

Title: 22-B Public Health and Medicine
Chapter: 28 Pediatric Trauma Care

Web Site:

<http://www.dcregs.dc.gov/Gateway/ChapterHome.aspx?ChapterNumber=22-B28>

2800 GENERAL PROVISIONS

- 2800.1 The Director, Department of Health, shall designate Level I and Level II hospitals for pediatric trauma care services as the inclusive trauma system in the District of Columbia, provided a facility complies with the provisions of this chapter.
- 2800.2 The provisions of this chapter shall be used by the District of Columbia for the purposes of assessing the suitability of hospitals for receipt of certain pediatric trauma patients in the District of Columbia's Emergency Medical Services System (EMS).
- 2800.3 An inclusive trauma care system is a system that is fully integrated into the EMS system and is designated to meet the needs of all injured patients requiring care in an acute care facility, regardless of severity of injury, Geographic location, or population density.
- 2800.4 An inclusive trauma care system shall have the following components:
- (a) Medical direction;
 - (b) Prevention;
 - (c) Communication;
 - (d) Training;
 - (e) Triage;
 - (f) Prehospital care;
 - (g) Transportation;
 - (h) Hospital care;
 - (i) Public education;
 - (j) Rehabilitation; and
 - (k) Research.
- 2800.5 An inclusive trauma care system shall be composed of the following:
- (a) System management;
 - (b) Prehospital providers;
 - (c) Acute care facilities; and
 - (d) Rehabilitation/reconstructive services.
- 2800.6 The designation of a pediatric trauma center as Level I and Level II guarantees the immediate availability and dedication of specialized surgeons, anesthesiologists, physician specialists, nurses, and resuscitation life-support equipment at the facilities on a twenty-four (24) hour-a day basis.

- 2800.7 Level I facilities shall have the capability to provide total care for every aspect of an injury, and shall ensure prompt transfer between facilities during all phases of acute and rehabilitative care.
- 2800.8 A Level I pediatric trauma center shall be an institution which, in addition to meeting the Level II guidelines, shall deploy and coordinate resources for the special types of care required for the major and multiple pediatric trauma victim and have a continued commitment to training and research as minimal characteristics of the hospital's commitment to pediatric trauma care.
- 2800.9 Level II facilities may have the capability to provide total care for every aspect of an injury and may ensure prompt transfer between facilities during all phases of acute and rehabilitative care.
- 2800.10 For optimal care of the severely injured, Level I and Level II facilities shall meet the following requirements:
- (a) Skilled surgeons and other members of the trauma team shall be immediately available;
 - (b) When an arriving patient meets the hospital-specific guidelines defining a major resuscitation, the attending surgeon shall be present in the emergency department:
 - (1) Upon arrival of the patient, when there is advance notification from the field; or
 - (2) Within fifteen (15) minutes of activating the trauma team, when there is no advance notification;
 - (c) Compliance with the requirements of subsections (a) and (b) at a rate of eighty percent (80%) or greater shall be documented; and
 - (d) The following minimum criteria shall be used to define a major resuscitation:
 - (1) Hypotension: infant less than sixty (60) Systolic Blood Pressure (SBP), child less than seventy (70) SBP, and adolescent less than eighty (80) SBP;
 - (2) Glasgow Coma Scale less than eight (8) with hemodynamic instability;
 - (3) Penetrating injury with hemodynamic instability;
 - (4) Transfusion: interhospital transfer;
 - (5) Burns more than fifty percent (50%) of body surface;
 - (6) Vascular, thoracic, abdominal management;
 - (7) Hemodynamics Instability: infant less than sixty (60) SBP, child less than seventy (70) SBP, adolescent less than eighty (80) SBP, Oxygen saturation less than ninety-three percent (93%), and capillary refill more than four (4) seconds; and
 - (8) Discretion of Surgical Coordinator or Emergency Department (ED) attending physician.
- 2800.11 All major pediatric trauma patients shall be admitted to a pediatric trauma center.
- 2800.12 Each Level I facility shall conduct research at the clinical or basic sciences level, and shall be responsible for disseminating new information.

- 2800.13 A designated person in each Level I and Level II facility shall be responsible for multi-disciplinary and interdepartmental coordination of trauma care.
- 2800.14 Each facility shall be in compliance with all applicable local laws and regulations.
- 2800.15 The management and operation of any pediatric trauma care facility shall be in accordance with good medical and public health practices.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2801 INJURY PREVENTION AND CONTROL

- 2801.1 Each pediatric trauma care facility shall implement injury prevention and control programs to accomplish injury prevention.
- 2801.2 Institutional involvement in injury prevention programs shall be based upon the resources of staff, time, and funds available.
- 2801.3 Injury prevention may be categorized in terms of primary, secondary, or tertiary implementation. Primary prevention refers to the elimination of the trauma incident. Secondary prevention refers to reducing the severity of injuries during the incident through the use of safety restraints and helmets. Tertiary prevention includes all efforts following the trauma incident that optimize outcome, thereby preventing complications, long-term disability, or death.
- 2801.4 Pediatric trauma care facilities shall develop an injury prevention program. In developing the program, the facility shall:
- (a) Gather and analyze data;
 - (b) Select a target population and its injuries;
 - (c) Develop intervention strategies;
 - (d) Identify, select, and obtain commitments from public and private institutions to implement the program;
 - (e) Develop protocols and materials;
 - (f) Orient and train organizations and individuals;
 - (h) Provide monitoring and support; and
 - (i) Evaluate and revise as necessary.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999).

2802 HOSPITAL ORGANIZATION - PEDIATRIC TRAUMA SERVICES

- 2802.1 The staff credentialing committee of a pediatric trauma care facility shall specifically delineate all privileges of members of the staff providing Pediatric Trauma Services.
- 2802.2 Each pediatric trauma resuscitation team shall be organized and directed by a general surgeon with expertise in and commitment to the care of the injured. All pediatric patients with multiple

system or major injury shall be evaluated by the trauma services team.

- 2802.3 Each pediatric trauma team shall be available in-house twenty-four (24) hours per day with attending coverage as specified in this chapter.
- 2802.4 The team leader during the resuscitation efforts shall be an emergency department physician until the arrival of a surgeon who shall then act as the team leader.
- 2802.5 Each facility shall provide a team approach for responding to the needs of and giving optimal care to pediatric patients with multiple-system injuries. Each team leader shall be a qualified surgeon contributing specific care in the area of his or her specialty, and shall continually oversee and coordinate the operation of the team and care of its patients throughout their hospital stay.
- 2802.6 The team leader shall be able to interpret and reconcile the recommendations of team members and consultants from a number of specialties and accept the responsibility for transmitting those recommendations to the hospital staff.
- 2802.7 Each pediatric trauma care facility shall appoint a Trauma Service Director who shall be a board certified surgeon with demonstrated special competence in pediatric trauma care.
- 2802.8 The Trauma Service Director shall have oversight authority for the care of each trauma patient and administrative authority for the hospital's trauma program.
- 2802.9 The Trauma Service Director shall be responsible for recommending appointment to and removal from the trauma service, along with the medical staff credentialing committee, and in consultation with the appropriate service chief.
- 2802.10 The Trauma Service Director shall meet each of the specific qualifications for surgeons, including personal involvement in the care of the injured, education in trauma care, involvement in professional trauma organizations and board certification.
- 2802.11 In pediatric trauma care facilities, the Trauma Service Director shall have active involvement or participation as an instructor in the American College of Surgeons PALS (Pediatric Advanced Life Support) courses, participation in other CME (Continuing Medical Education) courses, and the provision of instruction to other health care personnel.
- 2802.12 The Trauma Service Director shall have the appropriate specific responsibilities of evaluating newly appointed members of the trauma service and overseeing ongoing education for new and existing attending surgeons and physicians as appropriate.
- 2802.13 The Trauma Service Director, or his or her designee, shall participate in the development of pediatric trauma-care systems at the community, state, or national levels.
- 2802.14 The Trauma Service Director in Level I facilities shall be responsible for encouraging the staff to undertake clinical and basic research, with publication of their results.
- 2802.15 The Trauma Service Director shall make presentations on trauma care to medical staff and other health care organizations providing trauma care.
- 2802.16 The Trauma Service Director shall be responsible for quality improvement in each pediatric trauma care facility.
- 2802.17 Each pediatric trauma care facility shall have designated specialists available twenty-four (24) hours per day for the care of major trauma patients.
- 2802.18 Each pediatric trauma care facility shall be staffed by surgeons who are board certified in a surgical specialty recognized by the American Board of Medical Specialties.
- 2802.19 Each trauma surgeon in a pediatric trauma care facility shall have an interest in and a

commitment to trauma care, demonstrated by participation in the organization of trauma protocols, trauma teams, trauma call rosters, and trauma rounds.

