing process for the medical specialty) in the specific medical specialty.

i. Recognized boards are those recognized by the American Board of Medical Specialties, American Osteopathic Association or Royal College of Physicians and Surgeons of Canada.
   a. Examples of other governing boards not recognized include but are not limited to the National Board of Physicians and Surgeons, American Board of Podiatric Medicine, American Board of Foot and Ankle Surgery, and American Board of Cosmetic Surgery.
ii. Physicians with board certification by any other governing board must apply for an alternate pathway per Policy AC-129: Process for Use of Non-Board Certified Physicians: Alternate Pathway.
   a. Physicians participating in an approved alternate pathway must maintain:
      - 36 hours in three years or 12 hours annually of trauma-related CME. For pediatric trauma care, nine of 36 hours must be pediatric-specific CME.
        - In lieu of CME, demonstration of completion of the trauma program (IEP) is acceptable. See Standard 7: Continuing Education Programs for additional details.
      - Processes and outcomes of care comparable to that of other physicians.

B. Level I and II facilities must have:
   i. Available 24/7/365 with no gaps in coverage
      a. Cardiology
      b. Gastroenterology
      c. Infectious Disease
      d. Internal Medicine (Adult Trauma Centers Only)
      e. Nephrology
      f. Pediatrician (Pediatric Trauma Centers Only. At Adult Trauma Centers, required if admitting pediatric patients)
      g. Pulmonary Medicine
   ii. Available 7 days a week with bedside response preferred and telemedicine response acceptable
      a. Pain management (with expertise to perform regional nerve blocks)
      b. Physiatry
      c. Psychiatry
C. Level III facilities, at a minimum, internal medicine specialists must be available.
   i. Published 24/7/365 on-call schedules must be maintained without gaps in coverage.
   ii. If dialysis is not available, a transfer agreement must be in place.
D. Providers must be promptly available from inside or outside the institution as defined by the medical staff by-laws and the trauma program.
   i. Published on-call schedules must be maintained.
   ii. Level III: Requires consultation services available
E. A patient's Primary Care Physician/Pediatrician may be a valuable resource and considered a member of the trauma team and input into the care of a critically injured or ill patient.
F. Non-Surgical Specialists may be asked to participate in the trauma performance improvement process at the direction of the trauma program.

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15. Additional subspecialists may be valuable resources and should be considered a member of the trauma team and input into the care of a critically injured or ill patient.
   A. This includes but is not limited to:
      i. Gerontologist
      ii. Palliative Care Services
      iii. Pharmacist

iv. Primary Care Physician

B. Providers may be asked to participate in the trauma performance improvement process at the direction of the trauma program.

MISCELLANEOUS

16. For all patients requiring transfer for specialty care, such as burn care, OBGYN care, microvascular surgery, cardiopulmonary bypass capability, complex ophthalmologic surgery or high complexity pelvic fractures, agreements with similar or higher-qualitied accredited trauma centers should be in place.
    A. If this occurs, a clear plan for appropriate expeditious transport, follow-up and PIPS monitoring is required.
        i. Refer to Standard 2: Capacity and Availability for transfer plan detail requirements.

17. Telemedicine
    A. Level I & II: Telemedicine, by itself, is not an acceptable method of consultation. The expectation is that the specialist must be available in person at the bedside by a predefined time when a request is made.
        i. Excluding the following subspecialties:
            a. Pain management
            b. Physiatry
            c. Psychiatry
    B. Level III: Telemedicine is an acceptable method of consultation for non-surgical subspecialties, for non-trauma indications, in admitted patients.
        i. Telemedicine, by itself, is not an acceptable method of consultation for surgical specialties or for trauma indications.
        ii. Injured patients must be admitted to an onsite service. The admitting service cannot be a telemedicine service.
    C. Trauma centers wishing to utilize telemedicine for other subspecialties should refer to Policy AC-105: Applying for a Variance from a Standard for additional details.

Standard 11: Advanced Practitioners

1. Advanced Practitioners (AP), under the direction of a physician, may have a defined role in trauma patient care.
   A. The extent of the involvement must be determined by the TPMD in compliance with Pennsylvania law and hospital policy.
   B. This includes Physician Assistants (PA), Nurse Practitioners (NP) and Certified Registered Nurse Anesthetists (CRNA).

2. All APs who have a defined role in trauma patient care must be knowledgeable and current in the role of injured patients. This includes:
   A. A formal, institution specific orientation to the trauma program.
   B. Completion of annual review/performance evaluation including skills proficiency and trauma clinical competence by the TPMD or the Division Chief.
   C. Participation in the PIPS program as defined by the trauma program.

3. APs prior to functioning as a member of the team caring for trauma activation patients via assessment or interventions must:
   A. Maintain ATLS:
      i. This includes emergency medicine and trauma/surgery APs responding to activations.
      ii. This excludes:
         a. Neurosurgery, orthopedic surgery and other AP consulting services
         b. Emergency medicine APs solely working in the main emergency department and/or FastTrack area who do not respond to trauma activations
      iii. Certified Registered Nurse Anesthetists (CRNAs) who respond to care for the injured patient in a supportive/subspecialist role (such as airway only) are excluded from ATLS certification expectations.
   B. Recommend maintaining ACLS certification (or equivalent course)
   C. Recommend maintaining PALS certification (or equivalent course)

4. APs prior to being involved in the care of injured patients consider:
   A. Maintaining ACLS certification (or ACLS equivalent)
   B. Maintaining PALS for Pediatric ICU responders if pediatrics are routinely admitted to the institution (or PALS equivalent).

5. ATLS is required for APs functioning as a member of the trauma service caring for trauma patients in the ICU.

6. Additional subspecialty AP credentialing requirements as defined by the trauma program.

7. The Pennsylvania Trauma Nursing Core Curriculum (PaTNCC) is not required for Advanced Practitioners.

Standard 12: Residency Programs

1. In teaching facilities, the requirements of the Accreditation Council for Graduate Medical Education (ACGME) residency review committees must be met.

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2. Level I: Participation in a General Surgical Residency program is required.
   A. The trauma center must demonstrate commitment to postgraduate training and education by having residency rotations in trauma that meet all the following conditions:
      i. All residents on the trauma service must be from an ACGME accredited program.
         a. Trauma programs utilizing residents in an ACGME accredited residency program from another hospital must have a formal written training agreement in place.
      ii. There must be a defined documented trauma curriculum and trauma specific objectives for junior and senior residents designed to prepare surgeons to be proficient in the delivery of a high level of trauma care.
      iii. There must be a sufficient volume and breadth of cases to provide general surgery senior residents the opportunity to meet the competency requirements for senior general surgery residents in trauma set forth by the ACGME.
      iv. The rotation must be continuously available to residents to assure ample exposure to trauma care.
      v. The rotations must be available to, at minimum, general surgery residents, and if applicable orthopedic, neurosurgery, and emergency medicine residents.
      vi. “Available” implies that the rotation is open to receive trainees at all times.

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3. In institutions in which there are Emergency Medicine Residency training programs, supervision must be provided by an in-house attending emergency physician 24-hours a day.

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4. When any residents are fulfilling standard requirements, they must be fully qualified by the institution, in conjunction with the trauma program, for care by the appropriate specialty.
   A. Any resident rotating to the trauma service (including responding to trauma alerts or providing ICU care) and Emergency Medicine residents involved in the care of trauma patients must at a minimum:
      i. Maintain ATLS certification
      ii. Recommend maintaining ACLS certification (or equivalent course)
      iii. Recommend maintaining PALS certification (or equivalent course)
   B. Additional subspecialty residency credentialing requirements as defined by the trauma program.

Standard 13: Nursing

1. All registered nurses functioning in a department that routinely admits trauma patients must demonstrate compliance with the nursing standards. This includes:
   A. Burn Unit
   B. Emergency Department
      i. This includes admission/holding/observation areas used as an extension of the Emergency Department
   C. Intensive Care Units (ICU) for Trauma Patients
   D. Intermediate Care Step-Down Units (IICU) for Trauma Patients
   E. Medical/Surgical Units which regularly receive Trauma Patients
   F. PACU
   G. Operating Room
   H. Advanced Practitioners: This standard does not apply to AP's. Nurse Practitioners, Physician's Assistants and Certified Registered Nurse Anesthetists should see Standard 11: Advanced Practitioners for additional details.

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2. The institution will ensure that patient care units are staffed by registered nurses who have special capabilities as demonstrated through commitment, continuing education and experience.
   A. This includes, where applicable, the ability to operate pediatric equipment.
   B. Trauma care oversight must be done by a Registered Nurse.
      i. Licensed Practical Nurses (LPN's), Aids, Technicians or other ancillary staff may be utilized in care tasks. This must be accomplished by RN oversight of care, procedures and chart entries per institutional policy.
   C. In circumstances where a patient is admitted to the unit under the care of a non-trauma credentialed RN, there must be oversight by a trauma credentialed RN, which must include at a minimum immediate availability as a resource. This must be defined by the trauma program.

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3. The Pennsylvania Trauma Nursing Core Curriculum (PaTNCC) Course is required.
   A. For new applicants, 50% of the nursing staff must complete the trauma nurse course prior to survey.
   B. The RN transferring into a trauma department must complete the PaTNCC within one year of transfer.
   C. For RN's transferring from a Level I, II or III trauma center to another trauma center, the PaTNCC is transferable, however the hospital-specific module must be completed within one year of hire.
      i. RNs transferring from a Level IV trauma center must complete the higher-level trauma center PaTNCC.
      ii. RNs transferring from a pediatric trauma center must complete a geriatric module if not completed at the previous trauma center.
   D. For an accredited trauma center that is opening a new nursing unit, 50% of the staff must complete the trauma nurse course prior to the opening of the unit and the remaining 50% (for a total of 100%) must complete the course within the first year of the opening of the new unit.
   E. The course content will be reviewed on a regular basis at least every two years and must support evidenced based practice with the integration of data from the institutions trauma registry, national guidelines, current literature, and benchmarking efforts.
   F. The course must be reviewed and continuing education credits granted by an organization accredited to provide continuing education, for example: PSNA, ENA, AACN or AORN.

G. The Trauma Certified Registered Nurse (TCRN) advanced certification indicates advanced competence in trauma nursing, and therefore exceeds the expectations of the PaTNCC. A trauma program may combine a hospital-specific competency module with the TCRN certificate to demonstrate compliance with this standard.

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4. There must be evidence of ongoing skills proficiency / clinical competence appropriate for the institution.
   A. This can be accomplished through such mechanisms as annual reviews and performance evaluations.

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5. Recommend all RN's (with the exception of Medical/Surgical Floor and Operating Room RN's) maintain ACLS provider status (or equivalent course). This should be defined by the institution and compliance monitored by the institution.
   A. Recommend maintaining PALS for nurses participating in the care of the pediatric trauma patient. This should be defined by the institution.

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6. All RN's participating in the care of trauma patients must have evidence of annual continuing education including eight (8) hours of continuing education.
   A. The trauma continuing education must correspond to the nurses' scope of practice and patient population served.
   B. Education should be driven by the trauma PIPS program and registry data.
      i. This should include age-related clinical competency as determined by the trauma program.
   C. The TPM in conjunction with the TPMD is responsible for determining and validating which educational forums are acceptable in fulfilling continuing education requirements. This includes the approval and appropriation of all contact hours.
   D. Completion of an advanced trauma course, such as ATCN, TNCC, TCAR, PCAR, PTACC and TNACT may be credited to fulfill up to twelve (12) hours of continuing education requirements over a three (3) year time frame from the class.
   E. Completion of an advanced non-trauma course such as ACLS, APLS, PALS or ABLS may be counted towards the yearly hours as follows:
      i. Four (4) hours for a two day provider course
      ii. Two (2) hours for a one-day (re-certification) course
      iii. While it is recognized that these courses required additional hourly participation, the intention is to
         a. Acknowledge the trauma related content
         b. Assure that other trauma related education is obtained
   F. Serving as faculty for trauma-related courses may be used to fulfill eight (8) hours of continuing education requirement for a three-year time frame from the time of the class.
   G. Nurses maintaining one of the following trauma advanced certifications are not required to maintain continuing education logs: CEN/CPEN, CCRN, TCRN, PCCN, CPN, CFRN, CNRN, CNOR, CPAN, MEDSURG-BC, CBRN.
      i. Not applicable to the TPM or PI-Coordinator
   H. New nurses may have education requirements prorated based on start date/calendar year.

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7. Advanced Certification: at least 50% of the RN's employed in the Emergency Department, Intensive Care Unit and Intermediate Care/ Step-Down Unit more than three years must have and maintain advance certifications within two years following initial accreditation.
   A. Certifications that meet expectations are: CEN/CPEN, CCRN, TCRN, PCCN, CPN, CFRN and CNRN.
      i. By virtue of certification maintenance continuing education requirements, Nurses maintaining one of the approved advanced certifications are not required to maintain continuing education logs.
         a. Not applicable to the TPM or PI-Coordinator
   B. Courses that meet expectations are: ATCN and TNCC.
   C. For new applicants, a minimum of 25% of the nursing staff, in these units, must have advanced certification in the year prior to survey.
   D. For an accredited trauma center that is opening a new nursing unit, 25% of the nursing staff, in these units, must have advanced certification within the first year of the opening of the new unit.
   E. Trauma Centers wishing to utilize other Nursing certifications or courses should refer to Policy AC-105: Applying for a Variance from a Standard for additional details.
   F. Level III: Desired but not required

Standard 14: Emergency Medical Services (EMS)

1. Medical Command Facility Designation, as recognized by the PaDOH Bureau of EMS, must be maintained.
   A. A facility may submit a request for a waiver to the PaDOH if unable to meet the medical command qualifications. The waiver must then be submitted to the PTSF following Policy AC-105 Applying for a Variance from a Standard for final approval.

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2. The institution must have active involvement in its regional Emergency Medical Services (EMS / Pre-hospital) system.
   A. It is the responsibility of the trauma center to enhance lines of communication with EMS services and Regional EMS Councils to resolve issues related to EMS transportation, transfer, accuracy of triage and clinical care.
   B. The trauma program must identify a physician from the emergency department or trauma program to facilitate communication, education and outreach with EMS, and participate in the pre-hospital PI process, including assisting in the development of local pre-hospital care protocols relevant to trauma.

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3. The trauma center must be the local trauma authority and assume the responsibility for providing training for EMS providers.
   A. Physicians, nurses and administrative personnel must be involved in various EMS programs and invite EMS providers to attend internal hospital education forums that are trauma related.
   B. Participation in jointly sponsored accredited continuing educational program is required.

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4. The institution must provide opportunities for appropriate EMS provider clinical experience.

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5. EMS participation in the PIPS program must be clearly defined by the PIPS plan.
   A. At a minimum this includes, inviting an EMS liaison to the multidisciplinary PIPS meeting.

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6. Completed pre-hospital patient care records (PCR) must be sought, and when available, present for review by the trauma program as a part of the PIPS process.

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7. The trauma center should collaborate with EMS to adopt a universal format for the verbal transfer of care of the trauma patient from EMS to the trauma center.
   A. DMIST communication is recommended.

Standard 15: Helipad

1. There will be a lighted helipad in close proximity to the institution's emergency department.
   A. Location of the helipad will permit the trauma resuscitation team to meet the patient and provide direct transfer by gurney to and from the resuscitation unit. No intermediary vehicles should be employed.
      i. Level III: Must have access to lighted, licensed helipad within one mile of the emergency department with emergency vehicles readily available to provide proper transport.
         a. A policy for transfer of patient to and from the landing area must be in place.
         b. Emergency vehicles must be readily available to provide proper transport.
         c. Every transfer by helicopter must be reviewed by the trauma PIPS program specifically for timeliness of transfer and efficient access to the helicopter.
         d. Any variance from the 1.0 mile requirement must have an approved Standard Variance. Refer to Policy AC-105: Applying for a Variance from a Standard for additional details.

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2. The transport system to/from the helipad and/or ambulance entrance to and from the resuscitation unit must not adversely affect the timely intervention of definitive care. Methods will include:
   A. 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.
   B. Policies and procedures of the transport and transfer system for patients arriving or departing by the air transport system.
   C. Listing of the air transport systems used, consistent with the scope of care delivered.

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3. The Commonwealth of Pennsylvania must license the on-site helipad.

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4. The Federal Aviation Administration, Eastern Region, must approve the air space.

Standard 16: Emergency Department

1. Adequate Emergency Department facilities and personnel will be available to simultaneously care for two or more major uni-system or multi-system trauma patients.
   A. Back-up areas must be identified and immediately available.

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2. 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.
   A. The Emergency Department will 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 care of trauma patients.
   B. A minimum of two (2) RN's who are capable to actively function in trauma resuscitations must be present in the Emergency Department at all times.
      i. Level III: One (1) RN at all times who is capable to actively function in trauma resuscitations must be present in the Emergency Department at all times.
   C. See Standard 13: Nursing for additional details.

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3. There will be a designated trauma resuscitation area in the Emergency Department which will:
   A. Remain open 24-hours a day.
   B. Be of adequate size to accommodate the full trauma resuscitation team.

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4. A pediatric readiness assessment and a documented plan to address identified gaps must be completed at a minimum every 3 years.
   A. "Pediatric readiness" refers to infrastructure, administration and coordination of care, personnel, pediatric-specific policies, equipment, and other resources that ensure the center is prepared to provide care to an injured child.
   B. Pediatric Readiness Toolkit

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5. There must be a policy defining the expectation for frequency of vital signs.
   A. There must be hourly vital sign documentation beginning with ED arrival for trauma alert patients (all trauma activations, does not include trauma consults).
      i. At a minimum, hourly vital signs must be monitored through post-ED transport time or at the time a physician/provider order extends vital signs to an adjusted, longer frequency.
   B. The policy must include expected vital sign frequency for non-trauma alert patients. May be a tiered expectation based on triage level, such as emergency severity index levels.
   C. Vital signs include respiration, blood pressure, and pulse at a minimum.

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6. Adequate physician and nursing personnel and equipment must be available to accompany the trauma patient during transport.
   A. Personnel and patient population must be defined by the hospital, at minimum patient population must include highest level activations during resuscitative phase of care.
      i. Providers must be appropriately trained and to fully monitor and resuscitate the trauma patient in
      all areas.
   B. 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.

