Summary of Recommendations from: "Joint Policy Statement—Guidelines for Care of Children in the Emergency Department."

American Academy of Pediatrics, Committee on Pediatric Emergency Medicine, American College of Emergency Physicians, Pediatric Committee and Emergency Nurses Association Pediatric Committee

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This policy statement delineates guidelines and the resources necessary to prepare hospital emergency departments (EDs) to serve pediatric patients. Adoption of these guidelines should facilitate the delivery of emergency care for children of all ages and, when appropriate, timely transfer to a facility with specialized pediatric services.

BACKGROUND:

- Access to optimal care affected by lack of:
  - Availability of equipment
  - Appropriately trained staff to care for children
  - Policies and procedures that ensure timely transfer to definitive care

GUIDELINES FOR ADMINISTRATION AND COORDINATION OF THE ED FOR THE CARE OF CHILDREN

- Institute of Medicine, 2006, recommended that hospitals appoint qualified coordinators for pediatric emergency care
  - EDs that appoint these positions tend to be more prepared for pediatric patients

❑ Physician coordinator for pediatric emergency medicine
  - Qualifications:
    - Specialist in emergency medicine or pediatric emergency medicine
      - In some areas, must be a specialist in pediatrics or family medicine
    - Special interest, knowledge, and skill in emergency medical care of children
    - Maintains competency in pediatric emergency care
    - May be currently assigned other ED roles or may be shared with professional resources from a hospital that is capable of providing definitive pediatric care
  - Responsibilities
    - Promoting and verifying adequate skill and knowledge of ED physicians and other health care providers in the emergency care of children
    - Overseeing ED pediatric QI, PI, patient safety, injury and illness prevention, and clinical care activities
    - Assisting with development and periodic review of ED policies and procedures and standards for medications, equipment, and supplies
    - Liaison/coordinator for in-hospital and out-of-hospital pediatric care committees
    - Liaison/coordinator to other medical resources needed to integrate services for the continuum of care
    - Facilitating pediatric emergency education for ED and out-of-hospital providers
    - Ensuring that staff competency evaluations are pertinent to all children
    - Ensuring that pediatric needs are addressed in hospital disaster/emergency-preparedness plans
    - Collaborating with the nursing coordinator to ensure adequate staffing, medications, equipment, supplies, and other resources

❑ Nursing coordinator for pediatric emergency care
  - Qualifications:
    - Is a registered nurse (RN) who possesses special interest, knowledge, and skill in the emergency medical care of children
    - Maintains competency in pediatric emergency care
    - Is credentialed and has competency verification to provide care to children

        - May be currently assigned other ED roles, or may be shared with professional resources from a hospital that is capable of providing definitive pediatric care
    - Responsibilities
        - Facilitating ED pediatric QI/PI activities
        - Liaison to in-hospital and out-of-hospital pediatric care committees
        - Liaison to inpatient nursing as well as other medical resources needed to integrate services for the continuum of care
        - Facilitating, along with hospital-based educational activities, ED nursing continuing education in pediatrics and ensuring that pediatric-specific elements are included in new staff orientation
        - Ensuring that initial and annual competency evaluations completed by the ED nursing staff are pertinent to all children
        - Promoting pediatric disaster preparedness for the ED and participating in hospital disaster-preparedness activities
        - Promoting patient and family education in illness and injury prevention.
        - Assistance and support for pediatric education of out-of-hospital providers
        - Working with clinical leadership to ensure the availability of pediatric equipment, medications, staffing, and other resources through the development and periodic review of ED standards, policies, and procedures
        - Collaborating with the physician coordinator to ensure that the ED is prepared to care for all children

PHYSICIANS, NURSES, AND OTHER HEALTH CARE PROVIDERS WHO STAFF THE ED

- ❑ ED physicians have the skill, knowledge, and training in the care of children who may be brought to the ED, consistent with the services provided by the hospital
- ❑ Nurses and other health care providers have the skill, knowledge, and training in providing care to children who may be brought to the ED, consistent with the services offered by the hospital
- ❑ Competency evaluations completed for all clinical staff are age specific and include evaluation of skills related to neonates, infants, children, adolescents, and children with special health care needs (Appendix 1)