- 2802.20 General surgeons on the trauma team in pediatric trauma care facilities shall successfully complete the American College of Surgeons Advanced Trauma Life Support (ATLS) Course.
- 2802.21 Each surgeon member of the trauma team shall participate in a minimum of sixteen (16) hours of trauma-related continuing medical education (CME) courses per year. At least fifty percent (50%) of this CME shall be extramural and both category I and category II CME may count toward satisfying that requirement.
- 2802.22 A physician's participation in regional groups, such as state and regional trauma committees, and membership in regional organizations, shall constitute significant involvement in and commitment to trauma-related matters.
- 2802.23 In each pediatric trauma care facility, the emergency physician shall be a member of the trauma team who participates in the care of the patient and in all audits and critiques necessary for excellence in trauma care.
- 2802.24 Emergency physicians shall be involved with surgeons in the development of trauma care systems as part of the overall development of emergency medical systems in the community. In addition, they shall be active in organizations contributing to the benefit of injured patients.
- 2802.25 An anesthesiologist shall have the overall responsibility for preoperative airway control of the patient during resuscitation, and act as postoperative consultant in cardiorespiratory support and pain control. An anesthesiologist on the trauma team shall satisfy the following requirements:
- (a) Be appropriately certified;
 - (b) Have the necessary educational background in care of the trauma patient;
 - (c) Engage in trauma quality improvement; and
 - (d) Engage in investigative, teaching, and community activities.
- 2802.26 The emergency physician and anesthesiologist on the trauma team shall be board certified in their respective specialties as recognized by the American Board of Medical Specialties.
- 2802.27 In each pediatric trauma care facility; the following medical specialists shall be available for consultation in the area of patients with multiple injuries:
- (a) Cardiologist;
 - (b) Pulmonary medicine;
 - (c) Respiratory therapy;
 - (d) Nephrologist; and
 - (e) Dialysis team.
 - (f) Repealed.
 - (g) Repealed.
 - (h) Repealed.
 - (i) Repealed.

- (j) Repealed.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2803 TRAUMA COORDINATOR

- 2803.1 Each pediatric trauma care facility shall have a trauma coordinator who is fundamental to the institution's trauma program development, implementation, and evaluation. Working in conjunction with the Trauma Service Director, the trauma coordinator shall be responsible for the organization of services and systems necessary for a multidisciplinary approach throughout the continuum of trauma care. The trauma coordinator is supervised by the Trauma Service Director.
- 2803.2 The trauma coordinator shall have an active role in the following:
- (a) Participating in clinical activities, including:
 - (1) Developing clinical protocols;
 - (2) Monitoring patient care; and
 - (3) Assisting staff in problem solving;
 - (b) Ensuring continuing education for staff, including:
 - (1) Assisting in professional staff development activities;
 - (2) Conducting case reviews;
 - (3) Arranging continuing education for trauma care staff;
 - (4) Developing and implementing a community trauma education program; and
 - (5) Establishing trauma prevention programs;
 - (c) Conducting trauma research, including:
 - (1) Developing Protocol design; and
 - (2) Performing data collection and analysis, and distribution of findings;
 - (d) Assisting in developing a quality assurance program, including the development of audit filters and case reviews;
 - (e) Performing administrative duties, including organization management, budget preparation and staff accountability;
 - (f) Assisting in maintaining a trauma registry, performing data collection, coding including external causes of injury, e-coding and scoring, and developing processes for validating data and submitting the data to the citywide trauma registry maintained by the District of Columbia Department of Health; and
 - (g) Serving as a consultant and liaison to medical staff, prehospital EMS agencies, patients' families and the community at large.

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2804 HOSPITAL DEPARTMENTS, DIVISIONS, SERVICES, SECTIONS

2804.1 Each pediatric trauma care facility shall have departments, divisions, services, or sections with designated chiefs and shall be staffed by qualified pediatric specialists in the following areas:

- (a) General Surgery;
- (b) Neurologic Surgery;
- (c) Orthopedic Surgery;
- (d) Emergency Services; and
- (e) Anesthesia.
- (f) Repealed.
- (g) Repealed.
- (h) Repealed.
- (i) Repealed.
- (j) Repealed.

2804.2 In each pediatric trauma care facility; a clearly identifiable neurosurgeon shall be promptly available when a patient needs to be seen. Immediate care necessitates a reliable on-call schedule with a specific protocol for back-up coverage.

2804.3 The requirement set forth in § 2804.2 may be fulfilled by an in-house neurosurgeon or other surgeon who has special competence in the care of patients with neurotrauma, as judged by the chief of neurosurgery, and who is capable of undertaking measures for the stabilization and treatment of neurotrauma patients.

2804.4 In each pediatric trauma care facility, the following minimum personnel and equipment required for the treatment of severe neurological trauma shall be on call and promptly available for the treatment of trauma patients at all times:

- (a) Specifically named surgeon;
- (b) Specifically named neurosurgeon;
- (c) Emergency department staffed twenty-four (24) hours per day by a physician who has successfully completed training in Advanced Trauma Life Support (ATLS) or who has demonstrated his or her level of expertise as determined by the Trauma Service Director;
- (d) Twenty-four (24) hour availability of an operating room capable of the rapid acceptance of patients for craniotomy or spinal surgery;
- (e) Twenty-four (24) hour availability of a computerized tomographic (CT) scanner and technician;

- (f) Intensive care unit (ICU) with appropriate equipment and staffing, including capabilities for monitoring intracranial pressure (ICP); and
 - (g) A clearly defined bypass plan in the event of unavailability of the neurosurgeon or other essential resources.
- 2804.5 The care of neurological trauma may also include readily available magnetic resonance imaging (MRI) scanner.
- 2804.6 An orthopedic surgeon shall be available at all times for the optimal management of the trauma patient. The orthopedic surgeon shall be a member of the trauma team.
- 2804.7 An orthopedic surgeon shall have immediate and ongoing participation in the care of patients with musculoskeletal injuries, and shall interact with the rest of the trauma team regarding patient care.
- 2804.8 An orthopedic surgeon shall be promptly available to participate in the initial evaluation of the trauma patient in the emergency department. The orthopedic surgeon shall evaluate the neurovascular status and structural integrity of the extremities and axial skeleton.
- 2804.9 The minimum qualifications of an orthopedic surgeon on-call shall include the following:
- (a) Board certification (or eligibility during the first five (5) years after residency);
 - (b) Not less than sixteen (16) documented hours of Category I or II Continuing Medical Education (CME) per year in skeletal traumatology; and
 - (c) Participation in the facility's trauma service educational and quality improvement activities.
- 2804.10 Orthopedic surgeon shall have demonstrated skill in:
- (a) The management of open wounds;
 - (b) Recognition and treatment of compartment syndrome;
 - (c) External fixation of femoral fractures; and
 - (d) Internal fixation of femoral fractures.
- 2804.11 Each pediatric trauma care facility shall provide, for optimal musculoskeletal management, an adequate extended team composed of orthopedic assistants, nurses, physician assistants, and others who can assist with casts and traction, and can provide evaluation and care of patients both in the emergency room and on the acute care units.
- 2804.12 Operating room nurses and technologists shall be experienced in the use and care of fracture-fixation instruments and devices, as well as able to provide appropriate assistance during skeletal surgery. Appropriately trained X-ray technologists must be available in the operating room to assist with fluoroscopic procedures and to provide prompt radiographs when needed.
- 2804.13 Each pediatric trauma care facility shall maintain essential equipment for optimal fracture treatment, including:
- (a) A complete stock of plaster, fiberglass cast, and splint material with adequate padding;
 - (b) Equipment for skeletal traction of spine and extremities;
 - (c) A complete set of modular external fixation devices;

