Development and Implementation of EMS-C: A Step by Step Approach
Development and Implementation of Emergency Medical Services for Children

A Step by Step Approach

State of California EMS Authority
Sierra-Sacramento Valley EMS Agency
National EMSC Resource Alliance (NERA)

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<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pediatric Prehospital Equipment and Supply Guidelines</td>
</tr>
<tr>
<td>2</td>
<td>Pediatric Education of Prehospital Providers</td>
</tr>
<tr>
<td>3</td>
<td>Pediatric Prehospital Treatment Protocols</td>
</tr>
<tr>
<td>4</td>
<td>Development of Pediatric Emergency Department Guidelines</td>
</tr>
<tr>
<td>5</td>
<td>Implementation Process for Emergency Department Guidelines</td>
</tr>
<tr>
<td>6</td>
<td>Pediatric Interfacility Consultation and Transfer Guidelines</td>
</tr>
<tr>
<td>7</td>
<td>Pediatric Transfer Agreements</td>
</tr>
<tr>
<td>8</td>
<td>Pediatric Interfacility Transport Programs</td>
</tr>
<tr>
<td>9</td>
<td>Pediatric Critical Care and Specialty Centers</td>
</tr>
<tr>
<td>10</td>
<td>Implementation of Standards for Pediatric Critical Care Centers and other Pediatric Specialty Centers</td>
</tr>
<tr>
<td>11</td>
<td>Pediatric Trauma Center Standards: Development and Implementation Process</td>
</tr>
<tr>
<td>12</td>
<td>Pediatric Quality Improvement Guidelines</td>
</tr>
<tr>
<td>13</td>
<td>Data Systems and Information Management for Pediatric Patients</td>
</tr>
<tr>
<td>14</td>
<td>Community Linkages for EMS-C14. Linkages</td>
</tr>
<tr>
<td>15</td>
<td>EMS-C: Once You Have It, Keeping it Going</td>
</tr>
<tr>
<td>16</td>
<td>On-Line Resources for EMS-C</td>
</tr>
</tbody>
</table>
EMS-C IN CALIFORNIA

EMS-C Implemented and not Funded by EMSA

EMS-C Projects Funded by EMSA

No EMS-C Implemented

Note: Patterning delineates EMS regions. (For instance, a blue patterned area indicates that EMS-C was implemented in the region, and was funded by EMSA.)
DEVELOPMENT AND IMPLEMENTATION OF EMS-C: A STEP-BY-STEP APPROACH

The mission of the Emergency Medical Services for Children (EMS-C) Program is to reduce pediatric morbidity and mortality from injury and illness by development, implementation, and integration of EMS-C activities into the entire spectrum of Emergency Medical Services (EMS) systems.

The vision is to create a seamless system of care for children throughout the State of California from injury prevention, problem identification, prehospital care, and hospital care through reintegration into the community.

Problem Statement
The California EMS Authority (EMSA) through a grant from the U.S. Department of Health and Human Services, Maternal and Child Health Bureau, in collaboration with the National Highway Traffic Safety Administration, developed comprehensive guidelines for all aspects of emergency care of pediatric patients. These were published in a final report and disseminated to all counties in the State, and to other interested parties throughout the nation. Many counties have used these guidelines to develop and implement EMS-C components.

The California EMSA has also allocated block grant funds to assist counties in developing EMS-C components and has provided consultation services. Although much progress has been made in achieving the mission and vision of the EMS-C program, there is still much work to be done. Not all counties and regions have addressed the needs of children within EMS. Some counties have implemented certain components but not others. There is still no consistent age defining a pediatric patient, nor is a statewide system in place to assure that every ill or injured child requiring a higher level of care receives it.

Although each local Emergency Medical Services agency (LEMSA) is unique and is configured to meet community needs, all LEMSAs should develop EMS-C within their EMS systems within the political and fiscal constraints of their communities.

Solution
This manual has been designed to assist LEMSAs in development and implementation of EMS-C, whether the LEMSA is developing one component of EMS-C or many. The book chapters reflect the various system components, and the Appendix includes examples of policies, protocols, forms, and letters, etc. that might be helpful in the development of EMS-C. Many suggestions, recommendations and referrals are included to assure that the process of EMS-C development and implementation builds on the experience of others, and involves the many agencies and organizations concerned about the care of children.

All of the materials in this manual are in the public domain. Each LEMSA is encouraged to take ownership of the materials, change, and adapt them to meet the needs of the community in moving forward to improve the emergency care of children.
HOW TO USE THIS MANUAL

This manual was designed to assist local or regional EMS agencies in planning and implementing EMS-C components within the EMS system. The needs and priorities of all areas and agencies are different. The needs of children however, should be considered in the overall EMS plan. The components put in place to improve pediatric emergency care will depend on the fiscal resources and politics of a given area and agency.

An agency may elect to implement all of the components of EMS-C or just a few. Or they may plan for a graduated implementation. Each chapter can stand alone, so an interested party can use the chapter that covers the area of interest. Each chapter contains the following sections represented by the various icons:

The **Introduction** to each chapter explains what the chapter is about and why a specific component of EMS-C may be beneficial.

- **Authority** - lists the legislation or regulation that relates to the area covered in the chapter.

- **Administrative Issues** - discusses key administrative areas to be considered when developing and implementing an EMS-C component. These include governance, committees, process, who should be involved, and what decisions must be made.

- **Clinical Issues** - deals with the pertinent clinical information and issues.

- **Special Considerations** - covers the areas of controversy or special considerations that might be weighed when developing a specific EMS-C component.

- **Issues for Small Counties and Rural Areas** - highlights areas that may be important in rural and smaller counties with different resources and system configurations than more urban and larger counties.

- **Timeframe** - describes how the process might take place over time.

- **Resources, Guidelines and Minimum Standards** - includes suggested topics for inclusion in the plan and resources that may already be in existence within EMS-C. This section also describes documents included in the Appendix.

- **Suggested Reading** - offers key references on the topic covered in the chapter. Some of these are texts and some are primary references.

The manual also contains an Appendix that provides examples of letters, policies, procedures, protocols, etc. developed either nationally or in counties within the State of California. These may be used as templates and adapted to meet the needs of individual agencies or areas.

We hope you find the material in this manual useful and that it will enhance your ability to implement EMS-C within the EMS system.
CHAPTER 1

PEDIATRIC PREHOSPITAL EQUIPMENT AND SUPPLY GUIDELINES

Introduction

Children differ from adults in anatomical characteristics, physiology, and psychological development, so special supplies and equipment are needed to care for them. National standards for pediatric Basic Life Support (BLS) and Advanced Life Support (ALS) ambulances have been developed and adopted by several national organizations (see end of this chapter). Some of the most important differences that result in the need for special prehospital pediatric equipment and supplies are:

- Children are smaller in size and proportioned differently than adults, so adult equipment may not be correctly-sized for children.
- Children have different diseases and disease processes, and require different medications than adults.
- The pediatric airway is smaller and more easily blocked by edema or foreign bodies, so caring for them requires equipment designed for the pediatric airway.
- Small children have a greater body surface area, increasing their vulnerability to hypothermia and dehydration.
- Children’s heads are larger and heavier in relation to their bodies, making them more susceptible to head and neck injury.
- The prominent occiput and small size of children necessitate the use of special immobilization devices and technique.

Early Emergency Medical Services (EMS) systems were designed primarily for the care of adult cardiac and trauma patients, so less emphasis was initially placed on preparing prehospital providers to meet the needs of children. In the 1980s, several research studies demonstrated that prehospital providers lacked adequate equipment and training to care for ill and injured children, and focused attention on this area. In the last two decades, many EMS systems and national organizations have developed equipment
lists which can be adapted by EMS systems for integration into their programs. EMS systems developing pediatric equipment and supply guidelines appropriate for pediatric patients should first consider the types of pediatric illnesses and injuries seen in their systems, and the type of procedures most likely to benefit their patients.

Authority

California Health and Safety Code, Division 2.5, Chapter 12, *Emergency Medical Services Systems for Children*.

California Code of Regulations, Title 22, Division 9, Chapters 2,3,4, *Emergency Medical Technician-I,II,P*.

California Code of Regulations, Title 13, Division 1, Chapter 5, Article 1, Section 1103.2. *Ambulance Emergency Care Equipment*.

Administrative Issues

*What process should be used?*

In some cases, the local EMS Agency (LEMSA) decides on equipment guidelines unilaterally, although a consensus process, using a multidisciplinary Emergency Medical Services for Children (EMS-C) Advisory committee is often the most effective means of assuring support from the wider health care community. A consensus process generally includes:

- Development of a subcommittee
- Assessment of currently available equipment
- Review of guidelines available from other counties/national standards
- Development of pediatric guidelines in draft form
- Circulation of the guidelines to local hospitals and other interested parties
- Revision and development of final draft of guidelines
- Final approval and adoption by requisite administrative entities

*Who should be involved?*

This will depend on the LEMSA committee structure and procedures for developing EMS-C components. This is a multidisciplinary effort, including:
LEMSA administration and staff
EMS educators
Prehospital field providers and administration
EMS Medical Director
ED Medical Director(s)
Emergency physician(s)
Pediatrician(s), family practice physicians, and other primary care providers
ED nurse(s), nurse manager(s), educator(s)
Other in-hospital representatives, such as Mobile Intensive Care Nurses (MICN) or administrators

When should these guidelines be developed?
Because the equipment and supply guidelines will be based on prehospital protocols and procedures, it may be better to develop those guidelines first, basing the equipment and supplies needed on the guidelines. These guidelines should be reviewed and revised any time the scope of practice of the providers changes. In developing EMS-C within an EMS system, making decisions about equipment and supplies seems to be a simple and uncontroversial task, and is often the first one undertaken. However, changes in equipment have wide ranging effects on other system components, including protocols, education, and training.

How should these decisions be made?
When making decisions regarding the type of equipment and supplies to be carried by EMS providers, the numbers of pediatric patients seen, the types of illness and injury seen, the length of transport times, training levels, and the requirements for retraining of prehospital providers should be considered. EMS systems with longer transport times, for instance, may need more sophisticated equipment than systems with short transport time. It is always important to weigh the potential benefits of the use of procedures that have not been shown to improve outcomes against the costs, complications and skill degradation involved.

Another important factor in decisions about equipment and supplies will be the cost to the provider, not only in the initial purchase of the equipment, but in replacement costs, and ongoing costs of supplies.

Clinical Issues

- The cost of different types of equipment and supplies may be an important factor in determining the number of sizes and amount of supplies and equipment carried by providers. Phasing in of equipment may be necessary due to budgetary limitations.

- A method should be developed for organizing pediatric equipment. In some cases a separate pack is used, and in others, a specific location is identified.
A plan for checking and restocking of pediatric equipment and supplies must be built into the guidelines so that outdated materials are identified even when they are rarely used. When pediatric equipment is kept in a separate location, it may be better to have separate lists to facilitate restocking.

Compatibility with Emergency Department (ED) equipment may be a consideration in determining the type of equipment to be used.

In most cases, there will be different lists of pediatric equipment for ALS and BLS providers. This can either be done as two separate lists, or as a basic list with add-ons for ALS providers.

A specific method for determining the weight of the child should be included in the guidelines. This could be a length-based tape, or a chart with weights by age.

Equipment for assuring the safety of children and parents during transport should be included (car seats, shoulder harnesses, etc.).

Equipment and supply guidelines should be consistent with the protocols and procedures developed for EMS providers (if there is no protocol for insertion of pediatric nasogastric tubes, for instance, these should not be included in the supply guidelines).

**Special Considerations**

Difficulties encountered in developing guidelines for equipment and supplies usually involve decisions about cost of various items, field treatment issues, and hospital interface (billing, restocking) For this reason, a multidisciplinary, multiagency committee is the most useful method for decision making.

Some of the following equipment may or may not be included in basic equipment lists, depending on local protocols and preferences:

- Intraosseous infusion equipment requires special training, but is a relatively simple procedure that can be lifesaving. This may be an optional ALS procedure dependent on local, regional or State regulations.

- Pediatric cervical spine immobilization devices may be expensive, but useful in systems seeing substantial numbers of children. Many different types are available.

- The efficacy of pediatric endotracheal intubation in urban systems with short transport times has become a controversial issue. If this procedure is used in the field, proper-sized laryngoscopes, endotracheal tubes, and CO₂ monitoring devices (now available in pediatric sizes) are necessary.
The rectal administration of valium and other newer medications will continue to be controversial; decisions about these should be made on the basis of system capabilities and current research.

The need for pediatric blood pressure cuffs is somewhat controversial, as blood pressure measurement in small children is often problematic, and may not be useful.

Some EMS systems include a toy or puppet to comfort children in distress. Clean, safe, age appropriate, non-latex toys should be used for this, and provision should be made for replacing or cleaning this item.

The use of pediatric traction splints is not always recommended--they are expensive, rarely used, and most fractures can be splinted with conventional splints.

Issues for Small Counties and Rural Areas

When there are long transport times, providers may need specialized equipment, such as pediatric endotracheal intubation equipment and monitoring devices, and will require additional training in the use of this equipment.

Timeframe

If a committee of the LEMSA or subcommittee of the EMS-C Advisory Committee is used for this process, it should meet on a regular basis to revise existing guidelines or develop new guidelines. This process will take a longer or shorter time depending on administrative requirements and committee involvement.

Resources, Guidelines, and Minimum Standards

California EMS Authority EMSC Guidelines for Prehospital Equipment for BLS/ALS Support Units are available in the California EMSC Project Final Report.

Included in the Appendix are:
- The State of California Highway Patrol (CHP) equipment guidelines
Suggested Reading


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<td>Develop a subcommittee.</td>
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<td>Assess currently available equipment.</td>
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<td>Develop pediatric guidelines in draft form.</td>
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<td>Revise and develop final draft.</td>
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<td>Obtain final approval from requisite administrative entities.</td>
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<td>Implement guidelines.</td>
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CHAPTER 2

PEDIATRIC EDUCATION OF PREHOSPITAL PROVIDERS

Introduction

Pediatric education of prehospital providers has been an issue of concern to Emergency Medical Services (EMS) educators for many years. It is well known that prehospital providers are more anxious caring for children than for adults, and it has often been shown that they would like to have more education in pediatric emergency care. Considerable strides have been made in pediatric emergency education recently, and pediatric objectives and topics are now included in basic training for paramedics and Emergency Medical Technicians (EMT). There are good reasons for providing additional and ongoing pediatric education, including the following:

- Additional education to assure skill and knowledge retention is helpful to providers because children are seen less frequently in the prehospital setting. There is therefore less opportunity for use of assessment and intervention skills for pediatric patients.

- Children have different respiratory and heart rates in different age groups; providers can benefit from greater knowledge and skills in detecting abnormalities.

- The anatomy of children, particularly the airway, is different from adults, so pediatric airway management, the most critical intervention for children, requires additional education.

- Certain diseases occur most commonly in childhood, so special attention should be given to identifying the signs and symptoms of the more common childhood illnesses.

- Varying developmental stages of children require careful assessment of pediatric patients to determine age-appropriate responses.

- Children respond differently to some medications, and certain medications may not be recommended for specific age groups (such as aspirin for children with symptoms of influenza).
Because children are dependent on their caretakers, their care usually involves the entire family system. Educational programs must address this issue.

There are legal issues for pediatric patients such as permission to treat, emancipated minors, and Do Not Resuscitate (DNR) orders that require special instruction in prehospital programs.

Pediatric objectives are included in the national core curriculum and in the recommended or required curricula of many states, including California. The education and training provided is not consistent in different programs, however.

**Authority**

California Health and Safety Code, Division 2.5 Chapter 12, *Emergency and Critical Care Services for Children.*

California Code of Regulations, Title 22, Division 9, Chapters 2, 3, 4, *Emergency Medical Technician-I, II, P.*

**Administrative Issues**

*What process should be used?*

There are national standards and State recommendations for provider education which include pediatric topics, but pediatric training of prehospital providers still varies widely. Hospitals, pediatric specialty centers, fire services, ambulance services, and other health care providers assume some responsibility in providing continuing education for prehospital providers. Decisions regarding pediatric education of prehospital providers should be made by a multidisciplinary group to assure compliance with regulations, and development of educationally sound content and methodology, as well as assuring effective evaluation of educational programs.

Before development of pediatric education, local EMS agencies (LEMSA) should assess the educational needs of providers. Because primary education programs and local requirements differ widely, it can be helpful to determine:

- What pediatric education the prehospital providers in the area are receiving.
- What pediatric education the prehospital providers in your area feel would be most helpful to them.
- What methodology the prehospital providers prefer: case-based education, self-learning, lectures, videotapes, computer-based, hands-on demonstrations, etc.

This needs assessment can be accomplished by a short, anonymous questionnaire, or by a more informal method; it can also be done through quality improvement mechanisms.
LEMSAs should use multi-disciplinary groups to review the needs assessment (if one has been done), and to develop the educational plan. The activities of the committee or working group would be to:

- Review the needs assessment (if any), or conduct a needs assessment.
- Review pediatric content of current educational programs and objectives
- Review existing programs in pediatric education
- Develop pediatric educational goals and objectives
- Consider methodologies for pediatric education
- Determine available resources/funding for education
- Develop recommendations for pediatric education
- Develop recommendations for educational evaluation
- Circulate recommendations to outside agencies/individuals
- Revise educational plan
- Obtain approval of administrative bodies
- Develop/adapt curriculum
- Schedule education
- Provide education (may require additional participants)
- Evaluate the effectiveness of the education

**Who should be involved?**
Recommendations may be developed by existing EMS agency committees, if they have appropriate pediatric expertise, or a special committee can be formed. In any case, the development of pediatric educational programs should include:

- LEMSA Medical Director
- EMS educator(s)
- Prehospital field providers and administrators
- LEMSA Administrator (or representative) and staff
- Emergency physician(s)
- Pediatrician(s), family practice physician(s), and other primary care providers
- ED nurse(s), nurse educator(s), clinical specialist(s)
- Educational consultant (optional)
- EMS educator(s) from outside agencies (optional)

**When should the education be developed?**
Pediatric education can be an expensive and time-consuming effort, but it is essential for an effective system of care for children. Because education is at the core of Emergency Medical Services for Children (EMS-C), decisions regarding the educational plan should be made early in EMS-C development. Some aspects of the educational program will depend on the protocols developed, therefore, the educational plan must be closely tied to the development of those protocols. This is a four-step process, involving:
1. Decisions regarding content and time commitment
2. Identification of resources
3. Development of the curriculum
4. Provider education

Specific areas where additional education is needed can also be identified on an ongoing basis through the LEMSA’s quality assurance/management program.

**How should these decisions be made?**

Decisions regarding the content and methodology are often the easiest to make. Most of the difficulty in providing pediatric education is in finding resources, time, and educators for the effort, as well as the logistics of provider education. For this reason, it is essential to assure the active participation of LEMSA administration and outside educational providers from the beginning to make the decisions as collaborative as possible.

**Clinical Issues**

- Once the general goals and specific objectives for pediatric education and training have been decided upon, several other issues will need to be addressed. Some of the issues that have been encountered in developing and providing pediatric education are:

  - The teaching methodology is always an issue. Adult learning principles include use of interactive learning and group discussion, as well as provision of ample time for skill practice and integration. Lectures may be the most convenient format, but are not always the most effective method of education for adult learners. Skill-based content usually requires demonstration and hands-on experiences, and case-based curricula tend to require a greater time commitment on the part of the educator(s).

  - Computer-based education and self-learning materials require adequate technology, and motivation for self-instruction. These methods have been shown to be effective, so the selection should be based on careful evaluation of the learners’ needs and abilities.

  - Self-efficacy (the ability to perform a specific skill with confidence) is an important issue, as it affects the willingness to perform a skill, persistence in the face of difficulty, and the providers’ sense of anxiety and stress during and after skill performance. Self-efficacy is enhanced by verbal encouragement of the instructor, observation of others performing the task, and by successful practice of the task.

  - Because pediatric patients are less often encountered by prehospital personnel, the issues of skill retention and retraining become more significant. Studies have shown that many skills are lost after six months so plans for skill-testing and/or retraining should be incorporated into the educational plan.

  - Specific pediatric emergency courses such as Pediatric Advanced Life Support (PALS) and Pediatric Education for Prehospital Providers (PEPP), and resources Training Resource in Prehospital Pediatrics (TRIPP), have been endorsed by various
national organizations. LEMSAs should review these options and decide if they wish to incorporate portions of these into their educational programs.

- One important decision to be made in the development of an educational plan will be whether to change/increase pediatric content in both the primary training and continuing education.

- LEMSAs may want to consider including continuing education requirements in pediatric emergency care.

- Methods for assessing learner needs and evaluating education and training provided, preferably using measurable objectives, are crucial to an effective educational plan.