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7. Equipment will be available in the appropriate array of sizes for resuscitation and life support of the critically or seriously injured trauma patient. This will include but is not limited to:
   A. Airway control and ventilation equipment including laryngoscopes, endotracheal tubes, rescue airway devices, bag-valve mask resuscitators, sources of oxygen and mechanical ventilator.
   B. Arterial catheters
      i. Level III: Required only if utilized
   C. Central Venous Pressure Monitoring devices
      i. Level III: Required only if utilized
   D. Continuous cardiac monitoring, electrocardiograph and defibrillator with pediatric and adult paddles (both internal and external)
      i. Level III: Internal paddles are required only if open thoracotomies are performed
   E. End-tidal CO2 determination
      i. Waveform Capnography
   F. High volume rapid infuser
   G. Intravenous fluids and administrative devices including intravenous catheters and IO devices
   H. Intra-compartmental pressure measuring device
   I. Pediatric Capabilities:
      i. Designated Pediatric resuscitation area equipment including pediatric airway supplies.
      ii. Reference materials for pediatric medications, dosages and cardiac resuscitation must be displayed or immediately available
      iii. Pediatric (ranging in age from neonate to adolescent) instrumentation i.e.: blood pressure cuffs, chest tubes, nasogastric tubes and urinary drainage apparatus.
   J. Portable or over-head x-ray equipment
   K. Pulse Oximeter
   L. Medications and supplies necessary for emergency care, including pediatric medication doses
   M. Naso/Oro Gastric tubes
   N. Skeletal immobilization devices
   O. Suction devices
   P. Surgical Sets for standard emergent procedures
      i. Airway access/Cricothyrotomy
      ii. Central line insertion
      iii. Chest tube insertion
      iv. Peritoneal lavage
      v. Thoracotomy
      vi. Venous cut-down
   Q. Temperature control and warming devices for
      i. The Patient
      ii. Parenteral fluids
      iii. Blood
      iv. The Trauma Resuscitation area
   R. Tourniquet (commercial)
   S. Two-way communication with emergency transport system vehicles
   T. Ultrasound

Standard 17: Operating Room

1. The operating room (OR) will be adequately staffed and available 24 hours a day.
   A. Level I & II: The OR must be available within 15 minutes of notification.
      i. The first team, including nursing and anesthesia personnel, must be in-house.
      ii. If the first team is in surgery, the back-up on-call team must be in-house.
      iii. If the first room is occupied, an additional room must be available.
   B. Level III: The OR must be available within 30 minutes of notification.
      i. The first team, including nursing and anesthesia personnel, may be on-call with a 30-minute response time. Back-up call team is not required.
   C. The Trauma Center must have an OR booking policy/guideline that specifies time expectations for timely access to the OR based on level of urgency/acuity and includes access expectations for a range of clinical trauma priorities.
      i. The policy/guideline must define the parameters of immediate/emergent response based on level of urgency/acuity.
      ii. Level I & II: The policy/guideline must outline the process and expectations related to preparing a second OR, both during regular working hours and after hours.
   D. The trauma program must define the participants for OR staffing, at a minimum nursing and anesthesia personnel, to prepare the room and patient for an emergency surgical intervention.
      i. The time of the initial call and the team members' response time must be tracked.
      ii. The expectation is that the OR team is notified when a trauma patient is going to be sent to the OR.

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2. The Trauma Center must provide resources for modern musculoskeletal trauma care including readily available operating rooms.
   A. A system must be organized so that musculoskeletal trauma cases can be scheduled without undue delay and not at inappropriate hours that might conflict with more urgent surgery or other elective procedures.
      i. Skeletal fixation is often secondary to immediate and lifesaving resuscitative intervention; might be staged, and often requires unique expertise. Predictable access to an OR assures that musculoskeletal trauma care can be planned and that the right expertise will be available to provide optimal care.
   B. Level I & II: The Trauma Center must have a dedicated OR prioritized for fracture care in nonemergent musculoskeletal trauma
   C. Level III: Access to the OR must be made available for nonemergent musculoskeletal trauma.
   D. The TPMD and the Orthopedic Liaison shall collaboratively determine and approve operational details related to staffing, frequency of availability, and use by other services. The frequency of availability should be sufficient to provide timely fracture care for patients.

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3. The institution will ensure that the operating room is staffed by RN's who have special capabilities through commitment, continuing education and experience.
   A. See Standard 13:Nursing for additional details.

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4. Equipment will be available in the appropriate array of sizes for resuscitation and life support of the critically or seriously injured trauma patient. This will include but is not limited to:
   A. Bronchoscope
   B. Cardiac output equipment
   C. Cardiopulmonary bypass capability:

i. Required for Level I
ii. Desired for Level II and III
    a. If there is cardiopulmonary bypass capability, it must be immediately available when required or a contingency plan must exist. The contingency plan must address the need for immediate transfer of patients with time-sensitive cardiovascular injuries.
    b. If no cardiopulmonary bypass capabilities, management/transfer guidelines must be defined addressing the need for immediate transfer of patients with time-sensitive cardiovascular injuries.
    c. Individual cases must be reviewed by the PIPS program.

D. Craniotomy equipment
    i. Level III: Only when applicable
E. Defibrillator and monitor with adult and pediatric paddles (both internal and external)
F. Endoscopes – all varieties
    i. Level III: Desired
G. End-Tidal CO2 Determination
H. High-volume rapid infuser
I. Intra-compartmental pressure measuring device
J. Invasive and non-invasive monitoring equipment to include intracranial pressure monitoring
    i. Level III: ICP monitoring not applicable
K. Monitoring equipment
L. Operating Microscope
    i. Level II & III: Desired
M. Orthopedic equipment appropriate for fixation of long bone and pelvic fractures
N. Pediatric anesthesia equipment
O. Pediatric (ranging in age from neonate to adolescent) instrumentation i.e.: blood pressure cuffs, chest tubes, nasogastric tubes and urinary drainage apparatus
P. Radiologic capabilities including c-arm imaging intensifier with technologist available 24-hours
Q. Thermal control and warming devices for:
    i. The patient
    ii. Parenteral fluids
    iii. Blood
    iv. The room

Standard 18: Post Anesthesia Care Unit (PACU)

1. The institution must define the scope of involvement of the PACU within the trauma plan.

2. It is the responsibility of the institution to ensure that the post-anesthesia care unit is staffed by RN's who have demonstrated special capabilities through commitment, continuing education and experience:
   A. RN's and other essential personnel must be available 24 hours a day.
   B. See Standard 13:Nursing for additional details.

3. Equipment will be available in the appropriate array of sizes for the resuscitation and life support of the critically or seriously injured trauma patient including but not limited to:
   A. Airway control and ventilation equipment including laryngoscopes, endotracheal tubes, bag-valve mask resuscitators, sources of oxygen, and mechanical ventilator
   B. Central venous pressure monitoring equipment
   C. Continuous cardiac monitoring, electrocardiograph and defibrillator with adult and pediatric paddles, both internal (close proximity) and external.
   D. End-tidal CO2 determination
   E. Intracranial pressure monitoring devices
   F. Intravenous fluids including devices and intravenous catheters
   G. Medications and supplies necessary for emergency medications including pediatric medication doses
   H. Monitoring capabilities for continuous monitoring of temperature, hemodynamics and gas exchange – both invasive and non-invasive
   I. Pulmonary function measuring devices
   J. Pulse oximeter
   K. Suction devices
   L. Surgical sets for emergency procedures such as thoracotomy
   M. Temperature control and warming devices for:
      i. The patient
      ii. Parenteral fluids
      iii. Blood
      iv. Physical space/location/room
   N. Temporary Transvenous pacemaker

Standard 19: Intensive Care Units (ICU)

1. The ICU resources will be concentrated in a single unit or be in multiple specialty units

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2. There will be a commitment to the priority dedication of ICU beds for trauma care.

3. There will be a designated ICU Surgical Director.
   A. For the Medical/Surgical ICU, a surgical co-director is acceptable.
      i. Level III: Must have a surgeon, at a minimum, with an administrative role in the ICU structure.
   B. The Surgical Director/Co-Director is responsible for:
      i. Active participation in the administration of the unit
      ii. Active participation in unit based performance improvement
   C. See Standard 10: Physicians for additional details

4. 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 patients staff the ICU.
   A. Level I: Must have a dedicated ICU physician team 24 hours per day.
      i. This team can be staffed from different specialties as determined by critical care credentials consistent with the medical staff privileging process of the institution.
   B. Level II & III:
      i. An ICU specific team is not essential; however, arrangements for 24-hour coverage of all trauma patients are necessary for routine care.
   C. See Standard 10: Physicians for additional details.

5. Level I & II: In addition to overall responsibility for patient care by the patient's admitting trauma surgeon, there must be 24-hour ICU provider coverage who are continuously available within 15 minutes of request for emergency/unplanned situations.
   A. 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. On-site assessments and initial interventions must be planned in a systematic and documented approach.
   B. If the trauma attending is providing ICU coverage, a back-up ICU attending must be identified and available.
   C. An advanced practitioner or resident can be used to meet the standard.
      i. If a PGY-1 resident, then the PGY-1 must be, at a minimum, in the second half of the first year with this institution.
      ii. The resident must complete and maintain ATLS. Recommend maintaining ACLS (or ACLS equivalent) and PALS (or PALS equivalent if pediatric patients are admitted to the ICU).
      iii. If a PGY-1-3 resident, they must be promptly and properly supervised by the in-house general trauma surgeon in charge of the trauma patient.
         a. This may be fulfilled by senior residents in general surgery (PGY-4 or above).
            - The PGY-4 or above surgical resident may be approved to begin resuscitation while awaiting the arrival of the attending surgeon, but cannot be considered a replacement for the attending surgeon.
            - The PGY-4 or above must be able to deliver surgical treatment immediately and provide the control and leadership for the care of the injured patient.

- The PGY-4 or above must have completed at least three years of clinical, general surgery.

D. See Standard 10: Physicians for additional details.

6. Level III: 24-hour coverage of all trauma patients and available within 15 minutes of request for emergency/unplanned situations.
   A. Coverage may include a surgeon, intensivist, hospitalist, or Advanced Practitioner.

7. Trauma patients requiring ICU admission must be admitted to, or evaluated by, a surgical service.
   A. The admitting trauma service must retain responsibility for the care of the trauma patient, and must maintain control over all aspects of care up to the point where the trauma surgeon documents transfer of primary responsibility to another service.
   B. There must be a policy that defines the hospital's expected time frame for the initial surgical evaluation of a patient in the ICU. The policy must include notification of changes in care to the trauma service.
   C. While on the trauma service, the trauma surgeon must be kept informed of and agree with major therapeutic and management decisions when care is being provided by a dedicated ICU team.
   D. 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 trauma service and the ICU team.
   E. In some cases, transfer of responsibility to a surgical specialist may be appropriate; if such a transfer of responsibility is mutually acceptable to both the trauma surgeon and the specialist.
   F. Non-surgical specialists should be consulted as necessary; however, it is recommended the trauma service retain care of the critically ill trauma patient until all acute traumatic issues are resolved. Decisions to admit a trauma patient to a non-surgical specialist should involve collaboration with the trauma surgeon, and the trauma service should remain involved in the care of the critically ill trauma patient until all acute traumatic issues have been resolved.

8. The institution will ensure that the ICU is staffed by registered nurses who have special capabilities as demonstrated through commitment, continuing education, and experience.
   A. See Standard 13: Nursing for additional details

9. The ICU will 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.
   A. A planned maximum nurse-patient ratio of 1:2 is required.

10. Equipment will be available in the appropriate array of sizes for resuscitation and life support of the critically or seriously injured trauma patient including, but not limited to:
    A. Airway control and ventilation equipment including laryngoscopes, endotracheal tubes, bag-mask resuscitators, sources of oxygen, and mechanical ventilator
    B. Arterial Lines
    C. Central venous pressure monitoring devices
    D. Continuous Cardiac Monitoring, Electrocardiograph and defibrillator with adult paddles, both internal (close proximity) and external
    E. Electronic hemodynamic monitoring
    F. Electronic Transvenous pacemaker
    G. End Tidal CO2 determination
    H. Gastric lavage equipment
    I. Intracranial pressure monitoring devices
        i. Level III: Only if neurosurgical coverage admits neurotrauma patients
    J. Intravenous fluids and administration devices, including intravenous catheters
    K. High-volume rapid volume fluid infuser
    L. Medications and supplies necessary for emergency care; including pediatric medication doses
    M. Pulmonary Artery catheters
    N. Pulmonary function measuring devices
    O. Pulse oximeter
    P. Suction Devices
    Q. Surgical sets for emergency procedure such as thoracotomy, cut-down etc.
    R. Temperature control and warming devices for:
        i. The patient
        ii. Parenteral fluids
        iii. Blood
        iv. Patient Room
    S. Bedside ultrasound should be available as defined by the trauma program

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11. For institutions admitting pediatric patients to the ICU:
    A. There will be a pediatric ICU or ICU with specific beds available to pediatric trauma patients and available to provide 24-hours capability.
    B. Physician and Nursing Staff: It is the responsibility of the institution to ensure that physicians and nurses who have demonstrated special capabilities through commitment, continuing education, and experience to care for the pediatric trauma patient staff the ICU.
        i. When admitting pediatric trauma patients to an ICU, the physicians and nurses must demonstrate an ability to operate pediatric equipment.
        ii. The pediatric trauma patient will receive nursing care provided by a RN who is specialized in pediatric nursing as demonstrated by the institutions credentialing process in pediatric critical care nursing.

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12. Level III: The PIPS plan must review all ICU and Intermediate ICU admissions and transfer of ICU patients to ensure that appropriate patients are being selected to remain at the Level III center vs being transferred to a higher level of care.

Standard 20: Intermediate Care / Step-Down Units

1. The institution must define the areas considered Intermediate Care / Step-Down Units if utilized.

2. The institution will 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.
   A. This includes, where applicable, the ability to operate pediatric equipment.
   B. See Standard 13: Nursing for additional details.

3. The Intermediate Care / Step-Down Unit will have a staffing plan that reflects the trending, severity of injury, arrival of multiple trauma patients, and staffing/skill mix required to ensure the appropriated clinical care of trauma patients or the workload of the nurse which will indicate the number of nursing staff needed.
   A. The maximum planned nurse-patient ratio of 1:4 to adequately provide patient care.

4. Equipment will be available in the appropriate array of sizes for resuscitation and life support of the critically injured trauma patient.
   A. Availably of equipment will be dependent on the acuity level of trauma patients cared for in the Intermediate Care /Step-Down units.

5. Level III: The PIPS plan must review all ICU and Intermediate ICU admissions and transfer of ICU patients to ensure that appropriate patients are being selected to remain at the Level III center vs being transferred to a higher level of care.

Standard 21: Medical / Surgical Unit (General)

1. The institution will ensure that the general Medical/Surgical units that regularly receive trauma patients are staffed by registered nurses who have special capabilities as demonstrated through commitment, continuing education and experience.
   A. This includes, where applicable, the ability to operate pediatric equipment.
   B. See Standard 13: Nursing for additional details.

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2. The Medical/Surgical units 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.

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3. Equipment must support the current status of trauma patients of all ages
   A. Location/Availability of the equipment is dependent upon the patient's condition, age and immediacy with which equipment is accessible.
   B. Equipment must include, but is not limited to:
      i. Airway control and ventilation equipment, including laryngoscopes, endotracheal tubes, bag-valve mask resuscitators and sources of oxygen
      ii. Continuous cardiac monitoring, electrocardiograph and defibrillator.
         a. External defibrillator paddles must be promptly available. (Pediatric external paddles only where applicable)
      iii. Intravenous fluids and administration devices including intravenous catheters
      iv. Medications and supplies necessary for emergency care
      v. Suction devices

Standard 22: Laboratory & Blood Bank

1. There will be provisions to provide and receive the following laboratory test results 24-hours a day:
   A. Blood gases and pH determinations
   B. Blood typing and cross matching
   C. Coagulation studies
   D. Drug and alcohol screening
   E. Microbiology
   F. Micro capabilities for routine blood determinations
      i. Including pediatric capabilities
   G. Serum and urine osmolality
      i. Level III is desired
   H. Standard analysis of blood, urine and other body fluids
   I. Thromboelastography is desired

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2. A protocol must be in place stating that the trauma patient receives priority in laboratory request handling.

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3. There will be comprehensive blood bank or access to a community central blood bank and adequate storage facilities.

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4. There will be an evidenced-based massive transfusion policy that will be collaboratively reviewed by the Blood Bank and the trauma program.
   A. The policy must include details on the process to trigger MTP activation, the process for cessation, and strategies for preservation of unused blood.

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5. The blood bank must have adequate in-house supplies based on the needs of the trauma center:
   A. Packed Red Blood Cells
   B. Fresh Frozen (or thawed) Plasma
   C. Platelets
      i. Level III: Required, however acknowledged that this is recommended based on frequency of use (consideration for MTP and avoidance of wastage) and a variance of this standard is acceptable if hardship is documented.
         a. Appropriate par levels and turn-around-time for restocking is acceptable.
         b. Please refer to Policy AC-105: Applying for a Variance from a Standard for additional details.
   D. Cryoprecipitate
      i. Level III: Not required
   E. Coagulation Factors
      i. Level III: Not required

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6. Prothrombin Complex Concentrate (PCC) must be available.
   A. A rapid reversal protocol for patients on anticoagulants must be present.
      i. The protocol should include therapeutic options and indications for the use of each reversal agent.

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7. The trauma program, in collaboration with the blood bank, should consider utilization of Whole Blood.

8. The Laboratory/Blood Bank must participate in the trauma PIPS program as defined by the trauma program.

Standard 23: Radiology

1. Conventional radiological services will include 24-hour in-house technicians.
   A. The necessary human resources and equipment must be available for emergent/immediate tests. The response time is tracked from initial request (order) to start of the test.
      i. Level I and II: 15 minutes
      ii. Level III: 30 minutes
   B. The trauma program must define the parameters of emergent/immediate response based on level of acuity and patient need.
   C. PIPS program must monitor compliance with initiation of emergent tests and review delays for effects on patient care.

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2. Diagnostic information must be communicated in a written form and in a timely manner:
   A. A radiologist must have access to patient images and be available for imaging interpretation within 30 minutes from the time of images' availability to the time of interpretation when an expedited read is requested.
   B. Critical information that is deemed to immediately affect patient care must be verbally communicated to the trauma team.
      i. Documentation of preliminary diagnostic imaging must include evidence that critical findings were communicated to the trauma team.
   C. The preliminary diagnostic imaging report must be permanently recorded.
   D. 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. Documentation of the final interpretation of CT scans must occur no later than 12 hours after completion of the scan.
   F. Changes in interpretation, including missed injuries, must be monitored through the PIPS program.

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3. The following protocols/policies/guidelines must be in place:
   A. Trauma Patient Priority Requests
   B. Incidental Findings
   C. Discrepant Radiology Findings
      i. Changes in Interpretation
      ii. Missed Injury / Delay in Diagnosis

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4. The trauma surgeon, emergency physician, and neurosurgeon (Level I/II) all of whom have been properly credentialed by the institution, will have ability to initiate CT Scans.

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5. Computerized Tomography Scanning (CT) must be available for the trauma patient without delay 24-hours a day.
   A. Level I & II: CT Technicians must be in-house 24-hours and available within 15 minutes for emergent/immediate tests from the time of request (order) to initiation of test.
      i. Level III: CT Technicians must be available 24-hours a day and available within 30 minutes for emergent/immediate tests from the time of request (order) to initiation of test.
         a. CT Technicians may be out of house.
      ii. The trauma program must define the parameters of emergent/immediate tests based on level of acuity and patient need.

iii. The PIPS program must monitor compliance with initiation of emergent tests and review delays for effects on patient care.

B. A protocol must be in place to give the trauma patient priority and immediate access to the CT scanner for initiation of studies in a timely manner.

C. A policy for the bypass or transfer of trauma patients when CT capability is unavailable due to planned maintenance or mechanical failure is required.

D. CT scanner slice capability
   i. Level I & II: A minimum of one 64-slice CT capability scanner.
   ii. Level III: A minimum of one 64-slice CT capability scanner in hospitals where vascular imaging occurs or a minimum of one 16-slice CT capability scanner where vascular imaging does not occur.

E. CT scanner does not include mobile services, guaranteed service contracts with other institutions in-house CT scanners, or CT scanners in use at remote buildings or areas of the institution requiring transportation of the patients from the main building to the CT scanner.