- (d) A pulse-lavage unit with appropriate protective shields, including waterproof gowns and drapes;
- (e) Tissue pressure measurement equipment;
- (f) An image-intensifier fluoroscope;
- (g) A fracture table, compatible with the fluoroscope, that permits supine and lateral decubitus positions, with attachments for procedures on femur, tibia, upper extremity, and pelvis;
- (h) A radiolucent operating table for intraoperative fluoroscopy of pelvis, extremities, and spine;
- (i) Intramedullary nailing instruments and implants for femur, tibia, and humerus; interlocking nail equipment is essential for the femur and tibia, and nails that can be used without reaming the medullary canal shall also be available;
- (j) Standard sets of instruments, including power drills, reamers, and wire drivers for fracture fixation of small and large bones, with assorted plates and screws, including fixation devices for the proximal and distal femur, with sideplate length sufficient for extensive shaft comminution and multiple levels of injury;
- (k) Instruments and implants for reducing and stabilizing spinal injuries and for decompressing the spinal canal if necessary; and
- (l) Equipment and supplies for microvascular and microneural surgery.

2804.14 Each pediatric trauma care facility shall maintain an adequate number of orthopedists committed to trauma care. Orthopedists assigned to provide scheduled coverage for trauma patients shall qualify for membership on the trauma service team and shall participate in service activities, especially those related to quality improvement and so the development of institutional protocols for systematic evaluation and management of common injuries.

2804.15 In Level I facilities, orthopedic members of the trauma service are responsible for teaching and research appropriately related to musculoskeletal injuries and for providing readily available consultation to physicians in the surrounding community.

2804.16 In each pediatric trauma care facility, a general orthopedist shall provide primary care for musculoskeletal injuries. When orthopedic trauma specialists are not immediately available, the initial orthopedic care may be provided by another member of the staff, who will then transfer that patient to the specialist. Interhospital transfer shall be required in appropriate cases.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2805 CLINICAL CAPABILITIES (HOSPITAL PERSONNEL)

2805.1 Each pediatric trauma care facility shall have the following surgical specialties available in-house twenty-four (24) hours each day:

- (a) General Surgery;
- (b) Repealed.

- (c) Repealed.
 - (d) Emergency Medicine;
 - (e) Anesthesiology; and
 - (f) Repealed.
- 2805.2 The evaluation and treatment of a patient may be started by a team of surgeons that includes, at a minimum, a post-graduate resident in at least the fourth (4th) year of training.
- 2805.3 The attending surgeon shall participate in each major therapeutic decision and be present at each operative procedure. Compliance with these criteria and their appropriateness shall be monitored by the hospital's trauma performance improvement program.
- 2805.4 An attending neurosurgeon shall be available and dedicated to that hospital's trauma service. This requirement may be satisfied by an in-house neurosurgery resident or physician who has special competence, as judged by the chief of neurosurgery, in the care of patients with neurological trauma, and who is capable of initiating measures to stabilize the patient and initiate diagnostic procedures.
- 2805.5 Each Level I facility shall have personnel on-call and promptly available with competence to access or perform procedures in the following areas:
- (a) Cardiac Surgery;
 - (b) Cardiology;
 - (c) Hand Surgery;
 - (d) Infectious Disease;
 - (e) Microvascular Surgery (replant/flaps);
 - (f) Ophthalmic Surgery;
 - (g) Oral/Maxillofacial Surgery;
 - (h) Orthopedic Surgery;
 - (i) Internal Medicine;
 - (j) Plastic Surgery;
 - (k) Pulmonary Medicine;
 - (l) Radiology;
 - (m) Urologic Surgery;
 - (n) Obstetrics-Gynecologic Surgery; and
 - (o) Thoracic Surgery.
- 2805.6 Each Level II facility shall have personnel on-call and available with the competence to perform procedures in the following areas:
- (a) Cardiology;
 - (b) Internal medicine;

- (c) Obstetric/gynecologic surgery;
- (d) Ophthalmic surgery;
- (e) Oral/maxillofacial surgery;
- (f) Orthopedic surgery;
- (g) Plastic surgery;
- (h) Pulmonary medicine;
- (i) Thoracic surgery;
- (j) Urologic surgery; and
- (k) Radiology.

2805.7 Each Level II facility may have personnel on-call and available with competence to perform procedures in the following areas:

- (a) Cardiac surgery;
- (b) Hand surgery;
- (c) Infectious disease; and
- (d) Microvascular surgery (replant/flaps).

2805.8 In non-surgical specialty cases the patient's primary care physician shall be notified at an appropriate time.

2805.9 Thoracic surgery may be performed by a general trauma surgeon with privileges to provide thoracic surgical care to patients with thoracic injuries.

2805.10 Transplant specialists shall be provided as follows:

- (a) Level I facilities may have transplant specialists on-staff and available to respond for consultation; if no transplant specialists are on-staff, a Level I facility shall have a written transfer agreement with another facility for needed transplant service;
- (b) Level II facilities shall have a written transfer agreement with another facility for needed transplant service, and transfer shall take place if transplant personnel or resources are not available at the Level II facility.

2805.11 The requirement to provide emergency medical services may be satisfied by an emergency medicine chief resident capable of assessing emergency situations in trauma patients and providing any indicated treatment. When senior residents are used to satisfy availability requirements, the staff specialist on-call shall be advised and be available for consultations.

2805.12 The requirement to provide anesthesiology services may be satisfied in a Level I facility by an anesthesiology chief resident or a certified nurse anesthetist (CRNA) capable of assessing emergency situations in trauma patients, and providing any indicated treatment, including surgical anesthesia. When an anesthesiology resident or a CRNA is used to satisfy availability requirements the staff anesthesiologist on-call shall be advised and be promptly available.

2805.13 The requirement to provide anesthesiology services is satisfied in a Level II facility when the staff anesthesiologist will be in the hospital at the time of, or shortly after, the patient's arrival. Before the staff anesthesiologist arrives, an Anesthesiology chief resident or a CRNA capable

of assessing emergency situations in trauma patients and of initiating and providing any indicated treatment shall be available.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2806 FACILITY RESOURCES AND CAPABILITIES

2806.1 In each pediatric trauma facility, emergency department personnel shall consist of at least the following:

- (a) A designated physician director of the emergency department;
- (b) A physician with special competence in care of the critically injured who is a designated member of the trauma team and is physically present in the emergency department twenty-four (24) hours per day; and
- (c) Nursing personnel with special capability in trauma care who provide continual monitoring of the trauma patient from hospital arrival to disposition in the pediatric intensive care unit (PICU), operating room (OR), or patient care unit.