Special Considerations

- Whether to include pediatric content as a separate component of primary training is always a question. When pediatric issues are addressed within the adult program, they may receive less emphasis.

- Pediatric scope of practice and field protocols of prehospital providers are important factors driving the development of the curriculum, so these may have to be developed simultaneously.

- LEMSAs may decide to require a specific course completion for providers. This decision should be carefully considered by a multidisciplinary group and take many factors such as professional issues, financial constraints, time availability, and staffing requirements.

- When rarely used procedures such as intraosseous infusion, pediatric endotracheal intubation, and rapid sequence intubation are included in field protocols, the frequency of retraining required for skill maintenance is a subject of controversy.

Issues for Small Counties and Rural Areas

- Many rural areas have a large number of volunteer providers, so special attention should be given to development and provision of educational programs tailored to their needs. Modular programs that can be given in smaller increments may be more effective than lengthier ones.

- National programs developed for training in pediatric emergency care may be difficult to give in rural areas because of the need for certified instructors, time constraints, and staffing issues. In some areas, education can be provided through educational consortiums set up among the hospitals, or through use of self-learning and distance learning programs.
Rural areas often have long transport times, so rural providers may need to have specific education addressing the needs of pediatric patients during long transports. Procedures such as endotracheal intubation may be essential for these areas.

**Timeframe**

Decisions regarding education for prehospital providers will be made by a multidisciplinary group, which should begin meeting at the beginning of EMSC implementation. The first step will be to develop a needs assessment tool, and determine the current level of education in the system. Because portions of the educational programs should be based on protocols and procedures, however, final decisions and implementation will be made at a later point.

**Resources, Guidelines, and Minimum Standards**

A list of suggested topics and learning objectives for inclusion in educational plans is included in:

California EMS Authority. EMSC Project: Final Report. Sacramento, CA: EMS Authority; 1994; lesson content for a module on Sudden Infant Death Syndrome (SIDS) is also included.

The following are some teaching resources available nationally:


Suggested Reading


Anderson P, Colby C, Hirschfeld JA, Kittleson LP, Nichols MG. An analysis of skill retention by emergency medical technicians taught to perform endotracheal intubation in a rural state. 1994;Submitted for publication.


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<td>Develop/adapt curriculum.</td>
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<td>Schedule education.</td>
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<td>Provide education (may require additional participants</td>
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<tr>
<td>Evaluate the effectiveness of the education</td>
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</table>
CHAPTER 3

PEDIATRIC PREHOSPITAL TREATMENT PROTOCOLS

Introduction

There is often a question about whether separate protocols are necessary for the care of children in the prehospital setting. There are many reasons why specific protocols are necessary, and not only because of the differences in sizes and weights of children. Care of children in the prehospital setting requires specific treatment protocols because:

- Children have different types of illnesses and injuries than adults, with different physiological responses; these require different field medications, treatment, and management.

- Children have a smaller overall fluid volume, so special precautions must be taken to prevent dehydration or fluid volume overload; these issues must be addressed in the protocols.

- There are specific differences in the assessment of children with injuries (particularly head injuries), and scoring systems have not been validated in this age group, so special methods of assessment should be included in pediatric protocols.

- The psychological development of children is often an important factor in their care; protocols should address methods of obtaining information, response to pain, and privacy issues that affect the care of children.

- Parents are responsible for the care of their children, so protocols must address issues such as obtaining consent, DNR, and other legal issues.

- Because medication dosages are based on the weight of the child, a method (or methods) for estimating weight must be included in treatment protocols.

- Children respond differently to medications, so decisions must be made about which medications to include and exclude in protocols for prehospital care of pediatric patients.
Intravenous access is often more difficult to obtain in children in emergent situations, so other methods such as intraosseous infusion, may be useful in caring for children in the prehospital setting, and protocols will be needed for this procedure.

When venous access is not readily obtainable, certain medications can be given via other routes in children, such as per rectum—this is rarely necessary for adults. Protocols should address this decision-making process.

Children are dependent on their parents for comfort; protocols should assist providers in making decisions regarding inclusion of parents during field care and transport.

Providers may have less experience with medical illness and trauma in children, so protocols may improve field care.

Emergency Medical Services (EMS) systems should develop prehospital treatment protocols for children in compliance with scope of practice, and the State guidelines for Emergency Medical Services for Children (EMS-C). Protocols should be based on the scientific evidence whenever possible. Most LEMSA’s protocols are individualized, and depend on the scope of practice, education and training of providers, on-line medical direction available, and length of transport times. The number of variables involved in the decision-making process makes it difficult to adopt already developed protocols, and supports the development of protocols consistent with each LEMSA’s needs.

**Authority**

California Health and Safety Code, Division 2.5, Chapter 12, *Emergency Medical Services Systems for Children.*

California Code of Regulations, Title 22, Division 9, Chapter 4, *Emergency Medical Technician-P.*

**Administrative Issues**

**What process should be used?**

Local EMS agencies (LEMSA) may already have some pediatric protocols in place, so the process involves review, expansion, and revision of existing protocols. The protocols should be developed through a committee structure using 1) an existing local LEMSA Protocols Subcommittee (if it has appropriate pediatric representation), 2) a specific EMS-C protocols subcommittee, or 3) other appropriate committee (subcommittee or ad hoc committee). The process will involve:
Formal establishment of the sub-committee or ad-hoc committee
- Regular meetings of the committee
- Review of existing protocols and/or collection of other available protocols
- Review of current research
- Decision-making process regarding format, revision, expansion of protocols*
- Review and approval of draft protocols by committee members
- Circulation of the protocols to other interested parties
- Revision and development of final draft of protocols
- Final formatting of protocols
- Final approval by medical and administrative entities
- Inservice education for field providers in new/revised protocols

*Note: When new procedures are added to existing protocols, the educational process will be an important component, and methods for initial and continuing education and evaluation should be included. Consideration should be given to training costs, cost of medications and supplies, efficacy of procedures, and skill retention. All new personnel entering the system should also be evaluated as to their training needs.

Who should be involved?
LEMSA treatment protocols for prehospital providers are usually a collaboration between LEMSA administrator, the LEMSAl Medical Director, those responsible for education and training and community representatives who have expertise and interest in the field. There are good reasons to include a variety other interested parties, however, as the protocols have widespread effects on the entire system. Those included in the sub-committee or ad-hoc committee might include:

- LEMSAl Administrator (or representative)
- EMS educator(s)
- Prehospital field providers and administrators
- LEMSAl Medical Director
- Emergency Department (ED) Medical Director(s)
- Emergency physician(s)
- Pediatrician(s), family practice physicians, and other primary care providers
- ED nurse(s), manager(s), educator(s), clinical specialist(s)
- Mobile Intensive Care Nurse(s) (MICN)
- Pediatric Specialty Center representative(s)

In many cases, it may be helpful to include an outside consultant from a LEMSAl familiar with development and implementation of pediatric EMS protocols so the LEMSAl does not repeat mistakes, and “reinvent the wheel”.

Local protocols may affect a wider region, so it may be useful to collaborate with hospitals and other LEMSAs in the region that may be affected by prehospital protocol development.
**When should the protocols be developed?**
Protocols are central to field treatment, and will also determine educational and equipment needs, so the committee to review and develop pediatric protocols should be designated near the beginning of the EMS-C effort.

The first step will be to decide what protocols to include, which is a separate issue from developing the clinical decision trees and field treatment procedures involved in the protocols. For instance, an agency may decide to include intraosseous infusion as a protocol very early in the decision-making process. Under what circumstances, and how the procedure will be performed are other issues involved in protocol development, which can be addressed at a later point.

**How should these decisions be made?**
The decisions regarding protocols are influenced by many factors, so a collaborative effort and development of consensus is often a good way to assure support and compliance. In some cases, decisions regarding protocols will be strongly influenced by the Medical Director; available resources in the LEMSA and in the community may also be important factors. Other considerations will include the availability of training time and educators, current research, and types of field providers in the system.

Pediatric equipment, training, and transport issues are often determined by EMS protocols and what procedures are performed in the field, so effective liaisons with other committees are necessary.

**Clinical Issues**

- The age of a child described as a “pediatric” patient should be carefully defined by the LEMSA.

- Protocols should include when and where (under what circumstances) procedures should be performed.

- Protocols should be integrated into the educational program and be consistent with the pediatric supplies and equipment provided including, for instance, medication dosages consistent with a length-based tape, if used.

- Recommendations should be made for estimating the weights of children (length-based tape, age tables, etc.).

- Protocols should include issues such as pain control, comfort measures, and recommendations regarding parental presence.

- Coping with the death of a child, and assisting the family should be included in the protocols.
LEMSAs should have methods of monitoring performance of protocols, preferably by means of measurable objectives.

Pediatric destination policies are an essential part of pediatric protocols, and should be developed simultaneously, when possible.

Protocols for dispatchers should be reviewed along with field protocols to assure consistency.

A method for regular and timely review and revision of pediatric protocols should be included.

**Special Considerations**

Pediatric field protocols and procedures vary considerably by LEMSA, some are controlled by local, regional, and State regulations. The following are some of the controversial areas in pediatric protocols and procedures:

- Intraosseous infusion may or may not be included as a protocol, depending on local, regional or State regulations, or LEMSA preferences. In-service education would be required for this protocol to be included.

- Use of rapid sequence induction (RSI) for intubation is being considered in some EMS systems nationally, as a means of improving success rates for pediatric intubation. The efficacy of this procedure in the field is not well documented.

- Endotracheal intubation of pediatric patients is more complex than for adults; there is currently some concern about the benefit to the patient and rapid rate of skill deterioration which may make this procedure most useful in systems with lengthy transport times and substantial funding for focused education.

- Medications not normally in the scope of practice such as midazolam should be reviewed by the medical committee, and interactions and complications weighed against their efficacy.

- If rectal valium is used for seizure control in the prehospital setting, protocols should include ages of children, and methods for determining dosages. Use of any new medication requires additional education regarding dosages, contraindications, and possible side effects.

- Decisions about on-scene treatment, vs. en-route care can be difficult in protocol development. Length of transport time, facilities available, and training of the prehospital personnel are all factors in determining what is most beneficial for the patient.
LEMSAs should have policies addressing decisions about use of aeromedical transport for pediatric patients. Because of the scarcity of pediatric tertiary care facilities in some areas, air transport may be more readily used for pediatric patients.

Parental presence during field care and transport can be a controversial issue, which should be addressed in protocols. Where the parent(s) should ride, what care they can provide, and other such issues should be considered.

**Issues for Small Counties and Rural Areas**

- In rural areas, on-scene treatment, vs. en-route care may depend on the length of transport time to facilities. Protocols should address this issue.

- Rural areas should give special attention to developing triage and transport protocols for pediatric patients, including the decision to use air transport.

- In some cases, the nearest tertiary facility in a rural area may be out-of-state, and protocols should take this into consideration. As part of system development, transport agreements should be made with these facilities.

**Timeframe**

Development of protocols will require regular meetings of a committee, with review by committee members and other agencies and individuals. A schedule for ongoing review and revision of protocols should also be developed by the committee.

**Resources, Guidelines, and Minimum Standards**

The list of protocols included in the California EMSC Project Final Report can be found in the Appendix. Also included in the Appendix are:

- A list of pediatric protocols developed by Sierra-Sacramento Valley EMS
- The Los Angeles County EMS Agency Pediatric Destination Policy
- The Los Angeles County EMS Agency Base Contact and Transport Criteria Field Reference.

Many California LEMSAs who have completed EMS-C projects have also developed protocols for prehospital providers; a map showing those projects is included at the beginning of this manual.
**Suggested Reading**


<table>
<thead>
<tr>
<th>Activity</th>
<th>Date Planned</th>
<th>Date Completed</th>
<th>Comments</th>
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<tr>
<td>Formal establishment of the sub-committee or ad-hoc committee.</td>
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<td>Review current research.</td>
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<td>Make decisions about format, revision, expansion of protocols.</td>
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<td>Obtain review and approval of draft protocols from committee members.</td>
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<td>Circulate the protocols to other interested parties.</td>
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<tr>
<td>Revise and develop final draft of protocols.</td>
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<td>Final formatting of protocols.</td>
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<tr>
<td>Obtain final approval of protocols from medical and administrative entities.</td>
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<tr>
<td>Provide inservice education for field providers in new/revised protocols.</td>
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CHAPTER 4

DEVELOPMENT OF PEDIATRIC EMERGENCY DEPARTMENT GUIDELINES

Introduction

Emergency departments (ED) serve as a crucial pivot point in the care of ill and injured children, where decisions about their care and disposition to appropriate units, wards, and other facilities are made. EDs should therefore be very well prepared to recognize and care for all types of pediatric illness and injury. This chapter discusses the development of pediatric guidelines for EDs.

Once guidelines have been developed, there are a number of approaches to implementing appropriate pediatric capabilities of emergency departments, such as through a consultation and education process, or through somewhat more formal confirmation, affirmation, or designation processes. There are some differences in these approaches, mainly in configuration of the system and responsibilities for ongoing review. The various methods are more fully discussed in the chapter on implementation.

Specific components of ED guidelines include personnel issues, equipment and supplies, and protocols. The most important reasons for developing ED guidelines are:

- Many critically ill and injured children are taken directly to EDs, without using the EMS system, so EMS policies do not affect them. Guidelines are needed to assure rapid access to pediatric emergency care specialists, and consultation with other pediatric specialists when necessary.

- Pediatric ED guidelines can be helpful in organizing the ED to care for pediatric patients so that equipment and supplies are readily accessible.

- The ED serves as the gateway to intensive care -- 60% of children admitted to ICUs in community hospitals are admitted through the ED. ED guidelines assure a consistent approach to identification of patients who need specialized care and the availability of pediatric medical expertise for care or consultation when needed.

- ED guidelines promote identification of children who need a higher level of care and transfer to specialized centers when indicated.
Ill and injured children may cause anxiety among ED staff members. Assuring the availability of and access to pediatric nursing expertise and appropriate equipment as well as to educational programs in pediatric emergency care can assure a high level of nursing care for pediatric patients.

EDs should be made child-friendly, with children’s toys, books, furniture, etc. A staff aware of these issues can plan interventions to increase the comfort and decrease anxiety of pediatric patients and their families.

Pediatric trauma guidelines have been developed for many EDs, but an equal number of children have serious illnesses. Provision for the care of these children should be addressed in the guidelines.

Child maltreatment, pediatric psychiatric problems, and pediatric toxicology sometimes require specialized care and may have to be referred to pediatric specialty centers. ED guidelines can include methods and protocols to assure appropriate consultation or referral for these services.

The ED is an important resource in educating the lay public in injury prevention, appropriate use of EMS, and emergency care of children; development and implementation of ED guidelines can promote the availability of this education.

Planning for rehabilitation should begin in the Emergency Department. ED guidelines can address this issue from initial presentation of the ill or injured child.

The ED is, in many systems, an important link with pre-hospital providers, through base hospital on-line direction, clinical supervision of providers, and reviews of out-of-hospital care. Guidelines are needed to assure appropriate pediatric representation in these areas.

**Authority**

California Health and Safety Code, Division 2.5, Chapter 12, *Emergency Medical Services Systems for Children.*

**Administrative Issues**

**What process should be used?**

The process of ED guideline development and implementation requires input from EMS, medical professionals, community agencies, hospital administration(s), and the lay public. This requires a broad-based, multidisciplinary approach, using a multidisciplinary committee such as the EMS-C Advisory Committee, under the leadership of the LEMSA as the focal point for the decision-making process. This process includes:
Establishment of overall goals and objectives for ED pediatric guideline development.

Development of list of community and professional organizations necessary to include in the process.

Development of time-lines for ED guideline development.

Review of existing guidelines from other agencies/regions.

Development of guidelines.

Review of guidelines by appropriate EMS Agency/Health Department committees.

Circulation of guidelines to other interested parties/public comment.

Revision and finalization of guidelines.

Final approval of guidelines by the Health Department and other agencies.

Legal review as indicated.

Implementation of the guidelines.

Who should be involved?
Critical decisions about EDs will require collaboration between administration, physicians, nurses, and other parties. The committee developing ED guidelines should include representatives from many different disciplines, professional organizations and public officials, as ED implementation will affect the entire community and surrounding regions.

One of the main advantages of ED guidelines is to encourage more effective knowledge and utilization of resources in the region; this is facilitated by representation on the committee from a wide variety of organizations, both public and private (e.g. the use of SIDS support groups and others). Some of the representatives listed below may serve as consultants on an as-needed basis, rather than serving as standing members of the committee. The committee developing pediatric ED guidelines may include representation from:

- LEMSA Administrator, Medical Director, staff
- Emergency Medical Care Committee
- Health Department (administrators, injury/illness prevention, child abuse/neglect)
- Health care providers at all levels from rural and urban areas
- ED, ICU Director(s)
- Nursing staff, administrators, educators (ED, ICU, PICU)
- Prehospital provider(s), educator(s), administrator(s)
- Interfacility transport providers (ambulance, air)
- Professional organizations (ACEP, AAP, AFP, ENA)
- Specialized center administrators, staff (burn, spinal cord, rehabilitation, neonatal)
- Insurance/HMO providers
- Hospital Administrator(s)
- Hospital Council(s) (local, regional)
- Public officials
- Community organizations (Special needs children, family service, Kiwanis, etc.)
- Interested lay persons, consumer groups
In some areas, the most appropriate facilities for tertiary care are out-of-county or out-of-state. Representatives from these facilities should then be included in committee deliberations. EDs in some areas may also serve multiple EMS agencies, so representatives from those agencies may be included, and simultaneous development of pediatric ED guidelines may be a possibility. EMS Agency support staff should also be included, as there will be extensive development and circulation of documents. In some cases, it may be worthwhile to include an outside consultant familiar with the development of ED guidelines.

**When should the ED guidelines be developed?**
ED guidelines are a crucial component of EMS-C, so the process of development should be begun at the very earliest point possible. Gaining approval of the many public and private entities involved may be a lengthy process. Guidelines for consultation and transfer of pediatric patients are essential to include at an early stage in the ED guideline development process. The use of ad-hoc and subcommittees can often speed up the process by allowing work on several issues to occur simultaneously. Chapter 5, “Implementation Process for Emergency Department Guidelines” has more information on this process.

**How should these decisions be made?**
Developing guidelines that will affect every aspect of emergency care must be approached very carefully and methodically, using a consensus process. The goals and objectives of ED guideline development should be provided to every committee member, and should be reviewed on a regular basis. When there is substantial disagreement on an issue, it is important to negotiate a compromise before continuing, or later decisions may be undermined by dissenting members.

**Clinical Issues**
ED guidelines generally include equipment, education, and personnel in receiving facilities. (Quality improvement is addressed in another chapter.) Developing ED guidelines should also include planning the methodology for site visits (personnel, system for evaluation, method of notification of approval/disapproval, etc.) Some of the major clinical issues in developing appropriate guidelines are:

**Personnel Guidelines**
- A means of ongoing communication and networking between facilities included in the system should be considered in developing pediatric ED guidelines. This might involve establishment of a Pediatric Liaison Nurse (PdLN) group or a standing committee of ED nurse managers with a regular meeting schedule. Responsibility for attendance at these meetings can be included in the ED guidelines to ensure viability of the group. In some systems, this group takes an active role in quality assurance, particularly in the area of interfacility transfer.
- Guidelines should address the on-call specialists and subspecialists to be available for consultation (surgery, orthopedic, anesthesia, neurosurgery, etc.), and in what time-frame they should be available.
Personnel guidelines should address all levels of care providers in the ED (Nurses, Physicians, Physician Assistants, Pediatric Nurse Practitioners, etc.).

It is important to recruit staff with additional expertise in pediatric emergency care (nurses with pediatric experience, for example) in order to assure availability on a 24-hour basis. In some cases, special training, which may include Pediatric Advanced Life Support (PALS), Advanced Pediatric Life Support (APLS), or Emergency Nurses Pediatric Course (ENPC) courses, can be offered by the facility to assure adequate staff with pediatric expertise.

**Educational Guidelines**

- Plans for educating providers, health professionals, and the public in the purpose of the guidelines and the use of the system should be made prior to implementation of ED guidelines to prevent confusion.

- ED personnel need the knowledge, attitudes and skills to care for pediatric patients at all developmental levels. These may be enhanced through provision of national courses such as the Pediatric Advanced Life Support (PALS), Advanced Pediatric Life Support (APLS), and the Emergency Nurses Pediatric Course (ENPC). In addition, the Pediatric Education for Prehospital Providers (PEPP), and the Teaching Resource in Prehospital Pediatrics (TRIPP) are readily available resources.

- Any required courses included in the guidelines must take into consideration the cost, time involved, staff coverage, and availability of instructors.