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6. Magnetic Resonance Imaging (MRI) scanner
   A. Level I & II: MRI scanner must be available on site 24 hours a day.
      i. Emergent MRI test is expected to be initiated within 2 hours of request.
         a. The trauma program must define the parameters of an emergent test based on level of acuity.
         b. The PIPS program must monitor compliance with initiation of emergent tests and effects on patient care.
         c. Initiation of test is defined as the actual start time of first scan/slice.
   B. Level III: Not required –
      i. If a Level III center provides MRI services for trauma patients, the requirements are dependent on the type of participation, as defined by the trauma program:
         a. Emergent Diagnostics: If MRI will be used for emergent diagnostics, the center must meet Level II Standards above.
         b. Non-Emergent Use: If MRI will be limited to only routine, non-emergent tests, 24/7/365 availability is not required.
      ii. If a Level III center does not have a MRI readily available on the premises, then a formal protocol must be established for the early transfer of suspected spine and/or spinal cord injuries to a higher level of trauma care.

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7. Point-of-care ultrasound must be available 24 hours a day with a maximum response time of 15 minutes for emergent/immediate tests from the time of request (order) to initiation of test.
   A. The trauma program must define the parameters of emergent/immediate response based on level of acuity and patient need.
   B. The PIPS program must monitor compliance with initiation of emergent tests and review delays for effects on patient care.

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8. Interventional Radiology (IR)
   A. Level I & II: IR must be available 24-hours a day with the necessary human (physicians, nurses and technologists) and physical resources (angiography suite or hybrid OR). An endovascular or interventional radiology procedure for hemorrhage control that requires rapid intervention must begin within 60 minutes of request.
      i. Patients requiring an emergent response for hemorrhage control are defined as those where

blood transfusion has been initiated and there is a confirmed blood pressure less than 90 mmHg at any time prior to angioembolization in adults, or age-specific hypotension in children.

ii. The response time is tracked from request to arterial puncture.

B. Level III: IR is not required. If providing IR services for trauma patients, the requirements depend on the type of participation, as defined by the trauma program:

i. Emergent Interventions: If IR will be used for emergent interventions for hemorrhage control during resuscitation, the center must meet Level II Standards above.

ii. Non-Emergent Interventions: If IR will be limited to only non-emergent interventions, such as IVC filter placement, chest tube insertion or management of pseudoaneurysms, 24/7/365 availability is not required.

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9. Adequate physician and nursing personnel and equipment must be available to accompany the trauma patient during transport and while in the Radiology Department.

A. Personnel and patient population must be defined by the hospital, at minimum patient population must include highest level activations during resuscitative phase of care.

i. Providers must be appropriately trained and to fully monitor and resuscitate the trauma patient in
all areas.

B. 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.

10. Trauma Centers must have a mechanism in place to view radiographic imaging from referring hospitals within their catchment area.
    A. Level I & II: Must have a mechanism in place to remotely view radiographic imaging from referring hospitals.
    B. Documentation of review of external images must occur.
    C. Excessive rescanning due to technology issues should be reviewed by the PIPS program.

11. The Radiology Department must work to optimize the technical parameters of each examination so that the lowest radiation dose possible is used for each patient while still producing high-quality diagnostic images.
    A. Important consideration in the pediatric population is the use of non-radiation imaging.
    B. PTSF Imaging Statement

Standard 24: Collaborative Services

Nutritional Services

1. The hospital must have nutritional support services available.
   A. The Nutritional requirements of all trauma patients must be screened and evaluated with appropriate feedback and recommendations to the attending trauma surgeon or designee within 72 hours of admission.

Organ and Tissue Donation

2. The institution will comply with Pennsylvania law regarding organ and tissue donation request, procurement and documentation.
   A. The Trauma Center must have an affiliation with an organ procurement organization (OPO).
   B. A policy must be in place triggering the timely notification of the Organ Procurement Organization (OPO).
   C. A policy must be in place defining the clinical criteria and confirmatory tests for the diagnosis of brain death.
   D. The Trauma Center must review its organ donation data annually.

Rehabilitation Services

3. The hospital must meet the rehabilitation needs of the trauma patient.
   A. The hospital must have a protocol that identifies which patients will require rehabilitation services during their acute inpatient stay.
      i. The protocol must include screening of geriatric patients for mobility limitations and assurance of early, frequent, and safe mobility.
   B. All trauma patients must be screened for short-and long-term recovery/rehabilitation and treatment plans/goals. A trauma rehabilitation plan must be documented in the patient's medical record.
      i. The plan must be in place within 72 hours of the patient's admission.
      ii. A referral must be made to the physiatrist or other appropriae medical specialist when indicated.
   C. A physician with a special interest and training in Physical Medicine and Rehabilitation most often assumes leadership of the rehabilitation team.
      i. This does not restrict physicians in 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.
   D. The hospital must have the following allied health services available:
      i. Physical Therapy
         a. Level I & II: Must be available seven days a week.
      ii. Occupational Therapy
         a. Level I & II: Must be available seven days a week
      iii. Speech Therapy
      iv. Additional specialty services have defined roles in the recovery and rehabilitative care of the trauma patient. This includes but is not limited to:
         a. Family Support Programs

b. Neuropsychology (mild brain injury)
c. Pain Management Services
d. Psychosocial

E. Level III: While it is noted that Neurosurgery/Neurosurgical capabilities are not required for a Level III trauma program, mild Traumatic Brain Injuries (TBI) are common and often seen and treated in this venue.
   i. The clinical management guideline for the TBI patient must be developed and should include appropriate screening and referral.

Respiratory Therapy

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4. A Respiratory Therapist must be available in-house 24-hours a day.

Spiritual Counseling / Pastoral Care

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

Acute Pain Management

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6. The utilization of a pain management resource as a consultant for trauma care is recommended.
   A. This may be a formal pain management service, a representative from pharmacy, or an identified liaison from the trauma program.

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7. A protocol for multimodal analgesia (MMA) regimens and limited duration prescriptions is recommended.

Discharge

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8. The hospital must have a process to determine the level of care patients require after trauma center discharge, as well as the specific rehabilitation care services required at the next level of care. The medical record must show documentation of level of care and service requirements.
   A. Discharge planning should ensure a patient-centered approach. The core of a patient-centered approach is the acknowledgment that patients' perspectives can be integrated into all aspects of the planning, delivery, and evaluation of trauma center care.
   B. A copy of the discharge summary of trauma care will be made available to the patient's primary care provider.
   C. If the trauma patient is transferred to another institution for rehabilitation, outcome and follow-up must be formally requested if not received.
   D. Level I & II: Recommend adopting a means of facilitating the transition of patients into the community. The transition shall use patient-centered strategies such as peer-to-peer mentoring, a trauma survivors' program, or continuous case management. Transition management shall elicit and address patient concerns and link trauma center services with community care.

Standard 25: Social Services

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.
   A. Level I & II: A social worker must be available seven days a week.

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2. 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 but is not limited to:
   A. Assisting with the process of organ donation in the event of death.
   B. Contacting family and providing crisis intervention counseling upon arrival and throughout the hospitalization.
   C. Coordinating resource referrals.
   D. Facilitating the information flow between the trauma team, patient and family.
   E. Identifying the trauma patient.
   F. Intervention and involvement in post-discharge plan development.
   G. Locating family or legal next-of-kin.
   H. Providing grief counseling, when appropriate.
   I. Screening, reporting and interventions for suspected or confirmed abuse including but not limited to:
      child abuse, elder abuse, intimate partner violence, and sex trafficking.
   J. Timely access to information related to insurance verification and financial resource availability.

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3. There will be a social worker designated as accountable for ensuring that all trauma social work services are being provided in a cohesive manner (Liaison). The liaison must have:
   A. Qualifications – such as educational preparation, certification and clinical experience.
      i. Bachelor Degree in Social Work is required.
      ii. Masters of Social Work is preferred.
   B. A job description and organizational chart defining the structural role and relationship of the dedicated social worker within the institution and to the trauma services.
   C. Continuing Education:
      i. Eight (8) hours of trauma related continuing education annually.
      ii. Educational activities external to the institution's staff development program.
   D. Active participation in trauma multidisciplinary PIPS forums/groups/meetings as defined by the trauma program.
   E. It is the responsibly of the Social Work Liaison to facilitate communication between the trauma program and the Social Work / Social Services including dissemination of meeting minutes and information.

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4. All Social Workers who are associated with the trauma program must have evidence of educational preparation and experience. This includes:
   A. Bachelor Degree in Social Work is required.
      i. Masters of Social Work is preferred.
   B. Eight (8) hours of trauma-related continuing education annually.

Standard 26: Case Management

1. 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.
   A. Case Management will be available to all trauma patients and their families from the time of admission to the facility to the time of discharge.
   B. There must be evidence of appropriate coordination of clinical trauma care, discharge planning and follow-up care.
   C. These services may be provided by case managers or by qualified members of the multidisciplinary team.
   D. Level III: Desired

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2. If the case manager is an identified role/position; then there must be:
   A. A job description and organizational chart depicting the relationship between the case manager role/position and the trauma program.
      i. The role must be hospital based.
      ii. Evidence of appropriate qualifications, for example educational preparation, certification(s) and clinical experience is required.
   B. Demonstrated regular and active interface with the trauma program.
   C. Participation in local, state and national trauma related activities is desired.
   D. Continuing Education:
      i. Eight (8) hours of trauma related continuing education annually.
   E. Active participation in trauma PIPS multidisciplinary forums/groups/meetings as defined by the trauma program.

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3. When there is no identified case manager, a policy/protocol must be defined to ensure the presence of adequate case management capabilities. This evidence may include but is not limited to:
   A. Involvement with the multidisciplinary trauma team to coordinate the overall plan of care for the trauma patient.
   B. Involvement with the trauma PIPS program, including the development of patient management guidelines.
   C. 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.

Standard 27: Geriatrics

1. Geriatrics is defined as a patient age sixty-five (65) and over for purposes of PTOS.
   A. Trauma Centers may define geriatrics for their individual institutional protocol purpose.

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2. Trauma Center personnel should have continuing education, driven by registry data and the PIPS Program specific to geriatric patients.
   A. All providers with continuing education requirements should have evidence of geriatric trauma-related hours/credits and age-related clinical competency as determined by the trauma program.

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3. Every geriatric trauma patient must be screened for suspected or confirmed abuse. The institution must:
   A. Have a policy/procedure/guideline that defines the abuse screening and management of patients with suspected or confirmed elder abuse, intimate partner violence, and sex trafficking.
   B. Report abuse in compliance with Pennsylvania law and hospital policy/procedure/guideline.
   C. Forward the results of any abuse screening to the receiving institution if a patient is transferred.

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4. The trauma program must develop multidisciplinary geriatric trauma patient management guidelines (protocols) that include:
   A. Resuscitation
   B. Critical care
   C. Rehabilitation
   D. Identification of vulnerable geriatric patients
   E. Identification of patients who will benefit from the input of a health care provider with geriatric expertise
   F. Prevention, identification, and management of depression and delirium
   G. Identification and management of dementia
   H. Process to capture and document what matters to patients, including preferences and goals of care, code status, advanced directives, and identification of a proxy decision maker
   I. Medication reconciliation and avoidance of inappropriate medications
   J. Screening for mobility limitations and assurance of early, frequent, and safe mobility
   K. Implementation of safe transitions to home or other health care facility
   L. Hip fractures

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5. The trauma program 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 – for example osteoporosis.

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6. There must be geriatric specific audit filters as defined by the trauma program.

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7. A frailty screening tool should be used in the evaluation of the geriatric trauma patient.
   A. The Trauma-Specific Frailty Index is a validated screening tool.
   B. ACS COT Best Practices Guidelines Geriatric Trauma Management (https://www.facs.org/media/ubyj2ubl/best-practices-guidelines-geriatric-trauma.pdf)

Standard 28: Pediatrics

1. Pediatrics is defined as a patient less than 15 years of age (14 or younger) for purposes of PTOS submission.
   A. Trauma Centers may define pediatrics for their individual institutional protocol purpose.

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2. Trauma Center personnel should have continuing education, driven by registry data and the PIPS Program specific to pediatric patients.
   A. All providers with continuing education requirements should have evidence of pediatrics trauma-related hours/credits and age-related clinical competency as determined by the trauma program.

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3. Every pediatric trauma patient must be screened for suspected or confirmed abuse. The institution must:
   A. Have a policy/procedure/guideline that defines the abuse screening and management of patients with suspected or confirmed child abuse, intimate partner violence, and sex trafficking.
   B. Report abuse in compliance with Pennsylvania law and hospital policy/procedure/guideline.
   C. Forward the results of any abuse screening to the receiving institution if a patient is transferred.

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4. The trauma program must develop pediatric trauma patient management guidelines (protocols) that include resuscitation, critical care and rehabilitation.

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5. The trauma program must use its trauma registry to identify the pattern, frequency and risks for injury to the pediatric population group within the community and use this as a guide (along with community resources) to formulate pediatric trauma prevention programs.

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6. Capacity & Ability:
   A. All institutions which receive pediatric trauma patients must provide, at a minimum, emergency resuscitation and stabilization capabilities for the pediatric trauma patient.
   B. The institution will assess its pediatric capabilities and establish appropriate guidelines for the transfer of severely injured children to accredited Pediatric Trauma Centers.

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7. Performance Improvement:
   A. Every pediatric patient should be reviewed by the PIPS program for:
      i. Appropriateness of transfer or admission
      ii. Timeliness of care
      iii. Adequacy of Care
   B. There must be pediatric specific audit filters as defined by the trauma program.

Table 4 Examples of Pediatric Process and Outcomes Measures

Process or Outcomes Measures	Definition	Purpose
Missed intubation	More than one attempt to place endotracheal tube appropriately	Efficiency of airway care is the defining variable in outcome for severely injured children. Who, when, what, and how many attempts were required for successful control of the airway are objective measures of system performance.
Unplanned extubation	Unintentional extubation by patient or provider	Failure to maintain the airway can be life threatening. This indicator reflects adequacy of pediatric critical care nursing care.
Extubation within 24 hours of rapid-sequence intubation (excluding operative procedures)	Patient who can be extubated less than 24 hours after drug-assisted intubations, excluding operative procedure	This measure is the objecitve monitoring for the appropriateness of using rapid-sequence intubation, an intriscially dangerous process. Patients who can be extubated within 24 hours may not hvae required chemical paralysis and intubation in the first place.
Hypocapnia and/or hypercapnia	Overventilation or underventilation, especially in the first 12 hours after injury	These measures are a reflection of efficiency/precisions of care in the critical first 12 hours after initial stabilization
Resuscitations volume problems	Infusion of more than 50 mL/kg during the first 2 hours in a child with normal initial vital signs	Judicious fludi managment requires careful titration of filling pressures with oxygen-carrying capacity. Inordinate vollues of crystalloid, especially in the absence of clinical findings of hypeperfusion, will potentially exacerbate fluid sequestration in the brain and/or lung. THis indicator reflects appropriate attention to clinical and accurate reading.
Vascular access problems	Any acquisition of vascular access that takes longer than 5 minutes to accomplish, especially if intraosseous infusion is not used	This indicator is an objective measure of preparation and facility in the accomplishment of a critical, size-related component of pediatric resuscitiation.
Unplanned operation following nonoperative management	Any operative for control of hemorrhage in a patient being managed nonoperatively	This indicator is an objective measure of the appropriateness of nonoperative management
Unplanned hypothermia	Core temperature less than 35°C for more than 2 hours	Although mild hypothermia has been associated with imporved outcomes following brain injury, moderate to severe hypothermia causes a variety of hematologic and metabolic derangement and must be avoided in children.
Nosocomial pneumonia	Pneumonia	Pneumonia is a major cause of avoidable morbiditiy and cost. Recognition especially important in children without evidence of pulmonary injury or aspiration.
Missed injury	Any injury related to the intitial traumatic event diagnosed more than 24 hours after admission	This indicator is an objective measure of the specificity and accuracy of the initial assessment.

Glossary

TERM	DEFINITION
AACN	American Association of Critical Care Nurses is the world's largest nonprofit specialty nursing organization comprised of acute and critical care nurses. The AACN supports the education and certification process for the in Acute/ Critical Care Nursing
AANN	American Association of Neuroscience Nurses is a professional organization that provides educational resources and programs to nurses who specialize in caring for patients with neurologic disease, including traumatic brain, and/or spinal injuries. The AANN supports the education and certification process for the Certified Neuroscience Registered Nurse.
ABLS	Advanced Burn Life Support is a program offered by the American Burn Association. The program provides knowledge for immediate care of the burn patient up to the first 24-hours post injury.
ACGME	Accreditation Council for Graduate Medical Education is a non-profit organization that sets the standards for US graduate medical education (residency and fellowship) programs, and the institutions that sponsor the programs. ACGME also renders accreditation decisions based on compliance with their standards.
ACLS/PALS Equivalent	Advanced resuscitation educational program builds on the foundation of Basic Life Support curriculum. An example of an equivalent course to Advanced Cardiac Life Support (ACLS) is the Advanced Resuscitation Training (ART) program. The ART program integrates the same principles as ACLS and is designated as a Best Practice Model by the Joint Commission, is recognized by the Society of Hospital Medicine, and the National Association of Public Hospitals. A Neonatal Resuscitation Program and Pediatric Resuscitation Program are examples of age specific curriculum supported by the World Health Organization and the American Academy of Pediatrics guidelines.
Adequate Notification from the Field	The time of communication by emergency personnel in the field to the trauma center with the injured patient's mechanism of injury, complaint, and estimated time of arrival. This communication aids trauma team preparation for the receipt of injured patient(s).
Admission	The formal acceptance by a hospital to lodge a patient in the hospital's inpatient unit. Upon admission, the patient receives care by a physician, dentist, or allied health professional.
Advanced Practitioner	A nonphysician healthcare provider who has earned an advanced degree and certification to perform some of the responsibilities of the physician. Examples include Physician Assistant, Certified Registered Nurse Practitioner, Certified Registered Nurse Anesthetist, and Certified Nurse Midwife.

TERM	DEFINITION
Allied Health Professional	Specialty trained individuals who represent a broad field of clinicians and are typically licensed or certified but are not physicians, dentists, or nurses. Examples include physical therapists, radiology technologists, or phlebotomists.
Alternate Pathway	The required process for which non board certified physicians or non-US/ non-Canadian trained physicians in a trauma center can be approved to care for trauma patients. This applies to only those physicians who, by PTSF Standards of Accreditation, are required to be Board Certified. See Policy AC-129: Process for Use of Non Board Certified Physicians: Alternate Pathway
American Burn Association	A worldwide organization that dedicates its efforts and resources to promote and support burn related care, prevention, education, and research. The organization includes multidisciplinary membership, governed by a Board of Trustees, which provides policies, oversight and guidance on burn injuries that should be referred to a burn center.
ANCC Medical-Surgical Nursing Certification (RN-BC)	American Nurses Credentialing Center's Medical-Surgical Nursing Certification awards the credential RN-BC, Registered Nurse-Board Certified. Other ANCC specialty certifications awarding the RN-BC are not applicable. The ANCC credentials both organizations and individuals who advance nursing.
AORN	Association of Operating Room Nurses is an organization that provides nursing education, standards, and services that enable optimal outcomes for patients who undergo operative and other invasive procedures.
ATCN	Advanced Trauma Care for Nurses is an advanced course designed for registered nurses who want to increase their knowledge in the management of multiple trauma patients. This course is sponsored by the Society of Trauma Nurses
ATLS Course	Advanced Trauma Life Support Course provides instruction on the fundamental, systematic approach in the immediate care of injured patients. This course is sponsored by the American College of Surgeons.
Board Certified Physician	A physician who has passed the acceptable specialty exam certified by the appropriate specialty boards. Recognized Boards are those recognized by the American Board of Medical Specialties, the American Osteopathic Association, or Royal College of Physicians and Surgeons of Canada. Examples of other governing boards not recognized include but are not limited to the National Board of Physicians and Surgeons, American Board of Podiatric Medicine, American Board of Foot and Ankle Surgery, and American Board of Cosmetic Surgery.
Board Eligible Physician	A physician who has graduated from medical school, completed residency, trained under supervision in a specialty, and is eligible to take a specialty exam by the American Board of Medical Specialties, the American Osteopathic Association, or Royal College of Physicians and Surgeons of Canada.

