

EMERGENCY MEDICAL SERVICES AUTHORITY

1930 9th STREET
SACRAMENTO, CA 95814-7043
(916) 322-4336 FAX (916) 324-2875



Administration, Personnel and Policy for the Care of Pediatric Patients in the Emergency Department



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Prepared by:

The California Emergency Medical Services Authority

Bonnie Sinz, RN
EMS Systems Division Chief
California EMS Authority

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Donna Westlake
EMS for Children Coordinator
California EMS Authority

~

Daniel R. Smiley
Interim Director
California EMS Authority

Kim Belshé
Secretary
California Health and Human Services Agency

Arnold Schwarzenegger
Governor

Acknowledgements

EMS for Children Technical Advisory Committee

<p>Captain Art Andres, EMT-P Paramedic Ontario Fire Department</p>	<p>Judith Brill, MD Co-Chair TAC Committee Director Pediatric Intensive Care Unit Mattel Childrens Hospital UCLA Medical Center</p>	<p>Patrice Christensen, PHN Injury Prevention Program Coordinator San Mateo County EMS Agency</p>
<p>Bernard Dannenberg, MD Director Pediatric Emergency Medicine Stanford Lucile Packard Children's Hospital</p>	<p>Ron Dieckmann, MD Director Pediatric Emergency Medicine San Francisco General Hospital</p>	<p>Robert Dimand, MD Pediatric Critical Care Unit Children's Hospital Central California</p>
<p>Erin Dorsey, RN School Nurse Long Beach Unified School District</p>	<p>Jan Fredrickson, MSN, PNP California State Emergency Nurses Association</p>	<p>Les Gardina, RN EMSC/Trauma System Coordinator San Diego County EMS Agency</p>
<p>Marianne Gausche-Hill, MD Director EMS and Pediatric Emergency Medical Fellowships Harbor-UCLA Medical Center</p>	<p>Jim Harley, MD Emergency Medicine Children's Specialists of San Diego</p>	<p>Deborah P. Henderson, PhD, RN Adjunct Assistant Professor Department of Pediatrics David Geffen School of Medicine at UCLA Harbor-UCLA Medical Center</p>
<p>Donna Heppner EMSC Representative State of CA Office of Traffic Safety</p>	<p>Ramon Johnson, MD Co-Chair TAC Committee Director Pediatric Emergency Medicine Mission Viejo Emergency Medicine Associates</p>	<p>Nancy McGrath, PNP Pediatric Liaison Nurse Harbor UCLA Medical Center</p>
<p>Maureen McNeil Public Member</p>	<p>Allen Morini, DO Representative Emergency Medical Directors Association of California</p>	<p>Michael Osur Deputy Director of Public Health Riverside County</p>
<p>Barbara Pletz, RN EMS Administrator San Mateo County EMS</p>	<p>Debby Rogers, MSN Vice President Quality & Emergency Services California Hospital Association</p>	<p>Nicholas Saenz, MD Pediatric Surgeon Rady Children's Hospital</p>
<p>Debbie Smades-Henes Family Representative</p>	<p>Daniel R. Smiley Interim Director State of California EMS Authority</p>	<p>Scott Vahradian, EMT-P EMS Integration Authority Santa Cruz Co. Fire Department</p>
<p>Richard Watson Public Member</p>		

EMS Authority Staff

<p>Bonnie Sinz, RN Chief, EMS Systems Division State of California EMS Authority</p>	<p>Donna Westlake EMSC Program Coordinator State of California EMS Authority</p>	<p>Sandy Salaber EMSC Conference Coordinator State of California EMS Authority</p>
<p>Marquita Fabbri Administrative Assistant State of California EMS Authority</p>		

Administration, Personnel and Policy for the Care of Pediatric Patients in the Emergency Department

Adopted from the "Care of Children in the Emergency Department: Guidelines for Preparedness" Joint Policy Statement

American Academy of Pediatrics and American College of Emergency Physicians 2001

Approximately 30 million children are seen each year in our nation's emergency departments (EDs). Most of these children (90%) will arrive by private car and 10% will arrive by ambulance. Each ED must be prepared with appropriate staff, equipment, supplies, and procedures to ensure quality care regardless of the patient's age or presenting complaint. These guidelines are designed to provide EDs with the necessary resources for the care of children in emergency settings.