- In some areas, a one or two-day course in pediatric emergency care is offered for all facilities involved in developing and implementing ED guidelines. This provides a networking opportunity for facility staff as well as a baseline educational experience for health care providers at all levels.

- Educational program will require revision over time, so plans for updating these programs should be included in the guidelines.

- If recommendations for ongoing education are included in the pediatric ED guidelines, methods such as self-learning modules or distance learning may be found to meet requirements economically.

**Policy Guidelines**

- Policies should be developed as a collaborative process between hospital administration, nursing, and medical staff, as the policies will affect all three groups.

- A list of policies specific to the care of children should be included in ED guidelines (some suggestions for policies are included at the end of this chapter).

- Policies regarding transfer of pediatric patients should be developed, as well as ED policies for patient care.

- Establishment of formal transfer agreements will facilitate obtaining consultation and transfer of pediatric patients when indicated.
Legal review of ED policy guidelines should be considered when appropriate prior to implementation.

**Equipment Guidelines**

- Careful attention should be given to the means of organizing pediatric ED equipment as well as to the specific equipment needed. In many cases, a special cart can be used for this equipment, with different shelves and/or coded packs for different age groups of children.

- It is important to consider methods for warming children, and include appropriate equipment for both internal and external warming, when developing pediatric equipment guidelines.

- Equipment lists should be as consistent as possible between in-house staff, prehospital providers, and other transport agencies so that exchanges and patient transfers from one caregiver to another can be made smoothly.

- Non-medical equipment to assist in pain control and distraction (such as music, toys, videos, etc.) should be included in guidelines.

- When cost is a significant factor, methods of obtaining equipment and supplies collaboratively within a region should be considered.

**Special Considerations**

**Personnel Guidelines**

There is considerable controversy about guidelines that define qualifications for medical staff working in emergency departments to assure pediatric expertise. In some areas, only emergency physicians and pediatricians are recommended; in others, family practice physicians and others are included. Staffing of EDs will depend on the availability of expertise in the region.

**Educational Guidelines**

- Specific requirements for education and training for staffing are often controversial, and may not necessarily improve the knowledge, skills, and attitudes of providers.

- There are weaknesses in the various competing educational programs available---no one program is ideal for all audiences. In some cases “add-on” material has been added to existing programs, but there is currently no national standard course that broadly covers pediatric emergency care for all levels of providers.

- When continuing education is required, ongoing documentation of staff education can be time-consuming.
**Policy Guidelines**

- The definition of a pediatric patient is an important issue: many systems use one age for pediatric trauma patients, another for medical, and yet another for field protocols, causing confusion for all levels of health professionals. *This definition should be made at the outset of ED guideline development and used consistently for all areas and levels of patient care.*

- In some cases, there may be a question about using existing adult policies and adding in pediatric content. For the most part, separate policies for pediatric issues are more useful to staff.

- In some systems, where EDs are approved or designated by the local EMS Agency, out-of-hospital providers may bypass facilities not meeting ED guidelines: patient destination policies must be clearly written to prevent controversies and legal ramifications.

**Equipment Guidelines**

- Equipment guidelines should be very specific to the level of providers in the ED and to the procedures approved for ED use.

- An important decision is whether to have certain types of equipment kept in the ED or whether it should simply be available in-house. It may be prohibitively expensive to have certain types of equipment available in the emergency department.

**Issues for Small Counties and Rural Areas**

- In certain areas, rural hospitals may not be able to meet the same guidelines as larger hospitals. In these cases, separate guidelines may be needed for these hospitals.

- In rural and remote areas, the use of telemedicine (on-line, videoconferencing, teleconferencing) should be considered for contacting specialists to assist ED personnel with pediatric care when specialty care is not immediately available.

- The availability of on-call specialists in rural areas can be problematic. Some rural areas rely heavily on telephone consultation. ED guidelines should address this issue.

- Rural areas often have problems providing and/or accessing educational programs because of the difficulties in staffing, distances, and availability of educators. This can often be overcome through an educational consortium set up among the hospitals, or through use of self-learning or distance learning programs.
**Timeframe**

The timeframe for ED guideline development will depend on the number of hospitals and the resources available. When meetings are held on a monthly basis or more often, guideline development may take less than a year. When there are many hospitals involved, along with hospital associations, it may take longer.

**Resources, Guidelines, and Minimum Standards**

Many counties in California, and many areas nationally, both urban and rural, have developed guidelines for EDs. Guidelines were also developed by the California EMS Authority: California EMS Authority. EMSC Project, Final Report. Sacramento, CA: California EMS Authority; 1994.

The National Task Force Guidelines for emergency departments (American Academy of Pediatrics), and some samples of ED guidelines for rural and urban areas are also included in the Appendix. Also included in the Appendix are Guidelines for Pediatric Equipment and Supplies, and information about developing a pediatric immediate care cart.

Courses in caring for ill and injured pediatric patients available nationally include:


manual can be obtained through ENA or through Springer Publishing Co.  

The Table of Contents from the PEPP and TRIPP programs can be found in the Appendix.

**Suggested Reading**


Seidel JS, Henderson DP. EMSC: A Report to the Nation. Washington, DC:
National Center for Education in Maternal and Child Health; 1991.


## Comparison of Approaches to Development and Implementation of Guidelines/Standards for Emergency Departments

<table>
<thead>
<tr>
<th>Essential Issues</th>
<th>Consultation and Education</th>
<th>Approval/ Affirmation/ Confirmation</th>
<th>Designation</th>
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</thead>
<tbody>
<tr>
<td>Authority</td>
<td>LEMSA</td>
<td>LEMSA</td>
<td>LEMSA</td>
</tr>
<tr>
<td>Development of Guidelines for EDs</td>
<td>Multidisciplinary Committee under authority of LEMSA.</td>
<td>Multidisciplinary Committee under authority of LEMSA.</td>
<td>Multidisciplinary committee under authority of LEMSA.</td>
</tr>
<tr>
<td>Source of funding</td>
<td>Grant funding, LEMSA, other local resources such as pediatric specialty centers.</td>
<td>Grant funding, LEMSA, professional organizations, other local resources.</td>
<td>Primarily LEMSA, grant funding, others may participate.</td>
</tr>
<tr>
<td>Participation</td>
<td>Inclusive: potentially all hospitals meeting guidelines.</td>
<td>Inclusive: potentially all hospitals meeting guidelines.</td>
<td>Potentially all hospitals, but may involve exclusion of some.</td>
</tr>
<tr>
<td>Application or request for review</td>
<td>At request of ED.</td>
<td>At request of ED.</td>
<td>Formal application—may be at request of ED or LEMSA.</td>
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<tr>
<td>Application fees</td>
<td>Usually none.</td>
<td>May or may not require fee. Usually low.</td>
<td>May require more substantial fee than other processes.</td>
</tr>
<tr>
<td>Survey/Review</td>
<td>Informal: review of guidelines by consultants.</td>
<td>Formal process, including application forms and survey.</td>
<td>Formal process, including application forms and survey.</td>
</tr>
<tr>
<td>Review Team</td>
<td>LEMSA representatives, ED physicians, RNs, representatives from pediatric specialty centers serving region.</td>
<td>LEMSA representatives, volunteers from professional organizations, pediatric specialty centers.</td>
<td>LEMSA, Health Department representatives, others designated by LEMSA or other official entity.</td>
</tr>
<tr>
<td>Scheduling</td>
<td>LEMSA staff.</td>
<td>LEMSA staff. Local organizations may assist.</td>
<td>LEMSA staff in collaboration with other entities.</td>
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<tr>
<td>Purpose of Survey/Review</td>
<td>Determine if guidelines are met, linkage with local resources/referral centers, develop consult and transfer guidelines, and transfer agreements with specialty centers.</td>
<td>Determine if guidelines are met, record review, education, linkages with local resources, problem-solving.</td>
<td>Determine if standards are met, education.</td>
</tr>
<tr>
<td>Funding for Survey/Review</td>
<td>Usually through grant funding or pediatric specialty center outreach.</td>
<td>Grant funding, local professional organizations, EMS Agency, minimal fee from hospital.</td>
<td>Hospital application fee.</td>
</tr>
<tr>
<td>System Configuration</td>
<td>Potentially includes all hospitals, may exclude hospitals declining visitation.</td>
<td>Includes all hospitals requesting survey, and meeting guidelines May involve not receiving pediatric EMS patients.</td>
<td>Hospitals not designated are not included in the system Undesignated hospitals will not receive EMS patients.</td>
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<td>Activity</td>
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<td>Establish overall goals and objectives for ED pediatric guideline development.</td>
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<td>Develop a list of community and professional organizations necessary to include in the process.</td>
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<td>Develop time-lines for ED guideline development.</td>
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<td>Review existing guidelines from other agencies/regions.</td>
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<td>Develop guidelines.</td>
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<td>Review of guidelines by appropriate EMS Agency/Health Department committees.</td>
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<td>Circulate guidelines to other interested parties/public comment.</td>
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<tr>
<td>Revise and finalize guidelines.</td>
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<td>Obtain final approval of guidelines by the Health Department and other agencies.</td>
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<td>Obtain legal review as indicated.</td>
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<tr>
<td>Implement the guidelines</td>
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CHAPTER 5

IMPLEMENTATION PROCESS FOR EMERGENCY DEPARTMENT GUIDELINES

Introduction

Once Emergency Department (ED) Guidelines for pediatric patients have been developed and approved by the Emergency Medical Services for Children (EMS-C) Advisory Committee and the appropriate authorities, implementation of the guidelines should take place.

Decisions regarding what type of process should be used for implementation, whether 1) consultation and education, 2) approval, confirmation, or affirmation, or 3) designation were probably made during ED guideline development. Each method has advantages and disadvantages, as described in the table found in this chapter. Whatever process is used, participants in the process--hospital personnel and site team members--should have a clear idea of what ED guideline implementation means. They should also be informed as to why, when, and how ED guideline implementation will take place.

The most important reasons for ED guideline implementation are:

- To provide education regarding the needs of critically ill and injured children, and the best ways to assure a high level of care throughout the system.
- To increase awareness and use of appropriate community resources for pediatric patients, thereby promoting effective utilization of the system.
- To facilitate communication between community hospitals and pediatric specialty centers as a means of assuring timely and appropriate consultation and transfer of patients.
- To improve availability and consistency of pediatric equipment, supplies and education throughout the entire system, facilitating the care of ill and injured pediatric patients in the prehospital setting and in health care facilities.
To develop a means of information and data sharing among community hospitals and referral centers so that the illnesses and injuries are well identified and preventive programs can be initiated when necessary.

**Authority**

California Health and Safety Code, Division 2.5, Chapter 12, *Emergency Medical Services Systems for Children.*

California Health and Safety Code, Division 2.5, Chapter 6, *Facilities.*

**Administrative Issues**

There are several steps common to all forms of ED guideline implementation. These steps are outlined below:

**Distribution of ED Guidelines to Local Hospitals.** Hospitals participating in the implementation should be sent a letter describing the process, with a copy of the final ED guidelines adopted by the local Emergency Medical Services Agency (LEMSA). This letter should be sent to:

- Hospital Administrator
- Hospital Nursing Director
- ED Medical Director
- ED Nurse Manager
- Chief of Pediatrics

**Appointment of a pediatric visit coordinator by the LEMSA.** This can be a LEMSA staff member, or other designee or consultant, depending on availability and system configuration. This coordinator assumes shared responsibility with the EMS for Children (EMS-C) project coordinator, LEMSA staff, and the EMS-C Advisory Committee for:

- Compiling resource lists of the names and addresses of hospitals and key contacts within each hospital.
- Developing the format and materials for the ED visits, including survey documents, form letters, etc.
- Determining the composition of the consultant teams for the ED visits, including compilation of lists of names and possible alternates.
- Recruiting and scheduling of teams for ED visits.
- Providing orientation and training of site team participants.
- Serving as contact person for hospitals and consultants to provide information and answer questions about the process of guideline implementation.

- Serving as team leader, consultant, or team member during site visits whenever possible to assure consistency.

- Collecting and organizing data and information on pediatric ED capabilities in the process of implementation.

**Preparations for site visits.** Prior to the site visit, the following steps should be completed:

- Mailing of surveys to hospitals seeking inclusion. Set a specific date for return of the surveys.

- Review of surveys by coordinator to determine degree of compliance with guidelines.

- Circulation of completed surveys to the participants in the site visit team.

If retrospective chart review is included as part of the process, develop specific chart review criteria--number of charts to be reviewed, diagnostic categories, transfers, etc.

**ED site visit process.** This is described in greater detail in the Appendix, and consists of:

- Brief meeting of consultants prior to the visit.

- Group meeting of consultant team and hospital representatives.

- Tour of the ED by entire group.

- Review of equipment, supplies and medication guidelines

- Formation of physician and nursing groups to review various aspects of the ED guidelines such as administrative and staffing issues. Alternatively, this is often done as a multidisciplinary group to promote sharing of information.

- Reconvening of group to review quality improvement (QI) program, policies, procedures, and support services.

- At the end of this process, the consultant group will meet to share information and discuss findings and make recommendations.
Compilation of consultant findings and recommendations. This process includes:

- Collecting findings and summaries from consultants and site team members on completion of the site visit.
- Establishing a final date for delivery of findings not completed during the site visit.
- Preparing summaries of findings from consultants and site team members.
- Development of feedback letter for hospitals.
- Collecting and tallying hospital and consultant evaluation forms.
- Preparing reports on the site survey process and evaluation for the EMS-C Advisory Committee

Feedback to hospitals. The EMS-C Coordinator should be responsible for:

- Drafting a feedback letter with site visit summary for each hospital. This letter should include a composite of all the findings of the consultants. It should be reviewed by LEMSA administration, particularly when there are negative findings.
- Preparing copies of feedback letters to:

  ✓ ED Medical Director
  ✓ ED Nurse Manager
  ✓ Hospital Administrator
  ✓ Hospital Nursing Director
  ✓ Chief of Pediatrics
  ✓ Other hospital representatives as necessary
  ✓ Consultants involved in the site visit.
  ✓ EMS-C Advisory Committee members

Follow-up and monitoring of pediatric ED capabilities. Most hospitals are committed to providing high quality pediatric care to their patients, and continue to meet the guidelines established through the development process. Ongoing monitoring should take place through quality assurance system-wide, and any problems should be identified and a decision made about whether there is a need for re-evaluating the guidelines, additional site visits, etc.
Special Considerations

A very important issue in implementing ED Guidelines is the early decision regarding whether implementation will be by designation, a confirmation/approval process, or will be through a consultation/education process. Some of the strengths and weaknesses of each process are outlined in the following table:
site visits, etc.

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Consultation, Education</td>
<td>Hospitals are encouraged to participate voluntarily. Site visits by consultants for education, networking, problem-solving.</td>
<td>Less threatening, no fear of facility being bypassed or excluded. Encourages close working relationship with specialty centers.</td>
<td>Lack of formal approval means less control over system.</td>
<td>Used by SSV; Fresno, Kings, Madera, Alpine, Mother Lode, San Joaquin; San Mateo; Santa Clara; Riverside; Solano, Humboldt, Del Norte, Lake.</td>
</tr>
<tr>
<td>Confirmation/Approval/Affirmation</td>
<td>Hospitals invited to participate voluntarily. Site visits by consultants to determine compliance with guidelines.</td>
<td>Possibility of exclusion from system encourages compliance with guidelines, provides means of addressing system problems.</td>
<td>Formal approval process may exclude facilities that receive substantial walk-in patients. These facilities may need assistance in improving care.</td>
<td>Used in Los Angeles (EDAP-PCCC), San Luis Obispo, NorCal EMS, and in other states.</td>
</tr>
<tr>
<td>Designation</td>
<td>LEMSA designates facilities for inclusion.</td>
<td>May include all or exclude specific facilities. Rapid decision-making process, ability to assure compliance.</td>
<td>May cause conflict among facilities, legal ramifications.</td>
<td>Used in Santa Cruz County, and for trauma systems in many counties.</td>
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</table>

Not all EMS-C projects include an evaluation form for the recipients of the site visit, but very useful information can be obtained by using one. It is important that the personnel of the hospital being visited consider the visit to be a positive experience, even when there are substantial recommendations made for improvement. The feedback form provides a means of assessing their reaction to the experience.

The configuration of the site team may vary considerably, depending on personnel and resources available. In some systems only volunteers are used for the site visit, in others there may be consultation fees provided. In areas where only a few hospitals are involved, the same team may visit all hospitals; when many hospitals are involved, the
site teams should be very carefully trained to assure consistency and fairness of the evaluation.

Care should be taken when developing the site visit team not to include representatives of “competing” hospitals or others with specific agendas regarding implementation.

A schedule for re-visitng the hospitals should be considered at the very beginning of the process. In some systems, this may be every year, in others a schedule of two or three-year intervals may be chosen. When there is a longer time between visits, a self-assessment form may be used as a reminder of the guidelines.

**Issues for Small Counties and Rural Areas**

In some systems, particularly in highly urbanized areas, special consideration has been given to rural hospitals that will be included in the system. A modified set of guidelines for initial stabilization and subsequent transfer may be needed for rural emergency departments to meet local needs.

Special attention should be given to transfer/transport guideline implementation in rural areas. When there is no tertiary facility nearby, prehospital providers will need education in triage, use of air transport, and the decision making process related to transporting patients out of the area.

**Timeframe**

The timeframe for ED guideline implementation will depend largely on the number of hospitals in the system, the availability of personnel for site teams, and the length of time each hospital considers necessary for preparation. In systems where hospitals are designated, a firm date can be established by the LEMSA; other methods of implementation may require more flexibility on the part of the LEMSA.

**Resources, Guidelines, and Minimum Standards**

Many of the necessary components of EMS-C are included in the California EMS Authority’s final report on EMS-C, which should serve as a main reference point in implementing EMS-C. Specific materials related to implementation, including EDAP Applications, sample letters, and checklists for emergency department site surveys can be found in the Appendix.

**Suggested Reading**


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<thead>
<tr>
<th>Activity</th>
<th>Date Planned</th>
<th>Date Completed</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Distribute ED Guidelines to local hospitals.</td>
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<tr>
<td>LEMSA appointment of a pediatric visit coordinator.</td>
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<td>Prepare for site visits.</td>
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<tr>
<td>ED site visit process.</td>
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<tr>
<td>Compile consultant findings and recommendations</td>
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<td>Provide feedback to hospitals.</td>
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<tr>
<td>Follow-up and monitor pediatric ED Capabilities.</td>
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CHAPTER 6

PEDIATRIC INTERFACILITY
CONSULTATION AND TRANSFER
GUIDELINES

Introduction

Most common childhood illnesses and injuries can be successfully managed in community hospital emergency departments and/or in-patient pediatric services. The importance of these community facilities in a comprehensive Emergency Medical Services for Children (EMS-C) program is widely recognized. However, critically ill or injured children and/or children at risk for serious or life-threatening sequelae often require a higher level of care or specialized services not commonly available in community hospitals. Emergency department personnel must be prepared to identify these children who need care beyond the capabilities of their institutions.

- Prompt identification and treatment of serious illness and injury in children can be critical to achieving good outcomes. Health care providers who lack appropriate training, experience or guidelines may find it difficult to recognize children who are critically ill or injured and require urgent and advanced care.

- Local EMS agencies (LEMSA) may be familiar with developing trauma triage, consultation, and transfer guidelines, but may not have experience in developing guidelines specific to pediatric critical care consultations and transfers.

- A number of professional groups and California EMS-C projects have developed pediatric critical care and trauma guidelines, but there is no widely accepted set of pediatric interfacility consultation and transfer guidelines.

- Few hospitals have clearly defined mechanisms (e.g. pediatric interfacility transfer agreements) that facilitate the transfer of pediatric patients, when indicated, to centers with specialized pediatric critical care and trauma services.

EMS-C systems must include guidelines to assist physicians and hospitals in identifying the types of pediatric illnesses and injuries that might require specialized consultation (with critical care or trauma specialists) or transfer to appropriate specialized pediatric centers. Hospitals can use these guidelines to develop specific policies, procedures,
and mechanisms addressing how to obtain rapid access to specialized pediatric consultation and transfer services.

**Authority**

California Health and Safety Code, Division 2.5, Chapter 12, Emergency Medical Services System for Children.

California Health and Safety Code, Division 2.5, Chapter 6, Facilities.