2806.2 The requirement for an emergency medicine physician may be satisfied by an emergency medicine senior resident capable of assessing emergency situations in trauma patients and providing any indicated treatment. When a senior resident is used to satisfy this requirement the staff specialist on-call will be advised and will be promptly available. Supervision shall be provided by an in-house attending emergency physician twenty-four (24) hours per day in an institution where there is an emergency medicine residency training program.

2806.3 A team available for twenty-four (24) hours per day in-house coverage in the emergency department and who provides the initial management of the major pediatric trauma patient shall consist of at least the following personnel:

- (a) An emergency department attending physician with knowledge of trauma care who is Advanced Trauma Life Support (ATLS) Certified and may be Pediatric Advanced Life Support (PALS) Certified, or who has demonstrated an appropriate level of expertise as determined by the Trauma Service Director. An appropriate level of expertise is demonstrated with not less than sixteen (16) hours trauma-related Continuing Medical Education (CME), board certification, clinical involvement, and special interest in trauma.
- (b) Surgical residents, as follows:
 - (1) In Level I facilities, each surgical resident shall be in at least his or her fourth (4th) year of post-graduate specialty training; and
 - (2) In Level II facilities, each surgical resident shall be at least in his or her third (3rd) year of post-graduate specialty training;
- (c) An anesthesiologist who shall be promptly available when the initial response by an anesthesiology chief resident or a critical care nurse anesthetist;
- (d) A minimum of two (2) nurses familiar with emergency and critical care, qualified to function as members of the trauma team by specific criteria defining orientation and practice requirements; one (1) nurse shall have specialized knowledge of trauma care; and
- (e) Registered nurses, licensed practical nurses, and nurses aides in sufficient number to

provide appropriate coverage.

- 2806.4 The in-house team shall be on group call pagers to meet each patient with maximum readiness upon arrival. If the in-house team is not on group call pagers, a paging system shall function to mobilize the team within a maximum of two (2) minutes.
- 2806.5 The annual team responses for a pediatric Level I trauma center shall be at least twelve hundred (1200) patients, or a minimum of two hundred and forty (240) patients with an Injury Severity Score of greater than fifteen (15), or more than thirty five (35) patients with an Injury Severity Score of greater than fifteen (15) on average for all trauma panel surgeons.
- 2806.6 Repealed.
- 2806.7 Each pediatric trauma care facility shall have mobile X-ray capability with twenty-four (24) hours per day coverage by in-house technicians.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2807 PEDIATRIC TRAUMA RESUSCITATION AREA

- 2807.1 In each pediatric trauma care facility, the emergency department shall have a large space designated and dedicated as the trauma resuscitation area. The space shall be large enough to allow assembly of the full trauma team plus necessary equipment including ventilators and/or portable X-ray machine.
- 2807.2 Equipment may include ultrasound. Equipment or procedure trays to perform invasive treatments shall be available as follows:
- (a) Airway control and ventilation equipment;
 - (b) Pulse oximetry;
 - (c) Suction devices;
 - (d) Electrocardiograph-oscilloscope-defibrillator;
 - (e) Internal paddles;
 - (f) Central venous pressure (CVP) monitoring equipment;
 - (g) Standard intravenous (IV) fluids and administration sets;
 - (h) Large-bore intravenous catheters;
 - (i) Sterile surgical sets airway control/cricothyrotomy, thoracostomy, venous cutdown, central line insertion, thoracotomy, peritoneal lavage;
 - (j) Arterial catheters;
 - (k) Drugs necessary for emergency care;
 - (l) X-ray availability twenty-four (24) hours per day;
 - (m) Cervical traction devices;
 - (n) Broselow tape;

- (o) Thermal control equipment for patient, fluids, and blood;
 - (p) Rapid infuser system;
 - (q) Qualitative end-tidal Carbon Dioxide (CO₂) determination; and
 - (r) Communication with Emergency Medical Service (EMS) vehicles.
- 2807.3 The pediatric trauma resuscitation area shall contain adequate telephones, telephone lines, and intercoms.
- 2807.4 In Level I facilities, dedicated phone lines shall be used between the resuscitation area and the blood bank and/or operating room. Large wallboards shall display team members' names and roles, as well as key hospital phone numbers and on-call personnel.
- 2807.5 Each adult trauma care facility, shall have the following communication capabilities:
- (a) Prehospital to hospital link for direct medical command and early hospital notification;
 - (b) Trauma team alert and activation;
 - (c) Prehospital provider and trauma team information transfer;
 - (d) Trauma team and intrafacility personnel communication; and
 - (e) Interfacility communication.
- 2807.6 In each pediatric trauma care facility, the pediatric resuscitation area trauma team shall consist of at least the following personnel:
- (a) Surgeon (Trauma team leader);
 - (b) Emergency physician;
 - (c) Anesthesia personnel;
 - (d) Nurses;
 - (e) Respiratory therapist;
 - (f) Radiologic technologist;
 - (g) Blood bank or laboratory personnel;
 - (h) Operating room staff;
 - (i) Surgical and emergency residents;
 - (j) Critical care nurse;
 - (k) Security officer;
 - (l) Chaplain; and
 - (m) Social worker.
- 2807.7 Each individual trauma team member shall assist on the assessment of the patient with simultaneous life support, diagnosis of injuries, acquisition of laboratory specimens, initial

radiographic survey, and communication and mobilization of any and all necessary hospital resources.

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2808 PEDIATRIC OPERATING SUITE

2808.1 Operating suites in each pediatric trauma care facility shall be staffed and equipped to handle each pediatric patient brought into the emergency department in need of immediate surgical intervention.

2808.2 Operating suites in Level I facilities shall be adequately staffed in-house and immediately available twenty-four (24) hours per day. Operating suites in Level II facilities may be adequately staffed in-house and immediately available twenty-four (24) hours per day.

2808.3 Each operating suite in Level I and Level II facilities shall have equipment suitable for use with children, including:

- (a) Thermal control equipment for patients, blood, and fluids;
- (b) X-ray capability, including C-arm image intensifier available twenty-four (24) hours per day;
- (c) Endoscopes and a bronchoscope;
- (d) Craniotomy instruments;
- (e) Equipment appropriate for fixation of long-bone and pelvic fractures. Rapid infuser system; and
- (f) Rapid infuser system.

2808.4 Each operating suite in Level I facilities shall have the following capability and equipment, in addition to the requirements set out in § 2808.3:

- (a) Cardiopulmonary bypass capability; and
- (b) Operating microscope.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2809 POSTANESTHETIC RECOVERY ROOM (PAR)

2809.1 In each pediatric trauma care facility, the postanesthetic recovery room (PAR), which may be the Surgical Pediatric Intensive Care Unit (PICU), shall be staffed and equipped as follows:

- (a) Registered nurses and other essential personnel twenty-four (24) hours per day;
- (b) Equipment for the continuous monitoring of temperature, hemodynamics, and gas exchange;
- (c) Equipment for the continuous monitoring of intracranial pressure;

- (d) Pulse oximetry; and
- (e) Thermal control.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2810 PEDIATRIC INTENSIVE CARE UNITS (PICU) FOR TRAUMA PATIENTS

