

# Trauma Center Standards



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Health

### TRAUMA CENTER STANDARDS

Section 395.401(2) and (3), Florida Statutes, directs the department to adopt by rule, standards for approval and verification of trauma centers. This pamphlet contains the trauma center standards referenced in section 64J-2.011, Florida Administrative Code.

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## PREFACE

The Roy E. Campbell Trauma Act of 1990 established the specific steps for an individual general acute care hospital in Florida to follow when seeking to provide trauma care services. Included in these steps are the requirements that the hospital provide a written application to the Department of Health Division of Emergency Medical Operations, Office of Trauma, for review and approval and that the hospital accept an on-site survey by department staff and contracted out-of-state surveyors with expertise in trauma patient care. This pamphlet, "Trauma center Standards," details the standards a hospital shall meet to successfully complete the trauma center application process. The hospital shall also maintain these standards to operate as a trauma center.

The contents of this pamphlet are based in part on the standards published in the 1998 version of this pamphlet, in part on the guidelines published in the American College of Surgeons' *Resources for Optimal Care of the Injured Patient: (2006)*, and in part on the experience gained during site surveys conducted at Florida trauma center applicant hospitals since 1990.

This latest edition of the standards pamphlet contains many changes. Most notable is that this document now contains four chapters: a definitions chapter and a chapter that describes the minimum approval standards for each of the three options available for a hospital seeking to operate as a trauma center.

Chapter One consists of definitions of words, phrases, and acronyms used throughout the document to meet the unique requirements of the Florida program. Some definitions, for example, "trauma team," may not necessarily match definitions in documents published by other organizations or by other states.

In Chapters Two through Four, several individual standards begin with an introduction contained within a shaded box. Also, several standards have general information sections contained within shaded boxes. The information found in these shaded boxes is **not** measurable during the site survey and it is not mandatory for a hospital to comply with these remarks. The requirements described in the body of the standard that follows the introduction or general information sections, however, are mandatory. During a review of a hospital, the state will employ the standards as representing the **minimum** acceptable level of measure.

The standards published in this document are subject to revision at any time through the rule promulgation process. Any hospital granted approval to operate as a provisional trauma center or granted a full seven-year Certificate of Approval shall comply with all revisions published herein, beginning the date the amended rule becomes law.

## CHAPTER ONE

**INTRODUCTION:** The following definitions are explanations of words, phrases, and acronyms contained in the text of the subsequent chapters. As the standards found in this document are, in many cases, unique to the Florida trauma system, the definitions found in this chapter may also be unique and may not necessarily match those provided by other states or organizations that develop standards or guidelines for trauma centers.

### DEFINITIONS

1. **ATLS** Advanced Trauma Life Support course approved by the American College of Surgeons.
2. **Arrive Promptly** Arriving within 30 minutes, 90 percent of the time, from inside or outside the hospital to a specified area within the trauma center when summoned (for example, voice page, telephone, or beeper) to provide evaluation, consultation, treatment, or other defined services. The interval between the delivery of the patient at the trauma center and the arrival of the respondent should not have a measurably harmful effect on the course of patient management or outcome.
3. **Board Certified** Physicians certified by a medical specialty board recognized by the American Board of Medical Specialties (ABMS), American Osteopathic Association, a Canadian board, or other foreign board if recognized by the ABMS as an equivalent.

### Continuing Medical Education (CME)

Defined educational activities for practicing physicians, often resulting in approved credit hours from the American Medical Association, state medical society, a medical school, or hospital. For the purposes of this document, the Accreditation Council on Continuing Medical Education (ACCME), the American Osteopathic Association (AOA), or an appropriate state medical society recognized by the ACCME or AOA to accredit state programs shall approve all CME.

Indicates the year of post-graduate medical training (residency program) involvement of an anesthesiology resident, for example, CA-3.

6. **Contact Hour** The term used for continuing education credit, as defined by the Florida Board of Nursing. One contact hour equals 50 minutes of course content.

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7. **Continuing Education** Planned educational activities intended to enrich the educational and experiential background of the health professional.
8. **Credentialed** A process in which an individual hospital grants specific medical practice privileges to physicians in recognition of levels of education, training, or experience.
9. **Critical** This term describes any trauma patient with potentially life- or limb-threatening physiological variations or a variation in the level of consciousness.

10. **Emergency Medical Service (EMS) System**

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The arrangement of personnel, facilities, and equipment for the effective and coordinated delivery of prehospital emergency medical services required for the prevention and management of incidents. These incidents may occur as a result of a medical emergency, an injury, a natural disaster, or a similar situation.

11. **In-Hospital Trauma Alert**

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An alert issued by trauma center personnel to all trauma team members to arrive promptly to the trauma resuscitation area for a trauma alert patient not previously identified by EMS.

12. **In-Hospital Trauma Registry**

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A hospital wide database that integrates medical and system information related to trauma patient diagnosis and the provision of trauma care.

13. **Post-Anesthesia Recovery/Post- Anesthesia Care Unit (PAR/PACU)**

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This is an area designated by the hospital for monitoring and treating patients following anesthesia.

- 14. **Pediatric Patient**                      A patient with anatomical and physical characteristics of a person 15 years or younger.
- 15. **Pediatric Trauma Alert Patient**

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A patient with the anatomical and physical characteristics of a person 15 years of age or younger who meets the pediatric trauma alert assessment criteria described in Rule 64J-2.005(2), (3), or (4), Florida Administrative Code.

16. **Post-Graduate Year (PGY)**

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Indicates the year of post-graduate medical training (residency program) involvement of a resident, for example, PGY-2.

17. **Primary Care Specialty** Includes internal medicine, family practice, general surgery, general practitioner, and pediatric medicine. Hospitals should use caution when using pediatricians to see adult patients in the emergency department.

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18. **Quality Management (QM)**

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The utilization of a comprehensive approach, with measurable standards and indicators, to continuously monitor, evaluate, and improve the quality of trauma patient care. Often referred to as Total Quality Management (TQM), Quality Assurance (QA), and Continuous Quality Improvement (CQI).

19. **Trauma Alert** An alert (notification) made by an EMS provider informing a hospital or trauma center that they are en route with a patient meeting department-approved triage criteria consistent with trauma alert scorecard criteria as provided in Rules 64J-2.004 and 64J-2.005, Florida Administrative Code.
20. **Trauma Call** Block(s) of time within a 24-hour period in which designated trauma team members shall be available to arrive promptly to a specified area within the trauma center when summoned (for example, via voice page, telephone, or beeper) to provide evaluation, consultation, treatment, or other defined services.
21. **Trauma Program Manager**

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A registered nurse who meets the requirements delineated in Standard II.D.2.

22. **Trauma Nursing Core Course (TNCC)**

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A course developed and presented by the Emergency Nurses Association that in part will meet the minimum educational standard for a nurse requiring trauma specific education.

**Management Committee**

23. **Trauma Quality**

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A multidisciplinary committee established to monitor, evaluate, and improve the quality of trauma patient care.

- 24. **Trauma Registrar** An individual who demonstrates the ability to accurately perform hospital-based coding and injury scaling and who provides trauma-related data to the trauma service.
- 25. **Trauma Service** A dedicated and defined service within the organizational structure of the hospital designed to coordinate trauma patient care, trauma-related training, and trauma quality management.
- 26. **Trauma Medical Director** A physician who meets the requirements delineated in Standard II.D.1.
- 27. **Trauma Surgeon** A physician who meets the requirements delineated in Standard III.A.2 and 3.
- 28. **Trauma System** A system of organized patterns of trauma readiness and response services based on public and private agreements and operational procedures, in accordance with approved local trauma plans, as provided in section 395.401(2)(a)(c), Florida Statutes (1997).

29. **Trauma Team**

A group of health care practitioners available for the resuscitative phase of trauma patient care.

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## CHAPTER TWO

### LEVEL I TRAUMA CENTER STANDARDS

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## STANDARD I -- ADMINISTRATIVE

**INTRODUCTION:** From an institutional perspective, the willingness of the hospital's board of directors and administration to commit to allocating adequate resources and personnel to accept and care for trauma patients is essential for the successful operation of a trauma center.

- A. There shall be demonstrated commitment to trauma care by the hospital's board of directors, administration, medical staff, and nursing staff to treat any trauma patient presented to the facility for care. Methods of demonstrating commitment to the trauma center and system by the hospital shall include, but not be limited to, the following:
1. A board of directors' resolution of commitment of hospital financial, human, and physical resources to treat all trauma patients at the level of hospital's approval, regardless of color creed, sex, nationality, place of residence, or financial class.
  2. A board of directors' resolution of commitment to participate in the state regional trauma system and the local or regional trauma system, if one exists.
  3. Development of a trauma budget that provides sufficient support to the trauma service and program within the hospital.
  4. Institution of procedures to document and review all transfers with neighboring hospitals and trauma centers for transfers into and out of the hospital.
  5. Establishment of policies and procedures for the maintenance of the services essential to a trauma center and system as outlined in this standards document. (See Standard II.C.)
  6. Providing patient care data as requested by the department or its agent.
  7. Establishment of formal written patient transfer agreements with neighboring hospitals and trauma centers.
  8. All trauma centers must have clearly defined transfer protocols that include the types of patients, expected timeframe for initiating and accepting a transfer, and predetermined referral centers for outgoing transfers
    - In all trauma centers, the decision to transfer an injured patient must be based solely on the needs of the patient, without consideration of their health plan or payer status
    - In all trauma centers, when trauma patients are transferred the transferring provider must directly communicate with the receiving provider to ensure safe transition of care this communication may occur through a transfer center
- B. In all trauma centers, the institutional governing body, hospital leadership, and medical staff must demonstrate continuous commitment and provide the necessary human and physical resources to properly administer trauma care consistent with the level of verification throughout the verification cycle. Methods of demonstrating commitment include:
1. Hospital board of directors (or other administrative governing authority) approval of the establishment of the trauma center at the level specified and of the

2. application for verification
  2. Commitment to adherence to the standards required for the level of verification
  3. Commitment to ensuring that the necessary personnel, facilities, and equipment are made available to support adherence to the standards
- C. The hospital administration must demonstrate support for the research program (level I). Demonstration of support of the research program includes documentation such as the following:
1. Basic laboratory space
  2. Sophisticated research equipment
  3. Advanced information systems
  4. Biostatistical support
  5. Salary support for basic and translational scientists, or seed grants for junior investigators
- D. Commitment to postgraduate education
- E. In all trauma centers, diversion protocols must be approved by the Trauma Medical Director and include:
1. Agreement of the trauma surgeon in the decision to divert
  2. A process for notification of dispatch and EMS agencies
  3. A diversion log to record reasons for and duration of diversions
    - All trauma centers must not exceed 400 hours of diversion during the reporting period
- F. The hospital's chief executive officer (CEO) has overall responsibility for compliance with all trauma center standards. The CEO or his or her designee shall ensure that all staff involved with the care of the trauma patient are aware of their responsibilities as required by the trauma center standards.
- G. The hospital shall ensure that the trauma medical director is responsible and accountable for administering all aspects of trauma care. Therefore, the trauma medical director shall be empowered to enforce the trauma center standards with other medical and clinical departments in the hospital. The trauma program manager shall perform under the direction of the trauma medical director and shall interact with all departments on behalf of the medical director.
- H. When there are issues that the trauma medical director has been unable to resolve through the hospital's organizational structure, the hospital shall provide a specific mechanism to ensure that the medical staff or CEO address such unresolved issues. This mechanism shall include direct consultation with the affected services, including, but not limited to, trauma and emergency services.

- I. The trauma medical director is responsible for credentialing and attesting to the medical ability of all personnel who provide trauma services. Appointment or removal of personnel from the trauma service shall be done by the trauma medical director pursuant to procedures, policies, or bylaws of the hospital.
- J. The hospital shall ensure that the procedures, policies, or bylaws address circumstances in which the trauma medical director determines that an attending physician's actions compromise the health, safety, or welfare of trauma patients. In such case, procedures, policies, or bylaws shall address options such as temporary or permanent removal of the physician from the trauma service, or other appropriate remedial measure.
- K. The trauma medical director shall have oversight responsibility for trauma patient care and shall monitor trauma patient care on an ongoing basis as delineated in Standard XVIII.
- L. When the trauma medical director is unavailable to the trauma service (such as vacation, out-of-town conference, or illness), the medical director shall delegate authority to another trauma surgeon to carry out the above administrative functions.

## STANDARD II -- TRAUMA SERVICE

**INTRODUCTION:** From a personal leadership perspective, the qualifications of the trauma medical director and the trauma program manager should reflect leadership, planning, performance improvement, and trauma care expertise. These individuals lead the trauma care team and are responsible for the organizational integrity of the program. As such, it is desirable that these individuals obtain greater than 50 percent of their continuing education credits outside the hospital. It is also desirable that they participate in the development or operation of a local, regional, and statewide trauma care system and be involved in local or regional EMS services and local or regional trauma agency activities. The hospital might consider providing additional resources, such as a quality improvement staff member and clerical support, to assist with these activities.

- A. Organizational Requirements -- The trauma service shall be a dedicated and defined service within the organizational structure of the hospital as evidenced by the following:
  - 1. A designated medical director contracted to direct and oversee the operation of the trauma service. The medical director position for the trauma service shall be paid by the hospital and documented by a written job description and organizational chart.
  - 2. A designated trauma program manager for the trauma service. The trauma program manager position for the trauma service shall be paid by the hospital and documented by a written job description and organizational chart.
  - 3. In all trauma centers, there must be at least 1.0 FTE dedicated performance improvement (PI) personnel per 1000 admitted patients annually. The count of entries is defined as all patients that meet NTDS inclusion criteria, and those patients who meet inclusion criteria for hospital, local, regional, and state purposes
  - 4. A trauma registrar for the trauma service. The trauma registrar position for the trauma service shall be paid by the hospital and documented by a written job description and organizational chart.

