

**Alpine, Mother Lode, San Joaquin
Emergency Medical Services Agency**

**Interfacility Pediatric Trauma and Critical Care
Consultation and Transfer Guidelines**

Adopted by the Board of Directors

June 8, 1994

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Introduction

Most ill and injured children can be successfully managed by pediatricians, emergency physicians, and other community physicians in local hospitals. However, certain types of severely ill or injured children may require specialized pediatric critical care services or specialized trauma services that are not generally available in local hospitals.

Referral centers that provide specialized pediatric critical care services or specialized trauma services for pediatric patients and serve the Alpine, Mother Lode, San Joaquin EMS Region have been identified by the EMS Agency and are included as integral components of our pediatric emergency, critical care, and trauma systems. These specialized referral centers provide 24-hour telephone consultation to assist community physicians in the evaluation and management of critically ill and injured children and will accept critically ill and injured pediatric patients from the hospitals within the region. In addition, most of these referral centers provide pediatric interfacility transport services to facilitate the transport of critically ill or injured children to specialized centers when indicated.

The Pediatric Advisory Committee (PAC) of the Alpine, Mother Lode, San Joaquin EMS Agency created the Interfacility Pediatric Trauma and Critical Care Consultation and Transfer Guidelines, based on the work of the Pediatric Transfer and Consultation Subcommittee of the California EMS Authority's EMSC Project. Decisions regarding when to seek consultation or to transfer pediatric patients need to be individualized, based on local needs and resources. However, children with certain categories of critical illnesses and injuries are at high risk of death and disability. Early consultation with appropriate pediatric critical care or trauma specialists and rapid transport to specialized centers, when indicated, can improve the outcomes for these children. In particular, consultation should be sought for pediatric medical, surgical, and trauma patients who require intensive care.

The following guidelines are intended to assist physicians and hospitals to identify the types of critically ill and injured children who might benefit from consultation with pediatric critical care specialists or trauma specialists and transfer to specialized pediatric critical care or trauma centers, when indicated. If an interfacility transport is required, the referring physician, in consultation with the receiving physician, should determine the method of transport and appropriate personnel to accompany the child.

Consultation with pediatric medical and surgical specialists at a Pediatric Critical Care Center or trauma specialists at a Pediatric Trauma Center should occur as soon as possible after evaluation of the patient. It is recommended that each hospital and its medical staff develop appropriate emergency department and inpatient guidelines, policies, and procedures for obtaining consultation and arranging transport, when indicated, for the types of pediatric medical and trauma patients outlined in this document.

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I. Guidelines for Interfacility Consultation and/or Transfer of Pediatric Medical Patients (Non-Trauma).

A. Physiologic Criteria

1. Depressed or deteriorating neurologic status
2. Respiratory failure
3. Severe respiratory distress responding inadequately to treatment and accompanied by any one of the following:
 - a. Cyanosis
 - b. Retractions (moderate to severe)
 - c. Apnea
 - d. Stridor (moderate to severe)
 - e. Grunting or gasping respirations
 - f. Status asthmaticus
4. Children requiring endotracheal intubation and/or ventilatory support
5. Serious cardiac rhythm disturbances
6. Status post cardiopulmonary arrest
7. Heart failure
8. Shock responding inadequately to treatment
9. Children requiring any one of the following:
 - a. Intracranial pressure monitoring
 - b. Central venous pressure, arterial pressure or pulmonary artery monitoring
 - c. Vasoactive medications
10. Severe hypothermia or hyperthermia
11. Hepatic failure
12. Renal failure, acute or chronic requiring immediate dialysis

B. Other Criteria

1. Near drowning with any history of loss of consciousness, unstable vital signs, or respiratory problems
2. Status epilepticus
3. Potentially dangerous envenomation
4. Potentially life threatening ingestion of, or exposure to, a toxic substance
5. Severe electrolyte imbalances
6. Severe metabolic disturbances
7. Severe dehydration
8. Potentially life-threatening infections, including sepsis
9. Children requiring intensive care
10. Any child who the attending physician feels may benefit from consultation with, or transfer to, a Pediatric Critical Care Center

II. Guidelines for Interfacility Consultation and/or Transfer of Pediatric Trauma Patients

A. Physiologic Criteria

1. Depressed or deteriorating neurologic status
2. Respiratory distress or failure
3. Children requiring endotracheal intubation and/or ventilatory support
4. Shock, compensated or uncompensated
5. Injuries requiring any blood transfusion
6. Children requiring any one of the following:
 - a. Intracranial pressure monitoring
 - b. Central venous pressure, arterial pressure or pulmonary artery monitoring
 - c. Vasoactive medications