GUIDELINES FOR QI/PI IN THE ED

- ❑ Components of the process interface with out-of-hospital, ED, trauma, inpatient pediatric, pediatric critical care, and hospital-wide QI or PI activities
- ❑ The QI/PI plan shall include pediatric-specific indicators
    - Minimum components of the QI/PI process should include collecting and analyzing data to discover variances, defining a plan for improvement, and evaluating the success of the QI/PI plan with measures that are outcome based
- ❑ Pediatric clinical-competency evaluations should be developed as a part of the local credentialing process for all licensed staff
    - Competencies should be age specific and include those for neonates, infants, children, adolescents, and children with special health care needs
- ❑ Mechanisms should be in place to monitor professional performance, credentialing, continuing education, and clinical competencies, including integration of findings from QI audits and case reviews

GUIDELINES FOR IMPROVING PEDIATRIC PATIENT SAFETY IN THE ED

- ❑ Children should be weighed in kilograms, with the exception of children who require emergent stabilization, and the weight should be recorded in a prominent place on the medical record
    - For children who require resuscitation or emergency stabilization, a standard method for estimating weight in kilograms should be used (e.g., length-based system)
- ❑ Infants and children should have a full set of vital signs recorded to include temperature, heart rate, and respiratory rate
    - Blood pressure and pulse oximetry monitoring should be available for children of all ages on the basis of illness and injury severity
    - A process should be in place for identifying abnormal vital signs and for notifying the physician of abnormal values

- ❑ Processes for safe medication storage, prescribing, and delivery should be established
    - o Should include the use of precalculated dosing guidelines for children of all ages
- ❑ Infection-control practices should be implemented and monitored
- ❑ Services should be culturally and linguistically appropriate, and the ED should provide an environment that is safe for children and supports patient- and family-centered care
- ❑ Patient-identification policies should be implemented and monitored
- ❑ Policies for the timely reporting and evaluation of patient safety events and for the disclosure of medical errors or unanticipated outcomes should be implemented and monitored
    - o Education and training in disclosure should be available to care providers who are assigned this responsibility

GUIDELINES FOR POLICIES, PROCEDURES, AND PROTOCOLS FOR THE ED

Policies, procedures, and protocols are developed and implemented; including, but not limited to, the following:

- ❑ Illness and injury triage
- ❑ Pediatric patient assessment and reassessment
- ❑ Documentation of pediatric vital signs, abnormal vital signs, and actions to be taken for abnormal vital signs
- ❑ Immunization assessment and management of the underimmunized patient
- ❑ Sedation and analgesia for procedures
- ❑ Consent
- ❑ Social and mental health issues
- ❑ Physical or chemical restraint of patients
- ❑ Child maltreatment and domestic violence mandated reporting criteria, requirements, and processes
- ❑ Death of the child in the ED
- ❑ Do-not-resuscitate orders
- ❑ Family-centered care, including:
    - o Involving families in patient care decision-making and in medication safety processes.
    - o Family presence during all aspects of emergency care
    - o Education of the patient, family, and regular caregivers
    - o Discharge planning and instruction
    - o Bereavement counseling
- ❑ Communication with the patient's medical home or primary health care provider
- ❑ Medical imaging policies that address age- or weight-appropriate dosing for children receiving studies that impart ionizing radiation
- ❑ All-hazard disaster-preparedness plan that addresses the following pediatric issues:
    - o Availability of medications, vaccines, equipment, and appropriately trained providers
    - o Surge capacity for both injured and noninsured children
    - o Decontamination, isolation, and quarantine of families and children
    - o A plan that minimizes parent-child separation, allowing for the timely reunification of separated children with their families
    - o Access to specific medical and mental health therapies, as well as social services
    - o Disaster drills, which should include a pediatric mass-casualty incident at least every 2 years
    - o Care of children with special health care needs
    - o A plan that includes evacuation of pediatric units

Hospitals should have written interfacility transfer procedures that include the following components:

- ❑ Defined process for initiation of transfer
- ❑ Transport plan for delivering children safely and in a timely manner
- ❑ Process for selecting the appropriate care facility for pediatric specialty services not available at the hospital. These specialty services may include:
    - o Medical subspecialty and surgical specialty care
    - o Critical care
    - o Reimplantation