- a. A recommended staffing model is: one full time equivalent trauma registrar will be required to process more than 750 to 1,000 patients annually
- b. In all trauma centers, there must be at least 0.5 FTE dedicated to the trauma registry per 250 annual patient injuries the count of entries is defined as all patients who meet NTDS inclusion criteria, and those patients who meet inclusion criteria for hospital, local, regional, and state purposes
- c. In all trauma centers, all registrars must fulfill all of the following requirements:
1. Participate in and pass the most recent version of the AAAM's abbreviated injury scale (AIS) course
  2. Participate in a trauma registry course that includes all of the following content:
    - Abstraction
    - Reports/report analysis
    - Data management
    - Data validation
    - HIPAA
  3. Participate in an ICD – 10 course or in ICD – 10 refresher courses every five years
  4. Accrue at least 24 hours of trauma related CE during the verification cycle



5. At least one qualified trauma surgeon (as described in Standard III.A) to be in-hospital and on primary trauma call at all times to provide trauma service care.
  6. At least one qualified trauma surgeon (as described in Standard III.A) to be on backup trauma call at all times to provide trauma service care.
  7. At least one qualified pediatric trauma surgeon for the trauma service (as described in Standard III.A.3.b).
  8. The trauma program must have the following designated liaisons:
    - a. Board certified or board eligible emergency medicine physician
    - b. Board certified or board eligible orthopedic surgeon
      - In level I trauma centers, the orthopedic trauma surgeon liaison must have completed an orthopedic traumatology fellowship approved by the Orthopedic Trauma Association (OTA). In level I pediatric trauma centers, this requirement may be met by having a pediatric fellowship trained orthopedic surgeon
        1. Level One pediatric trauma centers May share the adult orthopedic trauma surgeon liaison from a level I trauma center to meet this requirement
    - c. board certified or board eligible anesthesiologist
    - d. Board certified or board eligible neurosurgeon
    - e. Board certified or board eligible radiologist
    - f. Board certified or board eligible Intensive Care Unit (ICU) physician
    - g. Geriatric provider
      - In level I and two trauma centers, the geriatric liaison may be a geriatrician, or a physician with expertise and focus in geriatrics, or in APP was certification, expertise, and a focus in geriatrics
        1. The role of the liaison is to assist in the development and implementation of geriatric protocols and to be available for patient consultation
- B. Administrative Requirements -- The trauma medical director shall ensure that:
1. Policies and procedures relevant to care of the injured patient are developed and enforced
  2. Ensure providers meet all requirements and adhere to institutional standards of practice
  3. Work across departments and/or other administrative units to address deficiencies in care
  4. Determine (with their liaisons) provider participation in trauma care, which might be guided by findings from the PIPS process or an Ongoing Professional Practice Evaluation (OPPE)
  5. Oversee the structure and process of the trauma pips program
  6. The following physicians participating on the trauma service meet and maintain the qualifications, certifications, and trauma-related continuing medical education (CME) data as required in Standards III.A and B and Standard V.B:
    - a. Pediatric and general trauma surgeons.
    - b. Emergency physicians.
  7. As surgeons change, the trauma medical director must ensure that the new

surgeons have the qualifications delineated in Standard III.A.3 and that they sign the General Surgeons Commitment Statement. The trauma service shall keep a current and up-to-date commitment statement on file in the hospital's trauma center application at all times for Department of Health review.

8. The trauma service maintains morbidity and mortality information, including discussions and actions by the quality management committee described in Standard XVIII.
9. Nursing personnel have completed their trauma-related continuing education requirements as delineated in Standard VIII.
10. Evidence is on file of active membership of the trauma medical director and the trauma program manager in the local or regional trauma agency, or local health planning council or advisory group if no trauma agency exists. Active membership is evidenced by attendance by either person at no less than 75 percent of the scheduled meetings.
11. All trauma centers must participate in the regional and/or statewide trauma system.
12. A written plan is on file that describes the hospital's interaction with the local or regional trauma agency, if one exists, and other county and regional medical response or treatment resources during disaster and mass casualty situations.
13. All trauma centers must participate in regional disaster/emergency management committees, healthcare coalitions, and regional mass casualty exercises
14. In all trauma centers, trauma registry data must be collected in compliance with the and TDS inclusion criteria and data element definitions, and must have been submitted to the TQP data center in the most recent call for data
15. The hospital submits trauma data to the state Division of Emergency Medical Operations, Office of Trauma, trauma registry program in accordance with "The Florida Trauma Registry Manual, adopted by Rule 64J-2.006, Florida Administrative Code.
16. The trauma service has a current and up-to-date trauma center application on file and available at all times for Department of Health review.
17. The trauma center shall provide, within the facility, pediatric trauma patient care services, from emergency department admission through rehabilitation, that are separate and distinct from adult trauma patient care services.

- C. Medical and Patient Care Requirements -- The trauma medical director shall maintain oversight responsibility for the development, implementation, and ongoing compliance of hospital policies and clinical protocols for trauma care.
1. All trauma centers must have evidence-based clinical practice guidelines, protocols, or algorithms that are reviewed at least every three years
  2. Level I and II trauma centers must have the following protocols for care of the injured older adult:
    - a. Identification of vulnerable geriatric patients
    - b. Identification of patients who will benefit from the input of a healthcare provider with geriatric expertise prevention, identification, and management of dementia, depression, and delirium
    - c. 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
    - d. Medication reconciliation and avoidance of inappropriate medications
    - e. Screening for mobility limitations and assurance of early, frequent, and safe mobility
    - f. Implementation of safe transitions to home or other healthcare facility
  3. All trauma centers must have a process in place to assist children for non-accidental trauma
  4. All trauma centers must have a massive transfusion protocol (MTP) that is developed collaboratively between the trauma service and the blood bank
  5. All trauma centers must have a rapid reversal protocol in place for patients on anticoagulants
  6. The trauma medical director shall ensure that patient care protocols exist for a minimum of the following departments:
    - a. Trauma Resuscitation Area.
    - b. Intensive Care Unit and Pediatric Intensive Care Unit.
    - c. Operating Room and Post-Anesthesia Recovery/Post-Anesthesia Care Unit.
    - d. Medical Surgical Unit.
  7. The trauma medical director shall ensure that policies and protocols are developed for a minimum of the following:
    - a. Priority admission status for trauma patients.
    - b. Patient transfers into and out of the hospital.
  8. The trauma medical director shall approve all trauma-related patient care protocols before implementation.
  9. The trauma medical director, in coordination with the trauma program manager, shall monitor compliance with trauma-related protocols through the trauma quality management process.

- D. Qualifications of Leadership Staff -- The trauma service shall have evidence on file that describes the qualifications of the trauma medical director and the trauma program manager to provide medical and organizational leadership to the trauma service. At a minimum, this evidence shall include the following:
1. Trauma medical director
    - a. Proof of board certification in general surgery or pediatric surgery (pediatric centers only) by the American Board of Medical Specialties (ABM S), American osteopathic Association (AOA), or Royal College of Physicians and Surgeons of Canada (RCPS – C).
      1. If a board certified general surgeon who is not board certified or board eligible in pediatric surgery serves as the pediatric TMD, they must also:
        - Hold current pediatric advanced life support (P ALS) certification
        - Have a written affiliation agreement with a pediatric TMD had another verified level I pediatric trauma Center whose role is to assist with process improvement, guideline development, and complex case discussions
    - b. Serve as the medical director of a single trauma program
    - c. Documentation that the hospital granted the medical director full and unrestricted privileges to provide general surgical and trauma care surgical services for adult and pediatric patients.
    - d. Participate on the trauma call panel
      1. Documentation that the medical director manages a minimum of 28 trauma cases per year (average of seven trauma cases per quarter), at least eight of which are pediatric, if the medical director manages pediatric trauma patients. These cases may include operative and non- operative interventions.
    - e. Documentation of a minimum of ten Category I CME credits every year in trauma-related topics, five of which shall be in pediatric trauma only if the medical director manages pediatric trauma patients. (See Note #1.)
    - f. In level I trauma centers, the TMD must hold active membership in at least one national trauma organization and have attended at least one meeting during the verification cycle

- g. A written attestation from the Chief of Neurosurgery indicating that the trauma medical director is capable of providing initial stabilization measures and instituting diagnostic procedures for patients, both adult and pediatric, with neural trauma. This statement shall be on file and available for Department of Health review.
  - h. Current ATLS instructor certification.
2. Trauma Program Manager
- a. Have 1.0 Full-Time Equivalent (FTE) commitment to the trauma program
  - b. Hold current membership in a national or regional trauma organization
  - c. The TPM assumes day-to-day responsibility for process and PI activities as they relate to nursing and ancillary personnel involved in the care of trauma patients. The TPM's role also includes partnering with the TMD in the development of policies and oversight of the program
  - d. In all trauma centers, the TPM must have a reporting structure that includes the TMD
    - 1. The reporting structure must, at minimum, include a "dotted line" to the TMD that allows for additional oversight and guidance to the TPM and execution of their activities. The intent is to ensure that the TMD has the opportunity to provide leadership to the TPM and partner with them in setting goals
  - e. Documentation of current Florida Registered Nurse licensure.
  - f. Documentation of current Emergency Nurses Association Trauma Nursing Core Course (TNCC) training or equivalent.
  - g. Documentation of a minimum of ten contact hours every year in trauma-related topics, five of which must be in pediatric trauma. The trauma program manager may apply contact hours earned during any given year for the completion of TNCC toward meeting this requirement. (See Note #1.) or maintenance of certification
3. Injury prevention professional
- a. All trauma centers must have a designated injury prevention professional that prioritizes injury prevention work based on trends identified in the trauma registry and local epidemiological data
    - In level I trauma centers, the injury prevention professional must be someone other than the TPM or PI personnel
4. Volume criteria
- a. Level I adult trauma patient volume criteria
    - A level I adult trauma center must care for at least 1200 trauma patients per year or at least 240 trauma patients with Injury Severity Score (ISS) greater than 15 per year
  - b. Level I pediatric trauma patient volume criteria
    - A level one pediatric trauma center must care for more than 200 or more injured patients under 15 years of age per year
    - C. Adult trauma centers that admit pediatric patients Adult trauma centers that care for 100 or more injured children under 15 years of age must have the following:
      - 1. Pediatric emergency department area
      - 2. Pediatric intensive care area

### STANDARD III -- SURGICAL SERVICES -- STAFFING AND ORGANIZATION

**INTRODUCTION:** The background of surgeons involved in the provision of trauma patient care should reflect an interest in and a commitment to trauma. Formal trauma fellowships, training in surgery with an active trauma service, or combat experience as a surgeon constitutes examples of such interest. Each trauma surgeon participating on the trauma service should also maintain his or her skills and expertise through continuing trauma-related education. It is desirable that these individuals obtain greater than 50 percent of their continuing education credits outside the hospital. Active trauma surgeon involvement in not only the care of injured patients, but also in the development of trauma protocols, coordination of trauma call schedules, and involvement in trauma rounds is imperative for the successful operation of a trauma center. Each of those elements indicates a commitment to excellence in trauma patient care.

- A. Capabilities
  - 1. Level I trauma centers must have the capability for comprehensive soft tissue coverage of wounds, including microvascular expertise for free flaps
  - 2. Level I and two trauma centers must have the capability to diagnose and manage acute facial fractures of the entire cranial maxillofacial skeleton, including the skull, cranial base, orbit, mid phase, and occlusal skeleton, with expertise contributed by any of the following specialists: otolaryngology, oral maxillofacial surgery, or plastic surgery
  - 3. Level I and two trauma centers must have reimplantation capability continuously available or must have in place a triage and transfer process with a replant center
- B. Trauma surgeons who are involved in the care of trauma patients must complete the following qualifications:
  - 1. Maintain current ATLS certification
  - 2. Have privileges in general and or pediatric surgery
  - 3. Hold current board certification or board eligibility in general surgery, or have been approved through the alternate pathway
    - a. Level I pediatric trauma centers must have at least two surgeons board certified or board eligible in pediatric surgery
    - b. Level II pediatric trauma centers must have at least one surgeon board-certified
- C. In all trauma centers, trauma surgery coverage must be continuously available
  - 1. In level I and II trauma centers, the trauma surgeon must be dedicated to a single trauma center while on call
- D. Level I and II trauma centers must have a published backup call schedule for trauma surgery
- E. General or Pediatric Surgery
  - 1. There shall be a minimum of five qualified trauma surgeons, assigned to the trauma service, with at least two trauma surgeons available to provide primary (in-hospital) and backup trauma coverage 24 hours a day at the trauma center when summoned. Pursuant to Standard II.A.6, there shall be at least one qualified pediatric trauma surgeon for the trauma service.

2. Each trauma surgeon who is a member of the trauma service and takes trauma call shall sign the Department of Health's General Surgeons Commitment Statement, DH Form 2032-E, December 2004, which becomes part of the facility's official application packet on file with the Department of Health. The commitment statement stipulates that, during his or her scheduled period of primary in-hospital or backup trauma call, the trauma surgeon agrees to the conditions listed below:
  - a. Primary trauma call

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- (1) To be physically present in-hospital to meet all trauma alert patients in the trauma resuscitation area at the time of the trauma alert patient's arrival.
  - (2) To perform no elective surgery or procedures, during the on-call period, that would render the trauma surgeon unavailable to arrive promptly to a trauma alert patient.
  - (3) To refrain from taking general surgery emergency calls or trauma calls at any other facility while on trauma call at the primary facility.
- b. Backup trauma call
- (1) When the trauma surgeon on primary call takes a trauma patient to surgery, the trauma surgeon on backup trauma call shall become the primary trauma surgeon and shall arrive promptly when summoned.
  - (2) To perform no elective surgery or procedures, during the on-call period, that would render the trauma surgeon unavailable to become the primary trauma surgeon.
  - (3) To refrain from taking general surgery emergency calls or trauma calls at any other facility while on trauma call at the primary facility.
  - (4) To refrain from any activity that would delay or prohibit the trauma surgeon from becoming the primary trauma surgeon when notified.
3. Evidence shall be on file that clearly describes the qualifications of each trauma surgeon to be a member of the trauma service and to take trauma calls. At a minimum, this evidence shall include the following:
- a. For a general surgeon:
- (1) Proof of board certification or actively participating in the certification process with a time period set by each specialty board in general surgery, or proof of meeting the following definition of alternate criteria:  
  
Alternate Criteria for the Non-Board-Certified General Surgeon in a Level I Trauma Center. In rare cases in a Level I trauma center, a non-board-certified general surgeon who meets all 4 of the following criteria may be included on the trauma call panel:
    1. Has provided exceptional care of trauma patients
    2. Has numerous publications and presentations
    3. Has published excellent research
    4. Is documented to provide excellent teaching.