Glossary

TERM	DEFINITION
Burn Unit	A specialty care unit that possesses the facilities, equipment, and personnel specifically designed for the care of burn patients. Burn Units adhere to the established standards of the American Burn Association (ABA).
Bypass/Diversion	A procedure put into effect by a trauma center when the facility is unable to provide the level of care designated by the trauma center accreditation. Patients are bypassed/diverted to other accredited trauma centers.
Case Management	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.
CCRN	The certification in Acute/Critical Care Nursing is a specialty certification issued by the American Association of Critical Care Nurses for nurses who provide direct care to acutely/critically ill adult patients regardless of their physical location. Nurses interested in this certification may work in areas such as intensive care units, cardiac care units, combined ICU/CCUs, medical/surgical ICUs, trauma units or critical care transport/flight.
CEN	A Certified Emergency Nurse is a specialty certification issued by the Board of Certification for Emergency Nursing (BCEN) for nurses who have demonstrated knowledge and expertise in the care of emergency department patients.
CFRN	A Certified Flight Registered Nurse is a specialty certification issued by the BCEN for nurses who have demonstrated knowledge and expertise in the care of patients in flight.
CME	Continuing Medical Education consists of American Medical Association authorized 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.
CNOR	Certified Perioperative Nurse is a specialty certification for nurses working in perioperative services, with most of their time spent intra-operatively, issued by Competency and Credentialing Institute.
CNRN	Certified Neuroscience Registered Nurse is a specialty certification for nurses working in the neurosciences specifically caring for patients with neurotrauma, chronic illnesses, tumors, infections, seizures, and other neurological conditions issued by the American Board of Neuroscience Nursing and supported by the AANN.
Continuing Education	Prepared instruction intended to enrich the educational and experiential background for healthcare professionals.
Continuous Basis	Constitutes ongoing maintenance of required education/certification(s) without time lapse between initial date and renewal.

Glossary

TERM	DEFINITION
CPAN	Certified Post Anesthesia Nurse is a specialty certification for nurses who care for patients who experienced anesthesia or procedures that require sedation and analgesia predominantly in the post operative anesthesia care unit issued by the American Board of Peri anesthesia Nursing Certification Inc.
CPN	Certified Pediatric Nurse is a specialty certification for nurses who demonstrate expertise in the care of children from birth through young adulthood. CPN is issued by the Pediatric Nursing Certification Board.
Credentialed	A recognition process in which individual institutions consider appropriate education, certifications, and training for physicians, advanced practitioners, allied health professionals, and registered nurses with specialized skills.
CRNP	A Certified Registered Nurse Practitioner is a professional nurse with an advanced graduate degree who, while functioning in the expanded role as a professional nurse, performs acts of medical diagnosis, prescription of medical therapeutic, or corrective measures in collaboration with a licensed physician who is certified by the State Board of Nursing.
Demonstrated Capacity	Documentation of an institution's ability, dedication, and capacity to provide care at the level stated, including the methodology for prioritization of services throughout the institution to meet patient needs.
Demonstrated Commitment	Documented evidence, visible and written, which clearly exhibits the institution's dedication to trauma care.
Desired/Should	Constitutes recommended processes, or items, ideal for incorporation in an accredited trauma center's program. Desired/Should is not a trauma center accreditation requirement.
DMIST	A formalized protocol developed by the Pennsylvania Department of Health Bureau of Emergency Medical Services (EMS), Pennsylvania Emergency Health Services Council, and Pennsylvania Trauma Systems Foundation as a method to standardize the verbal transfer of care process from EMS to the Trauma Center • D - Demographics • M - Medical Complaint / Mechanism • I - Inspections / Injuries • S - Signs (vital signs) • T - Treatment
Emergency	A sudden generally unexpected occurrence or set of circumstances that require immediate attention.
ENA	Emergency Nurses Association is an organization for emergency nurses who want to advance their career, knowledge, and improve their practice in emergency patient care.

TERM	DEFINITION
ENPC	Emergency Nursing Pediatric Course sponsored by ENA provides health care professionals who are new to Emergency Severity Index (ESI) or new to pediatric emergency nursing with a strong foundation and comprehensive review of the core principles of the ESI triage system as it relates to the pediatric patient. This course highlights the differences between pediatric and adult triage, as well as some of the nuances of the ESI system that may challenge novices.
Equivalent to	Identical in value, measure, or function
Essential/Must	Indicates a standard is required for trauma center accreditation
Excused Absence (PI Attendance)	Peer-review meeting attendance may be excused/waived / pro-rated for military deployment, medical leave, and/or missionary work. The trauma center must provide documentation to support the excused absence. Vacation, patient care, illness, and contracted but not working status are not excused absences. A TPMD/Liaison may provide a review of meeting minutes to the absent provider; however, it cannot be counted as attendance at the meeting. Per Diem providers, providers rotating from another hospital, and locum tenens providers cannot have attendance expectations prorated based on amount of call taken.
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 published list of attending level surgeons assigned to trauma care, including dates of coverage and back-up surgical physician (s).
Geriatric Patient	For the purposes of PTOS submission: trauma patients equal to or greater than sixty-five (65) years of age. Trauma Centers should determine the age definition of a geriatric trauma patient for their individual institutions.
ICD	The “International Classification of Diseases” is a standard medical coding system that includes all injuries and disease processes mandated by the U.S Department of Health and Human Services (HHS) for all patients covered under the Health Insurance Portability Accountability Act (HIPAA).
ICP	Intracranial pressure, often monitored in patients with severe injuries to the brain
In-House CT Scanner	In-house computerized tomography (CT) scanner refers to the trauma center’s dedicated CT Scanner and 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.

TERM	DEFINITION
Injury Severity Score (ISS)	Internationally recognized scoring system that correlates with mortality, morbidity, and other measures of severity. The ISS assesses the combined effects of the multiply injured patient and is based on an anatomical injury severity classification, the Abbreviated Injury Scale (AIS). ISS is the sum of the squares of the AIS scores of the three most severely injured body regions.
Intermediate Care Step Down Unit(s)	A unit that provides higher level acuity care than a regular Medical/Surgical unit but does not include the higher level of monitoring and care provided in the Intensive Care Unit.
Internal Educational Process (IEP)	IEPs are an institutional specific educational option for designated trauma providers to meet continuing education requirements. Examples of an IEP may include the following: in-services, case-based learning, educational conferences, grand rounds, internal trauma symposia, and in-house publication dissemination of information gained from a local conference or an individual's recent publication (through trained analysis).
Intervention (Substance Abuse)	Occurs after a patient screens positive for substance use/abuse. A healthcare professional approaches the patient to discuss their substance use/abuse and includes offers to seek treatment/help with their addiction.
Liaison	A physician with credentials and expertise in their field who represent their specialty department (e.g., Neurosurgery, Orthopedics, Emergency, etc.) in the care of trauma patients. This physician is assigned by the specialty department to respond to performance improvement inquiries by the trauma program.
Licensed Helipad	The landing and takeoff areas for medical helicopters. Helipads used by trauma centers in Pennsylvania require formal approval and licensure by the Bureau of Aviation, Pennsylvania Department of Aviation to operate. The Federal Aviation Administration approves air space operation.
Major Uni-system/Multi-system Trauma patient	Trauma Patients with injuries, the extent of which may be difficult to ascertain, but the injuries generally have the potential for mortality or major disability.
Mechanism of Injury	The method by which trauma and its associated forces directly, or indirectly, impact the human body. It implies a specific transfer of energy from one source to another.
Monitoring Equipment	Invasive and noninvasive devices designated by the trauma program for the continuous, intermittent observation, or measurement of biologically vital clinical data from traumatically injured patients. Such equipment includes, but is not limited to, a cardiac monitor, end tidal CO2 monitor, glucose monitor, intracranial pressure monitor, and continuous cardiac output monitor.
Morbidity	A complication or undesirable side effect following an injury, disease, medical or surgical intervention.

TERM	DEFINITION
Mortality	The state or condition of being subject to death. For PTOS inclusion, mortality refers to dead on arrival, died in ED or inpatient, and withdrawal of life sustaining care.
Orientation	The time period provided to acquaint new personnel with the physical facilities, philosophies, policies, role expectations, procedures, and skills required in the new environment.
PaTNCC	Pennsylvania Trauma Nursing Core Curriculum was developed by the PTSF to meet the educational needs and responsibilities of registered nurses in providing care to trauma patients across the continuum of care.
PA Trauma Registrar Basic Training Course	A required, online, course designed by the PTSF to provide new Pennsylvania Trauma Registrars with a basic understanding of trauma registry functions. All trauma registrars are required to complete the course within their first year in their role. It is acceptable to substitute this course for other basic registry options, however, the core content of the basic education must consist of: • Introduction • History and Insight (PA Trauma System, PTSF Operations, PTSF Accreditation Process) • Abstraction • Data Management • Reports/Report Analysis • Data Validation • HIPAA Tool Box #1 – What is Trauma, Why is Trauma Important, Trauma Registry Introduction and State vs. Facility Registry, Where to Find Documentation Required for Abstraction, Types of Injuries, and PTOS vs NON-PTOS Tool Box #2 – Patient Log Tool Box #3 – Reference documents to assist in abstraction: Standards, Benchmarking Reports, Website, PTOS Manual, ICD-10 CM/PCS Books, AIS Coding Book, and Registry Software User Guides Tool Box #4 – Registry Software Introduction Tool Box #5 – ICD-10-CM/PCS Coding Basics Tool Box #6 – AIS Coding Basics Tool Box #7 – Diagnosis Coding Tool Box #8 – Interfaces with PI Software, NTDS/TQIP Submission Tool Box #9 – Timely Submissions (How to Submit) Tool Box #10 – Performance Improvement Introduction
Participation	The act of an individual(s) sharing or receiving information, with active involvement.

Glossary

TERM	DEFINITION
Pastoral Care/Spiritual Counseling	The delivery of spiritual or religious support usually by qualified spiritual leaders such as ministers, priests, rabbis, etc.
Patient/Practice Management Guidelines (PMG)	Standardized clinical care pathways developed by the trauma program, based on current evidenced-based practice, for the assessment and treatment of trauma patients. PMGs aim to provide guidance for managing patient populations or injury types with special considerations to trauma care providers.
PATNAC	Pennsylvania Trauma Nurse Advisory Council is a voluntary committee comprised of Trauma Program Managers (and occasionally other trauma program staff) from various hospitals across Pennsylvania. PATNAC empowers Trauma Program Managers/Coordinators throughout the Commonwealth of Pennsylvania to knowledgeably interpret PTSF Standards, support them in operationalizing the Standards for Accreditation, and collaborate with PTSF and other professional trauma organizations to enhance Pennsylvania's trauma system.
PCCN	Progressive Care Nursing is a specialty certification issued by the AACN for nurses who provide direct care to acutely ill adult patients regardless of their location. This may include nurses working in an intermediate care unit, direct observation, stepdown, telemetry transitional care, or emergency departments.
Pediatric Intensive Care Unit (PICU)	An Intensive Care Unit that provides care to pediatric patients and utilizes the services of board certified Pediatric Critical Care Medicine (PCCM) specialists in collaboration with Pediatric Trauma Surgeons. A PICU is a distinguishing characteristic of trauma care at a Pediatric Trauma Center.
Pediatric Trauma Patient	For the purposes of PTOS submission: trauma patient less than 15 years of age (equal to or less than 14). Trauma Centers may define pediatrics for their individual institutional protocol.
Pennsylvania Trauma Outcome Study (PTOS)	A centralized, statewide, registry organized to compile and maintain statistics on mortality and morbidity for major uni-system or multi-system trauma patients in Pennsylvania.
Performance Improvement and Patient Safety Program (PIPS)	PIPS serves as the foundation of the trauma program. It is the formalized process that identifies adverse events and implements subsequent corrective action plans which are measurable through patient outcomes. Problem resolution, outcomes improvement, and assurances of patient safety ("loop closure") are essential components of structured PI initiatives. Although integrated into the hospital's overall quality improvement program, the trauma center's PIPS program is independent of the institution. The PIPS process is outlined in a comprehensive written PIPS Plan which must be updated annually.

Glossary

TERM	DEFINITION
PGY	Post Graduate Year is a 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.
Phases of Care	Patient progression through pre-hospital, resuscitative care, operative care, post-anesthesia care, critical care, post resuscitative care (intermediate care/step-down unit, medical surgical unit), and rehabilitative care.
PHTLS	Pre-hospital Trauma Life Support was developed by the National Association for Emergency Medical Technicians in cooperation with the American College of Surgeons Committee on Trauma to promote excellence in trauma patient management by all providers involved in the delivery of prehospital care . The PHTLS is accredited by the Commission on Accreditation for Pre-Hospital Continuing Education (CAPCE), which maintains the standards for the delivery of EMS continuing education.
PSNA	Pennsylvania State Nurses Association
Rehabilitation	Services that prepare a trauma patient for the fullest physical, psychological, social, vocational, and educational level of function possible given their impairments and environmental limitations.
Response Time	The interval between the notification and arrival of personnel on call, for example, when a provider arrives to perform an in-person trauma evaluation/intervention.
Resuscitation	The intense period of patient assessment and aggressive medical care to preserve tissue perfusion of life or limb. For purposes of educational requirements of responding staff – this resuscitative period is in the trauma bay.
Rural Trauma Team Development Course (RTTDC)	The course (RTTDC) emphasizes a team approach to the initial evaluation and resuscitation of the trauma patient at a rural facility. More than 60 percent of the country's trauma deaths occur in rural areas. RTTDC assists health care professionals in determining the need to transfer the patient to a higher level of care. The one-day course includes interactive lectures on both medical procedures and communication strategies and three team performance scenarios.
SBIRT	Screening, Brief Intervention, and Referral to Treatment for substance use/abuse includes screening for substance use/abuse, a brief intervention focusing on increasing the insight and awareness of a patient's substance use/abuse and offers of treatment to the patient.
STN	Society of Trauma Nurses is a professional, nonprofit, organization that developed the "Trauma Outcomes and Performance Improvement Course" (TOPIC). STN's mission is to ensure optimal trauma care to all people locally, regionally, nationally, and globally through initiatives focused on trauma nurses related to prevention, education, and collaboration with other healthcare disciplines.

TERM	DEFINITION
TCRN	Trauma Certified Registered Nurse is an advanced certification that indicates expertise and knowledge in trauma nursing across the continuum of care. The Board of Certification for Emergency Nursing provides this credential.
Trauma Center	A specialized hospital facility distinguished by the immediate availability of specialized surgeons (level IV exempt), physician specialists, anesthesiologists, nurses, resuscitation area(s), and life support equipment on a 24-hour basis for severely injured patients. Pennsylvania's accredited trauma centers must comply with the PTSF Standards of Accreditation.
Trauma Contact	All patients who meet PTOS inclusion criteria, NTDS inclusion criteria (not already counted in the PTOS inclusion), and those patients who meet inclusion criteria for hospital, local, and regional purposes. TQIP is based on NTDS inclusion criteria.
Trauma Credentialed Nurse	Professional registered nurse who has successfully completed the Trauma Nurse Course and fulfills education requirements mandated by the PTSF standards for trauma center accreditation. The nurse must demonstrate and maintain clinical proficiency by integrating knowledge and skills in the care of trauma patients.
Trauma Fellowship	A formalized post-residency, specialty training program, designed to educate graduate residents in the care of injured patients. Graduated, post-residency physicians, who participate in specialized training programs are referred to as fellows.
Trauma-Informed Care	An approach to care that health care organizations and care teams must have to encompasses the care of the entire patient, including their past and present life situations. This approach provides effective health care services with a healing orientation. There are four basic components to trauma informed care: • Understanding the widespread impact of trauma on individuals and the paths for recovery • Recognizing the signs and symptoms of trauma in patient, families, and staff • Integration of knowledge about trauma into policies, procedures, and practices • Actively avoid re-traumatization There are six core principles of trauma informed care: • Safety • Trustworthiness and Transparency • Peer Support • Collaboration • Empowerment • Humility and Responsivenes

TERM	DEFINITION
Trauma Injury Prevention Program	Internal institutional and external community outreach educational programs designed to increase awareness of methods for prevention and/or avoidance of trauma-related injuries with a focus on the most common causes of injury in the community.
Trauma Nurse Core Courses (TNCC)	A course sponsored by the Emergency Nurses Association. Not to be confused with the PaTNCC (Pennsylvania Trauma Nursing Core Curriculum). The TNCC prepares nurses with the knowledge, critical thinking skills, and training needed to provide high-quality, trauma nursing care using the latest evidenced based practice.
Trauma Outcomes and Performance Improvement Course (TOPIC)	Required course developed by the STN to educate and provide a better understanding of the PI process. TOPIC must be taken by the TPM, TPMD, TPIC and/or the TPIMD within one year of their appointment.
Trauma Program Manager	A registered nurse who monitors, promotes, and evaluates all activities associated with the trauma program in cooperation and conjunction with the TPMD. TPMs may have management and other administrative or performance improvement responsibilities.
Trauma Program Medical Director	Board certified, or board eligible, physician designated to work in conjunction with the hospital's medical governing body, and in collaboration with the Trauma Program Manager (TPM), to oversee and authorize the care of trauma patients and the functionality of the trauma program.
Trauma Registry	A database maintained by specialty trained registrars for the abstraction of trauma patients' electronic medical records. The database is used to provide an in-depth analysis and evaluation of patient outcomes for research and the database aids in the assessment of the quality of patient care. The trauma registry also includes information for analysis and evaluation of the quality of patient care, including epidemiological and demographic characteristics of trauma patients.
Trauma Resuscitation Area	A designated space within the emergency department for the initial evaluation/treatment of injured patients. The area must include adequate space to accommodate a full trauma resuscitation team and the necessary medical equipment/resources required to treat injured patients. The area must be readily available and accessible 24/7/365.
Trauma Resuscitation Team	A multidisciplinary team of health care providers, led by an attending physician, who are trained to work in synergy to rapidly assess and provide treatment to injured patients.
Trauma System	A network of trauma hospitals and additional services including EMS, rehabilitation facilities, and trauma prevention organizations. Research shows that death rates are drastically reduced in states where there is a trauma system in place.

Glossary

Inter-Facility Transfer & Consultation Requirements For Level III & IV Trauma Centers

General Guidelines

To facilitate transfer, timely consultation is required with a higher-level receiving trauma center. Consultation with an attending 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, and weather conditions. The development of mutually agreed upon written guidelines for the transfer of trauma patients between institutions is essential. These agreements should define which patients should be transferred and the process for doing so. Refer to Standard 2: Capacity and Ability; for transfer guideline requirements.

When transfer is necessary, the patient must be transferred to a higher-level trauma center. If the patient's condition exceeds the institution's capabilities, the patient should ideally be transferred to the closest higher-level trauma center.