**Administrative Issues**

**What process should be used?**

Decisions regarding when to seek consultation or to transfer pediatric patients remain a medical responsibility and can be influenced by many factors including resource availability. In the process of guideline development, LEMSAs must take into consideration issues such as community medical practices, referral patterns, medical groups, hospital systems, and managed care and insurance providers. It should be emphasized that these guidelines are intended to serve as a resource to assist physicians and hospitals and are not a mandate dictating medical practice. Hospitals will need to take the next step by developing internal organization policies and procedures to address how the recommended guidelines will be implemented. The process for guideline development will involve:

- Establishment of a committee, subcommittee, or ad-hoc committee
- Scheduled meetings
- Review of existing community resources and referral practices
- Review of existing guidelines from other EMS-C systems
- Development of guidelines in draft form
- Circulation of draft guidelines to emergency physicians, pediatricians, family practitioners and other interested groups
- Revision and development of final draft of guidelines
- Final approval by requisite administrative entities
- Distribution to local emergency departments and interested organizations and parties

**Who should be involved?**

Given the clinical nature of consultation and interfacility transfer guidelines, the establishment of a medically based committee, subcommittee or ad-hoc committee under the leadership of the LEMSA Medical Director would be appropriate. However, the inclusion of hospital administration, managed care and insurance providers to address organizational and financial issues may also be beneficial. This objective may
be met through the EMS-C Advisory Committee process, but the establishment of a subcommittee to draft the guidelines would also be appropriate. Consider the fact that this task may be controversial. Composition of the committee might include the following:

- LEMSA Medical Director
- Emergency Department (ED) Medical Directors or designee(s)
- Emergency physician(s)
- Pediatricians, family practice physicians, and other primary care providers
- Director(s) of Pediatric Critical Care Services that serve the community
- Director(s) of Trauma Services that serve the community
- ED nurse(s), manager(s) or designee(s)
- Hospital administrator(s) or designee(s)
- Managed care and insurance providers
- Hospital Council(s)
- Parent organization representative(s), or member(s) of the lay public
- Representatives from established local, regional, or national organizations that may be active in the community such as American Academy of Pediatrics (AAP), California Chapter of Academy of Emergency Physicians (ACEP), Emergency Nurses Association (ENA), medical societies, and others.

**When should these guidelines be developed?**

Guidelines identifying critically ill and injured children should be developed and made available to local emergency departments as soon as possible. They are generally distributed with ED Guidelines. For this reason, it is best that they be developed in conjunction with ED Guidelines.

**How should decisions be made?**

A collaborative effort would best serve the development and support of these guidelines. Several times throughout the process, it should be stressed that these are guidelines and are not intended to dictate clinical or organizational practices.

**Clinical Issues**

- Appropriate pediatric critical care and trauma resources serving the community or region need to be identified. These should include (but not be limited to) Pediatric Critical Care Centers (PCCC), and designated Pediatric Trauma Centers (PTC). Additional resources may include regional burn centers, spinal rehabilitation centers, and pediatric rehabilitation centers.

- ED and hospital personnel should know how to establish communication with pediatric specialty centers. This may involve the development of 800 numbers or dedicated lines at referral centers to provide prompt access for consultations or to arrange for transfers.
- Air and ground transport providers should be identified, and if necessary, contractual agreements should be in place.

- Identify and review existing agreements between community hospitals and pediatric specialty centers identified and reviewed.

- Develop triage criteria for definition of children who may benefit from care in specialized centers.

- Guidelines should be consistent with any pre-existing policy, procedure, or guidelines addressing interfacility transfers (e.g., trauma patients).

- The consideration of candidates as potential organ donors should be included in the guidelines.

- Distance, weather conditions, staffing capabilities of ground transport services, and time factors may necessitate interfacility transfer by means of aeromedical transport. Approved landing sites and standards must be identified. In addition, agreements with other LEMSAs may be necessary due to local ambulance ordinance requirements.

**Special Considerations**

- Consultation and transfer guidelines developed by LEMSAs are meant to serve as a resource tool for local physicians and hospitals, not to dictate medical practice.

- Hospitals will need to develop internal organizational policies and procedures that will address how the recommended guidelines will be implemented.

- Children may require transport to specialized facilities which are far from their homes. Parents should be consulted as to their preference of facilities, if a choice is available.

- Health Maintenance Organizations (HMOs) or regional hospital systems may have specialized pediatric capabilities within their organizational structure that should be considered when developing interfacility consultation and transfer guidelines.

- Experiences derived from trauma system development may be useful in avoiding conflicts when attempting to develop these guidelines.

**Issues for Small Counties and Rural Areas**

- Rural areas should consider the issues involved in transporting children to centers far from their homes. Support systems for parents, and methods for assuring
visitation may be built into the guidelines. This may include development of a group of volunteers or service clubs who can assist in this effort when there are problems.

- Aeromedical transport may be necessary when distances are long, but weather conditions may be a factor. Development of intermediate care facilities for stabilization of pediatric patients may be necessary in rural areas for situations where transport to a tertiary facility is not feasible.

**Timeframe**

Several factors may influence the timeframe necessary to complete the development of consultation and transfer guidelines. However, if the committee membership remains constant and meets on a regular basis, a draft document can be developed in 2-3 meetings. Circulation for public comment should comply with any pre-established LEMSA procedures. The goal to distribute the consultation and transfer guidelines in conjunction with the implementation of ED guidelines should be kept in mind.

**Resources, Guidelines, and Minimum Standards**

Interfacility consultation and transfer guidelines can be found in:


EMSC Guidelines for Interfacility Consultation and/or Transfer of Pediatric Trauma and Non-Trauma Patients developed by Santa Clara County can be found in the Appendix. In addition the following references may be helpful:


**Suggested Reading**


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<tr>
<th>Activity</th>
<th>Date Planned</th>
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<th>Comments</th>
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<tbody>
<tr>
<td>Establish a committee, sub-committee, or ad-hoc committee.</td>
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<td>Schedule meetings.</td>
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<tr>
<td>Review existing community resources and referral practices.</td>
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<td>Circulate draft guidelines to emergency physicians, pediatricians, family practitioners and other interested groups.</td>
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<td>Revise and develop final draft of guidelines.</td>
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<td>Obtain final approval by requisite administrative entities.</td>
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<tr>
<td>Distribute guidelines to local emergency departments and interested organizations and parties.</td>
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CHAPTER 7

PEDIATRIC TRANSFER AGREEMENTS

Introduction

Pediatric interfacility transfer agreements are formal written agreements between community hospitals and specialty centers. Local Emergency Medical Services agencies (LEMSA) must include mechanisms to ensure the availability of appropriate consultation services and transport to pediatric specialty centers when integrating an Emergency Medical Services for Children (EMS-C) program into their Emergency Medical Services (EMS) systems.

When a seriously ill or injured child requires transfer to a higher level of medical care, tasks involving administrative and financial matters can be time-consuming and distracting. Formal or written transfer agreements can facilitate the expeditious transfer of these children and provide a mechanism for establishing working relationships and linkages between community hospitals and specialized centers. Formal transfer agreements provide access to:

- Pediatric specialty center outreach services such as 24-hour consultation services, appropriate interfacility transport programs or critical care transport teams, and professional educational opportunities.
- Patient follow-up, outcome information, and inclusion in a comprehensive pediatric data collection quality improvement program.
- Repatriation back to referring facility once critical care or specialized services are no longer required.

Authority

California Health and Safety Code, Division 2.5, Chapter 12, Emergency Medical Services System for Children.

California Health and Safety Code, Division 2.5, Chapter 6, Facilities.
Administrative Issues

What process should be used?
Community hospitals that do not have existing transfer agreements with pediatric specialty care centers need to negotiate agreements with centers of their choice. LEMSAs can promote the establishment of pediatric transfer agreements in the following ways:

- Provide local hospitals with a list of pediatric specialty centers that serve the community
- Provide community hospitals with copies of pediatric transfer agreements used by pediatric specialty center(s)
- Provide copies of the California EMS-C Project model pediatric transfer agreement to pediatric specialty centers that do not have existing transfer agreements
- Provide community hospitals with a list of pediatric specialty centers' administrative or legal contacts responsible for executing pediatric transfer agreements
- Develop pediatric emergency department guidelines and pediatric specialty center standards that include requirements for signed transfer agreements
- Reinforce the importance of pediatric transfer agreements during the review of emergency departments
- Reinforce the importance of pediatric transfer agreements during the review of pediatric specialty centers

Who should be involved?
The EMS-C Advisory Committee and subcommittees should consider the recommendation or requirement of transfer agreements between community hospitals and the following specialty centers or services:
When should agreements be developed?

Pediatric transfer agreements should be discussed early in the developmental phases of an EMS-C program, as linkages with specialty care centers are essential. The requirement (or recommendation) of established transfer agreements should be included in both emergency department guidelines and specialty center standards. It is likely that some informal transfer patterns already exist; however written or formal agreements may be limited (e.g. neonatal services only) and may vary significantly from hospital to hospital.

Clinical Issues

- Transfer agreements should specify the clinical, administrative and financial responsibilities of the referring hospital and physicians and the receiving hospital and physicians.

- Provisions for consultation, education, transport, patient information sharing, progress reports, data sharing and quality improvement should be included.

Special Considerations

- Health Maintenance Organizations (HMOs) and hospital systems may have specialized centers or capabilities within their organizational structure and may not require the establishment of formalized agreements.

- Insurance providers may require pre-authorization or transfer to specialized centers with which they have pre-established agreements.

- Individual institutions should determine which specialized centers/services with which they wish to establish interfacility transfer agreements.
The requirement to have transfer agreements with specialty centers should not limit an organization's choice to only one agreement, instead multiple agreements for specialized services should be considered if more than one specialty center/service option is available.

**Issues for Small Counties and Rural Areas**

- Transfer agreements are particularly important in small counties and rural areas where there may be fewer local resources for critically ill and injured children. Agreements should be established with the closest facilities for stabilization and specialty care of these children. When transport times are long, air transport may be necessary.

- If weather or geography are barriers to rapid transport, the possibility of establishing a local facility for care until transfer to a specialized center is possible should be considered. Assistance from specialty centers in developing and providing ongoing education and training may be written into the interfacility transfer guidelines.

**Timeframe**

Early in the development of an EMS-C program, the establishment of transfer agreements should be encouraged. Linkage of community hospitals with critical care resources is a vital component of a comprehensive program. Given that written transfer agreements will require the involvement of the administrative and legal departments of the community hospitals and specialty centers, it is likely that lengthy discussions and numerous drafts may be necessary before a final agreement is ready to be signed.

**Resources, Guidelines, and Minimum Standards**

A model pediatric interfacility transfer agreement, developed by the PICU Network of Northern and Central California was revised for the EMSC Project in California. This can be found in:


In addition, a model agreement can be found in:

Suggested Reading


### CHECKLIST FOR PEDIATRIC TRANSFER AGREEMENTS

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date Planned</th>
<th>Date Completed</th>
<th>Comments</th>
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<tr>
<td>Provide local hospitals with list of pediatric specialty centers that serve the community.</td>
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<td>Obtain and provide community hospitals with copies of pediatric transfer agreements used by pediatric specialty center(s).</td>
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<td>Reinforce the importance of pediatric transfer agreements during the review of emergency departments.</td>
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CHAPTER 8

PEDIATRIC INTERFACILITY TRANSPORT PROGRAMS

Introduction

Safe, effective and timely transport of critically ill and injured children between community-based health facilities and specialized pediatric referral centers such as Pediatric Critical Care Centers (PCCC), and Pediatric Trauma Centers (PTC) is often required. Children who require transfer from a community hospital to a specialized center are generally severely ill or injured and require highly skilled care during the transport process. Established linkages between community hospitals and specialized pediatric centers must include the provision of accessible and appropriate pediatric interfacility transport services. These services are essential because:

- Children require specialized personnel with pediatric training, equipment, supplies and medications for ground and air transport, particularly over long distances. Specialized interfacility transport services must be available to ensure “pediatric mobile intensive care” capabilities during transport.

- Various parties such as private physicians, hospitals, Emergency Department (ED) personnel, etc…may arrange interfacility transports. The types and quality of services accessed by these different parties may vary considerably, especially if there are no guidelines.

Authority

Local Emergency Medical Services Agencies (LEMSA) may have limited authority regulating ambulance services that are not part of their organized 9-1-1 system, so criteria for pediatric interfacility transport services may have to be included in the standards developed for specialized centers (e.g. PCCCs or PTCs).

California Health and Safety Code, Division 2.5, Chapter 11, Emergency and Critical Care Services for Children.

California Health and Safety Code, Division 2.5, Chapter 12, Emergency Medical Services System for Children.

California Health and Safety Code, Division 2.5, Chapter 6, Facilities.
Administrative Issues

What process should be used?
In general, the pediatric interfacility transport guidelines or standards developed should be appropriate to the types of transport services provided and should apply to all transport programs in the region engaged in providing these services. However, the process used to develop and implement guidelines/standards may vary depending on the types of transport programs available. Guidelines/standards for hospital-based transport programs may be developed by the Pediatric Critical Care (PCC) subcommittee and included in PCC Standards. The process for guideline/standard development includes:

- Establishment of a committee, subcommittee or ad-hoc committee
- Scheduled meetings
- Review of current system interfacility transport services and programs
- Review of existing guidelines from other EMS-C systems
- Development of guidelines in draft form
- Circulation of guidelines to interfacility transport programs, community hospitals, critical care and trauma centers, and other interested parties.
- Revision and development of final draft of guidelines
- Final approval by requisite administrative entities
- Distribution of the guidelines or standards

Who should be involved?
Representation from pediatric specialty centers that provide service to community hospitals within a LEMSA’s jurisdiction is essential to this process. In an effort to coordinate activities between LEMSAs, representatives from agencies that are served by same specialty center(s) should be invited to participate in the process. A Pediatric Interfacility Transport Program committee may be composed of the following:

- LEMSA Administrator
- LEMSA Medical Director
- Representatives from all transport providers involved in pediatric interfacility transport services in the region. Representation should include management, medical directors, staffing supervisors (e.g. Chief Flight Nurse) and quality improvement coordinators
- Director(s) of Pediatric Critical Care (PCC) Services that serve the community
- Director(s) of Trauma Services that serve the community
- Transport/Outreach Coordinators from pediatric specialty centers that serve the region.
- Managed care and insurance providers
- EMS representatives from counties where interfacility transport services may be based or utilized.
- Legal representatives as indicated
**When should these guidelines be developed?**
Guidelines or standards addressing pediatric interfacility programs should be developed in conjunction with PCCC standards and PTC standards.

**How should decisions be made?**
When making decisions regarding pediatric interfacility transport programs, all of the various configurations of available services need to be addressed. Representatives from all pediatric interfacility programs need to be included in the decision-making process.

### Clinical Issues
Different configurations of pediatric interfacility transport programs can be found throughout California. There is no one ideal model, and no one transport program will be appropriate for every setting or case. Transport services, like other components of an EMS-C system, must be tailored to the special needs and resources of each region.

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<tr>
<th>Program</th>
<th>Operations</th>
<th>Staffing</th>
<th>Special Considerations</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private critical care ground transport services</td>
<td>Divisions of large transport services (e.g., AMR, Rural Metro)</td>
<td>Varies, may be one RN and an EMT or an RN and EMT-P</td>
<td>Appropriate for distances &lt;60 mi.</td>
<td>Available 24 hours/day</td>
</tr>
<tr>
<td>Private critical care helicopter transport services</td>
<td>Divisions of large transport service, privately owned (e.g., REACH) or supported by consortium of specialty centers (e.g., CalStar)</td>
<td>Varies, may be two RNs, two paramedics, or combination of the above, sometimes physicians may be available</td>
<td>Helicopters distances &lt;120 mi Fixed wing distances 120-500 mi. Jets distances &gt;500 mi.</td>
<td>Generally part of LEMSAs 9-1-1 systems and available 24 hours/day</td>
</tr>
<tr>
<td>Center-based transport services (Ground or helicopter)</td>
<td>Pediatric Specialty Centers (e.g., Lifeflight)</td>
<td>Varies, may include RNs, MDs, EMT-Ps, RTs or any combination of the above</td>
<td>Advanced scope of practice available if needed. Specialty equipment readily accessible.</td>
<td>Generally available 24 hours/day. Aeromedical transport services will depend on weather conditions</td>
</tr>
<tr>
<td>Center-based transport teams utilizing contracted private critical care ground, helicopter or fixed wing transport services</td>
<td>Pediatric Specialty Center and contracted private transport services</td>
<td>Varies, may include physician, RN and RT</td>
<td>Advanced scope of practice available if needed. Specialty equipment readily accessible</td>
<td>Generally available 24 hours/day. Aeromedical transport services will depend on weather conditions. Fixed wing transport may be required for long-distances</td>
</tr>
<tr>
<td>EMS system ALS ground transport providers</td>
<td>County contracted ALS providers</td>
<td>Varies, may include 2 EMT-Ps or and EMT-P and EMT-I</td>
<td>Specialized pediatric training as required by LEMS</td>
<td>Available 24 hours/day, dependent upon EMS system status</td>
</tr>
</tbody>
</table>
Although the transferring physician is responsible for the safe transfer of the patient, decisions on mode of transport, staffing, and appropriate level of care should be made jointly between the referring physician and the receiving physician. Communication between these two parties is essential for every transfer.

Performing skills such as endotracheal intubation, accessing IV sites, and monitoring are particularly difficult procedures in children during transport. Special of transport personnel is needed.

Since interfacility transport programs are usually not part of an organized EMS' 911 system, the question of medical control of transporting personnel (if paramedics are utilized) may need to be addressed.

For reasons of efficiency, cost effectiveness, and accountability, regional pediatric interfacility transport program may better serve your system rather than multiple services. However, availability of services is also an important factor.

Many pediatric interfacility transport programs cover large geographic areas that include service areas of different EMS agencies. LEMSAs should determine if existing EMS system guidelines or standards have already been developed and implemented and coordinate their activities with these agencies. In addition, agreements may be necessary to assure compliance with local ambulance ordinances.

In congested urban areas, problems with designated helicopter landing sites, noise control, etc. may occur. These issues need to be taken into account.

Guidelines should be developed as to level of service required for patients on transports (basic, advanced, or hospital).

Special Considerations

In the past there has been considerable controversy over the types and training of health professionals that should be used for pediatric interfacility transport.

Special requirements such as third party payers and existing contracts between hospital systems, insurers and transport providers must be taken into account when developing and implementing interfacility transport program guidelines.

As much as possible, parents and patients, should be afforded choice regarding transport services.

Use of aeromedical transport services must be based upon careful assessment of benefits versus risks associated with this type of service.
**Issues for Small Counties and Rural Areas**

- LEMSAs serving rural regions must develop realistic guidelines for interfacility transport services. Sensitivity to geographic conditions, availability of services and the capabilities of private, public and hospital-based providers must be considered.

- In some areas, where transport times are long, providers may need additional training in maintaining stabilization of pediatric patients, and may need to be able to perform more advanced procedures.

**Time Frame for Development**

Several meetings may be necessary to review the California EMSC guidelines, and existing standards, and develop a draft document. Circulation for public comment will be based upon LEMSA policies and procedures.

**Resources, Guidelines, and Minimum Standards**

Guidelines for pediatric interfacility transport programs can be found in:


In addition, the following resources may be helpful:


**Suggested Reading**


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<tr>
<th>Activity</th>
<th>Date Planned</th>
<th>Date Completed</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Establish a committee, subcommittee, or ad-hoc committee.</td>
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<tr>
<td>Review current system interfacility transport services and programs.</td>
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<tr>
<td>Review existing guidelines from other EMS-C systems.</td>
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<tr>
<td>Develop guidelines in draft form.</td>
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<tr>
<td>Circulate guidelines to transport programs, hospitals, critical care and trauma centers, others.</td>
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<tr>
<td>Review comments, revise guidelines, develop final draft.</td>
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<tr>
<td>Obtain final approval of guidelines from requisite administrative entities</td>
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<tr>
<td>Distribute the guidelines.</td>
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<tr>
<td>Implement the guidelines.</td>
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CHAPTER 9

PEDIATRIC CRITICAL CARE AND SPECIALTY CENTERS

Introduction

The development and implementation of Emergency Medical Services for Children (EMS-C) standards for Pediatric Critical Care Centers (PCCC) and other pediatric specialty centers ensures the availability of appropriate care for children who require complex or specialized care. PCCCs and other pediatric specialty centers are usually children's hospitals or major medical centers that provide a broad spectrum of specialized pediatric services not available in most community hospitals. Local EMS Agencies (LEMSA) need to design EMS-C programs that promote the care of critically ill and injured children in Pediatric Intensive Care Units (PICU), PCCCs, and other pediatric specialty centers because:

- Pediatric morbidity and mortality can be reduced when children who require intensive care or other specialized services are cared for in PCCCs, Pediatric Trauma Centers (PTC) or other specialized centers with appropriate pediatric trained personnel, services and resources.

- Critically ill and injured children are still cared for in adult Intensive Care Units (ICU) in many regions of the State, despite evidence of the negative impact this may have on outcomes.

- PCCC standards promote strong outreach consultation, education, and transport services, which facilitates the availability of pediatric critical care and specialty services to community hospitals, physicians, and other health care providers, especially in geographically remote areas.