- (2) Documentation that the hospital granted the general surgeon full and unrestricted privileges to provide general surgical and trauma care surgical services for adult and pediatric patients.
- (3) Documentation that the general surgeon manages a minimum of 28 trauma cases per year (average of seven trauma cases per quarter), at least eight of which are pediatric if the general surgeon manages pediatric trauma patients. These cases may include operative and non-operative interventions.
- (4) Documentation of a minimum of ten Category I CME credits every year in trauma-related topics, five of which shall be in pediatric trauma only if the general surgeon manages pediatric trauma patients. The general surgeon may apply CME credits earned during any given year for the completion of ATLS certification toward meeting this requirement. (See Note #1.)
- (5) A written attestation from the Chief of Neurosurgery indicating that the general surgeon is capable of providing initial stabilization measures and instituting diagnostic procedures for patients, both adult and pediatric, with neural trauma. This statement shall be on file and available for Department of Health review.
- (6) Current ATLS provider certification.

or

b. For a pediatric surgeon:

- (1) Proof of board certification or actively participating in the certification process with a time period set by each specialty board in pediatric surgery, or proof of meeting the following definition of alternate criteria:

Alternate Criteria for the Non-Board-Certified Pediatric Surgeon in a Level I Trauma Center. In rare cases in a Level I trauma center, a non-board-certified general surgeon who meets all 4 of the following criteria may be included on the trauma call panel:

1. Has provided exceptional care of trauma patients
  2. Has numerous publications and presentations
  3. Has published excellent research
  4. Is documented to provide excellent teaching.
- (2) When the number of pediatric surgeons on staff is too few to sustain the pediatric trauma panel, general surgeons who are board-certified or actively participating in the certification process with a time period set by each specialty board may serve on the trauma team.
  - (3) Documentation that the hospital granted the pediatric surgeon full and unrestricted privileges to provide general surgical and trauma care surgical services specific to pediatric patients.

- (4) Documentation that the pediatric surgeon manages a minimum of 12 pediatric trauma cases per year (average of three trauma cases per quarter). These cases may include operative and non-operative interventions.
  - (5) Documentation of a minimum of ten Category I CME credits every year in trauma-related topics, five of which shall be in pediatric trauma. The pediatric surgeon may apply CME credits earned during any given year for the completion of ATLS certification toward meeting this requirement. (See Note #1.)
  - (6) A written attestation from the Chief of Neurosurgery indicating that the pediatric surgeon is capable of providing initial stabilization measures and instituting diagnostic procedures for pediatric patients with neural trauma. This statement shall be on file and available for Department of Health review.
  - (7) Current ATLS provider certification.
4. PGY3, PGY4, PGY5 General Surgical Residents
    - a. There must be a trauma rotation with defined objectives and curriculum (Level I)
  5. Senior surgical residents (PGY-4 or above) may fill the in-hospital general surgical requirement if the trauma medical director ensures the following:
    - a. A qualified general surgeon (or pediatric surgeon for pediatric patients) is on trauma call and shall arrive promptly at the trauma center when summoned.
    - b. The trauma medical director attests in writing that each resident is capable of the following:
      - (1) Providing appropriate assessment and responses to emergent changes in patient condition.
      - (2) Instituting initial diagnostic procedures.
      - (3) Initiating surgical procedures.

This statement shall be on file and available for Department of Health review for each general surgical resident that fills this requirement.

    - c. When a trauma alert patient is identified, the attending trauma surgeon shall be summoned and take an active role by participating in patient care during the resuscitation.
    - d. The attending trauma surgeon shall also accompany the senior surgical resident to the operating room.
    - e. Each general surgical resident has current ATLS provider certification.

**GENERAL INFORMATION:** Optimal care of patients with neurological injuries requires dedicated neurosurgeons participating as members of the trauma team. Neurosurgeons should become involved early in trauma care planning to optimize outcomes. Early neurosurgical interventions include arriving promptly when a trauma patient needs neurosurgical evaluation or care. These interventions also include coordinating standard diagnostic or treatment protocols to assist the emergency physicians or trauma surgeons in their initial efforts to stabilize, diagnose, and treat trauma patients with neurological injuries.

F. Neurological Surgery

1. Level I and II trauma centers must have board certified or board eligible neurosurgeons continuously available for the care of neurotrauma patients
  - a. In level I pediatric trauma centers, there must be at least one board certified or board eligible neurosurgeon who has completed a pediatric neurosurgery fellowship
2. There shall be a minimum of one qualified neurosurgeon to provide in-hospital trauma coverage 24 hours a day at the trauma center.
3. Evidence shall be on file that clearly describes the qualifications of each neurosurgeon who takes trauma call. At a minimum, this evidence shall include the following:
  - a. Proof of board certification or actively participating in the certification process with a time period set by each specialty board in neurosurgery, or proof of meeting the following definition of alternate criteria:

Alternate Criteria for Non-Board-Certified Neurosurgeon in a Level I trauma center. In rare cases in a Level I trauma center, a non-board-certified specialist who does not meet all of the following 9 criteria:

1. A letter by the trauma medical director indicating this critical need in the trauma program because of the physician's experience or the limited physician resources in general surgery within the hospital trauma program.
2. Evidence that the neurosurgeon completed an accredited residency training program in that specialty. This completion must be certified by a letter from the program director.
3. Documentation of current status as a provider or instructor in the Advanced Trauma Life Support (ATLS) program.
4. A list of the 48 hours of trauma-related continuing medical education (CME) during the past 3 years.
5. Documentation that the neurosurgeon is present for at least 50% of the trauma performance improvement and educational meetings.
6. Documentation of membership or attendance at local, regional, and national trauma meetings during the past 3 years.
7. A list of patients treated during the past year with accompanying Injury Severity Score and outcome data.
8. Performance improvement assessment by the trauma medical director demonstrating that the morbidity and mortality results for patients treated by the neurosurgeon compare favorably with the morbidity and mortality results for comparable patients treated by other members of the trauma call panel.
9. Licensed to practice medicine and approved for full and unrestricted

neurosurgical privileges by the hospital's credentialing committee.  
**or**

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may be included on the trauma panel if he or she meets the following criteria:

1. Has provided exceptional care of trauma patients.
  2. Has numerous publications and presentations.
  3. Has published excellent research.
  4. Is documented to provide excellent teaching.
- b. Documentation that the hospital has granted the neurosurgeon privileges to provide neurosurgical and trauma care services for adult and pediatric patients.
4. Senior neurosurgical residents, PGY-2 or above, may fill the in-hospital neurosurgeon requirement **only** if the trauma medical director and the Chief of Neurosurgery ensure the following:
- a. An attending neurosurgeon is on trauma call and available to arrive promptly at the trauma center to provide stabilization, diagnostic procedures, or definitive operative care.
  - b. The trauma medical director and the Chief of Neurosurgery attest in writing that the senior neurosurgical resident is capable of the following:
    - (1) Providing appropriate assessment and responses to emergent changes in patient condition.
    - (2) Instituting initial diagnostic procedures.

This statement shall be on file and available for department review for each senior neurosurgical resident that fills the neurosurgeon requirement.
  - c. There is evidence on file that each resident has completed at least two years of neurosurgical training.
5. General trauma surgeons on trauma call (or the senior surgical residents, PGY-4 or above, who are fulfilling the in-hospital requirement as described in Standard III.A.4) may fill the in-hospital neurosurgeon requirement **only** if the trauma medical director and the Chief of Neurosurgery ensure the following:
- a. An attending neurosurgeon is on trauma call and shall arrive promptly at the trauma center when summoned.
  - b. The Chief of Neurosurgery shall provide written protocols for the general trauma surgeons regarding the initiation of neurological resuscitation and evaluation for head and spinal cord injuries. The protocols shall also include criteria for immediate summoning of or consultation with the attending on-call neurosurgeon.
6. Neurosurgical evaluation must occur within 30 minutes of request for the following:
- a. Severe TBI (GCS <9) with head CT evidence of intracranial trauma
  - b. Moderate TBI (GCS 9 – 12) with head CT evidence of potential intracranial mass lesion
  - c. Neurologic deficit as a result of potential spinal cord injury (applicable to

- spine surgeon, whether a neurosurgeon or orthopedic surgeon)
    - d. Trauma surgeon discretion
    - e. In level I and two trauma centers, neurosurgical provider response times must be documented
    - f. in all levels of trauma centers, the neurosurgery attending must be involved in clinical decision-making
  - 7. Level I and two trauma centers must have a neurotrauma contingency plan and must implement the plan when neurosurgery capabilities are encumbered or overwhelmed. The plan must include the following criteria:
    - a. A thorough review of each instance by the PIPS program
    - b. Monitoring of the effectiveness of the process by the PIPS program
- G. Orthopedic surgery
  - 1. Trauma centers must have board certified or board eligible orthopedic surgeons continuously available for the care of orthopedic trauma patients and must have a contingency plan for when orthopedic trauma capabilities become encumbered or overwhelmed
  - 2. In level I pediatric trauma centers, at least one board certified or board eligible orthopedic surgeon must have completed a pediatric orthopedic fellowship
  - 3. Trauma centers must have an orthopedic surgeon who has completed an OTA – approved fellowship or has met the alternate training criteria.
    - a. This requirement may also be met by having transfer protocol specifying the type of patients/injuries that will be transferred to a center with an orthopedic surgeon who has completed an OTA – approved fellowship or meets the alternate training criteria
  - 4. All trauma centers must have treatment guidelines for, at minimum, the following orthopedic injuries:
    - a. Patients who are hemodynamically unstable attributable to pelvic ring injuries
    - b. Long bone fractures in patients with multiple injuries (e.g., time to fixation, order of fixation, and damage control versus definitive fixation strategies)
    - c. Open extremity fractures (e.g., time to antibiotics, time to OR for operative debridement, and time to wound coverage for open fractures)
    - d. Hip fractures in geriatric patients (e.g., expected time to OR)
  - 5. In all trauma centers, an orthopedic surgeon must be at bedside within 30 minutes of request for the following:
    - a. Hemodynamically unstable, secondary to pelvic fracture
    - b. Suspected extremity compartment syndrome
    - c. Fractures/dislocations with risk of avascular necrosis (e.g., femoral head or talus)
    - d. Vascular compromise related to a fracture or dislocation
    - e. Trauma surgeon discretion
    - f. The orthopedic surgeon must be involved in the clinical decision-making for care of these patients
- H. Surgeons in the following specialties shall be available to arrive promptly at the trauma center when summoned:
- I. Level I and two trauma centers must have continuous availability of the surgical expertise listed below:
  - 1. Cardiac surgery
  - 2. Cardiothoracic surgery

3. Neurosurgery
4. Vascular surgery

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5. Hand surgery (Level I and Peds only)
  6. Microsurgery capabilities
  7. Obstetric/gynecologic surgery
  8. Ophthalmic surgery
  9. Oral/maxillofacial surgery
  10. Orthopedic surgery
  11. Otorhinolaryngologic surgery
  12. Plastic surgery
  13. Thoracic surgery
  14. Urologic surgery
- J. All surgeons staffing the services listed in items C.1-11 above shall be board certified or actively participating in the certification process with a time period set by each specialty board for certification in their respective specialties, and granted privileges by the hospital to care for adult and pediatric patients.

#### **STANDARD IV -- NON-SURGICAL SERVICES -- STAFFING AND ORGANIZATION**

**INTRODUCTION:** A trauma center should use a coordinated team approach for the optimal care of trauma patients because the complex problems of trauma patients can require the involvement of several specialty areas. However, trauma surgeons should not relinquish the overall responsibility for the trauma patient.

- A. In level I and two trauma centers, anesthesia services must be available within 15 minutes of request. Furthermore, the attending anesthesiologist must be present within 30 minutes of request for all operations
- B. Anesthesia -- An anesthesiologist shall be in-hospital and promptly available for trauma patient care 24 hours a day. The anesthesiologist shall be board certified or actively participating in the certification process with a time period set by each specialty board and have privileges from the hospital to provide anesthesia and trauma care services for adult and pediatric patients. A certified registered nurse anesthetist (C.R.N.A.) or a senior anesthesia resident (CA-3 or above) may, however, fill the in-hospital anesthesiologist requirement **only** if the trauma medical director ensures the following:
  1. A staff anesthesiologist is on trauma call and available to arrive promptly at the trauma center when summoned.
  2. The trauma medical director and the Chief of Anesthesiology attest in writing that each C.R.N.A. or resident is capable of the following:



- a. Providing appropriate assessment and responses to emergent changes in patient condition.

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- b. Starting anesthesia for any trauma patients that the attending trauma surgeon determines are in need of operative care (pending the arrival of the anesthesiologist on trauma call).

This statement shall be on file and available for Department of Health review for each C.R.N.A. or senior anesthesia resident that fills the anesthesiologist requirement.

3. Evidence is on file that each resident has completed at least 24 months of clinical anesthesiology.
- C. Level I and II trauma centers must have all of the following medical specialists continuously available:
1. Cardiology
  2. Gastroenterology
  3. Internal medicine or pediatrics
  4. Infectious disease
  5. Nephrology
  6. Pulmonary medicine
- D. Level I and II trauma centers must have all of the following medical specialists available seven days per week:
1. Pain management (with expertise to perform regional nerve blocks)
  2. Psychiatry
  3. Psychiatry
- E. The following non-surgical specialties shall be available 24 hours a day to arrive promptly at the trauma center when summoned:
1. Cardiology
  2. Gastroenterology
  3. Hematology
  4. Infectious disease
  5. Internal medicine
  6. Nephrology
  7. Pathology
  8. Pediatrics
  9. Psychiatry
  10. Pulmonary medicine
  11. Radiology
- F. All specialists staffing the services listed in B.1-11 above shall be board certified or actively participating in the certification process with a time period set by each specialty board in their respective specialties, and granted medical staff privileges by the hospital to care for adult and pediatric patients.

## STANDARD V -- EMERGENCY DEPARTMENT

**INTRODUCTION:** Resuscitation is a vital component of trauma care that requires appropriate organization, personnel, and resources to ensure an effective multidisciplinary approach. Since the trauma team initially comes together during this stressful and fast-paced time, members must maintain the knowledge and skills necessary to quickly assess and manage patients with traumatic injuries. It is desirable that the emergency department medical director and other emergency physicians obtain at least half of their trauma-related continuing education outside the hospital. It is also desirable that emergency nurses assigned to the trauma resuscitation obtain their initial trauma education through a comprehensive trauma core course. The resuscitation, if well planned and organized, should optimize the patient's chances of survival, minimize morbidity, and ensure both efficiency and proficiency of the trauma team. Once organized, resuscitations should undergo constant study, constructive evaluation, and continuous quality improvement.