B. Anatomic Criteria

1. Fractures and deep penetrating wounds to an extremity complicated by neurovascular or compartment injury
2. Fracture of two or more major long bones (i.e. femur, humerus)
3. Fracture of the axial skeleton
4. Suspected spinal cord or spinal column injuries
5. Traumatic amputation with potential for re-implantation
6. Head injury when accompanied by any of the following:
 - a. Cerebrospinal fluid leaks
 - b. Open head injuries (excluding simple scalp injuries)
 - c. Depressed skull fractures
 - d. Indications for intracranial pressure monitoring
7. Significant penetrating wounds to the head, neck, thorax, abdomen or

pelvis

8. Major pelvic fractures
9. Significant blunt injury to the chest or abdomen

C. Other Criteria

1. Children requiring intensive care
2. Any child who the attending physician feels may benefit from consultation with, or transfer to, a Trauma Center or a Pediatric Critical Care Center

D. Burn Criteria (Thermal or Chemical) - Contact should be made with a Burn Center or a Pediatric Trauma Center that has pediatric burn care capabilities for children who meet any one of the following criteria:

1. Second and third degree burns of greater than 10% of the body surface area for children less than ten years of age
2. Second and third degree burns of greater than 20% of the body surface area for children over ten years of age
3. Third degree burns of greater than 5% of the body surface area for any age group
4. Burns involving:
 - a. Signs or symptoms of inhalation injury
 - b. Respiratory distress
 - c. The face
 - d. The ears (serious full-thickness burns or burns involving the ear canal or drums)
 - e. The mouth and throat
 - f. Deep or excessive burns of the hands, feet, genitalia, major joints, or perineum
5. Electrical injury or burns (including lightning)
6. Burns associated with trauma or complicating medical conditions

Pediatric Critical Care Centers

Lucile Packard Children's Hospital (Stanford)

725 Welch Road
Palo Alto, California 94304
(415) 723-5495

Consultations: Call the PICU at (415) 497-8850
Transfers: Call dispatch at (415) 723-7342

Valley Children's Hospital, Fresno

3151 North Millbrook
Fresno, California 93703
(209) 225-3000

Consultations: Call the PICU at 1-800-707-PICU
Transfers: Call dispatch at 1-800-234-4VCH ext. 1229

Sutter Memorial Hospital

5151 F Street
Sacramento, California 95819
(916) 454-3333

Consultations and Transfers: Call the PICU at (916) 733-1965

Pediatric Critical Care Centers and Pediatric Trauma Centers

Children's Hospital, Oakland

747 52nd Street
Oakland, California 94609
(510) 428-3872

Consultations and Transfers: Call the PICU at: 1-800-ICU-KIDS

U.C. Davis Medical Center

2315 Stockton Boulevard
Sacramento, California 95817
(916) 734-3010

Consultations and Transfers: Call the PICU at: (916) 734-7405

Suggested Readings

1. Pediatric Intensive Care Network of Northern and Central California: Recommendations for a Regional Pediatric Critical Care System. Pediatric Consultation/Transfer Guidelines: Santa Cruz, CA, 1988.
2. S-SV EMS Agency: Pediatric Emergency and Critical Care System Development Project Report: Pediatric Interfacility Consultation/Transfer Guidelines. Sierra-Sacramento Valley EMS Agency; Sacramento, CA, 1992; p.237.
3. Fresno/Kings/Madera Emergency Medical Services: Pediatric Trauma and Critical Care Consultation and Transfer Guidelines (Policy #354); Fresno, CA 1992.
4. Seidel, JS: EMSC In Urban and Rural Areas: The California Experience - Pediatric Critical Care Center Transport Criteria. Emergency Medical Services for Children, Report of the 97th Ross Conference on Pediatric Research, Ross Laboratories, Columbus Ohio; 1989.
5. Pediatric Interfacility Consultation and Transfer Guidelines. California Pediatric Critical Care Coalition; 1989.
6. California Children Services, Pediatric Advisory Committee: Guidelines for Transfer to a CCS-Approved Pediatric Intensive Care Unit. California Children Services; Sacramento, CA, 1990.
7. American College of Surgeons, Committee on Trauma: Resources for Optimal Care of the Injured Patient. American College of Surgeons; 1990: p.52.
8. Pediatric Emergency Medical Services Advisory Board: A Plan for Regionalization of Emergency Medical Services for Children in Oregon and Southwest Washington. Guidelines for transfer to Pediatric Level I or Level II Centers. Portland, OR: Health Division, Oregon Department of Human Resources, 1988: p.43-44.
9. California Emergency Medical Services Authority: Model Transfer Guidelines, Protocols and Model Transfer Agreements, EMSA # 113. Sacramento, Ca., 1991.