**AMERICAN COLLEGE OF SURGEONS'**
**1999 TRAUMA FACILITIES CRITERIA (minus the Level IV criteria)**

| Note: In the table below, (E) represents essential while (D) represents desirable criteria. Chapter references refer to the ACS'publication entitled "Resources for Optimal Care of the Injured Patient:1999" | Levels | | |
|---|---|---|---|
| | **I** | **II** | **III** |
| **INSTITUTIONAL ORGANIZATION (see Chapter 5)** | | | |
| Trauma program | E | E | E |
| Trauma service | E | E | E |
| Trauma team | E | E | E |
| Trauma program medical director | E | E | E |
| Trauma multidisciplinary committee | E | E | E |
| Trauma coordinator/TPM | E | E | E |
| **HOSPITAL DEPARTMENTS/DIVISIONS/SECTIONS** | | | |
| Surgery | E | E | E |
| Neurological surgery | E | E | - |
| Neurosurgical trauma liaison | E | E | - |
| Orthopaedic surgery | E | E | E |
| Orthopaedic trauma liaison | E | E | E |
| Emergency medicine | E | E | E |
| Anesthesia | E | E | E |
| **CLINICAL CAPABILITIES** (Specialty Immediately Available 24 hours/day) | | | |
| Published on-call schedule | E | E | E |
| General surgery | E | E | E |
| Published back-up schedule | E | E | D |
| Dedicated to single hospital when on-call | E | E | D |
| Anesthesia (see Chapter 11) | E | E | E |
| Emergency medicine[1] | E | E | E |
| On-call and promptly available 24 hours/day | | | |
| Cardiac surgery | E | D | - |
| Hand surgery | E | E | D |
| Microvascular/replant surgery | E | D | - |
| Neurologic surgery | E | E | D |
| Dedicated to one hospital or back-up call (See Chapter 8) | E | E | D |
| Obstetrics/gynecologic surgery | E | E | D |
| Ophthalmic surgery | E | E | D |
| Oral/maxillofacial surgery | E | E | D |
| Orthopaedic surgery | E | E | E |
| Dedicated to one hospital or back-up call (see Chapter 9) | E | E | D |
| Plastic surgery | E | E | E |
| Critical care medicine | E | E | D |
| Radiology | E | E | E |
| Thoracic surgery | E | E | D |

| Note: In the table below, (E) represents essential while (D) represents desirable criteria. Chapter references refer to the ACS'publication entitled "Resources for Optimal Care of the Injured Patient:1999" | Levels | | |
|---|---|---|---|
| | **I** | **II** | **III** |
| **CLINICAL QUALIFICATIONS** | | | |
| General/trauma surgeon (see Chapter 6) | | | |
| Current board certification | E | E | E |
| 16 hours CME/year | E | E | D |
| ATLS completion | E | E | E |
| Peer review committee attendance >50% | E | E | E |
| Multidisciplinary committee attendance | E | E | E |
| Emergency medicine (see Chapter 7) | | | |
| Board certification | E | E | D |
| Trauma education: 16 hours CME/year | E | E | D |
| ATLS completion | E | E | E |
| Peer review committee attendance >50% | E | E | E |
| Multidisciplinary committee attendance | E | E | E |
| Neurosurgery (see Chapter 8) | | | |
| Current board certification | E | E | - |
| 16 hours CME/year | E | E | D |
| ATLS completion | D | D | D |
| Peer review committee attendance>50% | E | E | E |
| Multidisciplinary committee attendance | E | E | E |
| Orthopaedic surgery (see Chapter 9) | | | |
| Board certification | E | E | D |
| 16 hours CME in skeletal trauma | E | E | D |
| ATLS completion | D | D | D |
| Peer review committee attendance>50% | E | E | E |
| Multidisciplinary committee attendance | E | E | E |
| **FACILITIES/RESOURCES/CAPABILITIES**<br>**Volume Performance** | | | |
| Trauma admissions 1,200/year | E | - | - |
| Patients with ISS>15 (240 total or 35 patients/surgeon)[2] | E | - | - |
| Presence of surgeon at resuscitation | E | E | E |
| Presence of surgeon at operative procedures | E | E | E |
| **Emergency Department (ED)** | | | |
| Personnel | | | |
| Designated physician director | E | E | E |
| Equipment for resuscitation for patients of **all ages** | | | |
| Airway control and ventilation equipment | E | E | E |
| Pulse oximetry | E | E | E |
| Suction devices | E | E | E |
| Electrocardiograph-oscilloscope-defibrillator | E | E | E |
| Internal paddles | E | E | E |
| CVP monitoring equipment | E | E | E |
| Standard IV fluid and administration sets | E | E | E |