### A. Emergency Department Facility Requirements

1. There shall be an easily accessible and identifiable resuscitation area designated for trauma alert patients. This area shall be large enough to allow assembly of the full trauma team.
2. There shall be resources, staff, and equipment necessary to treat the pediatric trauma patient.
3. The trauma resuscitation area shall be of adequate size and contain adequate trauma care equipment and supplies to simultaneously perform at least two multi-system trauma alert patient resuscitations.
4. There shall be evidence of security measures in place in the resuscitation area designed to protect the life and well being of assigned trauma center staff, patients, and families (for example, a silent or overt alarm system or an assigned security guard).
5. There shall be facilities to accommodate the simultaneous unloading of two EMS ground units.
6. There shall be a helicopter-landing site in close proximity to the resuscitation area. Close proximity means that the interval of time between the landing of the helicopter and the transfer of the patient into the resuscitation area will be such that no harmful effect on the patient's outcome results. All helicopter landing sites shall also meet the following requirements:
  - a. The site shall be licensed by the Florida Department of Transportation.
  - b. Use of the air space shall be approved by the Federal Aviation Administration.
  - c. Documentation shall be on file with the trauma service indicating that the trauma center develops and maintains protocols and provides training during employee orientation regarding the safe loading and unloading of

patients from a helicopter, as well as precautions to ensure the safety of staff or bystanders while in the vicinity of the aircraft.

- B. In all trauma centers, the emergency department must evaluate its pediatric readiness and have a plan to address any deficiencies
- C. Physician Requirements
  - 1. All trauma centers must have a board certified or board eligible emergency department physician medical director. In level I and II trauma centers, the emergency department medical director must be board certified or board eligible in emergency medicine or pediatric emergency medicine
  - 2. Emergency Department Medical Director -- Evidence shall be on file indicating that the trauma center has designated a medical director for the emergency department. Evidence shall also be on file that describes the qualifications of the medical director to provide trauma-related medical and organizational leadership to physician, nursing, and hospital support staffs. At a minimum, this evidence shall include the following:
    - a. Proof of board certification in emergency medicine.
    - b. Documentation that the hospital granted privileges to the emergency department medical director to provide trauma and other emergency care services for adult and pediatric patients.
    - c. Documentation of a minimum of five Category I CME credits every year in trauma-related topics, at least two of which are in pediatric trauma. (See Notes #1 and #3.)
    - d. Documentation of a full-time practice in emergency medicine (may include both administrative and patient care hours).
    - e. Current ATLS provider certification.
  - 3. Emergency Physicians -- Evidence shall be on file indicating that at least one emergency physician is on duty in the emergency department 24 hours a day to cover adult and pediatric trauma patient care services. The emergency department medical director shall ensure that the emergency physicians, during their assigned shifts, comply with the following conditions:
    - a. To be physically present in-hospital to meet all trauma alert patients in the trauma resuscitation area at the time of the trauma alert patient's arrival.
    - b. In level I and two trauma centers, a board-certified report eligible emergency medicine physician must be present in the emergency department at all times
    - c. To assume trauma team leadership if the trauma surgeon on trauma call is not physically present at the time of the trauma alert patient's arrival in the trauma resuscitation area.

To transfer the care of the trauma patient to the attending trauma surgeon upon his or her arrival in the resuscitation area.

- 4. Evidence shall also be on file that clearly describes the qualifications of the emergency physicians working in the resuscitation area. At a minimum, this evidence shall include the following:
  - a. In all trauma centers, emergency medicine physicians involved in the care

of trauma patients must be currently board certified or board eligible, or have been approved through the alternate pathway

- (1) In level I and II trauma centers, physicians must be board certified or board eligible in emergency medicine or pediatric emergency medicine
    1. Physicians who completed primary training in a specialty other than emergency medicine or pediatric emergency medicine prior to 2016 may participate in trauma care
  - b. In level I pediatric trauma centers, at least one physician must be board certified or board eligible in pediatric emergency medicine
- 5.
- a. Certification and experience
    - (1) Proof of board certification or actively participating in the certification process with a time period set by each specialty board in emergency medicine, or proof of meeting the following definition of alternate criteria:

Alternate Criteria for a Non-Board-Certified Emergency Physician in a Level I Trauma Center: In rare cases in a Level I trauma center, a non-board-certified specialist who meets all 4 of the following criteria may be included on the trauma panel:

      1. Has provided exceptional care of trauma patients
      2. Has numerous publications and presentations
      3. Has published excellent research
      4. Is documented to provide excellent teaching.
    - (2) Board certification or actively participating in the certification process with a time period set by each specialty board in a primary care specialty and a written attestation by the emergency department medical director that the physician has worked as a full-time emergency physician for at least three out of the last five years.
  - b. Documentation of a minimum of five Category I CME credits every year in trauma-related topics, at least two of which are in pediatric trauma if the emergency physician cares for pediatric trauma patients. (See Notes #1 and #3.)
  - c. Documentation that the hospital granted privileges to the emergency physician to provide trauma and other emergency care services for adult and pediatric patients.
  - d. Current ATLS provider certification.
  - e. All emergency medicine physicians must have completed the ATLS course at least once. Physicians who are board certified or board eligible in a specialty other than emergency medicine must hold current ATLS certification
  - f.
6. For emergency physicians who care for only pediatric trauma patients, the evidence shall include the following:

a. Certification and experience

- (1) Proof of board certification or actively participating in the certification process with a time period set by each specialty board in pediatric emergency medicine, or proof of meeting the following definition of alternate criteria:

The non-board-certified physician must have completed an approved residency program. The physician must be licensed to practice medicine and approved for emergency medicine privileges by the hospital's credentialing committee. The physician must meet all criteria established by the trauma director and emergency medicine director. The physician must have experience in caring for trauma patients, which must be tracked by the PI program. The trauma director [and] emergency medicine director must attest to this physician's experience and quality of patient care as a part of the recurring granting of trauma team privileges consistent with the hospital's policy. This individual is expected to meet all other qualifications for members of the trauma team.

- (2) Board certification in a primary care specialty or emergency medicine and a written attestation by the emergency department

medical director that the physician has worked as a full-time emergency physician for at least three out of the last five years.

- b. Documentation of a minimum of five Category I CME credits every year in trauma-related topics, at least two of which are in pediatric trauma. (See Notes #1 and #3.)
  - c. Documentation that the hospital granted privileges to the emergency physician to provide trauma and other emergency care services for pediatric patients.
  - d. Current ATLS provider certification.
7. A PGY-3 emergency medicine chief resident or emergency medicine fellow may fill the requirements of meeting trauma alert patients in the resuscitation area only if the emergency department medical director ensures the following:
- a. An attending emergency physician, who meets the qualifications delineated in items B.2 and 3, is in the emergency department 24 hours per day.
  - b. The trauma medical director and the emergency department medical director attest in writing that each participating resident or fellow is capable of the following:
    - (1) Providing appropriate assessment and responses to emergent changes in patient condition.
    - (2) Instituting initial diagnostic procedures.
    - (3) Providing definitive emergent care.
  - c. There is documentation on file indicating that each PGY-3 resident or fellow has completed at least 24 months of emergency medicine experience and has current ATLS provider certification.

**GENERAL INFORMATION:** In a hospital dedicated to trauma care, nursing personnel occupy a crucial position in the care of injured patients. Encouraging nursing involvement in trauma training programs and research activities, as well as actively integrating nurses into the trauma team or service, should be a high priority of the trauma center.

D. Resuscitation Area Nursing and Support Personnel Staffing Requirements

- 1. Resuscitation area nursing staff
  - a. At a minimum, two nurses (R.N.s) per shift shall be in-hospital and taking primary assignment for the resuscitation area.
  - b. All resuscitation area nurses shall fulfill all initial and recurring training requirements as delineated in Standard VIII within the time frames provided.

2. Other nursing and technical support staff
  - a. The number of nursing personnel and technical staff members assigned to provide patient care in the resuscitation area (in excess of the minimum requirement provided in item C.1.a above) shall be established by each trauma center and shall ensure adequate care of the trauma patient.
  - b. The trauma center shall have a designated and trained staff member to record pertinent patient information on a trauma flow sheet during each trauma alert (may be one of the nurses specified in item C.1.a above).

E. Resuscitation Area Documentation Requirements

1. The trauma team shall use a trauma flow sheet of one or more pages to document patient care in the resuscitation area.
2. At a minimum, the design of the flow sheet shall be in such a fashion as to provide a sequential account of the following:
  - a. The time EMS called trauma alert.
  - b. The time of the trauma alert patient's arrival in the resuscitation area.
  - c. The prehospital or hospital reason for the trauma alert being called.
  - d. The time of arrival for each trauma team member and physician consultant.
  - e. Serial physiological measurements and neurological status.
  - f. All invasive procedures performed and results.
  - g. Laboratory tests.
  - h. Radiological procedures.
  - i. The time of disposition and the patient's destination from the resuscitation area.
  - j. Complete nursing assessment.
  - k. Weight for pediatric trauma patients.
  - l. Immobilization measures.
  - m. Total burn surface area and fluid resuscitation calculations for burn patients.

F. Emergency Department Responsibilities

1. The emergency department shall summon the trauma team when the facility is notified of a trauma alert en route that meets state/regional trauma alert criteria.



2. The emergency department physician shall evaluate all trauma patients not identified as a trauma alert utilizing trauma scorecard methodology. (See Rules 64J-2.004 and 64J-2.005, Florida Administrative Code.) Once the emergency department physician identifies the patient as a trauma alert patient, he or she shall call an in-hospital trauma alert and summon the trauma team.

The trauma team, physician consultants, and other support personnel shall arrive promptly when notified of a trauma alert and summoned. The trauma team, physician consultants, and other support personnel shall ensure that their response times are documented in each patient's record on the trauma flow sheet.

3. The trauma team shall include, at a minimum, the following:
  - a. A trauma surgeon (as team leader).
  - b. An emergency physician.
  - c. At least two trauma resuscitation area registered nurses.

The trauma medical director may also require other disciplines to participate on this team.

- G. In all trauma centers, the shared roles and responsibilities of trauma surgeons and emergency medicine physicians for trauma resuscitation must be defined and approved by the Trauma Medical Director
- H. In all trauma centers, trauma and/or emergency department advanced practice providers (APP's) who are clinically involved in the initial evaluation and resuscitation of trauma patients during the activation phase must have current ATLS certification

## **STANDARD VI -- OPERATING ROOM AND POST-ANESTHESIA RECOVERY AREA**

**INTRODUCTION:** Another key component in the provision of definitive trauma care is the timely availability of surgical facilities. Availability also means that operating rooms and post-anesthesia recovery areas are appropriately staffed with trained nurses and technicians.

- A. Operating Room
- B. In level I and two trauma centers, and operating room (OR) must be staffed and available within 15 minutes of notification
  1. The expectation is that the OR team is notified when a trauma patient is going to be sent to the OR. The initial call and the team members response must be tracked. This can be documented with a log book, and electronic medical record, or a badge swipe
  2. In level I and two trauma centers, if the first OR is occupied, an additional OR must be staffed and available
  3. Level I and two trauma centers must have a dedicated OR prioritized for fracture care and nonemergent orthopedic trauma
  4. The trauma center shall have at least one adequately staffed operating room

immediately available for adult and pediatric trauma patients 24 hours a day. This standard does not require a separate operating room for adult and pediatric patients.

5. The trauma center shall have a second adequately staffed operating room available within 30 minutes after the primary operating room is occupied with an adult or pediatric trauma patient.
6. All trauma centers must have an OR booking policy that specifies targets for timely access to the OR based on the level of urgency and includes access targets for a range of clinical trauma priorities
7. In all trauma centers, the trauma surgeon must be present in the operating suite for the key portions of operative procedures for which they are the responsible surgeon and must be immediately available throughout the procedure
8. The operating team shall consist minimally of the following:
  - a. One scrub nurse or technician.
  - b. One circulating registered nurse.
  - c. One anesthesiologist immediately available. (See Standard IV.A.)

9. All nursing staff members involved in trauma patient care shall satisfy all initial and recurring training requirements in the time frames provided in Standard VIII.

C. Post-Anesthesia Recovery (PAR)

1. The trauma center shall have a PAR area (the surgical intensive care unit is acceptable) adequately staffed with registered nurses and other essential personnel 24 hours a day.
2. A physician credentialed by the hospital to provide care in the ICU or emergency department shall be in-hospital and available to respond immediately to the PAR for care of adult and pediatric trauma patients 24 hours a day.
3. All nursing staff members involved in trauma patient care shall satisfy all initial and recurring training requirements in the time frames provided in Standard VIII.

**STANDARD VII -- INTENSIVE CARE UNIT (ICU) AND  
PEDIATRIC INTENSIVE CARE UNIT (PICU)**

**INTRODUCTION:** The critically ill trauma patient requires continuous and intensive multidisciplinary assessment and intervention to restore stability, prevent complications, and achieve and maintain optimal outcomes. The trauma service that assumes initial responsibility for the care of an injured patient should maintain that responsibility as long as the patient remains critically ill.

- A. The adult ICU must be separate and distinct from the PICU.
- B. All trauma centers must have an ICU surgical director who is board certified or board eligible in general surgery and actively participates in unit administration
  1. In level I adult trauma centers, the ICU surgical director must be board certified or board eligible in surgical critical care
  2. In level II adult trauma centers, at least one intensivist must be board certified or board eligible in surgical critical care
- C. In all trauma centers, trauma patients requiring ICU admission must be admitted to, or be evaluated by, a surgical service
- D. In all trauma centers, the trauma surgeon must retain responsibility for the trauma patient in the ICU up to the point where the trauma surgeon documents transfer of primary responsibility to another service
- E. Adult ICU
  1. Physician Requirements
    - a. In level I and two trauma centers, the ICU must be staffed with physicians (physicians include residents, fellows, or attendings) who are continuously available within 15 minutes of request and whose primary responsibility is to the ICU
    - b. The trauma medical director or trauma surgeon designee is responsible for adult trauma patient care in the ICU. Part of these responsibilities includes ensuring that an attending trauma surgeon remains in charge of the patient's care to coordinate all therapeutic decisions. The attending trauma

surgeon shall obtain consultations from medical and surgical specialists as needed to provide specific expertise.