- 2810.1 A hospital shall have a surgically-directed and staffed Pediatric Intensive Care Unit (PICU) in order to be designated as a Level I trauma center.
- 2810.2 Each pediatric trauma care facility shall designate a surgical director or surgical co-director for the PICU.
- 2810.3 The pediatric trauma service that assumes initial responsibility for the care of an injured patient shall maintain that responsibility as long as the patient remains critically ill. The surgeon in charge shall remain in that role even if the patient requires admission to a pediatric intensive care unit (PICU).
- 2810.4 Medical and surgical specialists shall be consulted as needed to provide specific expertise in the care of the patient in the PICU. The surgical PICU service physician shall be in-house twenty-four (24) hours per day in Level I facilities.
- 2810.5 The surgeon team leader in a pediatric trauma care facility shall have obtained critical care training during residency or fellowship and must have expertise in the perioperative and postinjury care of the critically injured patient. The surgeon team leader shall possess a Certificate of Added Qualifications in Surgical Critical Care from the American Board of Surgery, or have documented active participation during the preceding twelve (12) months in PICU administration and quality improvement activities, and direct involvement in the PICU care of trauma patients.
- 2810.6 Each PICU shall have a physician with privileges in critical care and approved by the Surgical Critical care service Director on duty in the PICU twenty-four (24) hours a day or immediately available in the hospital.
- 2810.7 The clinical nurse manager for a PICU shall be responsible for those aspects of administration that pertain to nursing in the unit and for quality improvement in nursing. He or she shall hold certification as a Critical Care Nurse (CCRN) or have evidence of equivalent critical care training.
- 2810.8 Each nurse assigned to trauma patients shall be a registered nurse, and shall hold certification as a CCRN or have evidence of equivalent critical care training from the American Association of Critical Care Nurses. Before assuming responsibility for patients in the PICU, each nurse shall be oriented to the care of the critically ill trauma patient. Each nurse shall complete at least eight (8) hours of Continuing Medical Education each year.
- 2810.9 The course work for nurses identified in §§ 2810.7 and 2810.8 shall cover mechanisms of injury in traumatized individuals, fluid and electrolyte balance, pressure monitoring, ventilator management, and infection control. It shall also provide an overview of aspects of operative treatment of specific injuries.
- 2810.10 PICU nursing staff shall be maintained at a level that insures a nurse patient ratio of one to two (1:2) on each shift and shall be increased above this as dictated by patient acuity.
- 2810.11 Each PICU shall have support personnel available as follows:

- (a) Respiratory therapists;
- (b) Physical therapists;
- (c) Discharge planners;
- (d) Social workers;
- (e) Interpreters;
- (f) In-house radiology technologist;
- (g) In-house acute hemodialysis;
- (h) In-house computerized tomographic (CT) technician; and
- (i) Angiographer, sonographer, magnetic resonance imaging (MRI) technician.

2810.12 Equipment in the PICU shall include, but not be limited to, the following:

- (a) Cardiopulmonary resuscitation cart;
- (b) Electrocardiograph machine;
- (c) Defibrillator with internal and external paddles; and
- (d) Sets of instruments for the following procedures:
 - (1) Tracheostomy;
 - (2) Thoracostomy;
 - (3) Venous cut-down;
 - (4) Central venous puncture;
 - (5) Tracheal intubation;
 - (6) Intracranial monitoring equipment; and
 - (7) Pulmonary artery monitoring equipment.

2810.13 Each pediatric trauma care facility shall provide a PICU physician on duty twenty-four (24) hours per day. This coverage may be provided by the patient's primary physician or by a physician who is credentialed in critical care by the hospital. This coverage for emergencies is not intended to replace the primary 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.

2810.14 Each pediatric trauma care facility ICU shall provide or have immediately available the following equipment:

- (a) Scale;
- (b) Volume - cycled and pressure - cycled ventilators;
- (c) Temporary transvenous pacemakers;
- (d) Vascular and intracranial pressure monitors;

- (e) Pulse or venous oximeters;
- (f) Infusion devices;
- (g) Thermodilution cardiac output computers;
- (h) Blood warmers;
- (i) Equipment for rapid warming and cooling off of patients;
- (j) Orthopedic traction devices;
- (k) Beds designed for care of patient with spinal cord injuries and for patients at high risk for decubitus ulcers;
- (l) Sets for arterial cannulation and peritoneal lavage;
- (m) Adjustable chairs for mobilization of patients; and
- (n) Repealed.

2810.15 Each PICU in a pediatric trauma care facility shall be concentrated in a single unit or in contiguous units. Trauma PICU beds on floors different from the operating rooms must have ready access to a nearby elevator that is immediately available for emergency transport. The elevator facilities shall be adequate to ensure immediate transport of the patient and all needed ancillary equipment between the operating rooms and the PICU, and shall be situated to facilitate the transport of the critically ill patient to special procedure departments.

2810.16 All PICU beds shall have bedside monitoring capabilities for central venous, pulmonary arterial, systemic arterial, and intracranial pressure monitoring. All beds shall have piped-in air and oxygen and adequate space for a mechanical ventilator, and at least every other bed shall have a sink. At least one bed shall have the space and water drainage capabilities adequate to support a bedside hemodialysis unit. All beds shall have lighting adequate for performance of minor operative procedures such as chest-tube insertion and central venous puncture.

2810.17 Sleeping quarters for the physician who is immediately responsible for the patients in the trauma PICU shall be located near or within the unit. A quiet room nearby, but separate from the unit, shall be available for discussions with family members. Space also shall be available near the PICU for educational activities for physicians, nurses, and support personnel.

2810.18 Each pediatric trauma care facility shall have access to clinical diagnostic services for essential laboratory evaluations and diagnostics such as blood gases measurement, **hematoerit** levels, serum potassium values, and chest X-rays within thirty (30) minutes of a request. This capability shall be continuously monitored by the quality improvement program.

2810.19 Each Level I facility shall investigate the pathophysiology and treatment of the critically injured pediatric patient.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2811 ACUTE PEDIATRIC HEMODIALYSIS CAPABILITY

2811.1 A Level I facility shall have in-house hemodialysis services which shall be available within one hundred and twenty (120) minutes of the request, twenty-four (24) hours per day.

2811.2 A Level II facility may provide in-house hemodialysis services which may be available within

one hundred and twenty (120) minutes of the request twenty-four (24) hours per day.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2812 PEDIATRIC BURN CENTER

- 2812.1 Each pediatric trauma care facility shall have, or shall have access to, a Burn Center directed by a licensed, board certified general or plastic surgeon on the active medical staff who has at least two (2) years of experience in management of burn pediatric patients in a Burn Center.
- 2812.2 The Burn Center shall be staffed by physician and nursing personnel who are trained in burn care and equipped for the care of the extensively burned patient.
- 2812.3 A burn service shall be formally established by the medical staff of the institution, and members of the burn service shall be properly credentialed by the facility. The chief of the burn service shall serve as the Medical Director of the burn center.
- 2812.4 The burn service Medical Director shall have the appropriate authority and responsibility to direct and coordinate all medical services for patients admitted to the Burn Center. The Medical Director shall be responsible for regular communications with physicians and other authorities regarding referred patients and for appropriate burn center management functions, including quality improvement, (liaison with other burn centers), internal and external educational programs, and coordination with regional and state EMS programs. The burn center Medical Director and each staff surgeon shall participate actively in the care of at least fifty (50) acute burn patients a year.
- 2812.5 The Burn Center shall admit an average over any three (3) year period of one hundred (100) or more patients with acute burn injuries annually and shall maintain an average daily census of three (3) or more patients with acute burn injuries.
- 2812.6 The Burn Center shall have one (1) registered nurse who is administratively responsible for and has a full-time commitment to the burn center. This individual shall have two (2) years of intensive care or equivalent experience on a burn unit and at least six (6) months of management experience.
- 2812.7 The Burn Center shall have the following support personnel:
- (a) Social worker;
 - (b) Dietitian;
 - (c) Respiratory therapists;
 - (d) Physical and occupational therapists;
 - (e) Psychologists;
 - (f) Clergy; and
 - (g) Repealed.
- 2812.8 The Burn Center shall have the capability of delivering all therapy required, including rehabilitation, and shall also engage in teaching, training of personnel, and burn research.
- 2812.9 Each pediatric trauma care facility may have written transfer agreements with a nearby Burn Center or hospital with a burn service unit.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2813 ACUTE SPINAL CORD/HEAD INJURY MANAGEMENT CAPABILITY

2813.1 Each pediatric trauma care facility, shall use a team approach to the initial and continued management of the acute spinal cord and head injury, as follows:

- (a) In circumstances where a designated spinal cord injury rehabilitation center exists in the region, early transfer to that facility shall be considered for selected patients; transfer agreements shall be in effect with a designated spinal cord injury rehabilitation center; and
- (b) In circumstances where a head injury center exists in the region, transfer to the facility shall be considered for selected patients; transfer agreements shall be in effect with a head injury center.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999).