    - Trauma and burn care
    - Psychiatric emergencies
    - Obstetric and perinatal emergencies
    - Child maltreatment
    - Rehabilitation for recovery from critical medical or traumatic conditions
- Process for selecting the appropriately staffed transport service to match the patient's acuity level (Process for patient transfer (including obtaining informed consent)
- Plan for transfer of patient information, personal belongings of the patient, and provision of directions and referral institution information to family
- Process for return transfer of the pediatric patient to the referring facility as appropriate

GUIDELINES OF ED SUPPORT SERVICES

- The radiology department should have the skills and capability to provide imaging studies of children and have the equipment necessary to do so and must have guidelines for reducing radiation exposure
- The radiology capability of a hospital must meet the needs of the children in the community it serves
- A process should be established for the referral of children to appropriate facilities for radiologic procedures that exceed the capability of the hospital
- A process should be in place for the timely review, interpretation, and reporting by a qualified radiologist for imaging studies
- The laboratory should have the skills and capability to perform laboratory tests for children of all ages, including obtaining samples
- The laboratory capability must meet the needs of the children in the community it serves
- There should be a clear understanding of what the laboratory capability is, and definitive plans for referring children to the appropriate facility for laboratory studies should be in place

GUIDELINES FOR EQUIPMENT, SUPPLIES, AND MEDICATIONS FOR THE CARE OF PEDIATRIC PATIENTS IN THE ED

- Pediatric equipment, supplies, and medications should be appropriate for all children and shall be easily accessible, clearly labeled, and safely and logically organized
- Resuscitation equipment and supplies shall be located in the ED
- Trays and other items may be housed in other departments (such as the newborn nursery or central supply) as long as the items are immediately accessible
- A mobile pediatric crash cart is strongly recommended
- ED staff shall be appropriately educated on the location of all items
- Each ED shall have a method of daily verification of proper location and function of equipment and supplies
- Medication chart, length-based tape, medical software, or other systems shall be readily available to ensure proper sizing of resuscitation equipment and proper dosing of medications.
- Table 1 and Appendix 2 outline medications, equipment, and supplies that are necessary for the care of children in the ED

SUMMARY

All hospital EDs must be continually prepared to receive, accurately assess, and, at a minimum, stabilize and safely transfer acutely ill or injured children, which is necessary even for hospitals located in communities with readily accessible pediatric tertiary care centers and regionalized systems for pediatric trauma and critical care.

TABLE 1 Guidelines for Medications for Use in Pediatric Patients in EDs

Resuscitation Medication	Other Drug Groups
Atropine	Activated charcoal
Adenosine	Topical, oral and parenteral analgesics
Amiodarone	Antimicrobial agents (parenteral and oral)
Antiemetic agents	Anticonvulsant medications
Calcium chloride	Antidotes (common antidotes should be accessible to the ED)[a]
Dextrose (D10W, D50W)	Antipyretic drugs
Epinephrine (1:1000; 1:10000 solutions)	Bronchodilators
Lidocaine	Corticosteroids
Magnesium sulfate	Inotropic agents
Naloxone hydrochloride	Neuromuscular blockers
Procainamide	Sedatives
Sodium bicarbonate (4.2%; 8.4%)	Vaccines
	Vasopressor agents

For a more complete list of medications used in a pediatric ED, see *Pediatrics.* 2008;121 (2):433 –44.
D10W indicates dextrose 10% in water; D50W, dextrose 50% in water.
[a] For less frequently used antidotes, a procedure for obtaining them should be in place.