- c. An attending trauma surgeon may transfer primary responsibility for a stable adult patient with a single-system injury (for example, neurological) from the trauma service if it is mutually acceptable to the attending trauma surgeon and the surgical specialist of the accepting service.
- d. The in-hospital trauma surgeon, or the general surgical resident fulfilling the in-hospital requirement (See Standard III.A.4), shall be available from within the hospital to arrive promptly for adult trauma patients in the ICU for emergent situations when the trauma medical director or trauma surgeon designee is not available. This coverage 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.

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- e. The trauma center shall track by way of the trauma registry all adult trauma patients, whether under the primary responsibility of the trauma service or of another surgical or non-surgical service, through the quality management process to evaluate the care provided by all health care disciplines.

## 2. Nursing Requirements

- a. The ratio of nurses to trauma patients in the ICU shall be a minimum of 1:2, and shall be increased above this as dictated by patient acuity.
- b. In all trauma centers, the patient to nurse ratio in the ICU must be 1:1 or 2:1, depending on patient acuity as defined by the hospital policy for ICU nursing staffing
- c. The ICU nursing staff shall satisfy all initial and recurring training requirements, as listed in Standard VIII, in the time frames provided.

## F. Pediatric ICU

### 1. Physician Requirements

- a. In level I pediatric trauma centers, there must be at least two physicians who are board-certified report eligible in pediatric critical care medicine or in both pediatric surgery and surgical critical care
  - These two physicians must practice at least part of their time in the ICU where the majority of pediatric trauma patients are
- b. The trauma medical director or trauma surgeon designee is responsible for pediatric trauma patient care in the PICU. Part of these responsibilities include ensuring that an attending trauma surgeon or pediatric surgeon remains in charge of the pediatric patient's care to coordinate all therapeutic decisions. The attending trauma surgeon or pediatric surgeon shall obtain consultations from medical and surgical specialists as needed to provide specific expertise.
- c. An attending trauma surgeon or pediatric surgeon may transfer primary responsibility for a stable pediatric patient with a single-system injury (for example, neurological) from the trauma service if it is mutually acceptable to the attending trauma surgeon or pediatric surgeon and the surgical specialist of the accepting service.
- d. The in-hospital trauma surgeon, or the general surgical resident fulfilling the in-hospital requirement (See Standard III.A.4), shall be available from within the hospital to arrive promptly for pediatric trauma patients in the PICU for emergent situations when the trauma medical director or trauma surgeon designee is not available. This coverage is not intended to replace the primary admitting trauma surgeon in caring for the patient in the PICU; it is to ensure that the patient's immediate needs will be met while the primary surgeon is being contacted.
- e. The trauma center shall track by way of the trauma registry all pediatric trauma patients, whether under the primary responsibility of the trauma service or of another surgical or non-surgical service, through the quality management process to evaluate the care provided by all health care

disciplines.

2. Nursing Requirements

- a. The ratio of nurses to trauma patients in the PICU shall be a minimum of 1:2, and shall be increased above this as dictated by patient acuity.

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- b. The PICU nursing staff shall satisfy all initial and recurring training requirements, as listed in Standard VIII, in the time frames provided.
- G. Nursing documentation in the ICU and PICU shall be on a 24-hour patient flow sheet.
- H. There shall be immediate access to clinical laboratory services.

### **STANDARD VIII -- TRAINING AND CONTINUING EDUCATION PROGRAMS**

**INTRODUCTION:** All healthcare professionals providing trauma patient care should have specific initial and continuing education and training related to that care. Educational offerings attended by staff, both external to the institution and those developed and presented in-hospital, should include didactic and clinical programs. All participants in trauma patient care should acquire and maintain an adequate level of clinical competency and an understanding of the theories supporting a trauma philosophy. The trauma service and the individual department involved, for example, nursing, surgery, intensive care, should mutually manage the educational sessions. The Emergency Nurses Association Trauma Nursing Core Course, Pediatric Advanced Life Support, and Emergency Nurses Pediatric Course are examples of courses that may partially satisfy the below training requirements. Nurses are encouraged to seek certification in their specialty, such as Certified Emergency Nurse, Certified Critical Care Registered Nurse, or Certified Operating Room Nurse.

Evidence shall be available indicating the completion of trauma-related continuing education in the hours and time frames provided for the personnel listed below. Time frames begin the effective date the hospital earns provisional trauma center status, or the employee's subsequent date of assignment to the indicated trauma care area.

- A. Registered nurses assigned to following departments shall obtain the specified number of trauma-related contact hours:
  - 1. ED/trauma resuscitation area -- 16 contact hours every two years.
  - 2. Operating room and post-anesthesia recovery -- eight contact hours every two years.
  - 3. Intensive care unit and pediatric intensive care unit -- eight contact hours every two years.
  - 4. Medical surgical/step down unit for both adult and pediatric -- eight contact hours every two years.
  - 5. Rehabilitation unit -- eight contact hours every two years.
  - 6. Burn unit -- eight contact hours every two years.
- B. Licensed practical nurses assigned to the above departments shall complete eight contact hours every two years.
- C. Paramedics assigned to the above departments shall complete four contact hours of trauma-related continuing education every two years.

- D. Should the nurse or paramedic provide care to both adult and pediatric or only pediatric trauma patients, then at least half of the contact hours mentioned in A.1-5, B, and C shall be in pediatric trauma.
- E. Trauma orientation must be provided to new nursing staff caring for trauma patients
- F. Nurses must participate in trauma CE corresponding to their scope of practice and patient population served.
- G. Postgraduate Training and Education
  - 1. There must be a defined trauma curriculum and trauma-specific objective for junior and senior residents
  - 2. The rotations must be available to, at minimum, general surgery, orthopaedic, neurosurgery, and emergency medicine residents
  - 3. All residents on the trauma service must be from an Accreditation Council for Graduate Medicine Education (ACGME) accredited program
  - 4. 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 ADGME
  - 5. The rotation must be continuously available to residents to assure ample exposure to trauma care

## STANDARD IX -- EQUIPMENT

**INTRODUCTION:** The rapid resuscitation, emergency management, and subsequent care of trauma patients require specialized equipment and supplies. This equipment may be expensive and unique to the care of trauma patients, so personnel should have appropriate training and orientation in the use, care, and maintenance of this equipment.

Medical supplies and equipment requirements for the care of adult and pediatric trauma patients in the treatment areas indicated below shall be readily available and shall include at a minimum the following:

- A. Trauma Resuscitation Area
  - 1. Cerebral monitoring equipment
  - 2. Airway control and ventilation equipment, including various sizes of laryngoscopes and endotracheal tubes, bag valve mask resuscitator, mechanical ventilator oxygen masks and cannulae, and oxygen.
  - 3. Autotransfusion.
  - 4. Cardiopulmonary resuscitation cart, including emergency drugs and equipment.
  - 5. Doppler monitoring capability.
  - 6. Electrocardiograph/oscilloscope/defibrillator.
  - 7. Monitoring equipment for blood pressure and pulse and an electrocardiogram (ECG).
  - 8. Pacing capability.



9. Pulse oximetry.
10. Skeletal traction devices.
11. Standard devices and fluids for intravenous (IV) administration.
12. Sterile surgical sets for airway, chest, vascular access, diagnostic peritoneal lavage, and burr hole capability.
13. Suction devices and nasogastric tubes.
14. Telephone and paging equipment for priority contact of trauma team personnel.

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Thermal control devices for patients, IV fluids, and environment.

Two-way radio communication with prehospital transport vehicles (radio communications shall conform to the State EMS Communications Plan).

B. Operating Room

1. Cerebral monitoring equipment
1. Airway control and ventilation equipment, including various sizes of laryngoscopes and endotracheal tubes, bag valve mask resuscitator, mechanical ventilator suction devices, oxygen masks and cannulae, and oxygen.
2. Anesthesia monitoring equipment.
3. Autotransfusion.
4. Cardiopulmonary bypass capability
5. Cardiopulmonary bypass equipment must be immediately available when required, or a contingency plan must exist to provide emergency cardiac surgical care (Level I and II)
6. Cardiopulmonary resuscitation cart, including emergency drugs and equipment.
7. Craniotomy/burr hole and intracranial monitoring capabilities.
8. Endoscopes.
9. Invasive hemodynamic monitoring and monitoring equipment for blood pressure, pulse, and ECG.
10. Operating microscope.
11. Orthopedic equipment for fixation of pelvic, longbone, and spinal fractures and fracture table.
12. Pacing capability.
13. Standard devices and fluids for IV administration.
14. Thermal control devices for patients, IV fluids, and environment.
15. X-ray capability.

C. Post-Anesthesia Recovery

16. Airway control and ventilation equipment, including various sizes of laryngoscopes and endotracheal tubes, bag valve mask resuscitator, mechanical ventilator suction devices, oxygen masks and cannulae, and oxygen.
17. Autotransfusion.
18. Cardiopulmonary resuscitation cart, including emergency drugs and equipment.

19. Intracranial pressure monitoring.
  20. Invasive hemodynamic monitoring and monitoring equipment for blood pressure, Pacing capability.
  21. Pulse oximetry.
  22. Standard devices and fluids for IV administration.
  23. Sterile surgical sets for airway and chest.
  24. Thermal control devices for patients and IV fluids.
- C. Intensive Care Unit and Pediatric Intensive Care Unit
25. Cerebral monitoring equipment
  26. Airway control and ventilation equipment, including various sizes of laryngoscopes and endotracheal tubes, bag valve mask resuscitator, mechanical ventilator suction devices, oxygen masks and cannulae, and oxygen.
  27. Auto transfusion.
  28. Cardiopulmonary resuscitation cart, including emergency drugs and equipment.
  29. Compartment pressure-monitoring devices.
  30. Intracranial pressure monitoring capabilities.
  31. Invasive hemodynamic monitoring.
  32. Orthopedic equipment for the management of pelvic, longbone, and spinal fractures.
  33. Pacing capabilities.
  34. Pulse oximetry.
  35. Scales.
  36. Standard devices and fluids for IV administration.
  37. Sterile surgical sets for airway and chest.
  1. Thermal control devices for patients, IV fluids, and environment.
- D. Medical Surgical Unit
38. Airway control and ventilation equipment, including laryngoscopes, endotracheal tubes of all sizes, bag-mask resuscitator, and sources of oxygen.
  39. Cardiopulmonary resuscitation cart, including emergency drugs and equipment.
  40. Standard devices and fluids for IV administration.

41. Suction devices.

**STANDARD X -- LABORATORY SERVICES**

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- A. Service Capabilities -- The trauma center shall have the following laboratory capabilities for adult and pediatric trauma alert patients available in-hospital 24 hours per day:
1. Services for the prompt analysis of the following:
    - a. Blood, urine, and other body fluids.
    - b. Blood gases and pH determination within five minutes 90 percent of the time.
    - c. Coagulation studies.
    - d. Drug and alcohol screening.
    - e. Microbiology.
    - f. Serum and urine osmolality.
  2. Level I and two trauma centers must have an adequate supply of blood products available
  3. An appropriately staffed blood bank. (See Note #4.) The blood bank shall, at a minimum, be capable of providing the following:
    - a. Blood typing, screening, and cross matching.
    - b. Platelets and fresh frozen plasma.
    - c. At least 10 units of type "O" blood, three of which shall be "O negative."
  4. The trauma center shall have written protocols available ensuring that trauma patients receive priority over routine laboratory tests.
- B. Staffing Requirements -- A laboratory technician shall be available in-hospital 24 hours per day to conduct laboratory studies for trauma alert patients.

#### **STANDARD XI -- ACUTE HEMODIALYSIS CAPABILITY**

- A. Acute hemodialysis capability shall be available for trauma patients 24 hours a day.
- B. Level I and level II trauma centers must have renal replacement therapy services available to support patients with acute renal failure

#### **STANDARD XII -- RADIOLOGICAL SERVICES**

- A. In level one in two trauma centers, the following services must be available 24 hours per day and be accessible for patient care within the time interval specified (the time interval refers to the time between the initial request and the initiation of the test/procedure. This does not mean that every test must be completed within the interval specified):
1. Conventional radiography
    - a. 15 minutes
  2. Computed tomography (CT)
    - a. 15 minutes

3. Point-of-care ultrasound
    - a. 15 minutes
  4. Interventional radiologic procedures
    - a. 1 hour
  5. Magnetic Resonance Imaging (MRI)
    - a. 2 hours
- B. Level I and two trauma centers must have a mechanism to remotely view radiographic images from referring hospitals within their catchment area. (Viewing mechanisms may include email, a phone app, a Picture Archiving and Communications System (PACS), etc.)
- C. In all trauma centers, documentation of the final interpretation of CT scans must occur no later than 12 hours after completion of the scan
- D. Service Capabilities -- The following radiological service capabilities for trauma alert patients shall be available in-hospital 24 hours per day:
1. In all trauma centers, a radiologist must have access to patient images and be available for imaging interpretation, in person or by phone, within 30 minutes of request
  2. Angiography (of all types) with a maximum response time until the start of the procedure of 60 minutes.
  3. Computerized tomography (CT).
  4. Routine radiological studies.
- E. Staffing Requirements -- Radiological staff needed to perform radiological services for trauma alert patients shall be available 24 hours a day. At a minimum, this includes the following:

1. Level I and two trauma centers must have the necessary human and physical resources continuously available so that an endovascular or interventional radiology procedure for hemorrhage control can begin within 60 minutes of request
  2. A radiologist, board certified or actively participating in the certification process with a time period set by each specialty board, and granted privileges by the hospital to provide radiological services for adult and pediatric patients, shall be in-hospital and promptly available 24 hours a day. (See Note #5.) A chief radiology resident may fill the in-hospital requirement only if the trauma medical director ensures the following:
    - a. A staff radiologist (item B.1. above) is on trauma call and available to arrive promptly at the trauma center when summoned.
    - b. The trauma medical director and the Chief of Radiology attest in writing that each participating resident is capable of the following:
      - (1) Authorizing any radiological studies required for adult and pediatric trauma alert patients.
      - (2) Providing appropriate evaluation of adult and pediatric trauma alert patient radiological studies.
  3. A CT technician shall be in-hospital 24 hours a day.
  4. A radiological technician shall be available in-hospital 24 hours per day.
- F. CT Scanner Requirements
1. At least one CT scanner shall be available for trauma alert patients, and be located in the same building as the resuscitation area. CT scanners located in remote areas of the hospital campus (that requires moving the patient from one building to another), in mobile vans, or in other institutions do not meet this requirement.
  2. If the trauma center has only one CT scanner, a written plan shall be in place describing the steps to be taken if the apparatus is in use or becomes temporarily inoperable. The plan must include trauma patient transfer agreements.