2814 SPECIAL PEDIATRIC RADIOLOGICAL CAPABILITIES

2814.1 In Level I facilities, special radiological capabilities shall be available twenty-four (24) hours per day and shall consist of at least the following:

- (a) In-house radiology technician;
- (b) Angiography;
- (c) Sonography;
- (d) Nuclear scanning;
- (e) Computerized tomography;
- (f) In-house computerized tomograph (CT) technician; and
- (g) Magnetic resonance imaging (MRI).

2814.2 In Level II facilities, special radiological capabilities shall be available twenty-four (24) hours per day and shall consist of at least the following:

- (a) In-house radiology technician;
- (b) Angiography;
- (c) Sonography;
- (d) Computerized tomography; and
- (e) Repealed.

2814.3 Special radiological capabilities in Level II facilities may also include:

- (a) Nuclear scanning;

- (b) In-house computerized tomographic (CT) technician; and
- (c) Magnetic resonance imaging (MRI).

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2815 CLINICAL LABORATORY SERVICE

2815.1 Clinical laboratory services in pediatric trauma care facilities shall be available twenty-four (24) hours per day for the following:

- (a) Standard analyses of blood, urine, and other body fluids;
- (b) Blood typing and cross-matching;
- (c) Coagulation studies;
- (d) Comprehensive blood bank or access to a community central blood bank and adequate storage facilities;
- (e) Blood gases and potential of Hydrogen (pH) determinations;
- (f) Microbiology; and
- (g) Repealed.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2816 REHABILITATION MEDICINE

2816.1 Each pediatric trauma care facility shall have a physician-directed rehabilitation service program staffed by personnel trained in rehabilitation care and equipped properly for the care of the critically injured patient, including, at a minimum, the following:

- (a) Physical therapy;
- (b) Occupational therapy;
- (c) Speech therapy; and
- (d) Social service.

2816.2 Pediatric trauma care facilities may have transfer agreements with a rehabilitation service for long term care.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2817 PROGRAMS FOR PERFORMANCE IMPROVEMENT

2817.1 Programs for performance improvement in a pediatric trauma facility shall have the following elements:

- (a) Trauma registry;
- (b) Special audit for all trauma deaths;
- (c) Morbidity and mortality review;
- (d) Multidisciplinary trauma conference;
- (e) Medical nursing audit, utilization review, tissue review;
- (f) Review of prehospital trauma care;
- (g) Review of times and reasons for transfer of injured patients;
- (h) Times of and reasons for trauma-related bypass documentation; and
- (i) Quality improvement personnel specifically dedicated to the trauma service program.

2817.2 Quality improvement programs in each pediatric trauma care facility shall be met by establishing the following:

- (a) A hospital organizational structure that facilitates the process of quality improvement by providing the responsible surgeon with authority to change policies, procedures, and protocols that address the care of the injured trauma patient;
- (b) The development of standards of quality care;
- (c) A process for monitoring compliance with or adherence to the standards, that includes at a minimum:
 - (1) Defining the population of trauma patients to whom the standards are applied;
 - (2) Defining adverse outcomes or deviations from quality (for example, death or complications from injury or treatment);
 - (3) Defining quality indicators or audit filters that examine the process of care; and
 - (4) Developing a systematic process for collection, evaluation, and analysis of data that describe or define the process of care and outcome;
- (d) A process of peer review to evaluate specific cases or problems identified by the monitoring process. This requires:
 - (1) Documentation of the process and outcome of peer review; and
 - (2) Tabulation of the judgments from peer review to provide a basis for trend analysis and to assess the effect of any corrective action;
- (e) A process for implementing corrective action to address problems or deficiencies identified by either the monitoring process or the peer-review process; and
- (f) A process for reevaluating and documenting the effect of the corrective action taken.

- 2817.3 A performance improvement program shall consist of the following components:
- (a) Standards and organization.
 - (1) Define the population to be monitored;
 - (2) Develop standards of care;
 - (3) Establish credentialing standards for practitioners;
 - (4) Provide administrative support for the process; and
 - (5) Designate a responsible surgeon and provide him or her with the appropriate authority to enact the process;
 - (b) Data collection:
 - (1) Establish a process for data collection;
 - (2) Establish quality indicators (audit filters) for the continuous or periodic evaluation of specific aspects of care;
 - (3) Define adverse outcomes according to an explicit list of well-defined complications; and
 - (4) Monitor the incidence of adverse outcomes on a regular basis and to compare to regional and national norms;
 - (c) Evaluation and analysis:
 - (1) Establish a systematic peer-review process using multiple disciplines for the continuous or periodic evaluation of tended data, sentinel events, or specific cases; and
 - (2) Provide written documentation of identified problems and opportunities to correct the problem and improve care;
 - (d) Corrective action:
 - (1) Define corrective actions needed to address problems identified in the analysis;
 - (2) Implement corrective action;
 - (3) Assess the effect of the corrective action; and
 - (4) Periodically reassess or monitor the effectiveness of the action to document improvements and define future objectives.
- 2817.4 In each pediatric trauma care facility, the governing body of a hospital has the ultimate authority and responsibility to provide for the delivery of quality patient care.
- 2817.5 Each pediatric trauma care facility shall have a designated clinician with authority, responsibility, and accountability for the assessment and improvement of quality of care.
- 2817.6 In Level I and Level II facilities, the Trauma Service Director shall be responsible for performance improvement.
- 2817.7 Repealed.

2817.8 In each pediatric trauma care facility, standards of quality care shall emphasize the outcome of care and the process by which it is rendered. To ensure quality care, trauma facilities and trauma systems shall deliver services that shall be:

- (a) Composed of systematic actions designed to improve the health of the patient;
- (b) Rendered in a timely fashion, relative to the severity of the illness;
- (c) Rendered by teaching the patient about the principles of health maintenance and disease prevention;
- (d) Provided to a completely informed patient so that the patient can be knowledgeable, cooperative, and participate in health care decisions;
- (e) Based on sound scientific principles and standards;
- (f) Provided with sensitivity and concern for the patient and his or her family;
- (g) Rendered with a cost-efficient use of available technology; and
- (h) Accurately documented in the patient's medical record.

2817.9 Elements critical to the consistent delivery of quality care in pediatric trauma facilities include:

- (a) Delineation of privileges to limit trauma care duties to those with demonstrated skills, commitment, and experience;
- (b) Reevaluation of privileges and reappointment to the trauma team shall be based on the following criteria:
 - (1) Maintenance of good standing in the primary specialty;
 - (2) Evidence of continuing education in trauma care;
 - (3) Documented attendance at a multidisciplinary conference where either morbidity or mortality comprises more than fifty percent (50%) of the subject matter, and hospital peer review conferences that deal with care of injured patients; and
 - (4) Satisfactory performance in managing trauma patients based on performance assessment and outcome analysis;
- (c) Identification of trauma patients;
- (d) A surveillance program, including at a minimum all trauma patients who:
 - (1) Are admitted to the hospital for more than two (2) days;
 - (2) Are admitted to an pediatric intensive care unit or operating room;
 - (3) Are transferred into or out of the hospital; and
 - (4) Die as a result of trauma injuries;
- (e) Autopsy information, including complete anatomical diagnosis of injury to assess quality of care. A postmortem examination shall be performed in all trauma-related deaths.