California leads the nation in experience with natural disasters and is making a strong effort to integrate preparedness for children into its planning efforts. The Institute of Medicine in its most recent report (2006) concluded that the deficiencies facing the emergency care system for children during normal operations; such as the lack of pediatric equipment, medications and supplies, are greatly exacerbated in the event of a disaster. It is therefore expected that all standby, basic and comprehensive EDs in California will meet or exceed these guidelines and that some hospitals, such as pediatric critical care centers or Children's hospitals with greater resources may develop more comprehensive guidelines and even serve as regional disaster resource centers that can address the issues of the needs of children during a disaster.

I. ADMINISTRATION/COORDINATION

- A. Medical Director for the Emergency department (ED)
- B. A Physician Coordinator for pediatric emergency care¹
 - 1. Qualifications:
 - a. Qualified specialist² in Pediatric Emergency Medicine or Emergency Medicine or a physician who is a qualified specialist² in Pediatrics or Family Medicine and is current with Advanced Pediatric Life Support: The Pediatric Emergency Medicine Course (APLS) or Pediatric Advanced Life Support (PALS) training.
 - b. Demonstrates special interest, knowledge, and skill in emergency medical care of children as demonstrated by training, clinical experience, or focused continuing medical education.
 - c. Maintains competency³ in pediatric emergency care.
 - 2. Responsibilities:
 - a. Oversight of ED pediatric quality improvement (QI).
 - b. Liaison with appropriate hospital-based pediatric care committees.
 - c. Liaison with pediatric critical care centers, trauma centers, the local EMS agency, base hospitals, prehospital care providers, and community hospitals.
 - d. Facilitation of pediatric emergency education and competency⁴ evaluations for ED physicians.
 - e. Ensure pediatric disaster preparedness for emergency department.

- C. Nursing Coordinator for pediatric emergency care¹ (e.g. Pediatric Liaison Nurse (PdLN))
1. Qualifications:
 - a. A registered nurse with at least two years experience in pediatrics or emergency nursing within the previous five years.
 - b. Current completion of PALS, APLS, Emergency Nursing Pediatric Course (ENPC) or other equivalent pediatric emergency care course.
 2. Responsibilities:
 - a. Coordination with the pediatric physician coordinator for pediatric QI activities.
 - b. Facilitation of ED nursing continuing education and competency³ evaluations in pediatrics.
 - c. Liaison with pediatric critical care centers, trauma centers, the local EMS agency, base hospitals, prehospital care providers, and community hospitals.
 - d. Liaison with appropriate hospital-based pediatric care committees.
 - e. Ensure emergency nursing preparedness for pediatric disasters.

II. PHYSICIANS

- A. Physician Staffing - ED
ED physician on duty 24 hours/day as per CCR Title 22: Ref. 70415.D.
- B. Qualifications:
 1. Qualified specialist² in Pediatric Emergency Medicine or Emergency Medicine, or
 2. Physicians who are not qualified specialists² in Emergency Medicine or Pediatric Emergency Medicine should be current in APLS or PALS⁵
 3. Complete pediatric competency³ evaluations that are age specific and include neonates, infants, children and adolescents as required by local credentialing.
- C. Backup MD Specialty Services:
 1. A designated pediatric consultant⁶ on available for in-house consultation or through phone consultation and transfer agreements
 2. Pediatric specialty physicians available for in-house consultation or through phone consultation and transfer agreements

III. NURSES

- A. Qualifications:
 1. At least one ED RN per shift with current completion of PALS, APLS, ENPC or other equivalent pediatric emergency care nursing course.
 2. All RNs regularly assigned to the ED should have four hours of CE in topics related to pediatrics every two years⁷.
 3. Complete pediatric competency³ evaluations that are age specific and include neonates, infants, children and adolescents as required by local credentialing.

IV. MID LEVEL PRACTITIONERS (Physician Assistants, Nurse Practitioners)

A. Qualifications:

1. All mid-level practitioners regularly assigned to the ED and who care for pediatric patients should demonstrate current completion of PALS, APLS, ENPC or other equivalent pediatric emergency care course.
2. Complete pediatric competency⁴ evaluations that are age specific and include neonates, infants, children and adolescents as required by local credentialing.