| Note: In the table below, (E) represents essential while (D) represents desirable criteria. Chapter references refer to the ACS'publication entitled "Resources for Optimal Care of the Injured Patient:1999" | Levels | | |
|---|---|---|---|
| | **I** | **II** | **III** |
| Large-bore intravenous catheters | E | E | E |
| Sterile surgical sets for | | | |
| Airway control/cricothyrotomy | E | E | E |
| Thoracostomy | E | E | E |
| Venous cutdown | E | E | E |
| Central line insertion | E | E | E |
| Thoracotomy | E | E | E |
| Peritoneal lavage | E | E | E |
| Arterial catheters | E | E | D |
| Ultrasound | D | D | D |
| Drugs necessary for emergency care | E | E | E |
| X ray availability 24 hours/day | E | E | E |
| Cervical traction devices | E | E | E |
| Broselow tape | E | E | E |
| Thermal control equipment | | | |
| For patient | E | E | E |
| For fluids and blood | E | E | E |
| Rapid infuser system | E | E | E |
| Qualitative end-tidal $CO_2$ determination | E | E | E |
| Communication with EMS vehicles | E | E | E |
| **Operating Room** | | | |
| Immediately available 24 hours/day | E | D[3] | D |
| Personnel | | | |
| In-house 24 hours/day | E | D[3] | - |
| Available 24 hours/day | - | E | E |
| Age-specific equipment | | | |
| Cardiopulmonary bypass | E | D | - |
| Operating microscope | E | D | D |
| Thermal control equipment | | | |
| For patient | E | E | E |
| For fluids and blood | E | E | E |
| X ray capability, including c-arm image intensifier | E | E | E |
| Endoscopes, bronchoscope | E | E | E |
| Craniotomy instruments | E | E | D |
| Equipment for long bone and pelvic fixation | E | E | E |
| Rapid infuser system | E | E | E |
| **Postanesthetic Recovery Room (SICU is acceptable)** | | | |
| Registered nurses available 24 hours/day | E | E | E |
| Equipment for monitoring and resuscitation | E | E | E |
| Intracranial pressure monitoring equipment | E | E | D |
| Pulse oximetry | E | E | E |
| Thermal control | E | E | E |

| Note: In the table below, (E) represents essential while (D) represents desirable criteria. Chapter references refer to the ACS'publication entitled "Resources for Optimal Care of the Injured Patient:1999" | Levels | | |
|---|---|---|---|
| | **I** | **II** | **III** |
| **Intensive or Critical Care Unit for Injured Patients** | | | |
| Registered nurses with trauma education | E | E | E |
| Designated surgical director or surgical co-director | E | E | E |
| Surgical ICU service physician in-house 24 hours/day (see Chapter 11) | E | D | D |
| Surgically directed and staffed ICU service | E | D | D |
| Equipment for monitoring and resuscitation | E | E | E |
| Intracranial monitoring equipment | E | E | - |
| Pulmonary artery monitoring equipment | E | E | E |
| **Respiratory Therapy Services** | | | |
| Available in-house 24 hours/day | E | E | D |
| On call 24 hours/day | - | - | E |
| **Radiological Services (Available 24 hours/day)** | | | |
| In-house radiology technologist | E | E | D |
| Angiography | E | E | D |
| Sonography | E | E | E |
| Computed tomography | E | E | E |
| In-house CT technician | E | D | - |
| Magnetic resonance imaging | E | D | D |
| **Clinical Laboratory Service (Available 24 hours/day)** | | | |
| Standard analyses of blood, urine, and other body fluids, including microsampling when appropriate | E | E | E |
| Blood typing and cross-matching | E | E | E |
| Coagulation studies | E | E | E |
| Comprehensive blood bank or access to a community central blood bank and adequate storage facilities | E | E | E |
| Blood gases and pH determinations | E | E | E |
| Microbiology | E | E | E |
| **Acute Hemodialysis** | | | |
| In-house | E | D | - |
| Transfer agreement | - | E | E |
| **Burn Care – Organized** | | | |
| In-house or transfer agreement w/Burn Center | E | E | E |
| **Acute Spinal Cord Management** | | | |
| In-house or transfer agreement with Regional Acute Spinal Cord Injury Rehabilitation Center | E | E | E |
| **REHABILITATION SERVICES** | | | |
| Transfer agreement to an approved rehabilitation facility | E | E | E |
| Physical therapy | E | E | E |
| Occupational therapy | E | E | D |
| Speech therapy | E | E | D |
| Social Service | E | E | E |