2817.10 Continuous audits, periodic focused audits, specific case review, and trend analysis shall be

available to evaluate the process of care in order to review outcome. Deaths and major complications shall have specific case review. Complications may be monitored by trend analysis, which requires determining the incidence of the complication over a given interval (for example, monthly or quarterly) and following the incidence over subsequent intervals. Changes in trends or unexpected variations should provoke a focused audit of the patient developing the complication.

2817.11 The requirements of § 2817.10 shall be carried out as follows:

- (a) Audit filters shall be used to examine the timeliness, appropriateness, and effectiveness of care rendered to an individual patient. The value of continuous or periodic use of these filters in the quality improvement program shall be reviewed regularly by individual trauma facilities. Minimum filters to be applied include the following:
 - (1) Repealed.
 - (2) Repealed.
 - (3) Repealed.
 - (4) Repealed.
 - (5) Repealed.
 - (6) Repealed.
 - (7) Repealed.
 - (8) Repealed.
 - (9) Repealed.
 - (10) Repealed.
 - (11) Selected complications, monitored as either trends or sentinel events. Trauma Service Directors shall select those complications for audit and review those complications that are frequent or severe in their cohort of trauma patients; and
 - (12) All trauma deaths;
- (b) A focused audit shall be used periodically to examine the process of care.
 - (1) Repealed.
 - (2) Repealed.
 - (3) Repealed.
 - (4) Repealed.
 - (5) Repealed.
- (c) The Trauma Score/Injury Severity Score (TRISS) method shall be used to estimate the likelihood of patient survival based on a regression equation that takes into account:
 - (1) Patient age;

- (2) The severity of anatomical injury as measured by the Injury Severity Score (ISS);
 - (3) The physiological status of the patient on admission based on the Revised Trauma Score (RTS); and
 - (4) The type of injury (blunt or penetrating);
- (d) An internal review shall be conducted to identify patients to receive an in-depth peer review and audit. The in-depth review shall include charts of nonsurvivors who were expected to survive;
 - (e) External comparison, to relate trauma center performance to an external reference, shall be performed, and shall include summing the individual calculated probabilities of survival for any cohort of patient to provide the number of expected survivors for the cohort;
 - (f) A multidisciplinary trauma peer-review committee shall meet regularly. The committee shall be chaired by the Trauma Service Director and have representation from all of the major services that treat trauma patients. The task of the committee is to conduct critical reviews, evaluate, and discuss the quality of care in cases of adverse outcome (complications and deaths), particularly focusing on those deaths statistically expected to survive, which were identified using outcome norms; and
 - (g) Following identification and documentation of a specific problem in patient care or system performance by the peer-review process, corrective action shall be taken through one of the following mechanisms:
 - (1) Change of existing policies and procedures that govern or define the standard of care;
 - (2) Professional education: cases may be selected for discussion at the trauma service morbidity/mortality review conference; deficits in knowledge can be addressed through education of the whole group of providers or of specific providers;
 - (3) Physician counseling: review of a special case or cases is made by the Trauma Services Director with the individual physician; the process of evaluation and counseling shall be carefully documented; and
 - (4) Credentialing process: information from quality improvement activities shall considered at the time of credentialing and in the delineation of privileges; serious deficits may result in the limitation of privileges or the failure to be reappointed in the discretion of the Trauma Services Director.

2817.12 In addition to the requirements set out in § 2817.1 (a), pediatric trauma care facilities shall have a Trauma Registry that provides accurate data describing patient injury severity, process of care, and outcomes.

2817.13 To satisfy the requirements of §2817.11(g) a pediatric trauma facility shall establish a multidisciplinary review committee, which shall have a quorum of a majority of the members at each meeting. The multidisciplinary review committee shall consist of the following members:

- (a) Chairperson - Trauma Service Director;
- (b) Trauma nurse coordinator;
- (c) A representative from neurosurgery;

- (d) A representative from orthopedic surgery;
- (e) A representative from emergency medicine;
- (f) A representative from anesthesiology;
- (g) A staff pathologist;
- (h) A staff radiologist; and
- (i) A representative from rehabilitation medicine.

2817.14 The goals of a multi-disciplinary review committee shall be as follows:

- (a) Review selective deaths;
- (b) Review complications;
- (c) Discuss sentinel events; and
- (d) Review organizational issues regularly and systematically.

2817.15 The objectives of this multi-disciplinary peer review committee shall be as follows:

- (a) To identify and resolve problems or specific issues that need to be rectified; and
- (b) Trigger new policies or protocols and have the representatives from the various departments listed in § 2817.13 transmit this information back to their respective departments.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2818 TRANSFER AGREEMENTS

2818.1 Level I facilities shall have transfer agreements with other hospitals acting as receiving facilities.

2818.2 Level II facilities shall have transfer agreements as transferring and receiving facilities.

2818.3 Once it is apparent that interhospital transfer is in the patient's best interest, the treating physician shall ensure that the patient is optimally stabilized within the capabilities of the transferring institution. Measures shall be taken to stabilize each injury or physiologic derangement, such as respiratory distress or shock, before the transfer. The urgent needs of the patient who requires advance level trauma care shall supersede the requirement that patients be cared within a specific provider network.

2818.4 Transferring physician responsibilities shall include:

- (a) Identifying the patient needing transfer;
- (b) Initiating the transfer process by direct contact with the receiving surgeon or physician;
- (c) Initiating resuscitation measures within the capabilities of the facility;

- (d) Determining the appropriate mode of transportation in consultation with the receiving surgeon or physician; and
- (e) Transferring all records, results, and x-rays to the receiving facility.

2818.5 Receiving physician responsibilities shall include:

- (a) Ensuring resources are available at the receiving facility;
- (b) Providing advice or consultation regarding specifics of the transfer or additional evaluation or resuscitation prior to transport;
- (c) Clarifying and identifying medical control after the receiving facility agrees to accept the patient; and
- (d) Identifying a process for transportation, allowing feedback from the receiving physician to the transport team directly or to the medical direction of the transport team.

2818.6 Management during transport of patient:

- (a) Qualified personnel and equipment shall be available during transport to meet anticipated contingencies;
- (b) Sufficient supplies shall accompany the patient during transport, such as intravenous (IV) fluids, blood, and appropriate medications;
- (c) Vital functions shall be equally monitored;
- (d) Vital functions shall be supported; for example, hemodynamics, ventilation, central nervous system, and spinal protection;
- (e) Records shall be kept during transport; and
- (f) Communication shall be kept with on-line medical direction during transport.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2819 RESERVED

2820 CONTINUING EDUCATION

2820.1 A formal program for Continuing Medical Education (CME) specifically addressing pediatric trauma care shall be provided by the hospital for the following personnel:

- (a) General surgery residency program participants;
- (b) Advanced Trauma Life Support (ATLS) providers;
- (c) Programs provided by hospital for the following:
 - (1) Staff or community physicians CME;
 - (2) Nurses;
 - (3) Allied health personnel; and

(4) Prehospital personnel.