APPENDIX 1: CLINICAL AND PROFESSIONAL COMPETENCY

Potential areas for the development of pediatric competency and professional performance evaluations may include but should not be limited to:

- Triage
- Illness and injury assessment and management
- Pain assessment and treatment, including sedation and analgesia
- Airway management
- Vascular access
- Critical care monitoring
- Neonatal and pediatric resuscitation
- Trauma care
- Burn care
- Mass-casualty events
- Patient- and family-centered care
- Medication delivery and device/equipment safety
- Team training and effective communication

APPENDIX 2: GUIDELINES FOR EQUIPMENT AND SUPPLIES FOR USE IN PEDIATRIC PATIENTS IN THE ED

General Equipment

- ☐ Patient warming device
- ☐ Intravenous blood/fluid warmer
- ☐ Restraint device
- ☐ Weight scale, in kilograms only (not pounds), for infants and children
- ☐ Tool or chart that incorporates both weight (in kilograms) and length to assist physicians and nurses in determining equipment size and correct drug dosing (by weight and total volume), such as a length-based resuscitation tape
- ☐ Pain-scale–assessment tools appropriate for age

Monitoring Equipment

- ☐ Blood pressure cuffs (neonatal, infant, child, adult-arm and thigh)
- ☐ Doppler ultrasonography devices
- ☐ Electrocardiography monitor/defibrillator with pediatric and adult capabilities including pediatric-sized pads/paddles
- ☐ Hypothermia thermometer
- ☐ Pulse oximeter with pediatric and adult probes
- ☐ Continuous end-tidal CO_2 monitoring device*

Respiratory Equipment and Supplies

- ☐ Endotracheal tubes
  - o Uncuffed: 2.5 and 3.0 mm
  - o Cuffed or uncuffed: 3.5, 4.0, 4.5, 5.0, and 5.5 mm
  - o Cuffed: 6.0, 6.5, 7.0, 7.5, and 8.0 mm
- ☐ Feeding tubes (5F and 8F)
- ☐ Laryngoscope blades (curved: 2 and 3; straight: 0, 1, 2, and 3)
- ☐ Laryngoscope handle
- ☐ Magill forceps (pediatric and adult)
- ☐ Nasopharyngeal airways (infant, child, and adult)
- ☐ Oropharyngeal airways (sizes 0–5)
- ☐ Stylets for endotracheal tubes (pediatric and adult)
- ☐ Suction catheters (infant, child, and adult)
- ☐ Tracheostomy tubes (sizes 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5 mm)
- ☐ Yankauer suction tip
- ☐ Bag-mask device (manual resuscitator), self-inflating (infant size: 450 mL; adult size: 1000 mL)
- ☐ Clear oxygen masks (standard and nonrebreathing) for an infant, child, and adult
- ☐ Masks to fit bag-mask device adaptor (neonatal, infant, child, and adult sizes)
- ☐ Nasal cannulas (infant, child, and adult)
- ☐ Nasogastric tubes (sump tubes): infant (8F), child (10F), and adult (14F–18F)
- ☐ Laryngeal mask airway (sizes 1, 1.5, 2, 2.5, 3, 4, and 5)

Vascular Access Supplies and Equipment

- ☐ Arm boards (infant, child, and adult sizes)
- ☐ Catheter-over-the-needle device (14–24 gauge)
- ☐ Intraosseous needles or device (pediatric and adult sizes)
- ☐ Intravenous catheter–administration sets with calibrated chambers and extension tubing and/or infusion devices with ability to regulate rate and volume of infusate
- ☐ Umbilical vein catheters (3.5F and 5.0F)
- ☐ Central venous catheters (4.0F–7.0F)
- ☐ Intravenous solutions to include: normal saline; dextrose 5% in normal saline; and dextrose 10% in water

Fracture-Management Devices

- ☐ Extremity splints, including femur splints (pediatric and adult sizes)
- ☐ Spine-stabilization method/devices appropriate for children of all ages
- ☐

Specialized Pediatric Trays or Kits

- ☐ Lumbar-puncture tray including infant (22-gauge), pediatric (22-gauge), and adult (18- to 21-gauge) lumbar-puncture needles
- ☐ Supplies/kit for patients with difficult airway conditions (to include but not limited to supraglottic airways of all sizes, such as the laryngeal mask airway, needle cricothyrotomy supplies, surgical cricothyrotomy kit)
- ☐ Tube thoracostomy tray
- ☐ Chest tubes to include infant, child, and adult sizes (infant: 10F–12F; child, 16F–24F; adult, 28F–40F)
- ☐ Newborn delivery kit (including equipment for initial resuscitation of a newborn infant: umbilical clamp, scissors, bulb syringe, and towel)
- ☐ Urinary catheterization kits and urinary (indwelling) catheters (6F–22F)