In the rare event that patients meeting the mandatory transfer requirements below are not transferred due to extenuating circumstances, 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 and IV trauma centers caring for the critically injured adult and pediatric trauma patient with any of the following conditions. Centers may have stricter criteria based on individual center's resources:

HEAD

1. Carotid or vertebral artery injury
2. Skull fracture, including penetrating injuries to the skull
3. Subdural hematoma ≥ 4 mm
4. Epidural hematoma
5. Intraparenchymal hemorrhage ≥ 4 mm
6. Subarachnoid hemorrhage ≥ 3 sulci and ≥ 1 mm
7. Intraventricular hemorrhage
8. Midline shift or cerebral edema
9. Abnormal CT as defined as an acute finding consistent (or highly suspicious) of an acute traumatic injury in a patient on warfarin, aspirin, platelet inhibitors, or direct oral anticoagulants (DOAC)
10. Abnormal CT as defined as an acute finding consistent (or highly suspicious) of an acute traumatic injury in a patient with an abnormal neurological exam
    a. Exceptions
        i. Patients who are at their normal baseline health status/GCS (e.g. this can be less than 14 if it is the patient's baseline)
    b. In the patients with exceptions it is highly recommended that a minimal phone consultation with a neurosurgeon (who is able to view CT imaging) is completed prior to consideration for admission.

Appendix A: Inter-Facility Transfer & Consultation Requirements For Level III & IV Trauma Centers

CHEST

11. Cardiac rupture
12. Torn thoracic aorta or great vessel
13. Bilateral pulmonary contusion with PaO2/FIO2 ratio less than 300
14. Rib fracture(s) with the presence of flail chest
15. Significant torso injury with advanced comorbid disease (such as coronary artery disease, chronic obstructive pulmonary disease, type 1 diabetes mellitus, or immunosuppression)
16. Non-occult pneumothorax which must be further defined by the trauma program

PELVIS/ABDOMEN

17. Major abdominal vascular injury
18. Grade IV or V liver injuries
19. Level IV: Any patient requiring damage control laparotomy
20. Hemodynamically unstable pelvic fracture
21. Complex pelvis/acetabulum fractures

SPINE

22. Cervical spine fracture
23. Cervical spinal cord deficit
24. Any level of spine fracture with neurologic deficit
25. Neurologic deficit without spine fracture

EXTREMITIES

26. Fracture or dislocation with loss of distal pulses

PEDIATRICS*: Age < 15 (less than or equal to 14) who:

27. Require admission to an ICU
28. Exhibit signs of traumatic brain injury (structural abnormality on x-ray or CT, sustained GCS < 15 for greater than 2 hours, or neurological deterioration)
29. Are being treated non-operatively for solid organ injuries

*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 II.

Consideration for Transfer: In addition to the above mandatory transfer criteria, consideration is indicated in the following circumstances:

1. Patients receiving anticoagulant therapy which places the patient at significant risk for intracranial hemorrhage or intracranial bleeding.
2. Pediatric considerations for transfer include pediatric trauma patients ≤ 14 years of age injured seriously enough to require hospital admission should be considered for transfer to a Level I or Level II pediatric trauma center.

Appendix B: Transfer Guidelines: Adult Trauma Centers (Level I and II) 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 incorporate 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: ACS, Resources for Optimal Care of the injured Patient: 2014)

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. 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:

   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.

   1. Persistent physiologic derangements, shock, hemodynamically unstable, ongoing transfusion needs.
   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. Pediatric trauma patients 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.

C. See Inter-Facility Transfer & Consultation Requirements for Level III and IV Trauma Centers for additional details

Appendix C: Admission Considerations for Level IV Trauma Centers

The following conditions may be appropriate for admission to a Level IV Trauma Center:

HEAD/SPINE TRAUMA

1. GCS 15 with normal (baseline) CT
2. Minor Traumatic Brain Injury
    i. Meets each of these conditions:
        1. With or without loss of consciousness
        2. Normal neurologic examination
        3. Not Intoxicated
        4. Not on coumadin, aspirin, Plavix, or direct oral anticoagulants (DOAC)
    ii. With one of the following diagnoses
        1. Subdural hematoma < 4 mm
        2. Intraparenchymal hemorrhage < 4 mm
        3. Subarachnoid hemorrhage < sulci and < 1 mm
    iii. Must have a practice management guideline on care of the minor traumatic brain injury. Recommended therapeutic plan:
        1. No hospitalization or 6-hour observation
        2. No repeat head CT scan
        3. No neurosurgical consultation
    iv. This criteria is evidence based and should be followed in its entirety. Centers may have stricter criteria based on individual center's resources.
3. Neck Strain with no neurological deficits
4. Isolated, non-displaced facial/nasal fracture

ORTHOPEDIC TRAUMA

5. Multiple distal orthopedic injuries with intact neurovascular examination in a patient without significant concomitant head, thoracic-abdominal or proximal lower extremity injuries
6. Closed proximal orthopedic injury with intact neurovascular examination in a patient without concomitant significant head or thoracic-abdominal injuries
7. Isolated clavicle fracture
8. Simple, non-operative pelvic fractures

TRUNCAL TRAUMA

9. Rib fractures without presence of flail chest
    i. Age > 14 (age 15 or greater)
    ii. Oxygen saturation > 93% on room air
    iii. Minimal hemothorax
    iv. Pneumothorax (isolated injury and asymptomatic)
    v. A clinical management guideline which must include pain management, respiratory therapy involvement, admission acuity guideline (med/surg, stepdown, intensive care, etc.), and provider-specific credentialing for chest tube insertion and management
10. Superficial abrasions and contusions

Appendix D: Guideline and Policy Reference Tool

The following lists identify operational and clinical guidelines as referenced throughout the standards of accreditation.

Each policy/guideline should be reflective of the scope of practice of the institution

REQUIRED OPERATIONAL POLICIES:

1. Trauma Activation Criteria
2. Trauma Team Member Identification and Role Definition
3. Trauma Activation, Trauma Consult and Non-Activation Provider Response Time Expectations
4. Admission Criteria
5. Level I, II and III: Transfer In
6. Transfer Out
7. Diversion / Disaster
    a. Bypass for transfer when CT capability is unavailable due to planned maintenance or mechanical failure
8. PIPS Plan
9. Screening, Brief Intervention and Referral for Treatment (SBIRT) of Substance Abuse
10. Level I, II and III: ED physician staffing, including defining daily periods of peak utilization
11. Level I and II: Back-up trauma attending expected response time parameters
12. Level III: Back-up trauma attending plan
13. Transfer To and From the Helipad
14. OR staffing availability, immediate response parameters and participants for minimal staffing
15. Level I and II: If cardiopulmonary bypass is not available at the facility: Management/transfer of patients requiring cardiopulmonary bypass
16. Priority Laboratory
17. Priority Radiology
18. Discrepant Radiology Reports (process for changes in interpretation, missed injury/delay in diagnosis, notification, and PI tracking)
19. Incidental Radiology Findings
20. Response time expectations for radiology personnel (CT, MRI) when not in-house
21. Social work capabilities
22. Level I and II: Case management capabilities when there is no identified case manager

REQUIRED CLINICAL GUIDELINES / POLICIES:

1. Anti-coagulant reversal
2. Burn Management
3. C-spine clearance
4. Determination of Brain Death Criteria
5. DVT Prophylaxis
6. Long Bone Fracture Management
7. Adult Trauma Centers: Management of Geriatric Trauma Patient including critical care and rehabilitation
8. Management of Pediatric Trauma Patient including resuscitation, critical care and rehabilitation
9. Massive Transfusion Protocol
10. Level III and IV: Mild Traumatic Brain Injury (TBI)
11. Open Fracture Management

12. Prothrombin Complex Concentrate (PCC) protocol
13. Resuscitation Management: (Adult, Pediatric, and Geriatric (n/a for Pediatric Trauma Center))
14. Level IV: Rib Fracture Management, if applicable
15. Screening for and management of suspected or confirmed child abuse, elder abuse, intimate partner violence, and sex trafficking
16. Timeliness of response to emergent consults or emergency/unplanned situations, and patient criteria for: Physicians to the ICU, Anesthesia (outside of the trauma resuscitation area), Radiology (interventional), Orthopedics and Neurosurgery as applicable
17. Timely notification of Organ Procurement Organization (OPO)
18. Unstable Pelvic/Acetabular Fracture Management

**Note, this appendix may not be all inclusive.

RECOMMENDED RESOURCES:

EAST Guidelines: https://www.east.org/education/practice-management-guidelines

TQIP Guidelines: https://www.facs.org/quality-programs/trauma/tqip/best-practice

Standards of Accreditation Revision Log

June 15, 2022		
Standard	**Levels**	**Edit**
10: Physicians	Adult Level IV	Revised the General Surgery Standards to be dependent on the level of participation in the care of the injured patients. The hospital will determine if General Surgeons will not participate, will participate as a Trauma Service, or participate as subspecialty consultants. General Surgeons are considered a Trauma Service if they meet at least 1 of the following: involved in trauma activations, admitting injured patients, and/or performing operative care to injured patients. General Surgery as a Trauma Service must have 24/7/365 coverage, and each General Surgeon must maintain board certification/ eligibility, ATLS, and 50% attendance at the Multidisciplinary Peer Review meeting. General Surgeons are considered a subspecialty consultant service if they meet all of the following: not involved in trauma activations, not admitting injured patients, and not performing operative care to injured patients. General Surgeons can be consulted for wound management, wound debridement, and external hematoma management. General Surgery as a subspecialty consultant service must have 24/7/365 coverage, assign 1 Liaison to attend 50% of the Multidisciplinary Peer Review meeting, and each General Surgeon must maintain board certification/eligibility. This is an optional addition, effective immediately

Standards of Accreditation Revision Log

June 15, 2022		
Standard	**Levels**	**Edit**
10: Physicians	Adult Level I and II Pediatric Level I and II	Clarified that Other Surgical Specialties (#12) and Other Non-Surgical Specialties (#13) must have 24/7/365 call schedules without gaps in coverage. Clarified the expectation for the surgical specialist Oral/Maxillofacial Surgery. Revised the verbiage to: Craniofacial Expertise. Clarified that Level I Trauma Centers must have Craniofacial Expertise capable to diagnose and manage acute facial fractures of the entire craniomaxillofacial skeleton, including the skull, cranial base, orbit, midface, and occlusal skeleton. Clarified that Level II Trauma Centers must have Craniofacial Expertise and may transfer highly complex/low-volume patients. Clarified if highly complex/low-volume patients will be transferred from Level II Trauma Centers, a transfer plan and PIPS review of all patients transferred must be in place. Clarified that call coverage can be a combination of a single specialty or multiple specialties from the following specialists: Otolaryngology, Oral Maxillofacial Surgery, and Plastic Surgery. Added the surgical specialty of Replantation Expertise. Level I and II Trauma Centers must have either 24/7/365 coverage of Replantation Expertise or have a triage and transfer plan in place with a Trauma Center with Replantation Expertise. Physicians providing Replantation Expertise must be capable of replanting a severed limb, digit or other body part (for example, ear, scalp, or penis), including critical revascularization or care of a mangled extremity. The triage and transfer plan should ensure optimal care with a view toward minimizing time to replantation. Effective Immediately

Standards of Accreditation Revision Log

June 15, 2022		
Standard	**Levels**	**Edit**
10: Physicians 23: Radiology	Adult Level I and II Pediatric Level I and II	Revised the response expectation for Intervention Radiology to 60 minutes from the time of request to arterial puncture in endovascular or interventional radiology procedures for hemorrhage control. Added that interventional procedures can be performed by Neurosurgeons, Neurologists and Cardiologists who are credentialed and capable to function in the role. Expected compliance by 1.1.24. Prior to 1.1.24 either parameter will be accepted: 30 minutes from time of request to time of arrival at the bedside 60 minutes from time of request to time of arterial puncture to signify the start of the procedure On and after 1.1.24 the only acceptable parameter will be 60 minutes from time of request to time of arterial puncture to signify the start of the procedure.
10: Physicians 16: Emergency Department 17: Operating Room	Adult Level IV	Added that trauma centers with Orthopedic Surgery involved in the care of the injured patient must have at least 1 intra-compartmental pressure monitoring device in the hospital. Expected compliance by 6.1.2023.
23: Radiology	Adult Level I, II, and III Pediatric Level I and II	Revised the expectation for Magnetic Resonance Imaging (MRI) response for emergent tests. An emergent MRI test is expected to be initiated within 2 hours of request. The Trauma Program must define the parameters of an emergent test based on level of acuity and monitor compliance. Removed the expectation to have Nuclear Scanning available 24-hours a day with a maximum response time of 30 minutes for emergent/ immediate response. Effective Immediately
24: Collaborative Services	Adult Level I, II, and III Pediatric Level I and II	Added the requirement to have an affiliation with an organ procurement organization (OPO). Effective Immediately

Standards of Accreditation Revision Log

October 1, 2022		
Standard	**Levels**	**Edit**
2: Capacity & Ability	Adult Level I, II and III Pediatric Level I and II	Added that every bypass/diversion event must be reviewed at the trauma operations committee. Expected compliance by 1.1.24

Standards of Accreditation Revision Log

October 1, 2022		
Standard	**Levels**	**Edit**
3: Trauma Program Medical Director	Adult Level I, II and III Pediatric Level I and II	Revised the board certification requirements for TPMDs. TPMDs must be a board certified or board eligible general surgeon. TPMDs can no longer be a general surgeon who is an ACS Fellow with special interest in trauma care. Effective immediately Clarified that the TPMD must be credentialed by the hospital to provide trauma care. Effective immediately Added that Pediatric TPMDs who are board certified in general surgery but not board certified/board eligible in pediatric surgery must maintain Pediatric Advanced Life Support (PALS) certification and have a written affiliation agreement with a pediatric TPMD who is board certified in pediatric surgery from an accredited Level I pediatric trauma center. Effective Immediately Added that Level I TPMD must hold active membership in at least one national trauma organization and have attended at least one meeting during the survey cycle. Membership in the Pennsylvania COT is not equivalent to membership in a national trauma organization. Expected compliance by 1.1.24 Added that Level II-III TPMD must hold active membership in at least one regional, state, or national trauma organization and have attended at least one meeting during the survey cycle. Expected compliance by 1.1.24 Revised that the 36 hours of CME in a 3-year period for Pediatric TPMDs must include 9 hours of pediatric-specific content. Expected compliance by 1.1.24 Clarified that TPMDs must have authority to ensure providers meet all requirements and adhere to institutional standards of practice, and correct deficiencies across departments and other administrative units. Effective immediately.

Standards of Accreditation Revision Log

October 1, 2022		
Standard	**Levels**	**Edit**
		Added that TPMDs at hospitals pursuing trauma accreditation undergoing an initial site survey must have 12 hours of trauma-related CME during the reporting period. Expected compliance by 1.1.24 Clarified that TPMDs must have authority to ensure providers meet all requirements and adhere to institutional standards of practice, and correct deficiencies across departments and other administrative units. Effective immediately

Standards of Accreditation Revision Log

October 1, 2022		
Standard	**Levels**	**Edit**
6: PIPS	Adult Level I, II and III Pediatric Level I and II	Clarified the following, which are effective immediately: • The trauma PI program must be independent of the hospital PI program with an organizational chart showing the relationship and bidirectional flow of information between the two programs. • The trauma PI program must have a means to report events and actions to the hospital PI program and the hospital PI program must provide feedback and loop closure to the trauma PIPS program. • The trauma PI program must be empowered to identify opportunities for improvement and develop actions to reduce the risk of patient harm, irrespective of the department, service, or provider. • The trauma program must use the results of benchmarking data (such as TQIP) to determine whether there are opportunities for improvement in patient care and registry data quality. • Pa V5 Outcomes must be utilized for documenting event identification, analysis, verification, corrective actions, loop closure and strategies for sustained improvement measured over time. • Trauma Centers with both adult and pediatric accredited programs must have separate adult and pediatric trauma multidisciplinary PIPS meetings with distinct minutes.

Standards of Accreditation Revision Log

October 1, 2022		
Standard	**Levels**	**Edit**
		Revised the requirements for the trauma PI Plan. Expected compliance by 1.1.24. • Added that there must be an organizational chart demonstrating the structure of the trauma PI process, with a clearly defined relationship to the hospital PI program. • Clarified the trauma PI program must identify events from all phases of care from prehospital care to hospital discharge. • Clarified the use of PI indicator, opportunities for improvement, hospital events and audit filters definitions in the PTOS Manual and Outcomes Manual. • Added that each level of review must be defined, including which cases are reviewed at that level, who performs the review at that level and when cases can be closed or advanced to the next level of review. • Added that the Multidisciplinary PIPS Committee must be defined, including membership and responsibilities. • Clarified that action plan development and issue resolution (loop closure) must each be distinctively included in the trauma PI Plan. • Added the outline of an annual process for identification of priority areas for PI, based on audit filters, event reviews, and benchmarking reports, with the requirement that priority focus areas be data driven.