There is no single set of standards that have been developed for PCCCs, but the State EMS-C Project Guidelines offer an overall outline for PCCC standards. There are also some standards and guidelines that address criteria for specialty centers and services, which should be reviewed and adopted as appropriate. The development and implementation of standards for PCCCs and specialty centers is necessary to:

- Ensure the availability of appropriate facilities and services for children who require complex or specialized care.
Facilitate the integration of pediatric specialty centers into the EMS system.

Create a structure for establishing effective linkages between these centers and other EMS system components, e.g., prehospital services, patient destination policies, interfacility transport and transfer services, and trauma systems.

PCCCs and other specialized pediatric centers often serve large geographic areas and multiple LEMSAs. Pediatric specialty centers and services may be located within or outside a LEMSA's catchment area. Some regions have one or more PCCCs that provide a full range of services. Other areas, particularly rural areas, have no PCCCs or other specialized pediatric services and must establish linkages (e.g., transfer agreements and pediatric interfacility transport services) with centers located in other LEMSA areas. The availability of the following specialized pediatric centers and services should be identified and included in an EMS-C program:

- PCCCs
- PTCs
- Other specialized centers or services such as:
  - Spinal rehabilitation centers
  - Burn centers
  - Pediatric rehabilitation centers

**Authority**

California Health & Safety Code, Division 2.5, Chapter 12. *Emergency Medical Services for Children.*

California Health and Safety Code, Division 2.5, Chapter 6, *Facilities.*

California Children’s Services Hospital Standards.

**Administrative Issues**

*What process should be used?*

LEMSAs are familiar with the process of trauma center designation, but may be less familiar with the concept of PCCCs. Education about the role of PCCCs and pediatric specialty centers may be a necessary first step before the actual development of standards can begin.

The process of developing EMS-C standards for PCCCs and specialty centers should be accomplished under the direction and leadership of the LEMSA. PCCC standards and implementation mechanisms relating to specific State or LEMSA regulations, standards, or requirements must conform to requirements set forth by legislation or the authorizing agencies, such as California Children’s Services (CCS) PICU standards. CCS is a program of physical habilitation or rehabilitation for children with specified handicapping conditions, whose families are unable to pay for necessary specialized services. The goal is for these children to obtain these services, which can only be provided in CCS approved centers, and by CCS paneled personnel. CCS develops PICU standards, and surveys PICUs and panel staff in the State to determine whether they meet those standards.
PCCCs should also conform to requirements of State trauma regulations. Though there are no State regulations for PCCCs as there are for trauma centers, formal standards, not guidelines, should be developed and an official designation or approval be made of qualifying centers by the appropriate LEMSA governing body.

Throughout the process of developing PCCC and specialty center standards, there should be coordination with other committees that might be developing related standards. For example, if the LEMSA has a trauma system, the development and implementation of PCCC and other pediatric specialty center standards should be coordinated with the trauma system so that appropriate and integrated services are provided for both critically ill and injured children. Additionally, cooperation and coordination among LEMSAs using the same PCCCs and specialty centers should occur during the planning, development, and implementation of standards.

EMS-C projects may choose to establish a multidisciplinary PCCC subcommittee for the purpose of developing standards for pediatric critical care and other specialty centers. The LEMSA should identify key agencies, institutions, organizations and individuals that should participate in the subcommittee. Development of PCCC and pediatric specialty center standards will require:

- Establishment of subcommittee.
- Formulation of goals and objectives.
- Identification of major pediatric specialty centers within or outside the region that serve the LEMSA catchment area.
- Identification of existing referral patterns of physicians and hospitals to specific pediatric referral centers.
- Identification of key pediatric interfacility transport services within or outside the region that serve the LEMSA catchment area.
- Identification and coordination with other LEMSAs involved in pediatric specialty centers and interfacility transport services serving the region.
- If there are no qualified pediatric specialty centers located in the area, evaluation of existing capabilities of local facilities for potential future designation or consider centers outside the region that can be used.
- Review of existing State and other regulations, standards, and guidelines for the relevant services.
- Adoption of existing standards or development of draft standards for appropriate pediatric specialty centers to serve the region.
- Review of draft standards with overall EMS-C Advisory Committee and trauma committee (if appropriate) and revise.
- Circulation of draft standards to interested parties/public for review and comment.
- Final approval of standards by EMS-C Advisory Committee, EMS agency, and appropriate governing body.
- Legal review, if indicated
- Formal adoption of standards
- Implementation of standards through formal site visits and designation.
Who should be involved?
The PCCC subcommittee should be broad-based and multi-disciplinary. The following should be considered for membership:

- LEMSA Administrator, Medical Director, staff,
- Key EMS agency committees, such as the Emergency Medical Care Committee, Trauma committee, etc.
- Representatives from other LEMSAs using same centers or serving overlapping service area.
- Representatives from major pediatric specialty centers serving the LEMSA area that might be interested in PCCC approval (whether they are located within or outside the area).
- Center Hospital Administration and Nursing Administration.
- Center Medical and Nursing Directors of PICU, Emergency Department (ED), surgery, other major services involved in pediatric emergency and critical care, and trauma service, if applicable.
- Representatives from other center services, such as social services, respiratory care, community outreach, etc., if desired.
- Center-based and other interfacility transport service provider representatives.
- Professional organizations, if appropriate, such as California American College of Emergency Physicians (ACEP), American Academy of Pediatrics (AAP), Emergency Nurses Association (ENA) and local Hospital Associations/Councils.
- Insurance/Health Maintenance Organization providers, if appropriate.
- Regional California Children’s Services (CCS) office representatives.

The PCCC subcommittee may also review standards for other specialty centers. Representatives from services/centers serving the LEMSA area should be included in PCCC committee discussions. The committee should develop recommendations for standards and implementation strategies for these centers in conjunction with PCCC standards.

When should pediatric specialty center standards be developed and implemented?
During the first year of a project, LEMSAs should develop a draft EMS-C system plan that addresses facilities and services needed by both critically ill and injured children. The role of pediatric critical care and specialty centers should be identified during the initial planning phase of an EMS-C Project, although the actual development and implementation of PCCC and other pediatric specialty center standards may not be undertaken until the second year of a project.

How should decisions be made?
Responsibility for decisions regarding the development and approval of PCCC standards rests with the LEMSA and its governing body and must conform to existing regulations and requirements. All participants with potentially conflicting points of view should have an opportunity to express their views to LEMSA representatives and other decision-makers early in this process.
Clinical Issues

LEMSAs should use the California EMS Authority Guidelines for PCCCs (included in the EMSC Project Final Report) as a template for developing standards for their region and should include existing standards from other sources as appropriate including:

- 1999 CCS PICU standards (core component of PCCCs).
- CCS Hospital standards (other PCCC components, e.g., Emergency Department standards, etc.).
- Local LEMSA pediatric standards or guidelines for emergency departments. PCCC Emergency Departments should meet higher standards than the standards/guidelines developed for community hospital EDs.
- State EMS-C Guidelines and LEMSA guidelines/standards for Pediatric Interfacility Transport Programs.

In addition to PCCCs, LEMSAs must ensure that other types of pediatric specialty centers are identified and accessible when necessary (e.g., spinal cord injury, burn, and pediatric rehabilitation). The development of standards by the LEMSA for these specific centers/services are generally not necessary since appropriate standards have already been developed by various national and State agencies and organizations. For example, CCS has developed standards and an approval process for pediatric rehabilitation centers.

LEMSAs may choose to review specialized services (such as pediatric rehabilitation) provided by a facility during a PCCC site visit. However, most agencies accept evidence of approval by other State agencies, as sufficient.

Special Considerations

- A separate, distinct Pediatric Intensive Care Unit (PICU) that meets the revised (January, 1999) CCS-PICU standards should be a "core component" of PCCC standards in all EMS-C systems in California.

- Some hospitals may want PCCC approval/designation without having a separate, distinct PICU that meets CCS PICU standards. These hospitals may care for critically ill and injured children in adult ICUs, and may pose strong challenges (political, financial, and otherwise) to LEMSAs about meeting CCS PICU standards.

- New CCS hospital standards (January 1999) cover many of the standards included in the EMS-C PCCC Guidelines (e.g., ED standards, etc.). These standards are now required of all hospitals in California participating in the CCS program but they were not available when the original EMS-C PCCC guidelines were developed.

- In some regions, there are conflicts between PCCCs and trauma centers regarding what types of critically ill and injured children and can be managed in the respective institutions (e.g., closed head trauma not requiring surgery).
The inclusion of pediatric interfacility transport program standards within PCCC standards may be considered to ensure a mechanism for timely and quality transport of children from community hospitals and geographically isolated areas to a designated or approved PCCC.

**Issues for Small Counties and Rural Areas**

- Rural areas without PCCCs or other specialized pediatric services within their regions should identify other resources and ensure an organized approach to obtaining specialized pediatric critical care services. Emphasis should be placed on stabilizing patients and facilitating transport in a timely fashion.

- In geographically remote areas, part of system development should be to develop PCCC standards that include provisions for outreach, consultation, education and transport services to smaller community hospitals and health care personnel.

- Mechanisms for feedback from the tertiary care center to the transferring hospital should be included in the development of the standards.

**Timeframe**

The development of PCCC standards generally requires 6-9 months. Implementation of the standards may take an additional 6-9 months depending on the number of centers involved.

**Resources, Guidelines, and Minimum Standards**

Guidelines for Pediatric Critical Care Centers can be found in:


The Sierra-Sacramento Valley PCCC standards and the California Children’s Services (CCS) standards for PICUs, can be found in the Appendix. In addition, the following resource may be helpful:

- California Children's Services, California Department of Health Services. CCS Hospital Standards. Sacramento, CA: California Children’s Services; 1999.

**Suggested Reading**


<table>
<thead>
<tr>
<th>Activity</th>
<th>Date Planned</th>
<th>Date Completed</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Establish a subcommittee.</td>
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<tr>
<td>Formulate goals and objectives.</td>
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<tr>
<td>Identify major pediatric specialty centers within or outside the region.*</td>
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<tr>
<td>Identify existing referral patterns of physicians and hospitals.</td>
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<tr>
<td>Identify key pediatric interfacility transport services that serve the LEMSAs in the region.</td>
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<tr>
<td>Identify key pediatric interfacility transport services that serve the LEMSAs in the region.</td>
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<tr>
<td>Review existing State and other regulations, standards, and guidelines for relevant services.</td>
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<tr>
<td>Adopt existing standards or develop draft standards for pediatric specialty centers to serve the region.</td>
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<tr>
<td>Review and revise draft standards with EMS-C Advisory Committee and trauma committee.</td>
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<tr>
<td>Circulate draft standards to interested parties/public for review and comment.</td>
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<tr>
<td>Final approval of standards by EMS-C Advisory Committee.</td>
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<tr>
<td>Legal review, if indicated.</td>
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<tr>
<td>Formal adoption of standards</td>
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<tr>
<td>Implementation of standards through formal site visits and designation.</td>
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* If there are no qualified pediatric specialty centers located in the area, evaluate capabilities of local facilities for potential future designation or consider centers outside the region.
CHAPTER 10

IMPLEMENTATION OF STANDARDS FOR PEDIATRIC CRITICAL CARE CENTERS AND OTHER PEDIATRIC SPECIALTY CENTERS

Introduction

The process for implementing standards for Pediatric Critical Care Centers (PCCC) is generally similar to the process used by Local Emergency Medical Services Agencies (LEMSA) for implementation of Trauma Center standards. Identifying, evaluating, and approving/recognizing other types of specialty centers such as burn, spinal cord and rehabilitation centers is also a part of Emergency Medical Services for Children (EMS-C) implementation; the process for inclusion of these facilities is somewhat simpler because they have often already undergone an approval process by other official entities. The PCCC Subcommittee should be responsible for developing the implementation process for PCCC and specialty center standards.

Specialty centers to be included in EMS-C should include:

- PCCCs, including center-based pediatric interfacility transport programs.
- Other specialty centers such as burn, spinal cord injury, and rehabilitation centers.
- Pediatric trauma centers (PTC).

For the specialty centers not a part of PCCCs, the Committee may also:

- Identify appropriate centers in the region.
- Adopt California Children’s Services (CCS) or other existing standards for these centers.
- Accept review and approval by relevant State agencies as evidence of meeting these standards.

When standards for PCCCs have been approved by the EMS-C Advisory Committee and other official entities as necessary, implementation of the standards should take
place. The steps for implementation of the PCCC standards and for approval of other specialty centers are outlined below.

**Authority**

California Health and Safety Code, Division 2.5, Chapter 12, *Emergency Medical Services System for Children*

California Health and Safety Code, Division 2.5, Chapter 6, *Facilities*


**Administrative Issues**

*What process should be used?*

Once PCCCs and specialty centers have been identified in the region and standards have been developed and approved, PCCC standards, pediatric interfacility transport standards, and other specialty center standards (if appropriate) should be circulated to all hospitals in the region that might be interested in designation. When there are questions about which hospitals might be interested in designation, it is advisable to send the standards to all hospitals in the region. (A sample letter to be sent to hospitals is included in the appendix.)

To implement the standards in those facilities interested in designation, a process and format for site review, supported by appropriate documents should be developed.

The PCCC subcommittee's tasks to prepare for the site reviews should include:

- Development of a document outlining the "Review and Designation" process. The description of the process should be used to explain to hospitals and other interested parties what the requirements are for PCCC application, review, and approval.

- Development of an application form with self-assessment tool to be used to obtain information from hospitals prior to visit. This is useful in identifying hospitals that are likely or unlikely to meet standards. Information obtained will also provide useful information for the site visit team in advance of the site visit.

- Identification of hospital personnel expected to be present during the site visit. Specifically note which personnel must be present in person, rather than a designee.

- Identification of the types of consultants and LEMSA staff, including a team leader (usually a LEMSA staff member) to be included in the site visit.
- Development of guidelines for site visit consultants and team leader (usually a LEMSA representative).

- Specification of documentation that will be required of the hospitals during the site visit. This may include charts, curriculum vitae, policies, documentation of education, QI materials, and others.

- Development of a survey document with checklist for the site visit. This survey document should be carefully designed with a scoring system assure consistency and eliminate subjectivity as much as possible. Materials to be made available by the hospital during the site visit should be listed in this document, including:

| ✓ Membership and attendance in the hospital multi-disciplinary PCCC Committee |
| ✓ Coordination and integration with other services involved in pediatric emergency and critical care |
| ✓ Patient care and transfer policies |
| ✓ Quality Improvement (CQI) |
| ✓ Outreach and Education |

- These requirements should apply to all services involved in emergency and critical care, including (but not limited to):

- Determination of fees to be assessed for application, if any, including application fees, survey fees, etc. These must be clearly outlined in application materials.

- Development of an evaluation tool regarding the survey process to be completed by the hospital after the site visit.

Prior to the site visit, the following steps should be taken:

- Completion by the hospitals of the application and self-assessment tool. This should be returned to the LEMSA prior to the visit, and sent to the consultants as background information if a site survey is to be performed.
Screening of application forms by LEMSA staff to determine which hospitals meet requirements and will be surveyed.

Notification to hospital of site survey specifics, including personnel to be in attendance, charts to be made available, schedules and other documentation to be reviewed during site survey.

Determination of the number and types of consultants that will be needed for the site visit, payment for their services, methods for invoicing, etc. The consultants will vary depending on the extent and types of services reviewed.

Identification and notification of survey participants, including hospital personnel, LEMSA personnel, and consultants, and scheduling of site visits. This should be done by the LEMSA coordinator in collaboration with designated hospital contact persons.

Arrangements should be made for consultants, including travel, hotel accommodations, and directions to hospital.

Development of a detailed schedule of the site visit, to be provided to all participants, along with names, titles, and professional affiliations of those involved in the site visit.

Collation of a packet of information for consultants to be included with confirmation letter for site survey. This should include:

- Information and guidelines for the site survey
- Completed self-assessment survey forms
- Site visit checklist
- Consultant site visit evaluation report, including deadline for submission of report
- Information regarding reimbursement, with invoice to be completed by consultant
- Regional information including map and location of hospitals, and demographics
- Other materials as necessary

Provision of instructional packet to site visit team leader including responsibilities and deadlines for submission of reports by team members.

Orientation of site survey consultants with instructions on purpose of survey, how to complete forms, deadlines for submission of reports, etc. This may be done the evening before the site survey, or on the morning of the site survey.

After the site survey is completed, the hospital should be given feedback as soon as possible.
Some feedback is given in wrap-up session after site-survey. This is an opportunity for providing education in resources available and positive feedback on areas of strength, as well as a summary of areas of weakness and suggestions for improvement.

LEMSA Coordinator will be responsible for collecting evaluation forms, collating information and preparing summary report for facilities.

Feedback letter to facilities should be written and should include information as to whether the hospital is designated; will be designated pending specific corrections (with specific deadline for corrections); not designated. Clear, objective reasons should be given for lack of designation.

Letter should include the name of a LEMSA contact person to answer any questions

Thank you letters should be sent to consultants and to hospital staff included in the site survey process.

Who should be involved?

- The PCCC Subcommittee responsible for development of the PCCC standards and identification of other specialty centers will continue to provide support for the implementation process.

- Each hospital involved in the process should designate a hospital contact person as liaison to the LEMSA for the PCCC designation process. This person will assist in developing a schedule for the site visit and circulate the “Review and Designation” document to appropriate personnel in the hospital.

- Consultants with special expertise in the specialties involved in designation should be recruited for the site surveys.

- Hospital personnel included in the site visit should include representatives from administration, physicians, nurses, and representatives from other services such as social work, respiratory, and other ancillary services as appropriate.

- EMS Agency personnel will be responsible for conducting the site visits along with consultants representing various specialties according to the type of services being reviewed.

Clinical Issues

- If the facility being surveyed has already been designated as a trauma center, the survey team should meet with trauma center representatives in the process of the site survey.

- A PCCC may also include other specialty services within their facility, such as a trauma center or a CCS-approved PICU; in these cases, the survey processes may occur concurrently to avoid duplication.
When a LEMSA designates centers outside its own jurisdiction, efforts should be coordinated with the LEMSA in which the center is located.

It may be helpful for Medical Records personnel to be available during the process of chart review to assist in obtaining additional records, explaining notations, etc.

Specific criteria for chart reviews should be developed with a list of diagnostic categories to be included.

**Special Considerations**

In some regions, potential PCCCs and other specialty centers are easily identifiable. In others there may be competition, and pressure may be applied to the LEMSA for designation. These situations can be politically challenging. Early participation, commitment and support for high quality standards from key agencies, organizations and other parties can help to offset this problem.

The site survey and evaluation reports should be made as non-threatening and as objective as possible. Consultants used for the site surveys should be encouraged to provide useful information and positive feedback when appropriate.

**Issues for Small Counties and Rural Areas**

The main issue for small and rural agencies is establishing triage guidelines and transfer protocols to approved PCCCs and PTCs in the region as part of their systems. When it is clear that transport will often be difficult, an approval process for a local pediatric center for initial stabilization of critically ill and injured patients may be necessary.

**Timeframe**

Once the standards for PCCCs and other pediatric specialty centers have been developed and agreed upon by all participants, it will take a 3-4 month period to contact the center(s), send out pre-survey information, schedule visits, and perform the site survey(s).

**Resources, Guidelines and Minimum Standards**

A full-length (85 page) guide to PCCC implementation developed by the Pediatric Intensive Care Network of Northern and Central California can be found in the Appendix. This includes samples of letters and site survey documents. The following documents contain standards for approval of facilities:

- California Children's Services, California Department of Health Services. CCS Pediatric Intensive Care Unit (PICU) Standards. Sacramento, CA: California Children's Services; 1999. (Included in the Appendix.)

California Children's Services, California Department of Health Services. CCS Hospital Standards. Sacramento, CA: California Children's Services; 1999.

**Suggested Reading**


### Checklist for Implementation of PCCCs

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<th>Activities</th>
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<tr>
<td>Develop a document outlining the process.</td>
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<tr>
<td>Develop an application form with self-assessment tool.</td>
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<tr>
<td>Identify hospital personnel to be included in the site visit.</td>
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<tr>
<td>Identify LEMSA staff, team leader and consultants to be included in the visit.</td>
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<tr>
<td>Develop guidelines for site visit.</td>
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<td>Specify documentation required of hospitals during site visit.</td>
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<td>Develop a survey document with checklist for the site visit.</td>
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<td>Determine fees to be assessed for application.</td>
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<td>Hospital(s) complete application and self-assessment tool.</td>
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<td>Application forms screened by LEMSA staff.</td>
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<td>Notify qualifying hospital(s) of site survey specifics.</td>
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<td>Notify survey participants of scheduling of site survey(s).</td>
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<td>Arrangements for consultant(s), (travel, fees, etc.).</td>
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<td>Develop a detailed schedule of site visit.</td>
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<td>Collate a packet of information for consultant(s).</td>
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<td>Provide instructional packet to site visit team leader.</td>
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<td>Provide orientation for site survey consultant(s).</td>
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<td>Site surveys of PCCC(s).</td>
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<td>Provide post-survey feedback to hospital(s).</td>
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CHAPTER 11

CHAPTER 11

PEDiatric Trauma CENTER Standards: Development and Implementation Process

Introduction

More children die from injury than from all other causes combined. For the injured who survive, severe disability may be a lifelong problem, as functional impairment may stretch into decades of institutional or custodial care. The effect of pediatric injury in terms of lost human potential, cost to society, and impact on families is especially over-whelming.