### STANDARD XIII -- ORGANIZED BURN CARE

**INTRODUCTION:** Most burn injuries are relatively minor and patients are discharged following outpatient treatment at the facility where they are first seen. Some burns, however, are serious enough to require hospitalization, either through direct admission or by referral to hospitals with special burn treatment capabilities.

- A. The trauma center shall have written policies and procedures for triage, assessment, stabilization, emergency treatment, and transfer (either into or out of the facility) of burn patients. Policies and procedures shall also be written regarding in-hospital management, including rehabilitation, of burn patients.
- B. The trauma center is capable of providing specialized care, dedicated beds, and supplies or equipment appropriate for the care of a patient with major or significant burns (See Note #6) when the facility meets one of the following criteria:
  - 1. Is verified by the American Burn Association Committee on Burn Center Verification of the American College of Surgeons.
  - 2. Demonstrates that the facility and burn center staff meet the following qualifications:
    - a. The facility shall admit an average of 60 or more patients with acute burn injuries annually. At least 40 patients shall meet the major or significant burn criteria.
    - b. General surgeons or plastic surgeons who are the primary managing physicians managing burn cases shall obtain a minimum of two burn-related CMEs each calendar year as part of their total CMEs.
    - c. Each general surgeon or plastic surgeon who is the primary managing physician shall participate in the management of burn patient admissions or resuscitations.
    - d. Burn unit nursing staff shall obtain a minimum of two burn-related contact hours each calendar year as part of their total CMEs.
    - e. The facility shall provide at least one burn-related community education or prevention program each calendar year.
- C. If the trauma center is not capable of providing specialized care, dedicated beds, and supplies or equipment appropriate for the care of a patient with major or significant burns (See Note #6), the facility shall have a written transfer agreement with such a facility. The trauma center shall also have written medical transfer policies and protocols to ensure the timely and safe transfer of the burn patient.



#### **STANDARD XIV -- ACUTE SPINAL CORD AND BRAIN INJURY MANAGEMENT CAPABILITY**

- A. The trauma center shall have written policies and procedures for triage, assessment, stabilization, emergency treatment, and transfer (either into or out of the facility) for brain or spinal cord injured patients. Policies and procedures shall also be written regarding in-hospital management, including rehabilitation, and the implementation of the preventive ulcer program (See Notes #7), for brain or spinal cord injured patients.
  
- B. The trauma center shall be designated by the Department of Health, Brain and Spinal Cord Injury Program, as a spinal cord injury acute care center or brain injury acute care center,

**or**

have a written transfer agreement in place with such a facility, and written medical transfer policies and protocols for when to initiate a transfer to ensure the timely and safe transfer of the brain or spinal cord patient.

#### **STANDARD XV -- ACUTE REHABILITATIVE SERVICES**

**INTRODUCTION:** A trauma service should provide for the rehabilitation of its patients, with the goal of returning to society an individual who functions at the highest possible level consistent with his or her injuries. Early rehabilitation minimizes the risk of secondary complications that may interfere with or limit functional recovery. Members of the trauma service should also work with colleagues to prepare the patient and family physically, psychosocially, and emotionally for the transition to rehabilitation and ultimately for return to the community.

- A. Trauma centers must have the following allied health services available:
  - 1. Respiratory therapy (24/7/365)
  - 2. Nutrition support
  - 3. Speech therapy
  - 4. Social worker (seven days per week)
  - 5. Occupational therapy (seven days per week)
  - 6. Physical therapy (seven days per week)
  
- B. All trauma centers must meet the rehabilitation needs of trauma patients by:
  - 1. Developing protocols that identify which patients will require rehabilitation services during their acute inpatient stay
  - 2. Establishing processes that determine the rehabilitation care, needs, and services required during the acute inpatient stay
  - 3. Ensuring that the required services during acute inpatient stay are provided in a timely manner
  
- C. All trauma centers 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 level of care and services required must be documented in the medical record

- D. The trauma medical director shall establish injury categories to identify trauma patients as candidates for rehabilitative services. At a minimum, the injury categories shall include trauma patients with musculoskeletal, cognitive, and other neurological impairments.
- E. The trauma medical director or trauma program manager shall ensure that trauma patients meeting the criteria established above have an evaluation by any or all of the following (as appropriate to the patient's injury) within 7 days of inpatient admission:
1. Attending trauma surgeon, neurosurgeon, neurologist, or orthopedic surgeon.
  2. Neuropsychologist.
  3. Nursing personnel may include the following:
    - a. Trauma program manager or designee.
    - b. Clinical nurse specialist.
    - c. Rehabilitation nurse.

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4. Occupational therapist.
  5. Physiatrist or medical director of the rehabilitation services department.
  6. Physical therapist.
  7. Speech therapist.
- F. The consultant shall document this evaluation in the patient's medical record. Documentation shall include any short- or long-term rehabilitation goals and plan.
- G. The physician with primary responsibility for the patient shall review the assessment and recommendations within 48 hours and document the review in the patient's medical record.
- H. The trauma center shall have one of the following for long-term rehabilitative services:
1. A designated rehabilitation unit that is accredited by the Commission on Accreditation of Rehabilitative Facilities.
  2. A rehabilitation unit designated by the Department of Health, Brain and Spinal Cord Injury Program, as a spinal cord or brain injury rehabilitation center.
  3. A written transfer agreement in place with one of the above stated facility types, and written medical transfer policies and protocols for when to initiate a transfer to ensure the timely and safe transfer of the trauma patient.

## STANDARD XVI -- PSYCHOSOCIAL SUPPORT SYSTEMS

**INTRODUCTION:** Such factors as age and developmental phase, previous and current health problems, family and social support systems, economic status, level of education, and the meaning given to the injury by the patient and family all affect human responses to injury. The trauma center should assure that qualified personnel are available to assess and support the patient and the patient's family or significant others. This should include crisis intervention, acceptance and adaptation to the repercussions of the injury, and facilitation of the transition from the hospital.

- A. All trauma centers must meet the mental health needs of trauma patients by having:
1. A protocol to screen patients at high risk for psychological sequelae with subsequent referral to a mental health provider
  2. A process for referral to a mental health provider when required
- B. The trauma center shall have written policies and protocols to provide mental health services, child protective services, and emotional support to trauma patients or their families. At a minimum, the policies and protocols shall include qualified personnel to provide the services and require that the personnel shall arrive promptly at the trauma center when summoned.
- C. Qualified personnel may include, but are not be limited to, the following:
1. Nurses (in addition to resuscitation area personnel).

2. Pastoral or spiritual care representatives.
3. Patient advocates or representatives.

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4. Physician consultants.
  5. Psychologists or psychiatrists.
  6. Social service workers.
- D. Drug and alcohol counseling and referral services shall be available for patients and their families.
- E. The personnel listed in B.1-6 shall document these interventions in the patient's medical record.
- F. Child life program
1. All pediatric trauma centers must have a child life program

### **STANDARD XVII -- OUTREACH PROGRAMS**

**INTRODUCTION:** Although the trauma center is a key component of acute care for the critically injured trauma patient, an effective trauma system encompasses all phases of care, from prehospital to reintegration into society. By providing multidisciplinary educational opportunities and becoming actively involved in the formulation of community approaches to trauma care, the trauma center will aid in attaining the goal of optimal care for all injured patients. It is desirable that the trauma center coordinate their outreach activities with the local or regional trauma agency, if one exists. Finally, the trauma center should consider developing these programs in response to identified, targeted local problems. Use of national injury prevention programs are recommended to avoid replication and eliminate the need to spend resources to develop a quality program when one has already been developed and tested.

- A. The trauma service shall have written evidence documenting active involvement in at least two public education programs (one general and one pediatric) and two public trauma prevention programs (one general and one pediatric) per calendar year.
1. Injury prevention programs shall be chosen based upon the epidemiologic needs of the community served by the trauma center.
  2. Hospital-specific evaluation methods shall be implemented to determine the effectiveness of the injury prevention programs.
- B. All trauma centers must implement at least two activities over the course of the verification cycle with specific objectives and deliverables that address separate major causes of injury in the community
1. All trauma centers must demonstrate evidence of partnerships with community organizations to support their injury prevention efforts
- C. The trauma program must participate in the training of prehospital personnel.
- D. The trauma center must provide public and professional education.
- E. In all trauma centers, an organ procurement program must be available and consist of at least the following (this standard pertains to solid organ procurement for trauma patients only):
1. An affiliation with an Organ Procurement Organization (OPO)
  2. A written policy for notification of the regional OPO
  3. Protocols defining clinical criteria and confirmatory test for the diagnosis of brain

death

- F. The trauma service shall provide consultations or feedback to EMS or the transferring hospital regarding any patient admitted to the intensive care unit when performance improvement issues related to prehospital care are applicable.
- G. All trauma centers must have a process of reviewing and providing feedback to:
  - 1. EMS agencies, related to accuracy of triage and provision of care
  - 2. Referring providers, related to the care and outcomes of their patients and any potential opportunities for improvement in initial care
- H. In all trauma centers, a physician from the emergency department or trauma program must participate in the prehospital PI process, including assisting in the development of prehospital care protocols relevant to the care of trauma patients
- I. The trauma service shall provide 24-hour availability of telephone consultation with members of the hospital's trauma team and physicians of the community and outlying areas. Scheduled on-site consultations with members of the hospital's trauma team shall be available with physicians of the community and outlying areas. Evidence of these consultations shall be documented.
- J. Evidence of contact with referring physicians regarding patient transfers shall be documented in all cases.
- K. All trauma centers must have a trauma multidisciplinary PIPS committee chaired by the TMD or an associate TMD
  - 1. Combined adult (level I/II) and pediatric (level II) trauma centers must hold separate adult and pediatric trauma multidisciplinary PIPS meetings with distinct minutes
- L. There shall be evidence of a minimum of 10 multidisciplinary conferences conducted per year to provide trauma case review for the purpose of case management, education,

and correction of system issues for both prehospital and in-hospital. The case review must include at least one adult and one pediatric trauma patient when appropriate.

1. The conference shall include the review of the following:
  - a. The local and regional emergency medical service system.
  - b. Individual case management.
  - c. The trauma center or system.
  - d. Solution of specific problems, including organ procurement and donation.
  - e. Trauma care education.
2. In order to be considered a multidisciplinary conference, there shall be at least one representative from the following departments:
  - a. Trauma service
  - b. Emergency department
  - c. Neurosurgery
  - d. Orthopedics
  - e. Nursing
  - f. Social work
  - g. Rehabilitation medicine
  - h. Laboratory
  - i. X-ray
  - j. Prehospital providers
  - k. Hospital administration

## STANDARD XVIII -- QUALITY MANAGEMENT

**INTRODUCTION:** The goals of a trauma quality improvement program are to monitor the process and outcome of patient care, to ensure the quality and timely provision of such care, to improve the knowledge and skills of the trauma care providers, and to provide institutional structure and organization to promote quality improvement. The plan should contain these essential elements for successful implementation: authority and accountability for the program, a well-defined organizational structure for the committee composition and member responsibilities, defined standards to determine quality of care, and explicit definitions for outcomes required by the facility's prescribed standards.

- A. All trauma centers must have a written data quality plan and demonstrate compliance with that plan. At minimum, the plan must require quarterly review of data quality
- B. In all trauma centers, the trauma registry must be concurrent, defined as having a minimum of 80% of patient records completed within 60 days of the patient discharge date
- C. In all trauma centers, the trauma PIPS program must be independent of the hospital or departmental PI program, but it must report to the hospital or departmental PI program
- D. All trauma centers must have a written PIPS plan that:
  - 1. Outlines the organizational structure of the trauma PIPS process, with a clearly defined relationship to the hospital PI program
  - 2. Specifies the processes for event identification. As an example, these events may be brought forth by a variety of sources, including but not limited to: individual personnel reporting, morning report or daily signout, case obstruction, registry surveillance, use of clinical guideline variances, patient relations, or risk management. The scope for event review must extend from prehospital care to hospital discharge
  - 3. Includes a list of audit filters, event review, and report review that must include, at minimum, those listed in the resources section
  - 4. Defines levels of review (primary, secondary, tertiary, and/or quaternary), with a listing for each level that clarifies:
    - 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
  - 5. Specifies the members and responsibilities of the trauma multidisciplinary PIPS committee
  - 6. Outlines an annual process for identification of priority areas for PI, based on audit filters, event reviews, and benchmarking reports
- E. All trauma centers must have documented evidence of event identification; effective use of audit filters; demonstrated loop closure; attempts at corrective actions; and strategies for sustained improvement measured over time
- F. All trauma centers must participate in a risk-adjusted benchmarking program and use the results to determine whether there are opportunities for improvement in patient care and registry data quality
- G.
- H. The trauma service shall have written evidence on file indicating the governing body's commitment to the trauma quality improvement program. This evidence shall include the following:
  - 1. The trauma program must have a trauma medical director with the authority and administrative support to implement changes related to the process of care and outcomes across multiple specialty departments. The administrative support commitment must assure that the defined lines of authority guarantee comprehensive evaluation of all aspects of trauma care.
  - 2. The trauma center shall demonstrate a clearly defined performance improvement program for the trauma population that is integrated into the hospital-wide program. The trauma program's monitoring and evaluation process must show identification of process/outcome issues, corrective actions taken, and loop closure, when applicable, for evaluations of the desired effects.