Standards of Accreditation Revision Log

October 1, 2022		
Standard	**Levels**	**Edit**
		Added PI specifics for Non-surgical admissions (NSA). NSA with surgical consultation, an ISS ≤ 9, or without other identified opportunities for improvement may be closed in primary review, however NSA without surgical consultation, an ISS > 9, or identified opportunities for improvement must, at a minimum, be reviewed by the TPMD in secondary review. Includes the recommendation of utilization of the Nelson tool to review NSA. Expected compliance by 1.1.24 Added that all traumatic injury related mortality (DOA, died in ED or inpatient, and withdrawal of life-sustaining care) must be reviewed, and classified for potential opportunities for improvement (OFI). Best practice is for review at tertiary level, however at a minimum those with OFI must go to tertiary level while those without OFI can go to secondary review. The categories include event/mortality with an OFI, event/ mortality without an OFI, and undetermined OFI. A death should be designated as "mortality with OFI" if any of the following criteria are met: anatomic injury or combination of severe injuries but may have been survivable under optimal conditions; standard protocols were not followed, possibly resulting in unfavorable consequences; provider care was suboptimal. Includes the recommendation to review patients discharged to hospice to ensure there were no OFI in care that might have significantly changed the clinical course that ultimately led to the decision for hospice care. This is an addition to the Standards but a clarification from the Outcomes Manual Effective immediately

Standards of Accreditation Revision Log

October 1, 2022		
Standard	**Levels**	**Edit**
10: Physicians	Adult Level I, II and III Pediatric Level I and II	Revised requirements for board certification/board eligibility. At Level I & II Trauma Centers, board certification/board eligibility in the appropriate specialty board is required for Anesthesiology, Emergency Medicine, General Surgery, Neurosurgery, Orthopedic Surgery and Radiology. Other surgical and non-surgical specialties must be a board certified or board eligible physician with credentialled expertise (privileges at the institution through the institution's credentialing process for the specialty) in the specific specialty. At Level III Trauma Centers, board certification/ board eligibility is required for Emergency Medicine, General Surgery and Orthopedic Surgery. Effective immediately Revised the requirement from Microvascular Surgery to Soft Tissue Coverage Expertise at Level I and II Trauma Centers. At Level I Trauma Centers the provider with soft tissue coverage expertise must be capable to address comprehensive soft tissue coverage of wounds, including microvascular expertise for free flaps, all open fractures, soft tissue coverage of a mangled extremity, and soft tissue defects of the head and neck. At Level II Trauma Centers there must be soft tissue coverage expertise 24/7/365, however it is acceptable to transfer highly complex/low-volume patients. If a Level II Trauma Center will transfer highly complex/low-volume patients, then a transfer plan and PIPS review of all patients transferred must be in place. Effective immediately
22: Laboratory & Blood Bank	Adult Level I, II and III Pediatric Level I and II	Clarified that the blood bank in-house supplies must be based on the needs of the trauma center. Effective Immediately

Standards of Accreditation Revision Log

January 1, 2023		
Standard	**Levels**	**Edit**
1: Commitment	Adult Level I, II and III Pediatric Level I and II	Updated wording of the minimum criteria for the highest level trauma activation. Specifically simplified the criteria for GCS to only <9 without additional details, and simplified to transfer patient with ongoing blood transfusion. Added a recommended method for involvement in state and regional trauma system planning, development and operation: Participate in media and legislative education to promote and develop trauma systems. Effective immediately
2: Capacity & Ability	Adult Level I, II and III Pediatric Level I and II	Revised the Diversion Standard. Revised the maximum amount of diversion hours per year, decreasing to 400 hours. Added that the hospital must have a trauma diversion protocol approved by the TPMD. Simplified the definition of diversion to the time during which the trauma center is not accepting trauma patients from the scene or via interfacility transfer. Expected compliance by 1.1.24
6: PIPS	Adult Level I, II and III Pediatric Level I and II	Clarified the expectation for hospitals to provide feedback to EMS and referring providers. Review and feedback to EMS agencies must include transportation, transfer, accuracy of triage and clinical care. Review and feedback to referring providers must include care and outcomes of their patients and any potential opportunities for improvement in initial care. Clarified death event categorization. Effective immediately
10: Physicians	Adult Level I, II and III Pediatric Level I and II	Clarified the Trauma Surgery/General Surgery Standard. Clarified that general surgeons who are involved in the care of trauma patients must have privileges in general surgery (Adult Level I-III) or general and/or pediatric surgery (Pediatric Level I-II). Clarified that residents' response to highest level trauma activations does not count toward the attending surgeon's response expectation. Effective immediately

Standards of Accreditation Revision Log

January 1, 2023		
Standard	**Levels**	**Edit**
14: Emergency Medical Services	Adult Level I, II and III Pediatric Level I and II	Added that the trauma program must identify a physician from the emergency department or trauma program to participate in the pre-hospital PI process, assist in the development of local prehospital care protocols related to trauma care, and facilitate communication, education and outreach with EMS. Expected compliance by 1.1.24

March 15, 2023		
Standard	**Levels**	**Edit**
1: Commitment 2: Capacity & Ability	Adult Level I, II and III Pediatric Level I and II	Clarified that the decision to transfer an injured patient must be based solely on the needs of the patient, without consideration of their health plan or payor status. Subsequent decisions regarding transfer should be made by the Trauma Surgeon only after stabilization of the patient's condition and appropriateness of the receiving facility's resources relative to the patient's needs. Expected compliance by 1.1.24 Removed the requirement of transfer agreements. Added that written transfer plans must also include a list of predetermined referral centers, and the expected time frame for initiating and accepting a transfer. Expected compliance by 1.1.24
2: Capacity & Ability	Adult Level I, II, III and IV Pediatric Level I and II	Updated the indications for transfer of burn patients based on the updated American Burn Associations Guideline for Burn Patient Referral to a Burn Center. Expected compliance by 1.1.24 Level I, II and III: Clarified that the transfer consultation process may include communication through a transfer center. Effective immediately

Standards of Accreditation Revision Log

March 15, 2023		
Standard	**Levels**	**Edit**
3: Trauma Program Medical Director	Pediatric Level I and II	Added additional requirements for pediatric TPMDs who are not board certified in pediatric surgery. The affiliate pediatric TPMD must be identified in the written affiliation agreement. The affiliate pediatric TPMD must attend 50 percent of the trauma multidisciplinary PIPS committee meetings, and must attend the accreditation site surveys. Expected compliance by 1.1.24
5: Registry	Adult Level I, II and III Pediatric Level I and II	Revised the FTE requirements for registry staff to 0.5 Registrar FTE per every 200-300 trauma contacts. Expected compliance by 1.1.25 Added that Registrars must complete an ICD course or refresher course every five years, as evidenced by a certificate. The course should correspond to the ICD version utilized within the PTOS submission software. Expected compliance by 1.1.25 Clarified Registrar continuing education is eight hours annually or 24 hours over three years. At pursuing hospitals, for the initial accreditation survey each registrar must have at least eight hours during the reporting period. Effective Immediately Added that the trauma program must have a written data quality plan that reflects compliance with the PTOS operations manual, includes a minimum of quarterly review of data quality, allows for a continuous process that ensures the fitness of data for use which may include an inter-rater reliability approach, internal or external data validation, or the use of reports. Expected compliance by 1.1.24

Standards of Accreditation Revision Log

March 15, 2023		
Standard	**Levels**	**Edit**
9: Research	Adult Level I Pediatric Level I	Added that the hospital administration must demonstrate support for the research program and included suggested methods of support. Added that at least once per survey cycle a trauma program faculty member will speak at a regional, national, or international trauma conference. Revised the requirements for publications. Removed the option for two different methods. All Level I trauma centers must publish a minimum total of 10 trauma related publications within a three year period. • Three publications must be from members of the general surgery trauma team (adult program), or general/pediatric surgery trauma team (pediatric program). • One publication from three different specialties: Anesthesia, Basic Sciences, Cardiothoracic Surgery, Critical Care, Emergency Medicine, Neurosurgery, Nursing, Orthopedics, Plastics/ Maxillofacial Surgery, Radiology, Rehabilitation, and Vascular Surgery. • Added that a case series must have more than five patients to be counted among the 10 trauma related publications, and a maximum of one publication can be from acute care surgery. Added that publication authors from the trauma center must meet accepted authorship requirements of the International Committee of Medical Journal Editors. Added the trauma center must support residents or fellows in any of the following scholarly activities: laboratory experiences, clinical trials, resident trauma paper competitions, or resident trauma research presentations. Expected compliance for all Research revisions by 1.1.24. Prior to 1.1.24, the trauma center may choose between meeting the previous standard requirement or the new standard requirement.

Standards of Accreditation Revision Log

March 15, 2023		
Standard	**Levels**	**Edit**
10: Physicians	Pediatric Level I and II	Added the requirement of a Child Abuse Physician who provides expertise in child abuse/ nonaccidental trauma. • Minimally the physician must have a special interest in child abuse/non-accidental trauma; preferably has board certification or board eligibility in child abuse pediatrics. • This role provides leadership in addressing the needs of children with nonaccidental trauma, is involved in the development of relevant policies and procedures, and where necessary, provides inpatient assessment and care. Expected compliance by 1.1.24

Standards of Accreditation Revision Log

March 15, 2023		
Standard	**Levels**	**Edit**
17: Operating Room	Adult Level I, II and III Pediatric Level I and II	Clarified that the first OR team must include nursing and anesthesia personnel. Effective Immediately Added the requirement of an OR booking policy/ guideline that specifies time expectation for timely access to the OR based on level of urgency/ acuity, includes access expectations for a range of clinical trauma priorities, and defines the parameters of immediate/emergent response based on level of urgency/acuity. At Level I & II trauma centers, it must outline the process and expectations related to preparing a second OR, both during regular working hours and after hours. Expected compliance by 1.1.24 Added that at a minimum OR staffing must include nursing and anesthesia personnel to prepare the room and patient for an emergency surgical intervention. Added that the OR must track the on call personnel's response from initial notification to arrival. The expectation is that the OR team is notified when a trauma patient is going to be sent to the OR. Expected compliance by 1.1.24 Revised the expectation for available ORs for musculoskeletal trauma care. • Level I & II trauma centers must have a dedicated OR prioritized for fracture care in nonemergent musculoskeletal trauma. Level III trauma centers must make ORs available for nonemergent musculoskeletal trauma. • The TPMD and the Orthopedic Liaison shall collaboratively determine and approve operational details related to staffing, frequency of availability, and use by other services. The frequency of availability should be sufficient to provide timely fracture care for patients.

Standards of Accreditation Revision Log

March 15, 2023		
Standard	**Levels**	**Edit**
		• Skeletal fixation is often secondary to immediate and lifesaving resuscitative intervention; might be staged, and often requires unique expertise. Predictable access to an OR assures that musculoskeletal trauma care can be planned and that the right expertise will be available to provide optimal care. Expected compliance by 1.1.25
22: Laboratory & Blood Bank	Adult Level I, II and III Pediatric Level I and II	Added that the Massive Transfusion Protocol must include details on the process to trigger MTP activation, the process for cessation, and strategies for preservation of unused blood. Expected compliance by 1.1.24 Clarified that the rapid reversal protocol for patients on anticoagulants should include therapeutic options and indications for the use of each reversal agent. Effective Immediately

Standards of Accreditation Revision Log

March 15, 2023		
Standard	**Levels**	**Edit**
24: Collaborative Services	Adult Level I, II and III Pediatric Level I and II	Pediatric Trauma Centers Only: Added that the child protective service must be led by a physician who is board certified/board eligible in child abuse pediatrics or has a special interest in child abuse/nonaccidental trauma. Expected compliance by 1.1.24 Added expectations for discharge planning. • The hospital must have a process to determine the level of care patients require after trauma center discharge, as well as the specific rehabilitation care services required at the next level of care. The medical record must show documentation of level of care and service requirements. • The discharge planning should ensure a patient-centered approach. The core of a patient-centered approach is the acknowledgment that patients' perspectives can be integrated into all aspects of the planning, delivery, and evaluation of trauma center care. • Added that if the trauma patient is transferred to another institution for rehabilitation, outcome and follow-up must be formally requested if not received. • Recommend Level I & II trauma centers adopt a means to facilitate the transition of patients into the community. This transition shall use patient-centered strategies such as peer-to-peer mentoring, a trauma survivors' program, or continuous case management. Transition management shall elicit and address patient concerns and link trauma center services with community care. Expected compliance by 1.1.24 Clarified that the hospital must have nutritional support services. Effective Immediately

Standards of Accreditation Revision Log

March 15, 2023		
Standard	**Levels**	**Edit**
		Added that the hospital must have a protocol that identifies which patients will require rehabilitation services during their acute inpatient stay. At adult trauma centers, the protocol must include screening of geriatric patients for mobility limitations and assurance of early, frequent, and safe mobility. At Level I & II trauma centers, Physical Therapy and Occupational Therapy must be available seven days a week. Availability can be in-house or on call with response expectations defined by the hospital. Expected compliance by 1.1.24
25: Social Work	Adult Level I and II Pediatric Level I and II	Added that a social worker must be available for trauma patients seven days a week. Availability can be in-house or on call with response expectations defined by the hospital. Expected compliance by 1.1.24
27: Geriatrics	Adult Level I, II and III	Added required content for geriatric trauma patient management guidelines (protocols): Identification of vulnerable geriatric patients Identification of patients who will benefit from the input of a health care provider with geriatric expertise Prevention, identification, and management of dementia, depression, and delirium Process to capture and document what matters to patients, including preferences and goals of care, code status, advanced directives, and identification of a proxy decision maker Medication reconciliation and avoidance of inappropriate medications Screening for mobility limitations and assurance of early, frequent, and safe mobility Implementation of safe transitions to home or other health care facility Expected compliance by 1.1.24

Standards of Accreditation Revision Log

August 1, 2023		
Standard	**Levels**	**Edit**
10: Physicians	Adult Level I, II and III Pediatric Level I and II	Clarified the responsibilities for the surgical director/co-director also includes developing pathways and protocols for the care of the trauma patient, and participation in the care of the patients. Clarified that in Pediatric Trauma Centers, the two physicians in Level I centers and one physician in Level II centers with the required board certification must practice at least part of their time in the ICU where the majority of pediatric trauma patients are cared for. Clarified that in Adult Level III Trauma Centers, the ICU physicians providing 24-hour coverage of all trauma patients can be a surgeon, intensivist, hospitalist or advanced practitioner. Clarified that Ophthalmology may have sporadic gaps in call coverage due to vacation, conference attendance, etc., with a contingency plan to address the gaps. • Effective immediately

Standards of Accreditation Revision Log

August 1, 2023		
Standard	**Levels**	**Edit**
12: Residency Programs	Adult Level I Pediatric Level I	Clarified that the requirements of the Accreditation Council for Graduate Medical Education (ACGME) must be met. Updated that trauma centers must demonstrate commitment to postgraduate training and education with residency rotations in trauma by residents from an ACGME accredited programs. The rotations must be continuously available to assure ample exposure to trauma care, and available to general surgery residents, and if available, orthopedic, neurosurgery and emergency medicine residents. “Available” to residents implies the rotation is open to receive trainees at all times. Added that the residency program must have a defined documented trauma curriculum and trauma specific objectives for junior and senior residents specifically designed to prepare surgeons to be proficient in the delivery of high level of trauma care. Added that there must be sufficient volume and breadth of cases to provide general surgery senior residents the opportunity to meet the competency requirements for senior general surgery residents in trauma set forth by the ACGME. • Expected compliance by 1.1.25

Standards of Accreditation Revision Log

August 1, 2023		
Standard	**Levels**	**Edit**
13: Nursing	Adult Level I, II and III Pediatric Level I and II	Clarified that the PaTNCC trauma nurse course utilized by the hospital must be reviewed and continuing education credits granted by an organization accredited to provide continuing education by a professional nursing organization. Clarified that the annual continuing education must correspond to the nurses' scope of practice and patient population served. Added that the PCAR and TNACT advanced trauma courses may be credited to fulfill up to twelve hours of continuing education requirements over a three year timeframe from the class. Clarified that advanced certification requirements for an accredited trauma center that is opening a new unit is 25% of the nursing must have advanced certification within the first year of opening. • Effective immediately
17: Operating Room	Adult Level II and III Pediatric Level II	Clarified that Level II and III Trauma Centers that have cardiopulmonary bypass capability must have it immediately available when required or a contingency plan must exist. The contingency plan must address the need for immediate transfer of patients with time-sensitive cardiovascular injuries. • Effective immediately

Standards of Accreditation Revision Log

August 1, 2023		
Standard	**Levels**	**Edit**
19: Intensive Care Units	Adult Level I, II and III Pediatric Level I and II	Added that trauma patients requiring ICU admission must be admitted to, or evaluated by, a surgical service. The admitting trauma service must retain responsibility of the patient and maintain control over all aspects of care up to the point where the trauma surgeon documents transfer of primary responsibility to another service. While on the trauma service, the trauma surgeon must be kept informed of and concur with major therapeutic and management decisions when care is being provided by a dedicated ICU team. Added that there must be a policy that defines the hospital's expectation of the time frame within which the initial surgical evaluation is performed in the ICU. The policy must also include notification of changes in care to the trauma service. • Expected compliance by 1.1.25 Clarified that in Pediatric Trauma Centers, the two physicians in Level I centers and one physician in Level II centers with the required board certification must practice at least part of their time in the ICU where the majority of pediatric trauma patients are cared for. • Effective immediately

Standards of Accreditation Revision Log

August 1, 2023		
Standard	**Levels**	**Edit**
23: Radiology	Adult Level I, II and III Pediatric Level I and II	Added that conventional radiology must have the necessary human resources and equipment available for emergent/immediate tests within 15 minutes at Level I and II centers, and 30 minutes at Level III centers. The response time is tracked from initial request (order) to start of the test. The trauma program must define the parameters of emergent/immediate response based on level of acuity and patient needs. The PIPS program must monitor compliance with initiation of emergent tests and review delays for effects on patient care. Added that there must be documentation on the preliminary diagnostic imaging report that critical findings were communicated to the trauma team. Added that final interpretation of CT scans must be documented no later than 12 hours after completion of the scan. Added that at Level I and II centers CT Technicians must be available within 15 minutes for emergent/immediate tests from the time of request (order) to initiation of test. At Level III centers, CT Technicians must be available within 30 minutes for emergent/immediate tests from the time of request (order) to initiation of test. The trauma program must define the parameters of emergent/immediate response based on level of acuity and patient need. The PIPS program must monitor initiation of emergent tests and review delays for effects on patient care. Added that point-of-care ultrasound must be available 24 hours a day with a maximum response time of 15 minutes for emergent/immediate tests from the time of request (order) to initiation of test. This is a new imaging requirement at Level III Trauma Centers. The PIPS program must monitor compliance with initiation of emergent tests and review delays for effects on patient care. Added that Level I and II centers must have a mechanism in place to remotely view radiographic imaging from referring hospitals. • Expected compliance by 1.1.25

Standards of Accreditation Revision Log

August 1, 2023		
Standard	**Levels**	**Edit**
23: Radiology	Adult Level I, II, III & IV	Clarified that in the pediatric population, consider use of non-radiation imaging to limit exposure to radiation. • Effective Immediately

October 15, 2023		
Standard	**Levels**	**Edit**
2: Capacity & Ability	Adult Level I, II and III Pediatric Level I and II	Added that at Level III Trauma Centers the admission policy must include the types of neurotrauma injuries that may be treated at the center and be approved by the TPMD. Added that the trauma program must be integrated into the hospital's disaster plan to ensure a robust surgical response. The surgical response must include an outline of the critical personnel, means of contact, initial surgical triage (including subspecialty triage when appropriate), and coordination of secondary procedures. Added that the trauma surgeon who is a member of the hospital's disaster committee is responsible for the development of a surgical response to a mass casualty event. At Level I and II Trauma Centers, this individual must successfully complete the Disaster Management and Emergency Preparedness (DMEP™) or eDMEP at least once. Added that at Level I Trauma Centers an Orthopedic Surgeon who provides care to injured patients must be a member of the hospital's disaster committee. Added that the Trauma Center must participate in regional disaster/emergency management committees, health care coalitions, and regional mass casualty exercises. Added that the trauma program must participate in two hospital drills or disaster plan activations per year that include a trauma response with the goal of refining the hospital's response to mass casualty events. Actual plan activations and tabletop exercises are acceptable. • Expected compliance by 6.1.25

Standards of Accreditation Revision Log

October 15, 2023		
Standard	**Levels**	**Edit**
		Clarified that the Trauma Center must have a provider and equipment immediately available to establish an emergency airway. The emergency airway provider must be capable of advanced airway techniques, including surgical airway. • Effective immediately
3: Trauma Program Medical Director	Adult Level I, II, and III Pediatric Level I and II	Clarified that attendance at the Annual Trauma Quality Improvement Program is not equivalent to attending a trauma organization's member meeting and therefore does not satisfy the Standard for Trauma Program Medical Directors. • Effective with the associated Standard on 1.1.24
5: Registry	Adult Level I, II, III and IV Pediatric Level I and II	All Levels: • Added that Trauma Centers must create a facility-specific data hierarchy for all required elements in the PTOS Manual, to allow for consistent data abstraction. • Revised the definition of Trauma Contacts to all patients who meet PTOS inclusion criteria, NTDS inclusion criteria (not already counted in the PTOS inclusion), and those patients who meet inclusion criteria for hospital, local, and regional purposes. • Expected compliance by 6.1.25

Standards of Accreditation Revision Log

October 15, 2023		
Standard	**Levels**	**Edit**

		Levels I-III:
		• Added that the registry staffing plan must include at least one Registrar with a current certification as a Certified Abbreviated Injury Scale Specialist (CAISS) offered by AAAM. There is a recommended minimum of 1 year of experience with AIS prior to certification. A trauma program with Registrars with less than 1 year of registry experience must have a plan in place to achieve CAISS within 3 years of appointment. A CAISS certified Registrar with FTEs attributed to a combined adult/pediatric trauma program can meet the CAISS requirement for each of those programs. Additional trauma program personnel, including but not limited to Performance Improvement Coordinators and Injury Prevention Coordinators, with 0.5 FTE dedicated to the trauma registry, can meet this Standard.
		  • Expected compliance by 1.1.26
		• Added the recommendation that at Trauma Centers with multiple registrar FTEs, a registry structure should include an identified individual(s) with a portion (% of effort) of their FTE dedicated for administrative duties to oversee registry operations, quality (data validation), data analytics, and education.
		• Added the recommendation that additional registrars may be needed to support Trauma Center research through report generation and abstraction of additional customized elements. One consideration would be to determine a percentage of registry effort per faculty/fellow, especially if the faculty's academic appointment requires a certain volume of publications for advancement.
		• Added the recommendation that at minimum, registry staff should have a basic understanding of anatomy/physiology and medical terminology prior to attending an AIS class.
		  • Effective immediately

