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INTERFACILITY PEDIATRIC TRAUMA AND CRITICAL CARE

CONSULTATION AND/OR TRANSFER GUIDELINES

Prepared by

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INTERFACILITY PEDIATRIC TRAUMA AND CRITICAL CARE CONSULTATION AND/OR TRANSFER GUIDELINES

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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 should be identified by local EMS agencies and included as integral components of their pediatric emergency and critical care systems and trauma care 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. 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.

Decisions on 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 illness and injury are at high risk of death and disability. Early consultation with appropriate pediatric critical care or trauma specialists and rapid transport to specialized referral 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 when it is not locally available.

The attached guidelines are intended for use in a number of ways:

(1) They can be used by physicians and hospitals to identify the types of critically ill or injured children who might benefit from consultation with critical care or trauma specialists or transfer to specialized referral centers. It is recommended that hospitals and their medical staffs develop appropriate policies, procedures and staff education programs based on these guidelines. This will help to promote consultation, minimize delays, and facilitate appropriate, rapid and efficient transport of critically ill and injured children to specialty centers, when indicated.

(2) It is recommended that these guidelines also be used by local EMS agencies as a basis for the development of pediatric consultation and transfer guidelines based on the local needs and resources. In accordance with California EMS System Guidelines, consultation and transfer guidelines should be integrated into local EMS agency plans for pediatric emergency, critical care, and trauma care in each region. These guidelines should become specific EMS policies and procedures in order to promote appropriate consultation and transfer of children who require specialized pediatric critical care and/or trauma services.

(3) Finally, these guidelines may be helpful in assisting hospitals to comply with existing Federal and State patient transfer legislation.

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 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 following types of pediatric medical and trauma patients.

I. GUIDELINES FOR INTERFACILITY CONSULTATION AND/OR TRANSFER OF PEDIATRIC MEDICAL PATIENTS (NON-TRAUMA).

A. Physiologic Criteria

1. Depressed or deteriorating neurologic status.
2. 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.
   g. Respiratory failure.

3. Children requiring endotracheal intubation and/or ventilatory support.
4. Serious cardiac rhythm disturbances.
5. Status post cardiopulmonary arrest.
6. Heart failure.
7. Shock responding inadequately to treatment.
8. Children requiring any one of the following:

   a. Arterial pressure monitoring.
   b. Central venous pressure or pulmonary artery monitoring.
   c. Intracranial pressure monitoring.
   d. Vasoactive medications.

9. Severe hypothermia or hyperthermia.
10. Hepatic failure.
11. 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 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. Arterial pressure monitoring.
    b. Central venous pressure or pulmonary artery monitoring.
    c. Intracranial pressure monitoring.
    d. 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. Spinal cord or column injuries.
5. Traumatic amputation of an extremity with potential for replantation.

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.

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 may benefit from consultation with, or transfer to, a Trauma Center or a Pediatric Critical Care Center.

D. Burns Criteria (Thermal or Chemical) - Contact should be made with a Burn Center 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.

Suggested Readings

Pediatric Consultation/Transfer Guidelines

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; Sacrament, 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. Committee on Trauma, American College of Surgeons: 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.