- 2820.2 The Trauma Service Director shall demonstrate educational involvement in trauma by active participation as an instructor for the American College of Surgeons (ACS) of an ATLS course.
- 2820.3 General surgeons on the trauma team shall successfully complete the ACS ATLS Course.
- 2820.4 All members of the trauma team shall have at least sixteen (16) hours of trauma-related CME training annually. Fifty percent (50%) of these hours during any three (3) -year period shall be obtained outside the surgeon's own institution.
- 2820.5 Emergency physicians on the trauma team shall have at least sixteen (16) hours of trauma-related CME training each year. Trauma CME credit may be earned by attending regional or national meetings concerning trauma-related issues and from in-house conferences, such as grand rounds and multidisciplinary conferences. Fifty percent (50%) of these hours during any three (3) year period shall be obtained outside the physician's own institution.
- 2820.6 Neurosurgical members of the trauma team at Level and II facilities shall have at least sixteen (16) hours of trauma-related CME. Fifty percent (50%) of these hours during any three (3) year period shall be obtained outside the surgeon's own institution.
- 2820.7 Orthopedic surgical members of the trauma team at Level I and II facilities shall have at least sixteen (16) hours of trauma-related CME annually. Fifty percent (50%) of these hours during any three (3) year period shall be obtained outside the surgeon's own institution.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2821 OUTREACH PROGRAM

- 2821.1 Each pediatric trauma care facility shall be available for telephone and on-site consultations with physicians in the community and surrounding area regarding the care and treatment of trauma patients.
- 2821.2 Each Level I facility shall conduct at least twelve (12) education or outreach presentations over a three (3) year period.
- 2821.3 Each Level II facility may conduct at least twelve (12) education or outreach presentations over a three (3) year period.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2822 PEDIATRIC TRAUMA EDUCATION

- 2822.1 Level I facilities shall undertake the following public education activities:
- (a) Perform epidemiology research to include:
- (1) Conducting studies in injury control;
 - (2) Collaborating with other institutions in epidemiological research;
 - (3) Monitoring the progress of prevention programs; and

- (4) Consulting with qualified researchers on evaluation measures.
- (b) Conduct trauma injury surveillance including:
 - (1) Conducting special emergency department and field collection projects;
 - (2) Maintaining an expanded trauma registry data; and
- (c) Develop a trauma injury prevention program, including:
 - (1) Designating a trauma prevention coordinator);
 - (2) Conducting outreach activities and program development;
 - (3) Providing information resources and submission of results to the District of Columbia Department of Health; and
 - (4) Collaborating with existing national, regional, and state programs.

2822.2 Level II facilities shall conduct the following prevention and public education activities:

- (a) Maintain injury surveillance and trauma registry data;
- (b) Establish an injury prevention program, including:
 - (1) Designating a trauma prevention coordinator;
 - (2) Conducting outreach activities and program development;
 - (3) Providing information resources; and
 - (4) Collaborating with existing national, regional and state programs.

2822.3 Level II facilities may conduct:

- (a) Epidemiology research, including but not limited to:
 - (1) Conducting studies in injury control;
 - (2) Collaborating with other institutions in research;
 - (3) Monitoring progress of prevention programs; and
 - (4) Consulting with qualified researchers on research evaluation measures;
- (b) Injury Surveillance to include:
 - (1) Special emergency department and field collection project; and
 - (2) Expanded trauma registry data.

2822.4 In Level I facilities, the requirements of § 2822.1 (a)(4) shall be met by making an epidemiologist or biostatistician available.

2822.5 In Level I facilities requirements of § 2822.1 (b)(1) shall be met by including the capability of doing special data collection projects as needed.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April

16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2823 TRAUMA RESEARCH PROGRAM

- 2823.1 Level I facilities shall have a trauma research program designed to produce new knowledge applicable to the care of injured trauma patients. This research may be conducted in a number of ways, including traditional laboratory and clinical research, reviews of clinical series, and epidemiological or other studies.
- 2823.2 A trauma research program shall have an organizational structure that fosters and monitors consistent publication of articles focused on trauma related issues in peerreviewed journals.
- 2823.3 A Level I facility shall periodically present research results at local, regional, and national society meetings and conduct ongoing studies approved by local human and animal research review boards. Each Level I facility shall demonstrate research productivity to include at least ten (10) peer-reviewed publications over a three (3) year period. These publications may pertain to any aspect of the trauma program.
- 2823.4 In Level I facilities, the trauma research program shall have an organized program with a designated director. The research group shall meet on a regular basis and there shall be evidence of productivity identified as proposal review by the Institutional Review Board, presentations at local/regional/national meetings, and publications in peer-reviewed journals.
- 2823.5 Level II facilities may have a trauma research program.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).

2824 DISASTER PLAN

- 2824.1 Each pediatric trauma care facility shall develop a disaster plan.
- 2824.2 Each pediatric trauma care facility shall have a plan that differentiates between multiple casualty situations, in which five to forty (5 to 40) victims are involved, and disasters leading to mass casualties. A treatment plan shall be in place to deal with multiple casualties as opposed to a widespread disaster where all hospitals in the area may be involved
- 2824.3 To develop a successful facility disaster plan, a facility shall:
- (a) Document the potential disasters for the region;
 - (b) Develop a flexible protocol for response to each of these disasters by an organized, logical, and realistic plan in accordance with existing local EMS systems;
 - (c) Establish communication and cooperation with regional disaster agencies;
 - (d) Practice, evaluate, and update the disaster response plan on a regular basis; and
 - (e) Educate the public about proper responses to disasters.
- 2824.4 Each pediatric trauma care facility shall participate in a local and regional disaster plan by ensuring that its activities and resources for responding to the trauma needs of the community are incorporated into the plan.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999).

2825 ORGAN PROCUREMENT ACTIVITY

2825.1 Each pediatric trauma care facility shall have an Organ Donation and Transplantation Program.

2825.2 Each pediatric trauma care facility shall develop policies and procedures for ensuring access to information on the option to donate organs.

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999).

2899 DEFINITIONS

2899.1 For the purposes of this chapter, the following words and phrases shall have the meaning described:

Audit Filters - clinical indicators used to examine the process of care and to identify potential patient-care problems.

Burn Service - the patient care team based in a hospital, and designed to treat patients with diverse degrees of burns.

Certificate of Added Qualifications in Surgical Critical Care - recognition of specialized education in surgical critical care by the American Board of Surgery.

Emergency Medical System EMS - the arrangement of personnel, facilities, and equipment for the effective and coordinated delivery of emergency care required to prevent and manage incidents that occur from a medical emergency or from an accident, natural disaster, or similar situation.

Glasgow Coma Scale - scoring system that defines eye, motor and verbal responses in the patient with injury to the brain.

Immediately available - implies the physical presence of the health professional in a stated location at the time of need by the trauma patient.

Injury - the result of an act that damages, harms, or hurts; unintentional or intentional damage to the body resulting from acute exposure to mechanical, thermal, electrical, or chemical energy or from the absence of such essentials as heat or oxygen.

Injury Severity Score - the sum of the squares of the Abbreviated Injury Scale Scores of the three most severely injured body regions.

Prehospital provider - individual who is trained to provide emergency medical services and is certified as such by the local authorities in accordance with the current national standard. Includes First Responders, Emergency Medical Technician/Basic (EMT/B) and advanced life support providers (EMT/Paramedics).

Promptly available - implies the physical presence of the health professional in a stated location within a short period of time, with the time period for actual appearance to be determined by the Trauma Service Director, and continuously monitored by the performance improvement program.

Revised Trauma Score - a prehospital/emergency center scoring system in which numerical values are assigned to differing levels of Glasgow Coma Scale, systolic blood pressure, and respiratory rate.

Trauma patient - a patient suffering injuries as a result of physical trauma.

Trauma Registry - database to provide information for analysis and evaluation of the quality of patient care, including epidemiological and demographic characteristics of trauma patients.

Trauma Score/Injury Severity Score or TRISS - the likelihood of patient survival based on a regression equation that includes patient age, injury severity score, revised trauma score, and the type of injury (blunt or penetrating).

SOURCE: Notice of Final Rulemaking published at 46 DCR 8779 (October 29, 1999); as amended by Notice of Emergency and Proposed Rulemaking published at 51 DCR 3933 (April 16, 2004) [EXPIRED]; as amended by Final Rulemaking published at 51 DCR 7277 (July 23, 2004).