Standards of Accreditation Revision Log

October 15, 2023		
Standard	**Levels**	**Edit**
6: PIPS	Adult Level I, II and III Pediatric Level I and II	Added that the clinical practice/patient management guidelines, protocols, or algorithms must be reviewed and updated at least every three years and can be developed or revised in response to new evidence or opportunities for improvement. • Expected compliance by 6.1.25
8: Injury Prevention, Public Education & Outreach	Adult Level I, II, III and IV Pediatric Level I and II	All Levels: • Updated Tables 2 and 3 "Suggestions for planning optimal injury prevention and violence intervention strategies with the greatest impact" and "Suggested methods for tracking and reporting of injury prevention activities." • Effective immediately Levels I-III: • Clarified that injury prevention programs can also reflect local epidemiological data. • Effective immediately • Revised that two annual injury prevention activities must address separate major causes of injury. Each must have specific objectives, goals, and timeframe for completion which should be documented for each of the prevention initiatives in advance of implementation so that the trauma center can describe the success relative to the stated goals. • Expected compliance by 6.1.25 • Added that Injury Prevention Coordinator position must be someone other than the trauma Performance Improvement Coordinator, in addition to the current expectation that it cannot be the Trauma Program Manager. • Expected compliance by 6.1.25 • Added the reference "ACS COT Best Practice Guideline for recognition of abuse" https://www.facs.org/media/o0wdimys/abuse_guidelines.pdf

Standards of Accreditation Revision Log

October 15, 2023		
Standard	**Levels**	**Edit**
		• Revised the SBIRT Standard to require substance misuse screenings and brief interventions for all PTOS admissions over 12 years of age, removing a minimum length of admission. The screening methods are at the discretion of the individual trauma center but must include a validated tool or blood/urine laboratory testing. The brief intervention must be completed by appropriately trained staff as determined and credentialed by the institution (could include nurses, social workers, etc.) and must occur prior to patient discharge. Included the references "ACS COT Quick Guide Alcohol Screening and Brief Intervention for Trauma Patients" https://www.facs.org/media/wdanhnsc/alcohol-screening-and-brief-intervention-sbi-for-trauma-patients-cot-quick-guide.pdf and "Best Practice Guidelines Screening and Intervention for Mental Health Disorders and Substance Use and Misuse in the Acute Trauma Patient" https://www.facs.org/media/nrcj31ku/mental-health-guidelines.pdf • Expected compliance by 6.1.25 • Added that the Trauma Center must meet the mental health needs of the trauma patient and must have a protocol to screen patients at high risk for psychological sequelae with subsequent referral to a mental health provider. The protocol must include a structured approach to identify patients at high risk for mental health problems. Included the reference "ACS COT Best Practice Guidelines Screening and Intervention for Mental Health Disorders and Substance Use and Misuse in the Acute Trauma Patient" https://www.facs.org/media/nrcj31ku/mental-health-guidelines.pdf • Expected compliance by 6.1.25

Standards of Accreditation Revision Log

October 15, 2023		
Standard	**Levels**	**Edit**

10: Physicians	Adult Level I, II, III and IV
	Pediatric Level I and II
		All Levels:
		• Added that telemedicine is an acceptable form of consult for Pain Management, Physiatry, and Psychiatry subspecialists. Trauma Centers wishing to utilize telemedicine for other subspecialties should refer to Policy AC-105: Applying for a Variance from a Standard for additional details.
		  • Effective immediately
		
		Level I-III:
		• Clarified that at Pediatric Trauma Centers there must be Obstetric and Gynecologic surgical expertise, and if the obstetric and gynecologic surgical expertise is not immediately available for emergent surgical intervention, a contingency plan, including immediate transfer to an appropriate center and PIPS review of all patients transferred must be in place.
		  • Effective immediately
		• Revised that Level I & II Trauma Centers must have physicians in the Emergency Department who are board certified or board eligible in Emergency Medicine or Pediatric Emergency Medicine. Physicians who completed primary training in a specialty other than emergency medicine or pediatric emergency medicine prior to 2016 may participate in trauma care. At Level III Trauma Centers, physicians in the Emergency Department can be board certified or board eligible Emergency Medicine, Pediatric Emergency Medicine, or a specialty other than emergency medicine.
		• Added that the Emergency Department Physician Director at Level I and II Trauma Centers must be board certified or board eligible in Emergency Medicine or Pediatric Emergency Medicine.

Standards of Accreditation Revision Log

October 15, 2023		
Standard	**Levels**	**Edit**

		• Revised that at both Level I and II Trauma Centers a board certified or board eligible Emergency Medicine physician must be present in the emergency department 24/7/365 with no gaps in coverage.
		• Added that there must be a protocol/policy defining the shared roles and responsibilities of Trauma Surgeons and Emergency Medicine physicians for trauma resuscitation and clearly established responsibilities of the Emergency Medicine Physician on the trauma team. The protocol/policy must be approved by the TPMD.
		  • Expected compliance by 6.1.25
		• Clarified that at Pediatric Level I Trauma Centers there must be at least one board certified or board eligible neurosurgeon who has completed a pediatric neurosurgery fellowship and one additional board certified or board eligible neurosurgeon with demonstrated interest in trauma care.
		  • Effective immediately
		• Revised that the defined parameters of Neurosurgical emergent consults based on level of acuity must include, at a minimum, severe traumatic brain injury (GCS less than 9) with head CT evidence of intracranial trauma, moderate traumatic brain injury (GCS 9–12) with head CT evidence of potential intracranial mass lesion, neurologic deficit as a result of potential spinal cord injury (applicable to spine surgeon, whether a Neurosurgeon or Orthopedic surgeon), and Trauma Surgeon discretion/request for emergent consult. The emergent consult must be within 30 minutes and may occur remotely (viewing CT, MRI, etc.). Neurosurgical provider response times must be documented.
		  • Expected compliance by 6.1.25

Standards of Accreditation Revision Log

October 15, 2023		
Standard	**Levels**	**Edit**
		• Added required non-surgical specialties of Pain management (with expertise to perform regional nerve blocks), Physiatry and Psychiatry who must be available 7 days a week. Bedside response preferred and telemedicine response acceptable. • Expected compliance by 1.1.26
16: Emergency Department	Adult Level I, II and III Pediatric Level I and II	Added that a pediatric readiness assessment (https://www.pedsready.org/) and a documented plan to address identified gaps must be completed at a minimum every 3 years. "Pediatric readiness" refers to infrastructure, administration and coordination of care, personnel, pediatric-specific policies, equipment, and other resources that ensure the center is prepared to provide care to an injured child. Includes the reference "Pediatric Readiness Toolkit" https://emscimprovement.center/domains/pediatric-readiness-project/readiness-toolkit/ • Expected compliance by 6.1.25

Standards of Accreditation Revision Log

January 1, 2024		
Standard	**Levels**	**Edit**

2: Capacity & Ability	Adult Level I, II and III	Revised the requirements for adult trauma centers caring for pediatric patients. Adult trauma centers annually caring for 100 or more pediatric patients no longer need to comply with all PTSF Pediatric Standards; they must comply with the following:
		• Pediatric emergency department area which may include dedicated pediatric rooms or mobile pediatric carts with pediatric equipment that can turn a room into an appropriate pediatric room.
		• Pediatric intensive care area which may include a dedicated pediatric intensive care unit or mobile pediatric carts with pediatric equipment that can turn a room into an appropriate pediatric room. Required pediatric equipment includes:
		  • Tool or chart that relies on weight (kilograms) used to assist clinicians in determining equipment size and correct medication dosing by weight and total volume
		  • Pediatric doses of medication
		  • Pediatric-specific defibrillation pads
		  • Pediatric monitoring equipment
		  • Pediatric bag-mask device, endotracheal tubes, laryngoscope blades, tracheostomy tubes, difficult airway supplies and/or kit, suction catheters, nasopharyngeal airways, oropharyngeal airways, non-rebreather masks, and nasal cannula
		  • Pediatric chest tubes
		  • Pediatric central venous catheters, intravenous and intraosseous needles, infusion devices with the ability to regulate the rate and volume of infusate (including low volumes)
		• The count of 100 or more pediatric patients includes PTOS pediatric patients who were admitted, remained at the hospital in observation status and dead on arrival. Pediatric patients transferred to another trauma center or pediatric patients with isolated burns are excluded in the count.
		• Expected compliance by 6.1.25

Standards of Accreditation Revision Log

January 1, 2024		
Standard	**Levels**	**Edit**
4: Trauma Program Manager	Adult Level I, II and III Pediatric Level I and II	Clarified that the TPM has oversight of the trauma program, plays an essential role in the delivery of optimal and equitable trauma care to all patients, and an organizational chart depicting the relationship with the TPMD, hospital governance, and administration and other services. • Effective immediately Clarified that the TPM job description should also include development and implementation of clinical protocols and practice management guidelines, providing educational opportunities for staff development, oversight of trauma registry and performance improvement program, involvement in the budgetary process of the trauma program and serve as a liaison to administration and represent the trauma program on hospital and regional committees to enhance trauma care. • Effective immediately Added that the TPM must have a minimum of a Bachelor of Science in Nursing degree with a master's degree preferred. Clarified that measures of competency for TPMs can include attainment and maintenance of an advanced certification by an accredited organization such as TCRN, CEN, CPEN, CCRN, PCCN, CPN, CFRN and CNRN, maintenance or faculty of Advanced Trauma Care for Nurses, and three years as an RN at a trauma center in the care of the injured patient. Trauma Centers wishing to utilize a TPM that does not meet these qualifications should refer to Policy AC-105: Applying for a Variance from a Standard for additional details. • Expected compliance by 1.1.25 Revised the requirement for annual trauma-related continuing education to 36 hours over three years or 12 hours annually. Recommend participation in Advanced Trauma Care for Nurses and a trauma program management course by a national organization such as STN Optimal. • Expected compliance by 1.1.25

Standards of Accreditation Revision Log

January 1, 2024		
Standard	**Levels**	**Edit**
		Added that TPMs at Level I and II Trauma Centers must hold active membership in at least one national trauma organization and have attended at least one national conference during a three-year period • Expected compliance by 1.1.26
5: Registry	Adult Level I, II and III Pediatric Level I and I	Added that the written data quality plan must include a minimum accuracy expectation and plan for improvement if a Registrar is below the internal accuracy expectation. • Expected compliance by 1.1.25 Added the recommendation that the trauma program should utilize an electronic data transfer process to reduce keystroke entry and promote a focus on injury coding, event capture and data validation. • Effective immediately
6: PIPS	Adult Level I, II and III Pediatric Level I and II	Added the following to the PIPS Indicators: • Delayed recognition of or missed injuries • Compliance with prehospital triage criteria, as dictated by regional protocols • Delays or adverse events associated with prehospital trauma care • All Non-Surgical Trauma Admissions • Recommend utilizing the Nelson tool • Lack of availability of essential equipment for resuscitation or monitoring • MTP Activations and appropriateness of component ratios • Significant complications and adverse events • Transfers to hospice • Mental health screening compliance • Delays in providing rehab services • Neurotrauma care at Level III trauma centers • All traumatic injury related death Revised the following PIPS Indicators: • Removed annually from the Indicator - Compliance with Activation Criteria • Removed quarterly from the Indicator - Over/Under triage trended rate • Recommend utilizing Need for Trauma Intervention (NFTI) in review of over/under triage • Expected compliance by 1.1.25

Standards of Accreditation Revision Log

January 1, 2024		
Standard	**Levels**	**Edit**
10: Physicians	Adult Level I, II and III Pediatric Level I and II	Added that Adult Level I and II Trauma Centers must have a Geriatric Provider Liaison to the trauma service who assists in the development and implementation of geriatric protocols and is available for patient consultation. The Geriatric Provider Liaison must be one of the following clinicians: a Geriatrician, a physician with expertise and focus in geriatrics, or an advanced practitioner with certification, expertise and a focus in geriatrics. This Liaison is not required to attend trauma PI meetings. • Expected compliance by 1.1.25

Standards of Accreditation Revision Log

January 1, 2024		
Standard	**Levels**	**Edit**
		Added that Level I Trauma Centers must have an Orthopedic Surgeon Liaison who has completed an orthopedic traumatology fellowship approved by the Orthopaedic Trauma Association (OTA). Trauma centers with both adult and pediatric trauma programs may share the adult OTA fellowship trained Liaison. Trauma centers wishing to have an Orthopedic Surgeon liaison who has not completed an OTA-approved orthopedic traumatology fellowship must obtain a variance from this standard. Refer to Policy AC-105: Applying for a Variance from a Standard. The request for the variance must demonstrate the Liaison meets the following criteria: • At least 50 percent of the Orthopedic Surgeon's practice is dedicated to providing care to orthopedic trauma patients. • Active trauma committee membership in a regional, national, or international organization (outside of hospital or institution) and attendance at one member meeting during the reporting period. • Participation in peer-reviewed publications/research in orthopedic trauma over the past three years. • Participation in trauma-related educational activities as an instructor or educator (outside of hospital or institution) in the past three years. • Expected compliance by 1.1.25 Clarified that Orthopedic Surgery must have a published 24/7/365 on-call schedule without gaps in coverage. • Effective immediately

Standards of Accreditation Revision Log

January 1, 2024		
Standard	**Levels**	**Edit**
		Added that the Trauma Center must provide a contingency plan in case the capability of the orthopedic surgeon, hospital or system is encumbered or overwhelmed and unable to meet standards of care for the orthopedic trauma patient with time-sensitive injuries. This plan must include EMS notification of advisory status/diversion, if applicable, evaluation of timely and appropriate care during event, and monitoring the efficacy of the process and each instance by the PIPS program. • Expected compliance by 1.1.25 Added that the orthopedic related practice management guidelines (PMG) must include specific information. The unstable pelvic and acetabular fracture PMG must include treatment guidelines for patients who are hemodynamically unstable attributed to pelvic ring injuries. The long bone fracture PMG must include treatment guidelines for patients with multiple injuries, for example, should include time to fixation and damage control versus definitive fixation strategies. The open fracture PMG must include treatment guidelines for open extremity fractures, for example, should include time to antibiotics, time to OR for operative debridement, and time to wound coverage. Added the requirement at Adult Level I-III of a geriatric patient hip fracture management PMG that should include expected time to OR. • Expected compliance by 1.1.25

Standards of Accreditation Revision Log

January 1, 2024		
Standard	**Levels**	**Edit**
		Added minimum parameters that must be included in the criteria for orthopedic surgery emergent consults that require a 30-minute bedside response expectation. Clarified that the time is measured from time of request until orthopedic surgery arrival at bedside. The minimum parameters must include: • Hemodynamically unstable, secondary to pelvic fracture • Suspected extremity compartment syndrome • Fractures/dislocations with risk of avascular necrosis (e.g., femoral head or talus) • Vascular compromise related to a fracture or dislocation • Trauma Surgeon discretion Clarified that although an Orthopedic resident in at least the second year of clinical orthopedic experience and an Orthopedic advanced practitioner can fulfill the response requirement, an Attending Orthopedic Surgeon must be involved in clinical decision-making for care of the orthopedic trauma patients. The communication with the Attending Orthopedic Surgeon must be documented in the medical record. • Expected compliance by 1.1.25
23: Radiology	Adult Level I, II and III Pediatric Level I and II	Added that a radiologist must have access to patient images and be available for imaging interpretation within 30 minutes from time of images' availability to time of interpretation when an expedited read is requested. • Expected compliance by 1.1.25
27: Geriatrics	Adult Level I, II and III	Added Hip Fractures to the required geriatric PMGs. • Expected compliance by 1.1.25

Standards of Accreditation Revision Log

June 15, 2024		
Standard	**Levels**	**Edit**
1. Commitment	Adult Level I, II, III & IV	Added to the list of considerations for inclusion in trauma activation criteria at some level Geriatric specific criteria: • Ground level fall patients on antithrombotic agents • Systolic blood pressure < 110 • Heart rate > 90 • Shock index > 1 • Ground level fall patients not on anticoagulants with GCS < 14 and signs of head trauma • Effective immediately
6. PIPS	Adult Level I, II, III & IV Pediatric Level I & II	Clarified the non-surgical trauma admissions (NSA) expectations at Level I-III trauma centers. NSA must be reviewed by the TPMD in secondary review at a minimum if one of the following is met: • NSA without trauma or other surgical consultation • NSA with ISS > 9 • NSA with identified opportunities for improvement NSA may be closed in primary review if none of the above items are met, there are trauma or other surgical consultations, ISS ≤ 9, and without identified opportunities for improvement. Clarified that the Nelson tool for evaluating NSA has been validated at adult trauma centers. Added to the Standards existing educational requirements for Trauma PI Coordinators as per PTSF Educational Offerings that participation in the PTSF PI Part 1: Theory & Overview is required within one year of appointment. Clarified the educational requirements for additional PI personnel above the required 1.0 FTE: • Participation in the STN-TOPIC Course (incl. Rural for Level IV) within one year of appointment. • Participation in the PTSF PI Part 1: Theory & Overview within one year of appointment.