| Note: In the table below, (E) represents essential while (D) represents desirable criteria. Chapter references refer to the ACS'publication entitled "Resources for Optimal Care of the Injured Patient:1999" | Levels | | |
|---|---|---|---|
| | **I** | **II** | **III** |
| **PERFORMANCE IMPROVEMENT** | | | |
| Performance improvement programs | E | E | E |
| Trauma registry | | | |
| In-house | E | E | E |
| Participation in state, local or regional registry | E | E | E |
| Orthopaedic database | D | D | - |
| Audit of all trauma deaths | E | E | E |
| Morbidity and mortality review | E | E | E |
| Trauma conference – multidisciplinary | E | E | E |
| Medical nursing audit | E | E | E |
| Review of prehospital trauma care | E | E | E |
| Review of times and reasons for trauma-related bypass | E | E | D |
| Review of times and reasons for transfer of injured patients | E | E | D |
| Performance improvement personnel dedicated to care of injured patients | E | E | D |
| **CONTINUING EDUCATION/OUTREACH** | | | |
| General surgery residency program (see Chapter 17) | E | D | - |
| ATLS provide/participate | E | D | D |
| Programs provided by hospital for: | | | |
| Staff/community physicians (CME) | E | E | E[4] |
| Nurses | E | E | E |
| Allied health personnel | E | E | E |
| Prehospital personnel provision/participation | E | E | E |
| **PREVENTION** | | | |
| Injury control studies | E | D | - |
| Collaboration with other institutions | E | D | D |
| Monitor progress/effect of prevention programs | E | D | D |
| Designated prevention coordinator-spokesperson for injury control | E | E | D |
| Outreach activities | E | E | D |
| Information resources for public | E | E | D |
| Collaboration with existing national, regional, and state programs | E | E | D |
| Coordination and/or participation in community prevention activities | E | E | E |
| **RESEARCH** | | | |
| Trauma registry performance improvement activities | E | E | E |
| Research committee | E | D | - |
| Identifiable IRB process | E | D | - |
| Extramural educational presentations | E[5] | D | D |
| Number of scientific publications | E[6] | D | - |

## FOOTNOTES

[1]When emergency medicine specialists are not involved with the care of the injured patient, these criteria are not required.

[2]The mechanism to calculate ISS should be through use of AIS 90 and handcoding.

[3]An operating room must be adequately staffed and immediately available in a Level I trauma center. This is met by having a complete operating room team in the hospital at all times so if an injured patient requires operative care, the patient can receive it in the most expeditious manner. These criteria cannot be met by individuals who are also dedicated to other functions within the institution. Their primary function must be the operating room.

An operating room must be adequately staffed and available when needed in a timely fashion in a Level II trauma center. The need to have an in-house OR team will depend on a number of things, including patient population served, ability to share responsibility for OR coverage with other hospital staff, prehospital communication, and the size of the community served by the institution. If an out-of-house OR team is used, then this aspect of care must be monitored by the performance improvement program.

Brasel KJ, Akason J, Weigelt JA: The dedicated operating room for trauma: A costly recommendation, *J Trauma* 1998; 14: 832-838.

[4]In areas where the Level III hospital is the lead institution, these educational activities are an essential criteria. When the Level III is in an area that contains other hospital resources, such as a Level I or II, then this criteria is no longer essential.

[5]Four Educational Presentations per year for the program. These presentations must be given outside the academically affiliated institutions of the Trauma Center.

[6]Publications should appear in peer-reviewed journals. *Index Medicus* listing is preferable. In a three-year cycle, the minimum acceptable number is 10 for the entire trauma program. This must include a minimal activity of one publication (per review cycle) from the physicians representing each of the four following specialties: emergency medicine, general surgery, orthopaedic surgery, and neurosurgery.

**AMENDMENTS**
**to the document**
**"Resources for Optimal Care of the Injured Patient: 1999"**
**as provided by**
**American College of Surgeons, Committee on Trauma, June 28, 2000**
**Verification/Consultation Program for Hospitals**

1) The volume performance criteria for Level I verification will consist of:
   - A. 1200 admissions per year
   - B. OR 240 admissions with ISS > than 15 OR
   - C. an average of 35 patients of ISS>15 for the trauma panel surgeons. Each individual surgeon does not have to have 35 patients with ISS >15 as long as the average for all trauma panel surgeons is 35 cases.

2) The volume criterion of 1200 patients per year may include burn patients when the trauma service and NOT A SEPARATE BURN SERVICE is responsible for burn care.

3) A surgeon who is board certified/eligible may fulfill the pediatric surgical emergency department attending response criterion even when he/she is a surgical Fellow.

4) External treatment guidelines such as the AANS Guidelines for the Treatment of Head Injuries will be treated as recommendations. Lack of specific compliance to external guidelines or even internal hospital guidelines will not, by itself, be a criterion deficiency. The reviewer, however, may identify poor care within a specialty as a deficiency.