V. QUALITY IMPROVEMENT (QI)

A. A Pediatric QI plan should be established

1. Components of the plan should include an interface with the prehospital, ED, trauma, in-patient pediatrics, pediatric critical care and hospital-wide QI activities.
2. The pediatric QI plan may include the following:
 - a. A periodic review of aggregate data of pediatric emergency visits.
 - b. A review of prehospital and ED pediatric patient care. Select pediatric indicators which may include:
 - (1) Deaths
 - (2) Transfers
 - (3) Child maltreatment cases
 - (4) Cardiopulmonary or respiratory arrests
 - (5) Trauma admissions from the ED
 - (6) Operating room admissions from the ED
 - (7) ICU admissions from ED
 - (8) Selected return visits to the ED
 - (9) Patient safety including adverse events involving medication delivery
 - c. Mechanism to monitor professional credentialing, education, and competencies.
 - d. Pediatric clinical competency evaluations should be developed for all licensed ED staff⁴. Competencies should be age specific and include neonates, infants, children, adolescents, and children with special health care needs. Competencies may include, but not be limited to:
 - (1) airway management
 - (2) burn care
 - (3) critical care monitoring
 - (4) medication delivery, and device/equipment safety
 - (5) pain assessment and treatment
 - (6) trauma care
 - (7) vascular access
 - e. A mechanism to provide for integration of findings from QI process and reviews into education and clinical competency evaluations of ED staff.

VI. POLICIES, PROCEDURES AND PROTOCOLS

- A. Policies, procedures, or protocols for emergency care of children are not limited to but should include the following:
1. Illness and injury triage
 2. Pediatric assessment
 3. Physical or chemical restraint of patients
 4. Child maltreatment (physical and sexual abuse/assault and neglect)
 5. Safe surrender and child abandonment
 6. Consent (including situations in which a parent is not immediately available)
 7. Do not resuscitate orders
 8. Death in the ED to include SIDS and care of the grieving family
 9. Procedural sedation
 10. Radiation dosage protocol
 11. Scheduled resuscitation medication and supply inventory check
 12. Immunization status
 13. Mental health emergencies
 14. Family Centered Care, including:
 - a. Education of the patient, family, and regular caregivers
 - b. Discharge planning and instruction
 - c. Family presence during care
 15. Communication with patient's primary health care provider
 16. Pain assessment and treatment
 17. Disaster preparedness plan that addresses the following pediatric issues:
 - a. A plan to minimize parent-child separation and improved methods for reuniting separated children with their families.
 - b. A plan that addresses pediatric surge capacity for both injured and non-injured children.
 - c. A plan that includes access to specific medical and mental health therapies, as well as social services, for children in the event of a disaster.
 - d. A plan which ensures that disaster drills include a pediatric mass casualty incident at least once every 2 years.
 - e. Decontamination
 18. Medication safety
 - a. Record all weights in kg
 - b. Process to solicit feedback from staff including reporting of medical error
 - c. Involvement of families in the medication safety process
 - d. Medication orders are clear and unambiguous
- B. An Interfacility Consultation and Transfer Plan for tertiary or specialized care should include at a minimum the following:
1. A plan for subspecialty consultation (telephone or real-time telemedicine) 24 hours/day
 2. Identification of transferring and receiving facilities' responsibilities which are in compliance with Emergency Medical Treatment and Active Labor Act (EMTALA)

3. Establishment of interfacility transfer agreements (including repatriation of the child back to his/her community as appropriate) to include the following pediatric specialty referral resources:
 - a. Medical and surgical pediatric intensive care
 - b. Trauma
 - c. Re-implantation (replacement of severed digits or limbs)
 - d. Burns
 - e. Psychiatric emergencies
 - f. Obstetric and perinatal emergencies
 - g. Child maltreatment (physical and sexual abuse and assault)

VII. GUIDELINES FOR SUPPORT SERVICES FOR THE ED

- A. Respiratory Care Practitioners (who respond to the ED) should include qualified staff and necessary equipment and supplies to care for children in the ED
 1. Staffing:
 - a. At least one Respiratory Care or equivalent practitioner in house 24 hours/day.
 - b. Complete pediatric competency⁴ evaluations that are age specific and include neonates, infants, children and adolescents as required by local credentialing.
- B. Radiology Services should include qualified staff and necessary equipment and supplies to provide imaging studies of children including:
Protocols that include modification of radiation exposure of children based on age and weight, pediatric radiation dosing, and protective shielding of children for plain radiography and CT.
- C. Clinical Laboratory Services should include qualified staff and necessary equipment and supplies to provide laboratory services and testing/analysis including but not limited to:
 1. Obtaining samples from children of all ages
 2. Micro-capabilities.