Effective care of the injured child requires an inclusive approach which recognizes injury as a major pediatric health problem, identifies effective strategies for prevention, improves systems of emergency care for children, and provides the most appropriate care available. There are many reasons for Local Emergency Medical Services Agencies (LEMSA) to develop and implement standards for Pediatric Trauma Centers (PTC), including the following:

- Regardless of age, injured children are still most commonly killed or disabled by central nervous system injury. An organized approach to caring for these children is essential.

- Infants, toddlers, and preschoolers (birth to 5 years) are at greatest risk from falls and sustain the highest proportion of isolated closed head injuries. Early recognition and treatment of traumatic brain injury can assure appropriate intervention.

- Children between 6 and 12 years of age are most commonly victims of vehicular trauma as pedestrians, bicyclists, or unrestrained passengers. Rapid intervention when a child is injured can improve outcomes.
Adolescents engage in many risk taking activities which can cause injury. Caring for injured adolescents requires not only skilled medical intervention but understanding of the causes of risk-taking behavior and effective prevention strategies.

The addition of a PTC can assure a comprehensive trauma system designed to care for all injured patients.

The original trauma regulations for California were promulgated in 1986. These regulations provided a definition of a PTC, but did not establish specific requirements for PTCs. Development of these standards was left up to the LEMSAs, as the designating authority. In 1999, the trauma regulations were revised to include standards for Level I and Level II PTCs.

The first step for each LEMSA is to determine the standards and the process that will be used to implement the PTC standards into a new or existing trauma system.

**Authority**

Health and Safety Code, Division 2.5. Chapter 6. Facilities. Article 2.5 *Regional Trauma Systems*.


**Administrative Issues**

**What process should be used?**

- LEMSAs should identify facilities, within or available to the LEMSA service area, that may meet the State requirements for Level I or Level II PTC designation. These facilities may or may not be previously designated as adult trauma centers within a given system.

- Trauma systems implemented prior to the effective date of the revised regulations must submit an updated trauma care system plan to the Emergency Medical Services (EMS) Authority within two (2) years. This provides an opportunity to include PTCs into an existing system plan.

- A LEMSA planning to implement a trauma system to include a PTC must develop a written trauma care system plan that includes policies and/or procedures to assure compliance of the trauma system with State Trauma Regulations. The plan must be approved by the EMS Authority prior to implementation. Required components of the plan are detailed in the regulations.

- The California Trauma Regulations provide minimum standards for trauma centers and pediatric trauma centers. LEMSAs may choose to develop standards that exceed the
regulations in order to meet the needs of the region. A multi-disciplinary committee should be used to review the State Trauma Regulations and draft a document that includes any additional chosen requirements. Draft trauma center standards will then require approval by the LEMSA’s governing body following established LEMSA procedures.

- There are several components and activities involved in implementing PTC standards that include the following:

- Request for Proposals developed containing:
  - Instructions governing the proposal to be submitted
  - Associated fees
  - The materials/documentation to be included
  - Mandatory requirements for eligibility
  - General evaluation criteria
  - Hospital’s responsibilities before and after designation

- Screening of proposals or applications to determine eligibility. This is usually a formal process with a scoring system to ensure that all applications are reviewed consistently.

- Letters of approval or rejection sent to applicants. Proposals may be rejected if they are incomplete or deemed not to meet the required PTC standards as set forth in State regulations and local policies. If a proposal is rejected, the LEMSA may choose to assist the hospital in resubmitting a successful proposal.

- Formal site review. The site survey is an essential component in the process of implementing PTC standards.

Prior to the site visit:
- Determination should be made of the site survey format for verification. Although the LEMSA is responsible for trauma center verification, they may wish to contract with the American College of Surgeons (ACS) to perform the site survey or may choose to put together an independent team of pediatric trauma experts. In any case, the LEMSA needs to ensure that consultants have appropriate pediatric trauma expertise. Efforts should be made to confirm that no conflict of interest exists between team members and the applicant facility and/or staff.

If the LEMSA chooses to use the ACS Trauma Center Consultation or Verification Process, many of the necessary tools for the site visit have already been developed by the Committee on Trauma and the Verification Committee. These materials will be provided to the LEMSA and used by the ACS survey team. Keep in mind that the ACS criteria may differ and/or not include California Trauma Regulation criteria. LEMSAs using the ACS process may also complete their own review to ensure compliance with
State regulations. The services and materials provided in the ACS Trauma Center Verification Process include:

- Pre-survey questionnaire
- Pre-survey questionnaire review process (usually performed the evening prior to a scheduled visit)
- Site visit format
- Selection of survey team (LEMSA my request specific team members)
- Evaluation tool and criteria
- Schedule of interviews and tour
- Requested documentation (including specific category of patient records) to be made available during the site visit

A site visit guide should be developed for each facility. This may include:

- Schedule
- Survey team information
- Documentation to be made available:
  - QI plan/records/committee minutes
  - Education records including physician CME and nursing course completion records,
  - Curriculum vitae for trauma director/nurse coordinator and key department chairs
  - Data reports reflecting program statistics/QI
  - Room requirements and meals/snacks
  - Patient care records (usually in categories selected by survey team)

Site review(s) should be scheduled. The scheduling of a site review includes a detailed schedule of interviews with key trauma center personnel and facility tour. The LEMSA representative, usually the trauma coordinator, should work with a contact person at each applicant facility to develop the site visit schedule.

The site visit:
- An initial site visit usually takes one full day. In the event that a designated adult trauma center requests an additional pediatric level designation, the survey process may not require a full team or full day as the survey may only focus on pediatric specific requirements.

- A post site visit conference allows for immediate feedback to the hospital administration and staff. This forum may be used to provide positive feedback on areas of strength, as well as identifying areas of weaknesses and suggestions for improvements. Educational resources and references may also be provided at this time.

After the site visit:
Consultant’s report should be analyzed by the LEMSA. The site team usually meets with the LEMSA to summarize their findings. This post conference provides an opportunity for any conflicting findings to be discussed. In addition to this meeting, all consultants should prepare a detailed written report of the review including their recommendations and need for corrections.

A letter should be sent to the facility reviewed addressing designation, conditional designation with corrections required or denial. This letter may also include copies of the site team members’ written report.

Formal contract or agreement should be executed between the LEMSA and designated facility. This includes terms of on-going monitoring and redesignation.

**Who should be involved?**

The California Trauma Regulations provide minimum standards for PTCs (Level I and II). The task of developing additional PTC standards, specific to the region, will require input from many sources including, medical professionals, professional organizations, hospital administrators, legal counsel, insurance providers, prehospital providers and consumers. A multi-disciplinary committee should be established for this purpose. This committee may also be used to determine the process by which the standards will be implemented. Membership may include:

- LEMSA administrator(s) and staff from surrounding areas with facilities that may meet PTC criteria.
- Air ambulance provider(s).
- Representative(s) from designated Trauma Center(s), if trauma system exists.
- Trauma Surgeon(s).
- Trauma Nurse Coordinator(s).
- Public official(s).
- LEMSA legal counsel.
- Insurance provider(s).
- Community hospital administrators.

**Clinical Issues**

- The California Trauma Regulations provide specific requirements for personnel, education, policy development, and equipment. (see attached) All of these should be included in the standards developed for the PTC(s).
- It is important to determine at the outset whether any other LEMSAs in the region are interested in participating in the LEMSA’s PTC implementation process.
- Consistency in the review process of all applicant facilities is imperative. For this reason, many LEMSA’s chose to use the same team for all centers being reviewed. If the same
team is not used, each participant in the review should be carefully briefed on the survey process.

**Special Considerations**

- Prior to the promulgation of the current trauma regulations, few PTCs were designated. Current regulations now provide clear standards and process allowing for adult trauma centers to consider application for a level of PTC designation.

- Site surveys tend to be time-consuming and expensive. Fees for reviews are often required and payer responsibility should be clearly stated in the RFP.

**Issues for Small Counties and Rural Areas**

In small counties and rural areas, there may be no facility in the immediate vicinity appropriate for designation as a PTC, but the LEMSA should identify the closest facilities, and include transfer agreements and a triage system for critically injured pediatric patients to be transported directly to the nearest PTC, or to be stabilized locally and prepared for transfer.

**Timeframe**

PTCs should be included in trauma system plans; when an updated trauma care system plan is required (for systems implemented prior to the effective date of the revised regulations), PTCs can be included in the revisions. Depending on existing trauma systems, and regional issues, review and site visit process can take six months to a year or longer.

**Resources, Guidelines and Minimum Standards**

The State of California Trauma Guidelines, which include guidelines for Pediatric Trauma Centers, can be found in the Appendix, as well as on California EMS Authority website: [www.emsa.cahwnet.gov](http://www.emsa.cahwnet.gov). In addition, the following resource may be useful:

- Resources For The Optimal Care Of The Injured Patient. Committee on Trauma, American College of Surgeons, 1999.

**Suggested Reading**

Baker SP, Fingerhut LA Higgins L, et al. Injury to children and teenagers:


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<th>Activity</th>
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<td>Identify facilities.</td>
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<td>Develop written trauma system plan.</td>
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<td>Obtain approval by EMS Authority.</td>
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<td>Develop Request For Proposals.</td>
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<td>Screen proposals to determine eligibility.</td>
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<td>Determine of site survey format.</td>
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<td>- Questionnaire review process</td>
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<td>- Selection of survey team</td>
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<td>- Evaluation tool and criteria</td>
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<td>Schedule interviews and tour.</td>
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<td>Request documentation from facilities.</td>
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<td>Formal site review.</td>
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<td>Post site visit conference.</td>
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<td>LEMSA analysis of consultant's report.</td>
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<td>Letters to facility(ies).</td>
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<td>Formal contract or agreement executed between LEMSA and designated facility(ies).</td>
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CHAPTER 12

PEDiatric quality IMPROvEMENT GUIDElINES

Introduction

The purpose of pediatric quality improvement (QI) guidelines is to assure timely evaluation of the quality and appropriateness of care of pediatric patients, and to provide a feedback loop for making improvements. The essence of QI in general is the use of quality assessment (QA)--data collection and analysis--to identify areas for improvement and develop methods for implementing change. In short, Emergency Medical Services for Children (EMS-C) QI involves assessment and improvement of pediatric care throughout the system, from initial identification of the ill or injured pediatric patient through rehabilitation and re-entry into the community.

Pediatric QI does not involve development of separate QI plans--rather, it involves identification of pediatric QI elements for integration into existing QI programs as well as planning mechanisms for collaborative review of system issues and improvements.

This chapter is intended to assist in the development of EMS-C QI guidelines for Local Emergency Medical Services Agencies (LEMSA), Emergency Departments (ED), interfacility transport providers and pediatric specialty centers. Pediatric QI guidelines are necessary because:

- Pediatric patients comprise from 5-10% of prehospital runs, and 1/3 of emergency department visits, and yet pediatric care is not always clearly addressed in quality improvement plans. Development of specific pediatric QI guidelines can assure that pediatric issues are adequately addressed.

- Decisions to transport pediatric patients can be quite different from those for adult patients; development of pediatric QI guidelines and monitoring of transport information can give a clearer picture of problems throughout the entire system to assist in development of a seamless system of care for pediatric patients.

- Pediatric patients have different illnesses and are affected differently by injuries, so specific quality improvement indicators, markers, or screens must be designed to evaluate pediatric care throughout the system.
QI monitoring can identify weaknesses in the pediatric knowledge, skills and attitudes of health care personnel; this can be of assistance in designing appropriate educational programs.

**Authority**

California Health and Safety Code, Division 2.5, Chapter 12, *Emergency Medical Services for Children.*

California Helath and Safety Code, Division 2.5, Chapter 6, *Facilities.*

California Code of Regulations, Title 22, Division 9, Chapter 4, *Emergency Medical Technician-P.*

California Code of Regulations, Title 22, Division 9, Chapter 7, *Trauma Care Systems.*

**Administrative Issues**

**What process should be used?**

In the process of developing pediatric Emergency Department and Emergency Medical Services (EMS) guidelines, an individual should be identified to be responsible for pediatric QI review. There is usually a QI plan already in place for health care facilities and Local EMS Agencies (LEMSA), so the process may only involve integrating pediatric elements into existing programs and developing collaborative methods for review.

It is helpful to obtain pediatric QI plans from national organizations and/or other hospitals in other regions that have already developed EMS-C QI plans.

The following steps provide a general framework for the process of pediatric QI development and integration.

- Review of existing pediatric QI guidelines
- Review of existing data systems and reports
- Development of EMS-C QI guidelines
- Review and approval of pediatric QI guidelines by EMS-C Advisory Committee,
- Circulation of QI guidelines to collaborating hospitals and other interested parties
- Revision and approval of pediatric QI guidelines by LEMSA, hospitals, health departments
- Integration of pediatric QI into existing QI plans

In addition, the following steps are presented as a reminder that QI is an ongoing and circular process:
Ongoing review and selection of pediatric issues
- Identification of areas for improvement
- Communication of findings
- Plans for improvement
- Implementation of change

**Who should be involved?**
Development and integration of pediatric QI elements should be a collaborative effort as it involves review of care throughout the system, and often in a wider region. A subcommittee or ad hoc committee for pediatric QI might include:

- LEMSA Director/Representative(s), Medical Director
- Prehospital providers, including EMS and interfacility transport providers
- ED Medical Director(s)
- Hospital quality improvement coordinator(s)
- Intensive Care Unit (ICU), Pediatric ICU (PICU) Medical Director(s)
- ED Nurse Manager(s)/staff nurse(s)
- Medical and administrative representatives from other facilities if appropriate
- Representatives from managed care organizations if appropriate
- Legal representation if appropriate
- Consultant(s) with experience in pediatric QI development
- Private practitioner(s) from the community

**When should pediatric QI guidelines be developed?**
Some preliminary decisions can take place early in the process of EMS-C development, such as identification of existing QI plans, review of data elements currently available for review, and exploration of existing methods for data sharing in the system. Specific pediatric QI indicators for each component will probably have to be selected after education, policy, and personnel guidelines have been developed.

**Clinical Issues**
- Quality improvement plans have traditionally focused on the high risk, high volume, and problem-prone areas of patient care. It is important, however, for QI plans to assume a positive approach to improving patient care by using Joseph Juran's principles of Quality Planning, Quality Control, and Quality Improvement; this paradigm is proactive, and encourages prioritization of resource allocation in QI to the "vital few projects" that can have the most impact on patient care.
Pediatric QI guidelines should address the following elements:

- Authority and responsibility.
- Indicators of quality care.
- Means of triggering evaluation.
- Methods for data collection and organization.
- Methods for communicating the results and initiating appropriate remedies.

EMS-C QI should include three types of indicators: *structure* (material elements such as staff, education, training, equipment, and policies; *process* (written protocols and procedures including timely performance by personnel); and *outcome* (the results of treatments and procedures performed). Structure and process indicators may be prospective, concurrent, or retrospective, while outcome indicators are necessarily retrospective in nature. Although outcome indicators are the most difficult to define and assess, they are essential to determining the effectiveness of the system.

A means of generating pediatric-specific reports efficiently and on a regular basis is a major consideration in evaluating pediatric care, and can be recommended in QI guidelines. In many cases, this involves developing a means of organizing pediatric data collection and reporting rather than addition of new data elements for pediatric patients.

In many cases, collaborative methods of QI have been developed, and are already in place--base hospital tape reviews, for instance, consider both ED and prehospital guidelines. This is an excellent method of joint QI for the system, and expansion of these activities to include specific pediatric indicators may be helpful in developing an effective EMS-C QI program.

Each component of EMS-C can tailor its QI plan to specific issues, but the pediatric indicators identified should be reviewed for consistency to assure a smoothly functioning system. For instance, if the EMS-C QI committee selects field administration of a specific medication for pediatric patients as an indicator, it is important that the protocol for field administration of the medication be consistent in base hospital and LEMSA guidelines, as well as being consistent with scope of practice regulations.

Plans should be made for identifying and communicating QI problems system-wide. This is done in some systems through designation in ED guidelines of a Pediatric Liaison Nurse (PdLN) for QI. The PdLN has additional education, training, and experience in pediatric emergency care and meets with PdLNs from other facilities on a regular basis to discuss QI issues and system functions. In Los Angeles County, this program has been very successful in assuring ongoing QI.

Guidelines for pediatric QI should be based on current pediatric policies and protocols. Some of the topic areas for review might include:
Death of a child  
Child maltreatment  
Transfers  
Cardiopulmonary and/or respiratory arrest  
Repeat calls/visits  
Selected treatment modalities, such as pediatric intubation

(Other lists of pediatric QI indicators are included in the Appendix.)

- Pediatric QI guidelines should address not only quality and appropriateness of patient care in LEMSAs, receiving facilities, and during interfacility transport, but also evaluation of staff education, staffing, and compliance with equipment guidelines.

**Special Considerations**

- The main area of controversy for QI in EMS-C results from the misperception that a separate QI program is necessary for pediatric QI. In fact, the goal is to integrate pediatric QI elements into existing QI programs, and to develop a method of collaborative review of system issues.

- There is generally a concern about the amount of information to be shared among facilities in the system. For this reason, representatives from LEMSA and/or hospital administration should be included as integral members of the committee developing pediatric elements for inclusion in QI plans.

- Feedback is essential in QI. When providers are asked to fill out forms and enter data, they should receive some information back—this tends to reinforce good effort. QI programs should include a means of providing information to health care providers at all levels on a regular basis.

**Issues for Small Counties and Rural Areas**

- Smaller systems may not have sophisticated electronic means of collecting and analyzing data for their QI programs, but the system should nevertheless have a means of reviewing care by other methods. Careful selection of elements and issues for analysis can help to simplify the process.

- In many cases, smaller counties and rural areas can have better control of their QI because the number of patients is smaller, and there is less paperwork. This can be an advantage in establishing a QI program, but care must be taken to assure anonymity.
**Timeframe**

Collection and review of QI plans from other agencies can take place early in the EMS-C development process; the identification of critical indicators for pediatric QI may take several months, as it will be necessary to review existing mechanisms for data collection and review. Identification of the individual(s) responsible for pediatric QI should be made during the development of pediatric ED and EMS guidelines.

**Resources, Guidelines, and Minimum Standards**

Lists of QI indicators are included in the Appendix, from:

**Suggested Reading**


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<td>Collection and review of existing pediatric QI guidelines.</td>
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<td>Review of existing data systems and reports to determine what guidelines are feasible.</td>
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<td>Development of EMS-C QI guidelines.</td>
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CHAPTER 13

DATA SYSTEMS AND INFORMATION MANAGEMENT FOR PEDIATRIC PATIENTS

Introduction

Local Emergency Medical Services Agencies (LEMSA) need information about numbers of patients seen, types of illnesses and injuries, run times, field procedures performed, and outcomes of patients cared for in their systems. No separate system is needed for collection of pediatric data, but data collection forms should be designed to obtain essential information specific to pediatric patients.

It is important to design information systems so that pediatric data can be extracted and analyzed on a regular basis. Whenever data is collected and analyzed, feedback should be provided to those who are responsible for the data collection. Information about pediatric patients is needed in EMS systems because:

- Without information about the number and type of pediatric patients seen for illness and injury, it may be difficult to make decisions about the type of equipment needed on ambulances, and the inventory required to keep the ambulance stocked adequately.

- The special training and education of providers in pediatric emergency care should be related to the types of illnesses and injuries seen in the system.

- Pediatric quality improvement requires the collection and analysis of pediatric data. Data concerning types of illnesses, locations, days, times, and procedures, can be used in quality improvement to determine how well the system works.

- Data is needed to project future demand for services for pediatric patients and to deploy resources effectively.

- Analysis of data can assist with identifying the need for prevention programs, and help to target areas for program planning. (See Chapter 14, “Community Linkages.”)