Standards of Accreditation Revision Log

June 15, 2024		
Standard	**Levels**	**Edit**

		• Maintain 75 percent attendance at the Trauma PIPS:
		  • Multidisciplinary Peer Review PI Meeting
		  • Multidisciplinary Trauma Program Operational Meeting
		• Eight hours of trauma-related continuing education per year.
		• Effective immediately

10. Physicians	Adult Level I, II, III & IV
	Pediatric Level I & II
		Revised the requirements for Level I-III physicians on an alternate pathway. Physicians on an alternate pathway prior to January 1, 2026 must complete 36 hours in three years or 12 hours annually of trauma-related CME. For pediatric trauma care, nine of 36 hours must be pediatric-specific CME. Physicians approved for an alternate pathway after January 1, 2026 must:
		• Complete 36 hours in three years or 12 hours annually of trauma-related CME. For pediatric trauma care, nine of 36 hours must be pediatric-specific CME.
		• All general surgeons, all neurosurgeons, all orthopedic surgeons, all emergency department physicians, and the anesthesiology liaison:
		  • Current ATLS certification.
		  • Active membership in at least one national or regional trauma organization and must have attended at least one meeting during the reporting period.
		  • Attendance of 50 percent or more at the trauma multidisciplinary PIPS committee meeting during the reporting period.
		• Processes and outcomes of care comparable to that of other physicians.
		Additionally, physicians who are no longer board eligible are unacceptable for inclusion on the trauma team. The ICU surgical director or co-director is not eligible for an alternate pathway.
		• Expected compliance by 1.1.26
		
		Added that the Level III anesthesiology liaison must be board certified or board eligible.
		• Expected compliance by 1.1.26

Standards of Accreditation Revision Log

June 15, 2024		
Standard	**Levels**	**Edit**
		Added that Level I-III emergency department directors who completed primary training prior to 2016 and are board certified in a specialty other than emergency medicine or pediatric emergency medicine may serve as the emergency department director. • Expected compliance by 1.1.25 Revised that Level I-II surgical director or co-director is not eligible for an alternate pathway. • Expected compliance by 1.1.26 Revised that at Level I-III centers the radiology board certification/eligibility requirement is limited to only the radiology liaison. • Effective immediately Added that Level I-III physicians on the ophthalmology service cannot be a surgeon with ophthalmology expertise. • Expected compliance by 1.1.26 Revised that at Level III-IV trauma centers telemedicine is an acceptable method of consult for non-surgical subspecialties, for non-trauma indications, in admitted patients. Telemedicine, by itself, is not an acceptable method of consult for surgical specialties or for trauma indications. Injured patients must be admitted to an onsite service and not a telemedicine service. • Effective immediately

Standards of Accreditation Revision Log

June 15, 2024		
Standard	**Levels**	**Edit**
16. Emergency Department	Adult Level I, II, III & IV Pediatric Level I & II	Clarified that there must be a policy defining the frequency of vital signs. Trauma alert patients must have hourly vital sign documentation beginning with ED arrival through post-ED transport time or at the time a physician/provider order extends vital signs to an adjusted, longer frequency. Non-trauma alert patients must have expected vital sign frequency defined by the trauma center which may be a tiered expectation based on triage level, such as emergency severity index levels. Vital signs include respirations, blood pressure, and pulse at a minimum. • Effective immediately
27. Geriatrics	Adult Level I, II, III & IV	Added that a frailty screening tool should be used in the evaluation of the geriatric trauma patient. The Trauma-Specific Frailty Index is a validated screening tool. Included the reference "ACS COT Best Practices Guidelines Geriatric Trauma Management" https://www.facs.org/media/ubyj2ubl/best-practices-guidelines-geriatric-trauma.pdf • Effective immediately

Standards of Accreditation Revision Log

August 15, 2024		
Standard	**Levels**	**Edit**
10. Physicians	Adult Level IV Pediatric Level I & II	Clarified the requirements for a Level I-II Pediatric Trauma Center's emergency department (ED) physicians. Physicians must be board certified or board eligible in emergency medicine or pediatric emergency medicine. Physicians who completed primary training prior to 2016 and are board certified in a specialty other than emergency medicine or pediatric emergency medicine may participate in trauma care. • Expected compliance remains by 6.1.25 Clarified the requirements for Level IV Trauma Center's general surgery if utilized as a trauma service. • General surgeons must be present in the ED for major resuscitations and at the bedside of the patients with highest-level trauma activations within 30 minutes from patient arrival if the hospital has defined general surgery participation as being involved in trauma activations. This provision must be included in an institutional policy. • General surgeons must be present in the operating room for surgical procedures related to their specialty if the hospital has defined general surgery participation as being involved in operative interventions beyond wound management. This provision must be included in an institutional policy. • This is a clarification, therefore effective immediately.
19. Intensive Care Unit	Adult Level I, II & III Pediatric Level I & II	Clarified that trauma patients must be admitted to, or evaluated by, a surgical service. Non-surgical specialists should be consulted as necessary; however, it is recommended the trauma service retain care of the critically ill trauma patient until all acute traumatic issues are resolved. Decisions to admit a trauma patient to a non-surgical specialist should involve collaboration with the trauma surgeon, and the trauma service should remain involved in the care of the critically ill trauma patient until all acute traumatic issues have been resolved. Additionally, the word primary is removed when referring to the admitting trauma surgeon/ service. • This is a clarification, therefore effective immediately.

Standards of Accreditation Revision Log

January 1, 2025		
Standard	**Levels**	**Edit**
3. Trauma Program Medical Director	Adult Level I, II, III & IV Pediatric Level I & II	Added the existing requirements from PTSF policies that new Trauma Program Medical Directors must participate in the PTSF Site Survey / Accreditation Education within the year prior to their first survey (All Levels) and panel review (Level IV only). • Effective immediately
4. Trauma Program Manager	Adult Level I, II, III & IV Pediatric Level I & II	Added the existing requirements from PTSF policies that new Trauma Program Managers must participate in the PTSF Site Survey / Accreditation Education within the year prior to their first survey (All Levels) and panel review (Level IV only). • Effective immediately
6. PIPS	Adult Level I, II, III & IV Pediatric Level I & II	Added the recommendation for new trauma Performance Improvement Coordinators to participate in the PTSF Site Survey / Accreditation Education within the year prior to their first survey (All Levels) and panel review (Level IV only). • Effective immediately Clarified the language related to timeliness of response in the ICU to track: timeliness of response to emergency/unplanned situations in the ICU. • Effective immediately
8. Injury Prevention, Public Education & Outreach	Adult Level I, II & III Pediatric Level I & II	Clarified that the acceptable mental health screenings focus on identifying patients at high risk of post-traumatic stress disorder and/or depression. • Changed expected compliance date to 1.1.26 Changed the expected compliance date for the new substance abuse screening, brief intervention and referral to treatment standard to 1.1.26.

Standards of Accreditation Revision Log

January 1, 2025		
Standard	**Levels**	**Edit**

10. Physicians	Adult Level IV	Revised the Orthopedic Surgery Standards. The hospital must choose one of the following three options:
		• Orthopedic surgery will not participate in the care of the injured patient.
		• Orthopedic surgery as an operative service. Must meet all the following requirements
		  ○ Published on-call schedules must be maintained with 24/7/365 coverage with physicians.
		  ○ Orthopedic surgeons must maintain applicable specialty board certification/ eligibility OR maintain 8 hours of trauma-related CME annually (completion of an internal educational program is acceptable).
		  ○ An identified orthopedic surgeon Liaison must be identified and attend a minimum of 50% of the multidisciplinary rauma peer review meetings. The attendance benchmark may be shared with a second identified orthopedic surgeon.
		  ○ Must have a minimum of one intra-compartmental pressure monitoring device within the hospital.
		• Orthopedic surgery as a non-operative service. Must meet all the following requirements:
		  ○ Orthopedic surgeons must maintain applicable specialty board certification/ eligibility OR maintain 8 hours of trauma-related CMR annually (completion of an internal educational program is acceptable).
		  ○ Recommend identifying an orthopedic surgeon Liaison who can attend the multidisciplinary trauma peer review meetings on an as needed bases when orthopedic cases are discussed.
		  ○ Must have a minimum of one intra-compartmental pressure monitoring device within the hospital.
		• Effective immediately.

Standards of Accreditation Revision Log

January 1, 2025		
Standard	**Levels**	**Edit**
11. Advanced Practitioners	Adult Level I, II & III Pediatric Level I & II	Clarified that APs functioning as a member of the trauma service caring for trauma patients in the ICU must maintain ATLS. • Effective immediately
19. Intensive Care Unit	Adult Level I, II & III Pediatric Level I & II	Level I-II: Revised the ICU coverage for emergency/unplanned situations must be a physician. • A physician must be available within 15 minutes of request for emergency/planned situations. 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. • If the trauma attending is providing ICU coverage, a back-up ICU attending must be identified and available. • A resident can be used to meeting this standard. ○ If a PGY-1, they must be in the second half of the first year within the institution. ○ Must maintain ATLS ○ If a PGY-1-3, they must be supervised by a general trauma surgeon or a senior resident in general surgery (PGY-4 or above). The PGY 4 or above cannot be considered a replacement for the attending surgeon. Level III: Included the ICU coverage that is currently expected in the Physician Standard. • 24-hour coverage of all trauma patients and available within 15 minutes of request for emergency/unplanned situations. • Coverage may include a surgeon, intensivist, hospitalist, or advanced practitioner. • Expected immediately

Standards of Accreditation Revision Log

January 1, 2025		
Standard	**Levels**	**Edit**
23. Radiology	Adult Level I & II Pediatric Level I & II	Clarified the expectation for Interventional Radiology (IR). • IR must be available 24-hours a day. • IR procedure for hemorrhage control that requires rapid intervention must begin within 60 minutes. • The trauma program must define hemorrhage control in addition to the parameters of an emergent IR procedure. • This is a clarification, effective immediately
Appendix D. Guideline and Policy Reference Tool	Adult Level I, II, III & IV Pediatric Level I & II	Removed the Policy for first responders. Revised the policy expectation for timeliness of response to emergent consults or emergency/unplanned situations, and patient criteria for: Physicians to the ICU, anesthesia (outside of the trauma resuscitation area), radiology (interventional), orthopedics and neurosurgery as applicable.

Standards of Accreditation Revision Log

March 1, 2025		
Standard	**Levels**	**Edit**
1. Commitment	Adult Level I, II, III & IV Pediatric Level I & II	Updated the language and added criteria to the suggested criteria to be considered for inclusion in the institution's trauma activation criteria at some level. Summary of the update: • Miles per hour has been eliminated from the criteria. • All mention of a diagnosed injury has been clarified to be a suspected injury. • Additions include the need for extrication for entrapped patient in an automobile crash, a child (0-9 years) unrestrained or in an unsecured child safety seat, and suspicion of child abuse. • Revised criteria for Falls to a height > 10 feet (all ages), Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact. • Revised tourniquet criteria to active bleeding requiring a tourniquet or wound packing with continuous pressure. • Expanded motorcycle crash criteria to Rider separated from transport vehicle with significant impact (for example, motorcycle, ATV, horse, electric scooter, etc.). • This is a clarification, effective immediately Revised the Trauma Activation Criteria reference to the ACS National Guidelines for the Field Triage of Injured Patients. • This is a clarification, effective immediately
13. Nursing	Adult Level I, II, III & IV Pediatric Level I & II	Updated details related to nursing annual continuing education. Summary of the update: • Added the Pediatric Trauma Across the Care Continuum (PTACC) to the list of advanced trauma courses that can be in the maximum of 12 continuing education hours in a 3-year period. • In the list of trauma advanced certifications that do not require maintaining continuing education logs, updated the medical surgical certification credential to MEDSURG-BC, and added Certified Burn Registered Nurse (CBRN). • This is a clarification, effective immediately

Standards of Accreditation Revision Log

August 15, 2025		
Standard	**Levels**	**Edit**
5. Registry	Adult Level I, II & III Pediatric Level I & II	Added the timeframe of within six months of position appointment for when an ICD course (version in use) must be completed by a Registrar. • Expected compliance by 6.1.26 Changed the expected compliance date for Level I-III centers to have one registrar with a current certification as a Certified Abbreviated Injury Scale Specialist (CAISS) standard to 6.1.27.
8. Injury Prevention, Public Education & Outreach	Adult Level IV	Revised the SBIRT Standard to match the Level I-III Standard. Revised to require substance misuse screenings and brief interventions for all PTOS admissions over 12 years of age, removing a minimum length of admission. The screening methods are at the discretion of the individual trauma center but must include a validated tool or blood/urine laboratory testing. The brief intervention must be completed by appropriately trained staff as determined and credentialed by the institution (could include nurses, social workers, etc.) and must occur prior to patient discharge. Included the reference "Best Practice Guidelines Screening and Intervention for Mental Health Disorders and Substance Use and Misuse in the Acute Trauma Patient" • Expected compliance by 6.1.26
9: Research	Adult Level I	Clarified that of four required extramural (external audience) educational presentations, one must be by a trauma program physician faculty member whereas three can be by a physician, advanced practitioner, nurse or clinical pharmacist. • This is a clarification, effective immediately
10: Physicians	Adult Level IV	Added requirement for the medical service physicians who are admitting injured patients to have evidence of four hours of annual trauma-related continuing education. In lieu of CME, demonstration of completion of the trauma program internal educational program (IEP) is acceptable. • Expected compliance by 1.1.27

Standards of Accreditation Revision Log

January 1, 2026		
Standard	**Levels**	**Edit**
1. Commitment	Adult Level I, II, III & IV Pediatric Level I & II	**Trauma Activation Criteria Clarification** The criterion previously labeled "Emergency Physician Discretion" has been revised to "Emergency Physician request to activate beyond listed criteria." Activation is mandatory when any listed criteria are met; The attending physician or trauma team leader may not decline activation for patients meeting these criteria. Centers may continue to use the term "Emergency Physician Discretion" in their activation policy language. • Effective immediately **Level IV: Response to Highest-Level Activation** Emergency physician or advanced practitioner must be at the bedside within 15 minutes of patient arrival or activation if the activation is called after the patient has arrived. Compliance must be monitored; each provider must maintain ≥ 80% compliance. • Effective immediately
2. Capacity & Ability	Adult Level I, II & III Pediatric Level I & II	**Hemodialysis Clarification** Added language specifying that capability may include intermittent hemodialysis or any form of Continuous Renal Replacement Therapy (CRRT) to support patients with acute renal failure. • Effective immediately
4: Trauma Program Manager	Adult Level I & II Pediatric Level I & II	**Conference Attendance** Clarified that TPMs at Level I & II centers must attend at least one national trauma organization conference every three years. This requirement is not limited to member meetings; therefore, attendance at TQIP is acceptable. • Effective immediately

Standards of Accreditation Revision Log

January 1, 2026		
5: Registry	Adult Level I, II & III Pediatric Level I & II	**Registry Staffing** Centers may outsource registry abstraction to off-site personnel with the expectation that: i. Data remains readily available for local PI activities. ii. The center maintains oversight of data quality and ensures that opportunities for data quality improvement are identified and actioned. • Effective immediately **Continuing Education (CE) for New Registrars**, For registrars appointed to the position during the survey cycle, trauma-related CE requirements will be prorated based on start date. • Effective immediately
8. Injury Prevention, Public Education & Outreach	Adult Level IV	**SBIRT** Updated the compliance date for the SBIRT Standard. • Effective January 1, 2026
9. Research	Adult Level I Pediatric Level I	**Clarification Regarding Published Articles** The requirement for three trauma-related publications has been clarified: these must be authored by adult or pediatric trauma surgeons, rather than members of the general surgery team. Additionally, case series must be specific to trauma patients. • Effective immediately
10. Physicians	Adult Level I, II, III & IV Pediatric Level I & II	**Response to Highest-Level Activation** Provider must be at bedside within the expected timeframe. Compliance must be monitored; each provider must maintain ≥ 80% compliance. i. Level I & II: Attending surgeon must be at the bedside within 15 minutes of patient arrival or activation if the activation is called after the patient has arrived. ii. Level III: Attending surgeon must be at the bedside within 30 minutes of patient arrival or activation if the activation is called after the patient has arrived. iii. Level IV: Emergency physician or advanced practitioner must be at the bedside within 15 minutes of patient arrival or activation if the activation is called after the patient has arrived. • Effective immediately

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January 1, 2026		
		Examples of Unapproved Physician Specialty Certification Boards The existing Standards state that recognized physician specialty certification Boards are those recognized by the American Board of Medical Specialties, American Osteopathic Association or Royal College of Physicians and Surgeons of Canada. Added explicit examples to the Standards of unapproved Boards: National Board of Physicians and Surgeons, American Board of Podiatric Medicine, American Board of Foot and Ankle Surgery, and American Board of Cosmetic Surgery. • Effective immediately **Neurosurgery** Level III: If a Level III center has Neurosurgeons participating in the care of trauma patients, they must meet Level II Standards for availability and timeliness. • Effective immediately **Orthopedic Surgery Liaison** Level I: Adult and pediatric trauma programs may share an Orthopaedic Trauma Association (OTA) fellowship-trained liaison only if credentialed to care for both adult and pediatric patients at the center. • Effective immediately **Ophthalmology Coverage** Level I & II: Centers must have continuous 24/7/365 availability or a contingency plan to ensure ophthalmic trauma care. If a contingency plan is used, it should ensure optimal and timely care. • Effective immediately
12. Residency Programs	Adult Level I, II & III Pediatric Level I & II	**ATLS Requirement Clarification** Any resident rotating to the trauma service (including responding to activations or providing ICU care) and Emergency Medicine residents involved in trauma care must maintain ATLS certification. • Effective immediately

Standards of Accreditation Revision Log

January 1, 2026		
19. Intensive Care Unit	Adult Level I & II Pediatric Level I & II	**Coverage Clarification** ICU coverage has been revised from "physicians only" to clinicians – including residents, fellows, attending physicians or advanced practitioners - who must be continuously available and respond at the bedside within 15 minutes of request. • Effective immediately
23. Radiology	Adult Level I, II & III Pediatric Level I & II	**Interventional Radiology (IR)** Level I & II: Necessary human resources include physicians, nurses, technologists, and physical resources include an angiography suite or hybrid OR. • Effective immediately Level I & II: Definition of hemorrhage control for emergent IR procedures: patients requiring an emergent response for hemorrhage control are those where blood transfusion has been initiated and there is a confirmed blood pressure less than 90 mmHg at any time prior to angioembolization in adults, or age-specific hypotension in children. • Effective date January 1, 2027 Level III: If a Level III center provides IR services for trauma patients, the requirements depend on the type of participation, as defined by the trauma program: i. Emergent Interventions: If IR will be used for emergent interventions for hemorrhage control during resuscitation, the center must meet Level II Standards, including 24/7/365 availability and request to arterial puncture for hemorrhage control must be within 60 minutes. ii. Non-Emergent Interventions: If IR will be limited to only non-emergent interventions, such as IVC filter placement, chest tube insertion or management of pseudoaneurysms, 24/7/365 availability is not required. • Effective immediately **Magnetic Resonance Imaging (MRI)** Level III: If a Level III center provides MRI services for trauma patients, the requirements are dependent on the type of participation, as defined by the trauma program: i. Emergent Diagnostics: If MRI will be used for

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		emergent diagnostics, the center must meet Level II Standards, including 24/7/365 availability and completion of STAT studies within 2 hours. ii. Non-Emergent Use: If MRI will be limited to only routine, non-emergent tests, 24/7/365 availability is not required. • Effective immediately
Appendix A	Adult Level III & IV	**Level III and IV Mandatory Transfer Criteria Updated** Updated the list of conditions requiring transfer: i. It should be a rare event with extenuating circumstances for a patient meeting mandatory transfer criteria to remain at a Level III or IV trauma center. ii. Previous requirement to transfer all patients with an abnormal CT has been revised. Transfer is now required only for patients with any of the following: a. Abnormal CT findings in a patient who takes warfarin, aspirin, platelet inhibitors, or direct oral anticoagulants (DOAC) b. Subdural hematoma ≥ 4 mm c. Epidural hematoma d. Intraparenchymal hemorrhage ≥ 4 mm e. Subarachnoid hemorrhage ≥ 3 sulci and ≥ 1 mm f. Intraventricular hemorrhage g. Midline shift or cerebral edema iii. Clarified that bilateral pulmonary contusion with PaO2/FIO2 ratio < 300 requires transfer. iv. Removed requirement to transfer patients with rib fractures and a pulmonary contusion; however, rib fractures with flail chest continue to require transfer. v. Removed requirement for Level III trauma centers to transfer patients requiring damage control laparotomy. • Effective immediately

Standards of Accreditation Revision Log

January 1, 2026		
Appendix C	Adult Level IV	**Admission Considerations for Level IV Trauma Centers** Updated the admission considerations for Level IV trauma centers. i. A subset of minor traumatic brain injury patients may be admitted if the center has a practice management guideline for their care. Meets each of these conditions: a. With or without loss of consciousness b. Normal neurological examination c. Not intoxicated d. Not taking warfarin, aspirin, platelet inhibitors, or DOACs e. Diagnosis limited to one of the following: f. Subdural hematoma < 4 mm g. Intraparenchymal hemorrhage < 4 mm h. Subarachnoid hemorrhage < 3 sulci and < 1 mm ii. Rib fractures, with or without the presence of pulmonary contusion, may be admitted if the center has a practice management guideline for these patients. • Effective immediately