VIII. EQUIPMENT, SUPPLIES, AND MEDICATIONS FOR THE CARE OF PEDIATRIC PATIENTS IN THE EMERGENCY DEPARTMENT

Pediatric equipment, supplies, and medications should be easily accessible, labeled, and logically organized.

Emergency Department (ED) staff should be appropriately educated as to the location of all items.

Each ED should have a method of daily verification of proper location and function of equipment and supplies.

Resuscitation equipment and supplies should be located in the ED; trays and others items may be housed in other departments, (for example, Newborn Nursery or Central Supply) as long as the items are immediately accessible to the ED staff. A mobile pediatric crash cart is recommended.

Medication chart, tape, medical software, or other system to assure ready access to proper sizing of resuscitation equipment and proper dosing of medication should be easily accessible.

General Equipment

Patient warming device

IV blood/fluid warmer

Restraint device

Weight scale in kilograms only (no reference to pounds) for infants and children

Pain scale assessment tools appropriate for age

Monitoring Equipment

Blood pressure cuffs (neonatal, infant, child, adult-arm and thigh)

Doppler ultrasound devices

ECG monitor/defibrillator with pediatric and adult capabilities including pediatric sized pads/paddles

Hypothermia thermometer

Pulse oximeter with infant and adult probes

Continuous end tidal CO₂ monitoring device⁸

Respiratory Equipment and Supplies

Endotracheal tubes:

(cuffed and/or uncuffed: 2.5, 3.0, 3.5., 4.0, 4.5, 5.0, 5.5)

(cuffed: 6.0, 6.5, 7.0, 7.5, 8.0)

Feeding tubes (5,8 F)

Laryngoscope blades (curved 2,3; straight 0, 1, 2, 3)

Laryngoscope handle

Magill forceps (pediatric and adult)

Nasopharyngeal airways (infant, child and adult)

Oropharyngeal airways (sizes 0-5)

Stylettes for endotracheal tubes (pediatric and adult)

Suction catheters (infant, child and adult)

Tracheostomy tubes (neonatal, pediatric and adult tube sizes (0-6)

Yankauer suction tip

Bag-mask device (manual resuscitator), self-inflating, (infant size – 450 mL; and adult size – 1000 mL)

Clear oxygen masks (standard and non-rebreathing) for an infant, child and adult

Masks to fit bag-mask device adaptor (neonatal, infant, child and adult sizes)

Nasal cannulae (infant, child and adult)

Nasogastric tubes (infant, child and adult)

Vascular Access Supplies and Equipment

Arm boards (infant, child and adult sizes)

Catheter over the needle (14-24 gauge)

Intraosseous needles or device (pediatric and adult sizes)

IV administration sets with calibrated chambers and extension tubing

Umbilical vein catheters⁹

Central venous catheter (4.0-7.0 double lumen)

Infusion devices with ability to regulate rate and volume of infusate

IV solutions to include: NS; D₅.45 NS; and D₁₀W

Fracture Management Devices

Extremity splints including femur splints (pediatric and adult size)

Spine stabilization method (pediatric and adult)¹⁰

Specialized Pediatric Trays or Kits

Lumbar puncture tray (neonate and pediatric)

Difficult airway supplies/kit (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 (12-36 F)

Newborn delivery kit (Kit with equipment for initial resuscitation of a newborn: umbilical clamp, scissors, bulb syringe and towel)

Urinary catheterization kits and urinary (indwelling) catheters 6-22 F

Medication

Resuscitation medications as per the American Heart Association PALS guidelines¹¹

Endnotes

¹ Personnel guidelines for a physician and a nurse coordinator for pediatric emergency medicine may be met by staff currently assigned other roles in the department and may be shared between EDs.