Authority

California Health & Safety Code, Division 2.5, Chapter 12. Emergency Medical Services for Children.
Administrative Issues

What process should be used?
To assure that data collection is uniform system-wide, the development and management of data systems should be a collaborative effort with input from LEMSA administrators, prehospital providers, emergency department staff and experts who will be involved in data analysis. The first step should be to review existing data collection mechanisms, such as prehospital patient care records, LEMSA/EMS provider-based, and hospital-based data systems, to determine the amount of pediatric data currently collected.

After deciding the type of information needed by the system, the next step will be to review pediatric data elements recommended by state and national organizations and other LEMSAs. These elements provide a standardized approach to data collection and have definitions associated with each element to ensure consistency when multiple providers participate in the system.

Who should be involved?
The following individuals and agencies should be involved in decisions regarding data collection and information management:

- LEMSA Director
- LEMSA Medical Director(s)
- Prehospital field provider(s), educator(s), and administrator(s)
- ED Physician(s)
- Pediatrician(s)
- ED Nurse Manager, staff nurse(s), and educator(s)
- Hospital quality improvement personnel
- Hospital medical records personnel
- Statistician
- Computer consultant

When should these guidelines be developed?
Data collection and analysis can have important implications for protocols, triage issues, scope of practice of providers, and equipment and supplies provided to field personnel. Data collection should therefore be initiated early in system development, ideally during the pre-planning process.

How should decisions be made?
Decisions should be made on the basis of informational needs of the EMS-C system. Whether the system is urban or rural will affect the type of information collected and
analyzed. In other words, formulate the questions to be asked and then design the system to answer those questions.

**Clinical Issues**

- Prehospital field providers should be included in developing data collection systems to assure that the data elements for entry on the patient care record are reasonable, understandable, and in a logical order.

- The quality of the data collected on the patient care record can be just as important as the quantity collected. In many cases it is better to reduce the amount of data required on patient care records if it will help to assure more accurate data entry.

- Linkage of data systems is a very important issue. The ability to link one EMS system’s data to another’s and the ability to track a patient through the system from identification through hospital discharge should be a major consideration in developing a data system. This can be done using a unique identifier (number) or through probabilistic linkage.

- Although pediatric trauma data is available in trauma registries, less information about medical illness is collected. Data collected should include medical issues.

- Standardized forms used by providers within a region increases the accuracy of and accessibility to data.

- Training should be provided to personnel regarding the reasons for data collection, the benefits of data systems, and the importance of accurate data entry. Without accurate data entry, all data analysis is worthless.

- Uniform definitions of data elements, consistent with national standards, allow for pooling of data with other systems.

- Analyzing data on a regular basis and providing the information to field personnel helps to assure compliance in completion of run forms.

**Special Considerations**

- Data management for EMS-C can be difficult because of the different administrative structures within the system. Coordination with all of the entities involved in collection and analysis of information is essential.

- Probabilistic linkage is a useful method of data linkage which allows patients to be tracked through a number of facilities and systems. Matching 4 or 5 data elements out of 8 or 10, rather than relying on a perfect match allows correction for data entry errors so more data is accessible. Data linkages may be considered with the following databases as resources permit:
  - SWITRS: Statewide Integrated Traffic Records System
  - NFIRS: National Fire Incident Report System
Consideration should be given to the Federal regulations being promulgated as a result of the Health Insurance Portability and Accountability Act of 1996 (HIPAA), when developing any policies/procedures relating to data collection. These regulations will have major data system implications relating to electronic format, data transmission, data security, and related patient confidentiality.

Data elements to be collected in the EMS system and in-hospital are always a matter of controversy in developing pediatric QI guidelines. Several sets of data elements are available, but each system will have to consider costs and the issue of “nice to know” vs. “need to know,” when deciding what data elements to collect.

There are often obstacles such as turf issues, confidentiality, imperfect data, and lack of expertise available for data analysis. These have to be overcome before a well-functioning system can be implemented.

Issues for Small Counties and Rural Areas

Smaller systems have an advantage in having a more manageable number of patients, but have a disadvantage in having fewer resources for data collection and analysis. National resources, such as the National EMS-C Data Analysis Resource Center (NEDARC) can be helpful in assisting in the development of smaller systems to analyze pediatric data.

Timeframe

Although plans for data collection should be considered throughout the development of EMS-C, final decisions regarding data elements and alteration of run sheets will probably have to be made late in the process, and will have to be reconsidered as protocols and procedures change.

Resources

A comparison of recommended data elements can be found in the Appendix. The National Emergency Medical Services for Children Data Analysis Resource Center (NEDARC), in Utah can be helpful in assisting in linking data, and developing guidelines for data analysis. Their address is:

NEDARC
University of Utah
401 Chipeta Way, Suite 222
Salt Lake City, UT 84108
(801)581-6410 (phone); (801)581-8686 (fax)
http://nedarc.med.utah.edu (web)
Suggested Reading


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<tr>
<td>Develop Committee for pediatric data systems (may include EMS administrators, providers, emergency department staff and experts).</td>
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<td>Review existing data collection mechanisms to determine pediatric data currently collected.</td>
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<td>Make decisions made about the type of information needed for ongoing review of the system.</td>
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<tr>
<td>Review of pediatric data elements recommended by state and national organizations and other EMS agencies.</td>
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<tr>
<td>Compare data currently collected with data needed and recommended elements.</td>
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<tr>
<td>Decide on data elements. If elements currently collected are inadequate, data collection instruments may have to be revised.</td>
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<tr>
<td>Educate providers in need for data collection.</td>
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<tr>
<td>Provide feedback to those responsible for data entry.</td>
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<tr>
<td>Ongoing review, data analysis, and feedback.</td>
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CHAPTER 14

COMMUNITY LINKAGES FOR EMS-C

Introduction

Care of children has always been the responsibility not only of the family, but of the larger community, so an Emergency Medical Services for Children (EMS-C) program should thoroughly explore the availability of local resources useful to the project. EMS-C includes the entire continuum from injury and illness prevention through rehabilitation, so many agencies and organizations should be involved in EMS-C activities. Community leaders, local and regional public and private agencies, professional organizations, parent-teacher associations (PTA) and charitable foundations are only a few of the many potential resources in a community. It is important for EMS-C programs to form linkages with many community resources because:

- Forging effective linkages in the community from the initiation of EMS-C development and implementation assures rapid information dissemination, and can help to identify obstacles to the process.

- Children cared for in Emergency Medical Services (EMS) systems usually return to their communities, and some may need continuing support; community linkages can help to assure continuity of care.

- Professional organizations may be in the process of developing standards or educational products related to EMS-C. Including representatives from these organizations allows rapid access to that information, and mutual coordination of projects.

- Organizations and agencies in the local area often have overlapping responsibilities in caring for children. These can best be coordinated when a forum for discussion of children's issues is provided.

- Community organizations often can assist with obtaining or providing funding for various components of EMS-C. Professional medical organizations can also serve as principal investigators for medical research and grants, if needed.

- Local EMS agencies (LEMSA) can increase their knowledge of the function and resources of community agencies by including them in the process of EMS-C development and implementation. This will also offer opportunities for the agencies to understand the services provided by the EMS Agency.
When advocacy is necessary to assist in obtaining or changing legislation, community agencies and organizations can be immeasurable assistance.

Many decisions affecting local and regional entities are made in the process of EMS-C development and implementation. When these entities are represented in the EMS-C process, immediate feedback will be available.

Linkages with organizations and agencies involved prevention of childhood illness and injury can help to define areas of need, and provide direction for EMS-C illness and injury prevention efforts.

**Authority**

California Code of Regulations, Title 22, Division 9, Chapter 7, *Trauma Care Systems.*


**Administrative Issues**

**What process should be used?**

One of the first decisions of the EMS-C Committee should be to consider in what forum the community organizations should need to discuss EMS-C issues. There are many ways to structure their participation. In some cases, an Advisory Board may be formed with representatives from community organizations, and the general public, in others, there may simply be an Ad Hoc Committee that meets as needed. If a separate Advisory Committee is formed, regular meetings should be planned with strong representation from the EMS-C Committee. In other cases community representatives may serve directly on the EMS-C Committee and be responsible for disseminating information to the other agencies.

**Who should be involved?**

A good general rule is to include as many organizations and agencies as possible to obtain widespread support. Representatives from the following agencies and organizations have been included in EMS-C projects:

- American Ambulance Association (AAA)
- Air and Surface Transport Nurses Association (ASTNA)
- Ambulatory Pediatrics Association (AmbPA)
- American Academy of Family Physicians (AAFP)
- American Academy of Pediatrics (AAP)
- American Association of Critical Care Nurses (AACN)
- Association of Air Medical Services (AAMS)
- American Association of Office Nurses (AAON)
- American Association of Poison Control Centers (AAPCC)
- American College of Emergency Physicians (ACEP)
- American College of Surgeons (ACS)
- American Psychological Association (APA)
- American Red Cross (ARC)
- Boy Scouts of America (BSA)
- Bureau of Indian Affairs (BIA)
- California Children’s Services (CCS)
- Chamber of Commerce
- Consumer Product Safety Commission (CPSC)
- Department of Transportation (DOT)
- Elks Club
- Emergency Nurses Association (ENA)
- Girl Scouts of America
- Health Maintenance Organizations (HMO)
- Highway Patrol
- Local and regional Hospital Council(s)
- International Association of Fire Chiefs (IAFC)
- International Association of Firefighters (IAFF)
- Joint Commission on Accreditation of Hospitals (JCAHO)
- Kiwanis Club
- Law Enforcement
- Lions Club
- Local Health Officers
- Local Unions
- Maternal and Child Health Branch, Department of Health Services
- Mothers Against Drunk Driving (MADD)
- National Association of EMS Physicians (NAEMSP)
- National Association of EMTs (NAEMT)
- National Association of Pediatric Nurse Associates and Practitioners (NAPNAP)
- National Association of Social Workers (NASW)
- National Association of State EMS Directors (NAEMSD)
- National Congress of Parents and Teachers (PTA)
- National Emergency Number Association (NENA)
- National Highway Traffic Safety Administration (NHTSA)
- National SAFE KIDS Campaign (NSKC)
- National Safety Council (NSC)
- Private Ambulance Agencies
- Rural Healthcare Center
- School Nurses
- Society of Pediatric Nursing (SPN)

All of these organizations have some interest in EMS-C, and many have local chapters that you can contact. The choice of organizations and agencies included in EMS-C development and implementation will depend, however, on the size and scope of the project, as well as the availability and interests of representatives in the local area.

**When should these linkages be made?**

Linkages with community agencies and organizations should be made at the very beginning of the project. Deciding on how to include community representatives should be one of the first decisions made by the EMS-C Committee. Additional Advisory Board or Committee members can be designated and invited to join the Board, or serve on ad hoc committees throughout the life of the project.
How should these decisions be made?
Decisions regarding the administrative structure and method for soliciting community participation should be made by the EMS-C Committee. Some of this groundwork may have been laid during the EMS-C funding application process.

Clinical Issues

- It is especially important to include representatives from organizations that will be affected by decisions made during development and implementation of EMS-C, such as transport organizations, hospital associations, and professional organizations involved in medical care.

- An effective means of providing information to community organizations and agencies is for EMS-C Committee members to ask to be placed on the agenda at regular meetings. A brief slide show or other type of presentation describing the goals and objectives of the program is a useful adjunct.

- Injury and illness prevention is a very important component of EMS-C. The EMS Agenda for the Future states, “In the future, the success of EMS systems will be measured not only by the outcomes of their treatments, but also by the results of their prevention efforts.” Linkages with organizations involved in injury and illness prevention are essential to reduce morbidity and mortality in children.

Special Considerations

- The most important representatives to include may be those whose organizations are likely to be opposed to various aspects of the project. It is better to include them and determine the sources of and remedies for their opposition rather than wait until implementation has begun and opposition becomes more entrenched.

- It is often useful to include a member of the lay public who has had experience with EMS during the course of their child’s injury or illness. This person can provide a different point of view, and insight into how various decisions may affect the average family.

- Another method of keeping the community informed and assuring information dissemination to agencies and interested parties is to develop an EMS-C newsletter for the project that includes information about the process, the agencies involved, and tells the story of EMS-C.
Issues for Small Counties and Rural Areas

- Small counties and rural areas may not have many large agencies and organizations to include in the process, but they often have more of a sense of community, and can be creative in tapping some unexpected resources. Hospitals in rural areas, for instance, can share educational resources, and develop effective communication links by fax, telephone, and internet when assistance is needed.

Timeframe

A list of organizations and agencies with an interest in EMS-C should be identified before beginning EMS-C development. When the EMS-C Committee structure is being developed, the method for including community representatives should be discussed. When this is not possible, linkages can be made at any point in the program, but the earlier this takes place, the more completely the community will be involved. Participation of community representatives should continue throughout the life of the program.

Resources, Guidelines, and Minimum Standards

A list of organizations and agencies for possible inclusion in the EMS-C development process are included in this chapter; additional suggestions can also be found in the Appendix.

The EMS-C National Resource Center’s guide, “Reaching Out: A Guide to Effective Coalition Building,” and “Working with Families to Enhance Emergency Medical Services for Children.” provides some helpful information on how to recruit and involve community agencies, organizations, and individuals in EMS-C. These can be obtained from the EMS-C National Resource Center in Washington, D.C., or ordered directly from the EMS-C Website at http://www.ems-c.org.

The Vision process for the California EMS Authority has included a Prevention component for Emergency Medical Services. Documents related to that issue can be found on the California EMS Authority website: www.emsa. Cahwnet.gov.

Suggested Reading


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<th>Activity</th>
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<tr>
<td>Make decisions about how to include community representatives.</td>
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<tr>
<td>Develop a list of community organizations and representatives.</td>
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<td>Delegate responsibilities for contacting representatives.</td>
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<tr>
<td>Plan meetings including community representatives.</td>
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<td>Ongoing review by Board to determine if additional organizations should be included.</td>
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<tr>
<td>Consider a newsletter or other means of communication to provide feedback to organizations and community.</td>
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Introduction

Emergency Medical Services for Children (EMS-C) systems are comprehensive, coordinated systems designed to meet the special needs of ill and injured children and to provide appropriate pediatric emergency and critical care services. The California EMS Authority (EMSA) has developed a comprehensive EMS-C system model and guidelines, which have been used by various Local Emergency Medical Services Agencies (LEMSA) in the development of their EMS-C systems. In addition, EMSA has provided financial support to applying LEMSAs for system development and implementation. With the acceptance of financial support, LEMSAs agreed to institutionalize their EMS-C programs within their agencies. However; the extent to which this commitment has been maintained is variable.

To date, 43 California counties and regions have established or are in the process of establishing EMS-C systems. Many systems are comprehensive, however, for various reasons, a few LEMSAs have chosen to implement only specific EMS-C components. While considerable progress has been made on a voluntary basis, there are no national or State legislative or regulatory mandates that require EMS-C system development, implementation or maintenance.

LEMSAs that have implemented EMS-C systems should make sure their EMS-C programs will be sustained within their EMS systems and updated with other system components. The importance of institutionalization of the EMS-C program cannot be overemphasized. The degree to which LEMSAs monitor, maintain and upgrade their EMS and EMS-C programs varies considerably throughout the State. The ability of a LEMSA to maintain an EMS-C system may be determined by:

- The degree of institutionalization of the EMS-C program--having a designated, (preferably funded) position for EMS-C, and including the EMS-C Advisory Committee as part of EMS decision-making assures perpetuation of the program.
The LEMSA's commitment and resources (staff, funding, data) for program maintenance. More resources will obviously be needed for agencies that have implemented more complex programs.

The availability of pediatric expertise and community resources to participate in EMS-C program maintenance.

The internal and external pressures on the LEMSA for an EMS-C program.

Results of overall EMS and EMS-C program evaluations.

Mandates of State and federal legislation and regulation.

Conditions as specified in a LEMSA's EMS-C Plan

The intent of this chapter is to provide LEMSAs with strategies for EMS-C program maintenance. Each LEMSA needs to determine the strategies that best suit the maintenance of its EMS-C components. For those LEMSAs, who did not initially implement comprehensive EMS-C programs, consideration should be given to expanding their programs to include all of the State recommended EMS-C components.

Authority

California Health and Safety Code –Division 2.5, Chapter 12 Emergency and Critical Care Services for Children.

Administrative Issues

What administrative structure should be in place?
The administrative structure will depend on a LEMSA's resources. A specific, qualified EMS agency staff member should be designated as the EMS-C or pediatric coordinator and be given oversight responsibility for the pediatric program. Various EMS agency staff members can serve as EMS-C coordinator, but the role and responsibilities should be specifically defined and incorporated into the LEMSA's organizational structure. This should help to ensure the EMS-C program's institutionalization and maintenance.

An EMS-C Plan should be developed to assist the EMS-C coordinator with ongoing program evaluation and maintenance. An EMS-C Plan details system components, administrative structure, methods for evaluation, and timetables for EMS-C program component review and revisions.

Pediatric expertise must be available to assist the LEMSA. An established or ad-hoc, multi-disciplinary EMS-C Advisory Committee or appropriate pediatric consultants may meet this role. These resources can assist the LEMSA to review pediatric-related policies, procedures and protocols.
What administrative structures have been used?
Administrative structures and strategies that have been used to institutionalize EMS-C programs include:

- Adequate allocation of resources by LEMSAs. When resources are not specifically allocated to the EMS-C program, there is little hope of continuation of the program.

- An EMS administrative structure that has an assigned, designated coordinator who is responsible for all aspects of the EMS-C program.

- An established EMS-C Advisory Committee to advise the LEMSA on pediatric issues. The Advisory Committee may meet regularly or on an ad-hoc basis when the LEMSA needs to develop or review pediatric materials.

- Integration of EMS-C system components within adult programs. For instance, the pediatric trauma program would be a subset of the overall system trauma program and the agency trauma coordinator would oversee this component of EMS-C.

- Established relationships and linkages with agencies, organizations and institutions involved in pediatric emergency and critical care such as: local and regional community hospital councils, committees of American College of Emergency Physicians (ACEP), Chapters of the American Academy of Pediatrics (AAP), and various pediatric critical care physician groups. Linkages should also be made with nursing organizations such as the Los Angeles (L.A.) County Pediatric Liaison Nurses (PdLN), local ENA chapters, and the Pediatric Intensive Care Unit (PICU) Nurses Network of Northern and Central California.

Models for EMS-C Program Institutionalization and Maintenance within EMS Systems in Northern and Southern California
An EMS-C program that has fully integrated EMS-C components into its EMS system should include the following:

- Paramedic pediatric education and skills criteria.
- Ambulance and paramedic pediatric equipment policies.
- Field treatment protocols.
- Facilities triage and destination policies for emergency departments, trauma centers, burn centers and pediatric critical care centers.
- Emergency department pediatric standards/guidelines for administration, staffing, quality improvement, policies, procedures, equipment and supplies.
- Interfacility transfer agreements for higher levels of care.
- Interfacility transfer guidelines/criteria to assist community health professionals.
- Standards for specialized pediatric referral centers and procedures for review and designation/recognition of these centers.
- Quality Improvement indicators for EMS-C.
- Pediatric data collection.
- On-going review of the system.
How these components of an EMS-C program are maintained will depend upon the LEMSA, resources available, and its overall commitment to the EMS-C program. Some strategies that have been used by various LEMSAs include:

- The incorporation of EMS-C policies and procedures into official contracts with EMS providers, ambulance companies etc and sustained through these agreements.

- The promulgation of local regulations pertaining to EMS-C through LEMSA’s county structures. This has facilitated the permanent institutionalization of an EMS-C program into an EMS system.

- Enlisting the aid of consumer groups such as parents and the PTA can be helpful in promoting an agenda. The local PTA may well have insight into the emergency care needs of children in the community.

- Seeking advice and materials from existing EMS-C programs as well as the California EMS Authority.

In addition to the above, there have been a number of unique maintenance strategies developed by various EMS-C programs that may be helpful to LEMSAs being faced with this challenge.

**L.A. County:**
L.A. County developed a comprehensive program integrating EMS-C into EMS; this system has been a model for numerous EMS-C systems not only in California but also throughout the United States. Some of the unique features of the L.A. County EMS-C program that have promoted system improvement and maintenance include:

- A strong public and private partnership which was established and has been maintained throughout the years to provide on-going leadership, review and maintenance of the EMS-C program. This partnership consists of the Los Angeles Pediatric Society (LAPS), California Chapter 2 of the AAP Committee on Pediatric Emergency Medicine (COPEM) and the L.A. County EMS Agency. This Committee advises L.A. EMS Agency on all aspects of the EMS-C program. In addition, physicians from these organizations volunteer as members of the survey teams for the facility categorization process.