5) There must be a multi-disciplinary peer review committee meeting with an attendance requirement. The makeup of this multi-disciplinary peer review committee is comprised of the Trauma Medical Director, representatives of General Surgery, Orthopedic Surgery, Neurosurgery, Emergency Medicine, Anesthesia, and Trauma Nurse Coordinators/Trauma Program Managers OR their alternates. There is an attendance requirement of at least 50% by the representatives from General Surgery, Neurosurgery, Orthopedic Surgery, Anesthesia, and Emergency Medicine, or his or her alternate. The goals of this committee are to:

   - A) review selective deaths;
   - B) review complications;
   - C) discuss sentinel events;
   - D) review organizational issues on a regular basis and in a systematic fashion.

   The objectives of this multi-disciplinary peer review committee are:
   - A) to identify and resolve problems or specific issues that need to be rectified and/or
   - B) trigger new policies/protocols and have the representatives from the various departments listed above act as a conduit or information back to their respective departments.

6) Each physician on the General Surgical, Orthopedic, Neurosurgical, and Emergency Medicine trauma panel will have an average of 16 hours of trauma related CME per year. At least 50% of this CME must be extramural; both Category I and Category II CME n be counted.

7) Trauma specialists who work in centers which provide care for only injured children, must have 16 hours of trauma related CME per year.

8) Pediatric specific CME for specialists working in centers providing care for both injured adults and children is no longer mandated.

9) Verification of a Level I trauma center that cares for only injured children requires that there be at least two pediatric trained (residency, fellowship, or practice pattern) general surgeons, orthopedic surgeons, neurosurgeons, and emergency physicians.

10) The presence of a Research committee with Research director and documented minutes is no longer a criterion for verification.

11) Research productivity must include ten peer reviewed publications over a three year period. These publications may come from any aspects of the trauma program. In addition, twelve education/outreach presentations must occur over a three year period.

12) When the surgical coverage for the ICU patient comes from out-of-house, there must be documentation of appropriate response time.

13) A non-boarded specialist who does not meet all of the eight criteria listed in the Alternate Pathway document may be included on the trauma panel if he/she has:

    A) provided exceptional care of trauma patients;
    B) has numerous publications and presentations;
    C) has published excellent research;
    D) and is documented to provide excellent teaching.

14) The trauma medical director, although not board certified, will still qualify to be the trauma medical director if he/she is a Fellow of the ACS.

15) There must be a surgeon in the community and available to take trauma call to have a Level IV site visit.

16) The presence of a cardiopulmonary capability and operating microscope equipment are necessary for Level I verification. This does not have to be age specific.

17) The minimum criteria for the definition of a major resuscitation are as follows:

    A. **CONFIRMED** blood pressure<90 at any time in adults and age specific hypotension for children;

B. Respiratory compromise/obstruction and/or intubation;
C. Transfer patients from other hospitals receiving blood to maintain vital signs;
D. Emergency physician's discretion;
E. Gunshot wounds to the abdomen, neck, or chest;
F. GCS<8 with mechanism attributed to trauma.

18) The attending surgeon is expected to be present in the ED upon patient arrival in all patients meeting the **hospital specific guidelines for defining a major resuscitation** when given sufficient advance notification from the field OR within fifteen minutes of trauma team activation when the advance notification is short. Documentation of compliance with this expectation must be 80% or greater to be verified.

19) In a Level II trauma center, with regard to Anesthesia, requirements may be fulfilled when local conditions assure that the staff Anesthesiologist will be in the hospital at the time of arrival of the trauma patient. During the interim period prior to the arrival of the staff Anesthesiologist, an IN-HOUSE certified registered nurse anesthetist (CRNA) capable of assessing emergent situations in trauma patients, and of initiating and providing any indicated treatment will be available. In some hospitals without a CRNA IN-HOUSE, local conditions may allow Anesthesiologists to be rapidly available on short notice. Under these circumstances, local criteria must be established to allow Anesthesiologists to take call from outside the hospital but WITH THE CLEAR COMMITMENT THAT the Anesthesiologists will be IMMEDIATELY AVAILABLE for airway emergencies and operative management. The availability of the Anesthesiologist and the absence of delays in airway control and/or operative Anesthesia management MUST BE DOCUMENTED in the hospital PI process. The Level I trauma center in-house Anesthesia requirement, as noted on page 43 of the document, "**Resources for Optimal Care of the Injured Patient**" remains the same.

20) Board certification for Anesthesia is desirable but not required.

File: c:\srhyne\word97\acs trauma criteria gold book2