² “Qualified specialist” means a physician licensed in California who has: 1) taken special postgraduate medical training, or has met other specified requirements, and 2) has become board certified within six years of qualification for board certification in the corresponding specialty, for those specialties that have board certification and are recognized by the American Board of Medical Specialties. For Standby Emergency Departments: A physician who is not a qualified specialist may perform the role if:

(1) the physician can demonstrate to the appropriate hospital body and the hospital is able to document that he/she has met requirements which are equivalent to those of the Accreditation Council for Graduate Medical Education (ACGME) or the Royal College of Physicians and Surgeons of Canada;

(2) the physician can clearly demonstrate to the appropriate hospital body that he/she has substantial education, training, and experience in treating and managing pediatric patients which shall be tracked by the pediatric quality improvement program;

(3) the physician has successfully completed a residency program and

(4) is current with Advanced Pediatric Life Support: The Pediatric Emergency Medicine Course (APLS) or Pediatric Advanced Life Support (PALS)

³ These guidelines do not promote or suggest that any particular continuing education course is required for competency. Competency as stated in this document is defined by local (hospital) credentialing requirements which should include requirements for all ages of patients from newborns through the elderly.

⁴ Refer to Section V of the Guidelines: Quality Improvement

⁵ For physicians staffing a general emergency department, a pediatric emergency department or for physicians staffing an emergency department in a children’s hospital, certification in Emergency Medicine or Pediatric Emergency Medicine is the preferred standard of competence. For all other situations or areas in which physician resources are limited, then a physician specialist as described in section II.B.1. is desirable.

⁶ The Pediatric consultant should be a specialist in pediatrics or pediatric emergency medicine and may be board certified or prepared. Requirements may be fulfilled by supervised senior residents who are capable of assessing emergency situations in their respective specialties. When a senior resident is the responsible specialist: the senior resident shall be able to provide the overall control and leadership necessary for the care of the patient, including initiating care; the pediatric consultant shall be on-call and promptly⁷ available; the pediatric consultant shall be advised of all admissions, participate in major therapeutic decisions, and be present in the ED for major resuscitations.

⁷ May be met by PALS or APLS

⁸ Endtidal CO₂ monitoring is considered the optimal method of assessing for and monitoring of endotracheal tube placement in the trachea, however for low patient volume hospitals, CO₂ colorimetric detector devices could be substituted. Clinical assessment alone is not appropriate.

⁹ Feeding tubes (size 5F) may be utilized as a UVC catheter

¹⁰ A spinal stabilization device should be a device that can also stabilize the neck of an infant, child or adult in a neutral position.

¹¹ 2005 International Consensus Conference on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Recommendations (or most current)

IX. REFERENCES

American Academy of Pediatrics, Committee on Pediatric Emergency Medicine and American College of Emergency Physicians, Pediatric Committee. Care of Children in the Emergency Department: Guidelines for Preparedness. *Pediatrics* 2001;107:777-781.

American College of Emergency Physicians, American Academy of Pediatrics, Care of children in the emergency department: guidelines for preparedness. *Ann Emerg Med* 2001 Apr;37(4):423-7.

Frush D, Donnelly L, Rosen N: Computed Tomography and Radiation Risks: What Pediatric Health Care Providers Should Know. *Pediatrics* 2003;112:951-957.

Frush D: Strategies of dose reduction. *Pediatr Radiol* 2002;32:293-297.

Frush KS, Hohenhaus SM (eds), Patient Safety in Pediatric Emergency Medicine; *Clin Pediatr Emerg Med* 2006;7(4):213-283.

Institute of Medicine. Committee of the Future of Emergency Care in the U.S. Health System. Emergency Care for Children: Growing Pains. Washington, DC: National Academy Press, 2006.

Institute of Medicine. Committee on Pediatric Emergency Medical Services. Emergency Medical Services for Children. Washington DC: National Academy Press, 1993.

Brody AS, Frush DP, Huda W, Brent RL and American Academy of Pediatrics Section on Radiology. Radiation risk to children from computed tomography. *Pediatrics* 2007; 120:677-682

2005 International Consensus Conference on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Recommendations. 2005 international consensus on CPR and ECC science with treatment recommendations, part 6: pediatric basic and advanced life support. *Circulation* 2005;112(24 Suppl):III-73 – III-90.

X. Web Resources

American Academy of Pediatrics www.aap.org

American College of Emergency Medicine www.acep.org

Emergency Medical Services for Children Program www.ems-c.org

Center for Pediatric Emergency Medicine www.cpem.org