- I. The trauma service shall have written evidence on file indicating an active and effective trauma quality improvement program. This evidence shall include procedures and mechanisms for at least the following:
  1. Population of cases for review -- The trauma medical director and trauma program manager shall review all trauma patient records from the following categories:
    - a. All trauma alert cases admitted to the hospital (patients identified by the state trauma scorecard criteria in Rules 64J-2.004 and 64J-2.005, Florida Administrative Code).
    - b. Critical or intensive care unit admissions for traumatic injury.
    - c. All operating room admissions for traumatic injury (excluding same day discharges or isolated, non-life threatening orthopedic injuries).
    - d. Any critical trauma transfer into or out of the hospital.
    - e. All in-hospital traumatic deaths, including deaths in the trauma resuscitation area.
    - f. In all trauma centers, all cases of trauma related mortality and transferred to hospice must be reviewed and classified for potential opportunities for improvement
      - (1) Deaths must be categorized as:
        - Mortality with opportunity for improvement
        - Mortality without opportunity for improvement
    - g. In all trauma centers, all nonsurgical trauma admissions must be reviewed by the trauma program
    - h. In all trauma centers, all instances of diversion must be reviewed by the trauma operations committee
  2. Process/outcome indicators -- The facility shall monitor at least ten indicators relevant to process or outcome measures. The trauma medical director or trauma program manager shall apply the following indicators to screen each trauma case identified in Standard XVIII.B.1.a-e above:
    - a. The facility must monitor four state-required indicators relevant to process and outcome. The initial four indicators shall be as follows:
      - (1) All deaths.
      - (2) Any trauma patient with an unplanned re-admittance to the hospital within thirty days of discharge.

- (3) Any trauma patient readmitted to ICU, or an unplanned admission to the ICU from a medical/surgical unit.
- (4) Percentage of all traumatic C1, C2 and/or C3 spinal cord injury patients permanently dependent on mechanical ventilator support who were admitted or transferred to the ICU during the quarter or who remained in the ICU from the previous quarter; who received the diaphragm pacer surgery and were discharged to a less restrictive facility, home or home-health. (See Note #8 for eligibility criteria for the Diaphragm Pacer Program)

As process and outcome issues are resolved through evidence of the implementation of an action plan, evaluation, and closure when applicable, new indicators shall be introduced and monitored for a minimum of at least six months. The identification of indicators shall be based on defined criteria (expectations) that can be determined from consensus institutional guidelines and nationally derived evidence-based guidelines.

- b. The facility must identify and monitor six indicators relevant to its respective facility for a period of six months and submit these indicators to the Department of Health.

The identification of indicators shall be based on defined criteria (expectations) that can be determined from consensus institutional guidelines and nationally derived evidence-based guidelines.

As process and outcome issues are resolved through evidence of the implementation of an action plan, evaluation, and closure when applicable, new indicators shall be introduced and monitored for a minimum of at least six months. New indicators must be submitted to the Department of Health.

3. Evaluation of cases -- The trauma medical director or trauma program manager shall evaluate each case identified by one of the indicators in Standard XVIII.B.2.a and b to determine whether the case should be referred to the TQM committee for further review. (The trauma medical director and the trauma program manager shall also present a summary of reviewed cases not referred to the TQM committee.)
4. Committee discussion and action -- The members of the TQM committee shall review and discuss each case referred by the trauma medical director or trauma program manager. The members shall recommend or take action on those cases where the committee finds opportunities for improving performance, system process, or outcomes. (The trauma medical director is responsible for monitoring the outcome of each case referred to persons or committees outside the TQM committee. The medical director is also responsible for providing a comprehensive report to the TQM committee regarding those referrals.)
5. Resolution and follow-up -- The TQM committee shall evaluate and document the effectiveness of action taken to ensure problem resolution, improvements in patient care, or improved patient outcomes.

- J. The TQM committee shall meet a minimum of 10 times per year to review trauma cases referred by the trauma medical director or trauma program manager, including cases identified by the indicators listed in XVIII.B.2.a and b and other cases with quality of care concerns, systems issues, morbidity, or mortality.
- K. All trauma centers must meet the following trauma multidisciplinary PIPS committee meeting attendance thresholds:
1. 60% of meetings for the Trauma Medical Director (cannot be delegated to the associate Trauma Medical Director)
  2. 50% of meetings for each trauma surgeon
  3. 50% of meetings for the liaisons (or one predetermined alternate) from emergency medicine, neurosurgery, orthopedic surgery, critical care medicine, anesthesia, and radiology
    - a. Combined adult and pediatric trauma centers must have 50% attendance by representative (Trauma Medical Director or one predetermined alternative) from the other program; this representative is responsible for disseminating information to panel members of the other program
- L. The trauma quality management committee shall be composed of at least the following persons:
1. Trauma medical director (as chairperson).
  2. Trauma program manager.
  3. Medical director of emergency department or emergency physician designee.
  4. Trauma surgeon, other than the trauma medical director.
  5. Surgical specialist other than trauma surgeon, such as neurosurgeon, orthopedic surgeon, and pediatric surgeon.
  6. Representative from administration.
  7. Operating room nursing director or designee.
  8. Emergency department nursing director or designee.
  9. Intensive care unit nursing director or designee.
- M. There shall be at least one of the above committee members (there must always be another representative from the trauma service in addition to the trauma medical director) at the trauma quality management committee meetings.
- N. The trauma service shall maintain written minutes of all TQM committee meetings for at least three years. The trauma service shall have these minutes available for the Department of Health to review upon request. The minutes shall include at a minimum the following:
1. The names of attendees.
  2. The subject matter discussed, including an analysis of all issues related to each case referred by the trauma medical director or the trauma program manager, cases involving morbidity or mortality determining whether they were disease

related or provider related and the preventability, and cases with other quality of care concerns.

3. A summary of cases with variations not referred to the committee.
4. A description of committee discussion of cases not requiring action, with an explanation for each decision.
5. Any action taken to resolve problems or improve patient care and outcomes.
6. Evidence that the committee evaluated the effectiveness of any action taken to resolve problems or improve patient care and outcomes.

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- O. The trauma quality management committee shall prepare and submit a quarterly report to the Department of Health. The reports shall be submitted at the end of each calendar year quarter by the 15<sup>th</sup> of the month following the end of the previous quarter. The report shall:
1. List every case selected for corrective action by the trauma quality management committee (do not include information that would identify the patient) and shall provide the following regarding each case:
    - a. Hospital case number.
    - b. Description of questionable care.
    - c. Corrective action taken. If corrective action is not necessary, an explanation is required.
  2. List the clinical indicators with the number of patients per quarter, number identified, and committee involvement.
  3. List all the complications experienced by trauma patients in the quarter by number of patients and number of total patients in the quarter.
- P. The trauma service shall maintain an in-hospital trauma registry containing information on all cases identified in Standard XVIII.B.2.a and b. The minimum data set for the trauma registry shall include the following:
1. Medical record number.
  2. Mechanism of injury.
  3. Injury severity score.
  4. Discharge diagnosis(es) (narrative description of top 10 minimum).
  5. Discharge date.
  6. Case criterion (a) from section B.1.a-e.
  7. Applicable indicators that identified cases for review (B.2.a and b).
  8. Quality improvement review date.
  9. Quality improvement review disposition (for example, pending, acceptable, or unacceptable, with preventable, unpreventable, or possibly preventable for all deaths).

## STANDARD XIX -- TRAUMA RESEARCH

**INTRODUCTION:** One of the major responsibilities of a Level I trauma center is to continually expand the body of knowledge in the field of trauma through clinical and basic research programs. It is incumbent on the full-time staff of the trauma center to apply this newly acquired knowledge to the treatment of the injured patient and to disseminate the knowledge throughout the medical community.

- A. Level I trauma centers must demonstrate the following scholarly activities during the verification cycle:
1. At least 10 trauma related research articles
    - a. Fulfillment of the research requirement must also meet the following criteria:
      - At least three articles must be authored by general pediatric trauma surgeons
      - Research activity must be performed at the trauma center
      - If case series are to be counted, they must include more than five patients
      - Basic science research must involve topics directly related to the pathophysiology of injury
      - At least three articles must be from disciplines other than general/pediatric surgery
      - All articles must be published or accepted for publication in peer-reviewed and indexed journals
      - Authors from the trauma center must meet accepted authorship requirements of the international committee of medical Journal editors
      - One paper from acute care surgery may be included
    2. Participation by at least one trauma program faculty member as a visiting professor, invited lecture, or speaker at a regional, national, or international trauma conference
    3. Support of residents or fellows in any of the following scholarly activities:
      - a. Laboratory experiences
      - b. Clinical trials
      - c. Resident trauma paper competitions at the state, regional, or national level
      - d. Other resident trauma research presentations
- B. The trauma service shall conduct ongoing clinical and research programs in trauma patient care and a Level I trauma center program must have:
1. Three articles published in a 3-year period. These articles must result from work related to the trauma center. Of the three articles, at least 1 must be authored or coauthored by members of the general surgery trauma team. Trauma-related articles co-authored by members of other disciplines or work done in collaboration with other trauma centers; sub-specialists involved in trauma care for examples: neurosurgery, emergency medicine, orthopedics,

radiology, anesthesia, and rehabilitation; and participation in multicenter investigations may be included in the remainder, and

2. Of the 7 following trauma related scholarly activities, 4 must be demonstrated:
  - a. Leadership in major trauma organizations. There must be evidence of this leadership for a Level I organization. Evidence includes membership in trauma committees of any of the regional and national trauma organizations such as the American Association for the Surgery of Trauma (AAST), Western Trauma Association, Eastern Association for the Surgery of Trauma, and the ACS Committee on Trauma.
  - b. Peer-reviewed funding for trauma research. There should be demonstrated evidence of funding of the center from a recognized government or private agency or organization.
  - c. Evidence of dissemination of knowledge to include review articles, book chapters, technical documents, Web-based publications, editorial comments, training manuals, and trauma-related course material.
  - d. Display of scholarly application of knowledge as evidenced by case reports or reports of clinical series in journals included in MEDLINE.
  - e. Participation as a visiting professor or invited lecturer at national or regional trauma conferences.
  - f. Support of resident participation in institution-focused scholarly activity, including laboratory experiences, clinical trials, or resident trauma paper competitions at the state, regional, or national level.
  - g. Mentorship of residents and fellows, as evidenced by the development of a trauma fellowship program or successful matriculation of graduating residents into trauma fellowship programs.

- C. The institution will have a designated trauma research director and demonstrate current involvement in and commitment to research in adult and pediatric trauma care.
- D. Methods of demonstrating the trauma center involvement and commitment will include, but not be limited to, the following:
  - 1. Commitment of resources
  - 2. Outcome, mechanism, or process-related studies
  - 3. Regular meetings of research group
  - 4. Funded studies
  - 5. Effort (publications in peer review journal or regional or national presentation)
  - 6. Multidisciplinary studies
  - 7. Concluded studies
  - 8. Proposals reviewed by Institutional Review Board

#### **STANDARD XX – DISASTER PLANNING AND MANAGEMENT**

The trauma center shall meet the disaster related requirements pursuant to s. 395.1055(1) c, F.S., and the Agency for Health Care Administration, Comprehensive Emergency Management Plan, Chapter 59A-3.078, Florida Administrative Code, and Joint Commission on the Accreditation of Healthcare Organizations' Standards.

- A. All trauma programs must be integrated into the hospital's disaster plan to ensure a robust surgical response
  - 1. A trauma surgeon from the trauma panel must be included as a member of the hospital's disaster committee and be responsible for the development of a surgical response to a mass casualty event
  - 2. This surgical response it must outline the critical personnel, means of contact, initial surgical triage (including subspecialty triage when appropriate), and coordination of secondary procedures
  - 3. The trauma program is participating to hospital drills or disaster plan activations per year that include a trauma response and are designed to refine the hospital's response to mass casualty events
  - 4. Level I trauma centers must also include an orthopedic surgeon from the orthopedic trauma call panel as a member of the hospital's disaster committee
- B. In level I and II adult and pediatric trauma centers, the trauma surgeon liaison to the disaster committee must successfully complete the Disaster Management and Emergency Preparedness (DMEP) course at least once



## NOTES

**#1 The time frame for implementing Trauma Center Standards, Department of Health Pamphlet 150-9, January 2008, will be January 1, 2009.**

For the purpose of this document, the one-year time frame mentioned in the standards is a calendar year beginning January 1 and ending December 31.

For hospitals earning provisional status on May 1, reduce the one-year time frame for that year to six months and reduce the number of required cases, CMEs, or contact hours by 50 percent.

For trauma centers, reduce the number of cases, CMEs, or contact hours in proportion to the date of staff assignment or appointment, for example:

- Staff employed or assigned on or after October 1 -- 25 percent of requirement.
- Staff employed or assigned on or after July 1 -- 50 percent of requirement.
- Staff employed or assigned on or after April 1 -- 75 percent of requirement.
- Staff employed or assigned before April 1 -- 100 percent of requirement.

**#2 A trauma surgeon shall be board certified or a trauma surgeon actively participating in the certification process with a time period set by each specialty board may fill the requirement for pediatric surgery by meeting the following conditions:**

- A. The trauma medical director attests in writing that the substitute trauma surgeon has competence in the care of pediatric trauma.
- B. The hospital grants privileges to the trauma surgeon to provide surgical care for the injured child.

**#3 Latitude is permitted to each hospital in deciding the types of professional training or course offerings emergency physicians can use to satisfy the requirement of earning five trauma-related CME credits annually. Some conditions, however, do apply in defining the parameters in which the hospital shall operate while making these determinations. These conditions are as follows:**

- A. All offerings shall be on specific trauma-related topics.
- B. CME credits earned through attendance at trauma-related training courses offered by professional organizations, for example, ATLS, may be applied against the five-credit requirement.
- C. Credits earned through attendance at an advanced cardiac life support (ACLS) course may **not** be applied against the five-credit requirement.

**#4 Blood bank policies and protocols that describe the following shall be in place:**

- A. The methods for obtaining additional blood from other sources, for example, a community blood bank or another medical facility, as the need may arise.
- B. The methods for obtaining blood, platelets, and frozen plasma from the blood bank.

**#5 If the trauma center utilizes teleradiology capabilities (the transfer of radiological study images via modem to an off-campus computer terminal), a radiologist may take trauma call from the site of the off-campus terminal. The trauma center, however, assumes all responsibility and liability to ensure that computer images evaluated by a radiologist from an off-campus site are of such quality that it will not compromise the trauma patient's outcome by using this system. The radiologist shall arrive promptly at the trauma center when summoned.**

**#6 Patients with major or significant burns include the following:**

- A. Second- and third-degree burns greater than 10 percent total body surface area in patients under 10 or over 50 years of age.
- B. Second- and third-degree burns greater than 20 percent total body surface area in other age groups.
- C. Second- and third-degree burns that involve the face, hands, feet, genitalia, and perineum, or that involve skin overlying major joints.
- D. Third-degree burns greater than five percent total body surface area in any age group.
- E. Significant electrical burns, including lightning injury.
- F. Significant chemical burns.
- G. Inhalation injury.
- H. Burn injury in patients with pre-existing illness that could complicate management, prolong recovery, or affect mortality.
- I. Children with burns who were seen initially in hospitals without qualified personnel or proper equipment for burn care.
- J. Burn injury in patients who will require special social and emotional or long-term rehabilitative support, including cases involving suspected abuse and neglect.

**#7 Pressure Ulcer Prevention & Treatment**

Policy: Patients will be assessed for pressure ulcer risk. Appropriate preventive and treatment measures will be used for patients at risk as per hospital guidelines. Pressure ulcer prevention and treatment requires a multidisciplinary approach. Those involved

may include, but are not limited to, the patient/caregiver, the physician, the nurse, the physical therapist, the dietitian, and/or the wound care nurse.

Purpose: To establish procedures for early detection of patients at risk for the development of pressure ulcers, early identification of patients with existing skin care needs and the development and implementation of strategies to facilitate wound healing.

Definitions:

- A. At-risk patient – Braden score of 18 or less

Guideline: To establish guidelines to implement pressure ulcer prevention strategies for at-risk patients following the standard of care. Adult inpatients with a Braden Score of 18 or less will have the Skin/Low Braden Care Plan implemented by a nurse.

When a patient is assessed at risk for pressure Ulcers (Braden Score of 18 or less), the Skin/Low Braden Score focus of the Interdisciplinary Patient-Centered Plan of Care will be completed for the patient. The pressure ulcer prevention individualized interventions should be implemented for the patient, documented on the nursing flow sheet and continued throughout the hospital stay while the Braden score is 18 or less by Nursing Service Personnel. The patient and/or family will be taught the pressure ulcer prevention strategies, and this education will be documented on the IPER.

*References:*

Guideline for Prevention and Management of Pressure Ulcers, WOCN Clinical Practice Guideline Series, Wound, Ostomy Continence Nurse's Society, 2003.

Clinical Practice Guidelines, Pressure Ulcers in Adults: Prediction and Prevention. ((AHCPR Publication No. 92-0047, Quick Reference Guide (AHCPR Publication, 92-0048), Rockville MD: Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services, May 1992.

Evidenced-Based Pressure Ulcer Prevention, A Study Guide for Nurses, HCPro, Inc., Marblehead MA, Karen Clay, 2005.

Definitions to Core Procedure:

- I. Pressure Ulcer: A localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with sheer and/or friction. A number of contributing or confounding factors are also associated with pressure ulcers: the significance of these factors is yet to be elucidated.
- II. Pressure Ulcer Staging – Staging is a standardized system where a wound is observed and rated.

- A. Suspected Deep Tissue Injury -Purple or maroon localized area of discolored intact skin or blood-filled blister due to damage of underlying soft tissue from pressure and/or shear. The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue. Deep tissue injury may be difficult to detect in individuals with dark skin tones. Evolution may include a thin blister over a dark wound bed. The wound may further evolve and become covered by thin eschar. Evolution may be rapid exposing additional layers of tissue even with optimal treatment.
- B. Stage I: Intact skin with non-blanchable redness of a localized area usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its color may differ from the surrounding area. The area may be painful, firm, soft, warmer or cooler as compared to adjacent tissue. Stage I may be difficult to detect in individuals with dark skin tones. May indicate "at risk" persons (a heralding sign of risk).
- C. Stage II: Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister. Presents as a shiny or dry shallow ulcer without slough or bruising.\* This stage should not be used to describe skin tears, tape burns, perineal dermatitis, maceration or excoriation. \*Bruising indicates suspected deep tissue injury.
- D. Stage III: Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle is not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunneling. The depth of a stage III pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and stage III ulcers can be shallow. In contrast, areas of significant adiposity can develop extremely deep stage III pressure ulcers. Bone/tendon is not visible or directly palpable.
- E. Stage IV: Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed. Often include undermining and tunneling. The depth of a stage IV pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and these ulcers can be shallow. Stage IV ulcers can extend into muscle and/or supporting structures (e.g., fascia, tendon or joint capsule) making osteomyelitis possible. Exposed bone/tendon is visible or directly palpable.
- F. Unstageable: Full thickness tissue loss in which the base of the ulcer is covered by slough (yellow, tan, gray, green or brown) and/or eschar (tan, brown or black) in the wound bed. Until enough slough and/or eschar is removed to expose the base of

the wound, the true depth, and therefore stage, cannot be determined. Stable (dry, adherent, intact without erythema or fluctuance) eschar on the heels serves as "the body's natural (biological) cover" and should not be removed.

Note - Staging of Pressure Ulcers is only one dimension of pressure ulcer assessment and documentation. There is recognition of staging process limitations, which includes; Assessment of Stage I pressure ulcers could be difficult in patients with darkly pigmented skin. When eschar is present, accurate staging of the pressure ulcer is not possible until the eschar has sloughed or the wound has been debrided.

III. Braden Scale - A validated risk assessment tool utilized to identify patients ages six and over who are at risk. Patients with a Braden Score of 18 or less will be considered at risk. Exception: this tool is not recommended for psychiatric or obstetric patients (See Appendix B).

IV. Pressure Ulcer Goals

A. Patient care goals as related to prevention and treatment of pressure ulcers should include:

1. Identifying individuals at risk for developing pressure ulcers and initiating early prevention programs.
2. Implement appropriate strategies to: attain and maintain intact skin, prevent complications, promptly identify or manage complications, and involve patients and caregivers in self-management.
3. Institute measures that maintain and improve tissue tolerance to pressure in order to prevent injury.
4. Establish interventions in an effort to protect the patients against adverse effects of external mechanical forces, such as pressure, friction, and shear.
5. Educate staff on strategic initiatives, and competencies which include, but are not limited to, assessment, distinguishing pressure ulcers from other wound or skin disorders, developing a plan of care with the multi-disciplinary team, knowledge and skill in wound care, identification of systemic factors that influence ulcer healing, monitoring pressure ulcer healing using a valid measuring method and documentation of assessments and intervention strategies.
6. Educate patients, and caregivers related to pressure ulcer prevention and treatment.

7. Implement effective strategies that prevent and treat pressure ulcers.
- B. Quality indicators initiatives shall be utilized to measure the effects of implemented strategies.
- C. Clinical Practice guidelines for the treatment of pressure ulcers shall be consistent with the recommendations from the Agency for Health Care Research and Quality and the Wound Ostomy and Continence Nurses Society to ensure evidence based practice.

Core Procedure:

I. Pressure Ulcer Prevention

Identify at-risk individuals needing preventive strategies and the specific factors placing them at risk for pressure ulcer development. If the patient refuses assessment, the nurse should document the refusal in the medical record.

- A. Patient's skin is to be assessed during the admission assessment process. The Braden Scale, and the assessment shall be documented in the medical record.
  1. A Braden score identifying a patient at risk should trigger initiation of pressure ulcer prevention strategies. These strategies may include, but are not limited to:
    - a. Repositioning in bed or in chair/wheelchair;
    - b. Floating the heels;
    - c. Utilization of positioning and or pressure reducing devices;
    - d. Appropriate bed surfaces
  2. A Braden score identifying a patient at high risk for pressure ulcer development may trigger referrals/consults for assessment, planning, and interventions as indicated.
- B. Patients identified with impaired ability to reposition himself/herself should be assessed for additional factors placing them at risk for the development of pressure ulcers to include, but are not limited to: immobility, incontinence, nutritional factors, and altered level of consciousness.
- C. Patients should have a daily systematic skin assessment, to include attention to bony prominences.
- D. Reassessment of skin integrity should be done following transfer

to another clinical unit, procedures requiring prolonged restriction of movement, and at discharge.

- E. Appropriate interventions should be implemented to assist in maintaining clean and dry skin. Utilize a mild cleansing agent that minimizes irritation and dryness of the skin. Minimize the force and friction applied to the skin at the time of cleansing. Avoid massaging bony prominences. Interventions may include, as appropriate use of moisturizers or protective barriers.
- F. Utilize proper positioning, transferring, and turning techniques in an effort to prevent skin injury due to friction and shear forces. Maintain the head of the bed at the lowest degree of elevation consistent with medical conditions and other restrictions. Utilize lifting devices to move individuals in bed who cannot assist during transfers and position changes.
- G. Maintain or improve current activity level, mobility, and range of motion. Consider obtaining a consult for rehabilitative services as appropriate.
- H. Educate patient and/or caregiver about the risk factors and causes for pressure ulcer development and how to minimize risks. Instructions should include:
  - 1. Regularly inspect skin over bony prominences;
  - 2. Follow appropriate skin-care regimens;
  - 3. Utilize measures to minimize friction/shear;
  - 4. Avoid vigorous massage over bony prominences or reddened areas;
  - 5. Routine turning, repositioning, and the use of pressure-reducing devices if patient's unable to reposition self;
  - 6. Avoid use of donut-type devices;
  - 7. Maintain adequate nutrition and fluid intake and monitor for weight loss, poor appetite, or gastrointestinal changes that interfere with eating; and
  - 8. Promptly report healthcare changes and nutritional problems to healthcare provider.
- I. Documentation should include, but not be limited to:
  - 1. The admission assessment;
  - 2. The plan of care;

3. Interventions, including activity, repositioning, pressure reducing devices, etc.;
  4. All reassessment of patients; and
  5. Wound stage, if applicable, at a minimum on admission and at discharge.
  6. Patient refusal of any assessments and/or interventions.
- J. In the case of patient refusal of assessments and/or interventions, continued efforts will occur. Collaboration with other members of the interdisciplinary team and/or family may be necessary.

## II. Pressure Ulcer Treatment

Implement wound management strategies to optimize the healing potential.

### A. Assess the wound:

1. Stage the wound following the National Pressure Ulcer Advisory Panel Staging System; identify location of pressure ulcer;
2. Describe tissue type an/or pressure ulcer bed (granulation, necrotic, eschar, and or epithelial);
3. Measure the size including length, width, and depth;
4. Note presence, location and depth of undermining, sinus tracts or tunneling, if applicable; describe exudate/drainage (amount, type, character, odor), if applicable;
5. Note presence of any signs/symptoms of infection (erythema, induration, crepitation) describe wound edges (open or closed), if applicable;
6. Assess periwound skin (tissue around the wound); e.g., maceration, excoriation.

Document assessment findings in the medical record.

- B. A physician's order will be obtained to implement protocols or guidelines for wound cleansing, wound management, wound dressings and management of pain associated with the wound. Refer to Appendix A for Pressure Ulcer Treatment Guidelines; however, treatment is not limited to Appendix A, as each patient's plan of care is individualized.



1. Etiology of pressure ulcer;
2. Staging;
3. Principles of wound healing;
4. Nutritional support;
5. Program of skin care and skin inspection;
6. Program for bowel and bladder management;
7. Appropriate wound care – cleansing, dressing application;
8. Positioning and use of support surfaces; and
9. Monitoring of treatment interventions and healing.

C. Follow all steps delineated for Pressure Ulcer Prevention.

#### **References:**

Clinical Practice Guidelines – Pressure Ulcer in Adults: Prediction and Prevention, (AHCPR Publication NO. 92-0047), Quick Reference Guide (AHCPR Publication, 92-0048), Rockville, MD: Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services, May, 1992.

Clinical Practice Guidelines, Treatment of Pressure Ulcers, (AHCPR Publication NO. 95-0652) U.S. Department of Health and Human Services, Public Health Service, Agency for Health Care Policy and Research, Rockville, MD, Dec, 1994.

Guidelines for Prevention and Management of Pressure Ulcers, WOCN Clinical Practice Guideline Series, (Wound Ostomy Continence Nurses Society) Clinical Practice Guidelines, 2003.

National Pressure Ulcer Advisory Panel, New Pressure Ulcer Staging, updated 2/2007 <http://www.npuap.org/pr2.htm> Accessed, 10/28/07.

Position Statement: Pressure Ulcer Staging, WOCN, 2007.

## **#8 Diaphragm Pacer Program Eligibility Criteria and Performance Indicator**

**Program Eligibility Criteria** (Patient must meet all criteria to be eligible for the Diaphragm Pacer Program):

1. Age 18 or over (upper age limit)
2. Level of injury C1-C3
3. injury deemed complete
4. Family or significant other support systems
5. Eligibility for home health
6. Free of underlying lung disease that precludes ventilator weaning
7. Free of a serious disorder that might affect nerve conduction
8. The client would be able to be independent in activities of daily living if not on mechanical ventilator support
9. The patient has a permanent address in the state of Florida
10. The patient does not carry a Do Not Resuscitate Order
11. The patient is free of active infections

12. The patient has an intact diaphragm

Note: At the current time, the pacer surgery is not FDA approved for individuals who are under 18 years of age.

**Performance Indicator for Level I and II Trauma Centers:**

*Percentage of all traumatic C1, C2 and/or C3 spinal cord injury patients permanently dependent on mechanical ventilator support who were admitted or transferred to the ICU during the quarter or who remained in the ICU from the previous quarter; who received the diaphragm pacer surgery and were discharged to a less restrictive facility, home or home-health.*

The following numerator and denominator are to be submitted on a quarterly basis to calculate the above indicator.

- Numerator: Number of traumatic C1, C2, and/or C3 spinal cord injury ventilator-dependent patients, permanently dependent on mechanical ventilator support, who received the diaphragm pacer surgery and were discharged from the ICU to a less restrictive facility, home or home health.
- Denominator: Cumulative total of the traumatic C1, C2, and/or C3 spinal cord injury patients, permanently dependent on mechanical ventilator support, who are admitted or transferred to the ICU during the quarter or who remained in the ICU from the previous quarter, who received the diaphragm pacer surgery; and those who did not receive the surgery and remain in the ICU.

**Indicator for Pediatric Trauma Centers:**

Cumulative total of traumatic C1, C2, and/or C3 spinal cord injury patients, permanently dependent on mechanical ventilator support, who are admitted or transferred to the ICU during the quarter and the cumulative total of those that remain in the ICU from this and previous quarters.