- The PdLN Association. This group is a very important of the system. Nurses from all of the acute care hospitals that have the voluntary status of Emergency Department Approved for Pediatrics or PCCC (Pediatric Critical Care Center) meet on a monthly basis to work on EMS-C projects of common interest. Some of their projects have included:
  - Development of education programs in pediatric emergency care offered to all nurses throughout the county.
  - Development of a child maltreatment policy and protocol.
  - Development of quality improvement indicators.
  - Volunteers as members of the survey teams for the facility categorization process.
Northern and Central California:
Northern and central California consists of numerous (48) counties that vary in size, geography, and resources. These regions of the State consist of five (5) regional and thirty-seven (37) county-based EMS systems. The EMS-C systems in northern and central California also vary in available resources, comprehensiveness and program maintenance activities.

Due to the number and diversity of LEMSAs, the development, implementation and maintenance of EMS-C programs have relied heavily on the leadership and assistance of region-wide organizations such as the Pediatric Intensive Care Physicians' and Nurses' Networks (PICN) of Northern and Central California. These networks include a variety of health professionals from all of the major pediatric centers in the region that have established linkages with a wide variety of agencies, organizations and institutions involved in pediatric emergency and critical care. All pediatric centers participating in the Network are actively involved in the development and maintenance of the EMS-C systems in the counties/regions that they serve.

PICN member centers provide a variety of services such as training, outreach, transport, and consultation that supplement LEMSA resources and activities for EMS-C system monitoring and maintenance. In most northern California programs, the multi-disciplinary EMS-C Advisory Committees established during program planning and implementation have been maintained are an invaluable resource for program maintenance.

In the early 1980s, the Sierra-Sacramento Valley Emergency Medical Services Agency (S-SV EMS) a regional EMS agency, in conjunction with the PICN of Northern and Central California developed the first comprehensive EMS-C system in northern and central California. This EMS-C system has served as a model for other systems in these regions of the State.

The S-SV EMS-C program and the L.A. County program are quite similar, with differences mainly noted in the categorization process for emergency departments (ED). ED guidelines have been implemented through an educational/consultation visit process in the S-SV region, versus the more formal approval process that takes place in L.A. County. Follow-up evaluations indicate a high level of maintenance of pediatric ED capabilities in both systems. In a 1996-1997 EMSA grant the S-SV region resurveyed the emergency departments and pediatric intensive care units in the region. The survey results indicated that readiness to receive and treat pediatric patients had been maintained.

Issues for Small Counties and Rural Areas

Small counties and rural areas may experience difficulties in maintaining their EMS-C components. These problems may be similar to ones encountered during the system development and implementation phases. Strategies found to be successful for the development/implementation phases may be utilized to maintain the system as well. Rural LEMSAs have used community pediatricians, emergency physicians, hospital
administrators, EMS providers and nurses to form ad-hoc EMS-C Advisory Committees. Contacting local pediatricians might be a starting point or contacting the Chapter Office of the AAP. Local Emergency Physicians may also be a valuable resource. These professionals can assist the agency in the review of EMS-C related issues and make recommendations on the use of existing local, state or national EMS-C materials to meet the needs of the community.

If EMS-C is integrated and institutionalized within the EMS system, it will be sustained and maintained; all the review processes and updates necessary to keep EMS-C current will occur automatically. The LEMSA may have to rely on an Advisory Committee of emergency physicians, nurses and pediatricians for ongoing review.

**Suggested Reading**


CHAPTER 16

ON-LINE RESOURCES FOR EMS-C

Introduction

The internet and the world wide web (WWW) have developed into powerful tools for the healthcare provider, and have much to offer providers interested in improving pediatric emergency care. There are list servers, discussion groups and web sites devoted exclusively to EMS-C, as well as a variety of sites dedicated to specific areas of emergency care and to various levels of providers. You can use this powerful tool to access every type of information needed to support development and implementation of EMS-C components. The following is a very basic introduction to the internet, and a list of some useful sites.

The Internet

The internet offers a multimedia format including video, audio interactive instruction and general information. Judicious use of the internet involves the accessing of a website, search engines and browsing techniques. Information found on the internet must be carefully inspected for accuracy, objectivity, and timeliness of the information provided. In general it is a good idea to consider the following issues when using information from the world wide web (www):

- Who is the author/administrator of the site? Is this a reputable organization/individual?
- What is the source of the information provided?
- Is there a possible bias in the information presented?
- Is the information accurate? Are there references given?
- Is the Web site current? When was it last updated?
World Wide Web Browsing
The www and the internet are often used interchangeably. In fact the WWW is a subsection of the internet, and consists of Web sites and pages with text as well as pictures, video and audio components. A Web browser is a computer program that allows the user to access Web sites.

Each Web site has a unique address. This allows the browser to find the site quickly. Sites may be very complex and have many layers to navigate and require time to view completely, or to find the information you desire. When you access a site you usually arrive at what is called a "home page". This is the first page of information and usually provides a “roadmap” for the information contained on that site. On the home page there are “hyperlinks” that are pictures or text that when selected, will lead you to another page on the same Web site. By clicking on a hyperlink you are able to navigate the website. Some Web sites are interlinked with other websites that have a similar subject matter.

Search Engines/Subject Catalogues
Search engines and subject catalogues are sites that allow you to search for information on virtually any topic. You simply access the site and type in key words relating to whatever topic you are interested in. There are a wide variety of search engines and subject catalogues, all useful; the choice is often simply a matter of personal preference. This is a very short list of some of the resources available.

- All in One Search. This engine provides one page access to all major search engines on the Web. [http://www.alloneserach.com](http://www.alloneserach.com)
- Argus Clearinghouse. This site allows for Boolean searches, search operators, and truncations. Results displayed include guide title, author name, key word and ratings. [http://www.clearinghouse.net](http://www.clearinghouse.net)
- Excite. [http://www.excite.com](http://www.excite.com)
- Galaxy. This site provides a topic list linking one page to the next. Searches can also be performed. [http://www.einet.net](http://www.einet.net)
- Google. [http://www.google.com](http://www.google.com)
- Hotbot. This site merges many search engines into one. [http://hotbot.com](http://hotbot.com)
- Lycos [http://www.lycos.com](http://www.lycos.com)
- Yahoo. This is a powerful database that can be searched by key words or Web sites. It can also be personalized by selecting My Yahoo! [http://www.yahoo.com](http://www.yahoo.com)

To find names, addresses, telephone numbers and e-mail addresses of individuals or organizations, the following sites may be useful.
EMS-C Resources
Listed below are many internet resources that may be useful in obtaining information about EMS-C issues.

Large Portal Sites
These sites are useful for a general overview when first starting to explore the resources on the Internet.

- Emergency Services WWW List. Over 2000 sites are listed and categorized by field (EMS, Fire, Disaster etc) [http://www.district.north-van.bc.ca/esws/www-911.htm](http://www.district.north-van.bc.ca/esws/www-911.htm)
- Paramedics Ring Site. This is a collection of sites created by paramedics for paramedics. [http://www.zianet.com/rcmedic/pmring.html](http://www.zianet.com/rcmedic/pmring.html)
- Emergency 9-1-1 Ring. [http://home.earthlink.net/~codern2/webring.html](http://home.earthlink.net/~codern2/webring.html)

Interactive/Multimedia Education
- ECG Library. [http://homepages.enterprise.net/djenkins/ecghome.html](http://homepages.enterprise.net/djenkins/ecghome.html)
- EMBSS. Here is an excellent site with many teaching components. [http://www.embbs.com/index.html](http://www.embbs.com/index.html)


Patient Simulations/Virtual Patients. http://Vh.radiology.uiowa.edu/Providers/Simulations/PatientSimulations.html


The Interactive Patient. http://medicus.marshall.edu/medicus.htm

Trauma.Org. This is a great site with interactive moulages. http://www.trauma.org/


Publications On-Line

Academic Emergency Medicine, the official journal of the Society for Academic Emergency Medicine. http://www2.hanleyandbelfus.com/journals/aem.html

Annals of Emergency Medicine, the official journal of the American College of Emergency Physicians (tables of contents and abstracts). http://www.mosby.com/Mosby/Periodicals/Medical/AEM/em.html:

Disaster Research electronic newsletter. http://www.colorado.edu/hazards/

Emergency Medical Services Magazine; requires subscription. http://www.emsmagazine.com

Emergency medical abstracts online; requires subscription. http://ccme.org


- Pediatric Emergency Care (journal).  http://www.wwilkins.com/PEC

- Pre-hospital Immediate Care; table of contents.  http://www.bmjpg.com/data/phic.htm

- Prehospital Emergency Care: the official journal of the National Association of EMS Physicians.  http://www2.hanleyandbelfus.com/journals/pec.html

- Weekly web review in emergency medicine http://www.wwrem.com/ (dedicated to the critical analysis of current clinical literature on topics relevant to the practice of emergency medicine; the reviews will be updated each Friday).

**Databases**

- CDC Wonder. This site has data and document access from the Centers for Disease Control (mortality and some morbidity).  http://wonder.cdc.gov


- ER Watch. A searchable database of consumer product-related Emergency Department cases derived from the U.S. Consumer Product Safety Commission (CPSC), NEISS system. ER Watch is sponsored by Health Ink Communications, a health and wellness communications firm.  http://www.erwatch.com


- Injury Chartbook, 1996-97. This is a 328 page (3.6 MB Adobe Acrobat) file prepared by the National Center for Health Statistics, CDC. It contains a comprehensive profile of injuries in the U.S.  http://www.cdc.gov/nchs/www/data/hus96_97.pdf


National Clearinghouse on Child Abuse and Neglect Information. Key statistics from studies are summarized in the National Child Abuse and Neglect Statistical Fact Sheet and In Fact. http://www.calib.com/nccanch/services/stats.htm

The National EMSC Data Analysis Resource Center (NEDARC). NEDARC is located at the University of Utah School of Medicine. Through a cooperative agreement with the Maternal and Child Health Bureau, NEDARC provides technical assistance with the collection, maintenance, and analysis of high quality data related to the care of children within the overall EMS system. The Center also provides expert assistance with statistics and serves as a clearinghouse for information regarding the Uniform Pre-Hospital Emergency Medical Services (EMS). http://nedarc.med.utah.edu


The National Pediatric Trauma Registry (http://www.nemc.org/rehab/nptrhone.htm), a multi-center nationwide Pediatric Trauma Registry established in 1985 to study the etiology of pediatric trauma and its consequences.

The Pediatric Database (PEDBASE). This database contains descriptions of over 550 childhood disorders, described in various sources. You may download the entire Database as Shareware. http://www.icodata.com/health/pedbase/index.htm


List Servers

Pediatric Emergency Medicine list server. To subscribe write an e-mail to: LISTSERV@BROWNVM.BROWN.EDU and enter the text: “subscribe PED-EM-L (your name)”.  

California EMS List Server. E-mail to: listproc@UCDavis.edu and enter the text "subscribe caems (your name)".

Clinical Emergency Department. E-mail to: listserv@itssrv1.ucsf.edu

EMS Educators. E-mail to: listserv@%20informatics.sunysb.edu "subscribe EMS-EDU-L (your name)".

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EMS Educators. E-mail to: listserv@%20informatics.sunysb.edu "subscribe EMS-EDU-L (your name)".
EMS for Children Network. E-mail to:owner-emscnet-l@netcom.com - "subscribe (your name)".

Miscellaneous Emergency Services. E-mail to:listserv@%20VM.Marist.EDU "SUB" (your name).

Association/Organization Websites
- International Association of Fire Chiefs (IAFC). http://www.iafc.org/
- State of California Emergency Medical Services Authority. This site has links to local EMS agencies. http://www.emsa.cahwnet.gov/
Transportation Emergency Rescue Committee (TERC). http://www.terc.org/

Research Funding
- Federal Information Exchange (FEDIX) This has a searchable index, Automated alert for funding. http://www.sciencewise.com/fedix/
- Federal Register GPO. http://www.access.gpo.gov/su_docs/aces/aces140.html
- Foundation Center. http://fdncenter.org/
- The National Institutes of Health (NIH). http://www.nih.gov This is a large web site with valuable information Below are some very useful pages:
  - NIH Search Engine. Searches the NIH web site http://search.info.nih.gov
  - Grants Page/Office of Extramural Research. Information on NIH’s extramural research and training programs including NIH’s funding opportunities (with application kits), grant policy and includes access to the CRISP database http://www.nih.gov/grants/oer.htm
  - CRISP (Computer Retrieval of Information on Scientific Projects). This is a major biomedical database system containing information on research projects and programs supported by the Department of Health and Human Services. www.nih.gov
- Pre-Award Grant Information. http://www.uth.tmc.edu/ut_general/research_acad_aff/ors/index.htm
- The National Center for Education in Maternal and Child Health (NCEMCH). http://www.ncemch.georgetown.edu/


<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>APLS</td>
<td>Advanced Pediatric Life Support Course</td>
</tr>
<tr>
<td>CO₂</td>
<td>Carbon Dioxide</td>
</tr>
<tr>
<td>CCS</td>
<td>California Children’s Services</td>
</tr>
<tr>
<td>CME</td>
<td>Continuing Medical Education</td>
</tr>
<tr>
<td>DNR</td>
<td>Do Not Resuscitate</td>
</tr>
<tr>
<td>ED</td>
<td>Emergency Department</td>
</tr>
<tr>
<td>EDAP</td>
<td>Emergency Department Approved for Pediatrics</td>
</tr>
<tr>
<td>EMS</td>
<td>Emergency Medical Services</td>
</tr>
<tr>
<td>EMS-C</td>
<td>Emergency Medical Services for Children</td>
</tr>
<tr>
<td>EMT</td>
<td>Emergency Medical Technician</td>
</tr>
<tr>
<td>ENPC</td>
<td>Emergency Nurses Pediatric Course</td>
</tr>
<tr>
<td>ET</td>
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</tr>
<tr>
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<td>Endotracheal Intubation</td>
</tr>
<tr>
<td>ICU</td>
<td>Intensive Care Unit</td>
</tr>
<tr>
<td>HMO</td>
<td>Health Maintenance Organization</td>
</tr>
<tr>
<td>LEMSA</td>
<td>Local EMS Agency</td>
</tr>
<tr>
<td>MICN</td>
<td>Mobile Intensive Care Nurse</td>
</tr>
<tr>
<td>MICU</td>
<td>Mobile Intensive Care Unit</td>
</tr>
<tr>
<td>PALS</td>
<td>Pediatric Advanced Life Support Course</td>
</tr>
<tr>
<td>PCCC</td>
<td>Pediatric Critical Care Center</td>
</tr>
<tr>
<td>PEPP</td>
<td>Pediatric Education for Prehospital Professionals</td>
</tr>
<tr>
<td>PICU</td>
<td>Pediatric Intensive Care Unit</td>
</tr>
<tr>
<td>PICN</td>
<td>Pediatric Intensive Care Network</td>
</tr>
<tr>
<td>PTC</td>
<td>Pediatric Trauma Center</td>
</tr>
<tr>
<td>QI</td>
<td>Quality Improvement</td>
</tr>
<tr>
<td>REDAP</td>
<td>Rural Emergency Department Approved for Pediatrics</td>
</tr>
<tr>
<td>RSI</td>
<td>Rapid Sequence Intubation</td>
</tr>
<tr>
<td>SBEDAP</td>
<td>Stand-By Emergency Department Approved for Pediatrics</td>
</tr>
<tr>
<td>TRIPP</td>
<td>Teaching Resource in Prehospital Pediatrics</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Name</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>AAA</td>
<td>American Ambulance Association</td>
</tr>
<tr>
<td>AACN</td>
<td>American Association of Critical Care Nurses</td>
</tr>
<tr>
<td>AAFP</td>
<td>American Academy of Family Physicians</td>
</tr>
<tr>
<td>AAMS</td>
<td>Association of Air Medical Services</td>
</tr>
<tr>
<td>AAON</td>
<td>American Association of Office Nurses</td>
</tr>
<tr>
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<td>American Academy of Pediatrics</td>
</tr>
<tr>
<td>AAPA</td>
<td>American Academy of Physician Assistants</td>
</tr>
<tr>
<td>AAPCC</td>
<td>American Association of Poison Control Centers</td>
</tr>
<tr>
<td>AAPHA</td>
<td>American Association of Public Health Physicians</td>
</tr>
<tr>
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<td>American College of Emergency Physicians</td>
</tr>
<tr>
<td>ACS</td>
<td>American College of Surgeons</td>
</tr>
<tr>
<td>AFHHA</td>
<td>American Federation of Home Health Agencies</td>
</tr>
<tr>
<td>AHA</td>
<td>American Heart Association</td>
</tr>
<tr>
<td>AmbPA</td>
<td>Ambulatory Pediatric Association</td>
</tr>
<tr>
<td>APA</td>
<td>American Psychological Association</td>
</tr>
<tr>
<td>ARC</td>
<td>American Red Cross</td>
</tr>
<tr>
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<td>American Society of Dentistry for Children</td>
</tr>
<tr>
<td>ASHA</td>
<td>American School Health Association</td>
</tr>
<tr>
<td>ASIA</td>
<td>American Spinal Injury Association</td>
</tr>
<tr>
<td>ASTNA</td>
<td>Air and Surface Transport Nurses Association</td>
</tr>
<tr>
<td>CCS</td>
<td>California Children’s Services</td>
</tr>
<tr>
<td>CPSC</td>
<td>Consumer Product Safety Commission</td>
</tr>
<tr>
<td>DOT</td>
<td>Department of Transportation</td>
</tr>
<tr>
<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
</tr>
<tr>
<td>IAFC</td>
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</tr>
<tr>
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</tr>
<tr>
<td>IHS</td>
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</tr>
<tr>
<td>JCAHO</td>
<td>Joint Commission on Accreditation of Healthcare Organizations</td>
</tr>
<tr>
<td>MADD</td>
<td>Mothers Against Drunk Driving</td>
</tr>
<tr>
<td>MCHB</td>
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</tr>
<tr>
<td>NACHC</td>
<td>National Association of Community Health Centers</td>
</tr>
<tr>
<td>NACHRI</td>
<td>National Association of Children’s Hospitals and Related Institutions</td>
</tr>
<tr>
<td>NAEMD</td>
<td>National Association of Emergency Medical Dispatchers</td>
</tr>
<tr>
<td>NAEMSP</td>
<td>National Association of EMS Physicians</td>
</tr>
<tr>
<td>NAEMT</td>
<td>National Association of Emergency Medical Technicians</td>
</tr>
<tr>
<td>NAPNAP</td>
<td>National Association of Pediatric Nurse Associates and Practitioners</td>
</tr>
<tr>
<td>NASEMSD</td>
<td>National Association of State EMS Directors</td>
</tr>
<tr>
<td>NASN</td>
<td>National Association of School Nurses</td>
</tr>
<tr>
<td>NASW</td>
<td>National Association of Social Workers</td>
</tr>
<tr>
<td>NCIPC</td>
<td>National Center for Injury Prevention and Control, CDC</td>
</tr>
<tr>
<td>NCSEMSTC</td>
<td>National Council of State EMS Training Coordinators</td>
</tr>
<tr>
<td>NCSL</td>
<td>National Conference of State Legislatures</td>
</tr>
<tr>
<td>NEMSA</td>
<td>National Emergency Medical Services Alliance</td>
</tr>
<tr>
<td>NENA</td>
<td>National Emergency Number Association</td>
</tr>
<tr>
<td>NFPAA</td>
<td>National Flight Paramedics Association</td>
</tr>
<tr>
<td>NHTSA</td>
<td>National Highway Traffic Safety Administration, DOT</td>
</tr>
<tr>
<td>NSC</td>
<td>National Safety Council</td>
</tr>
<tr>
<td>NSKC</td>
<td>National SAFE KIDS Campaign</td>
</tr>
<tr>
<td>OHRP</td>
<td>Office of Rural Health Policy, HRSA</td>
</tr>
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<td>Pediatric Critical Care Center</td>
</tr>
<tr>
<td>SCCM</td>
<td>Society of Critical Care Medicine</td>
</tr>
<tr>
<td>SPN</td>
<td>Society of Pediatric Nurses</td>
</tr>
<tr>
<td>VNAA</td>
<td>Visiting Nurses Associations of America</td>
</tr>
<tr>
<td>Chapter</td>
<td>Title of Document</td>
</tr>
<tr>
<td>---------</td>
<td>------------------</td>
</tr>
<tr>
<td>6. PCCCs</td>
<td>PICU Standards PCCC Standards PCCC Standards</td>
</tr>
<tr>
<td>7. Interfacility Consultation</td>
<td>Guidelines for Interfacility Consultation and/or Transfer</td>
</tr>
<tr>
<td>8. Interfacility Transfer Agreements</td>
<td>Model Interfacility Transfer Agreement</td>
</tr>
<tr>
<td>9. Interfacility Transport Programs</td>
<td>Pediatric Interfacility Program Survey Pediatric Interfacility Transport Program</td>
</tr>
<tr>
<td>10. PCCC Implementation</td>
<td>Procedures for Pediatric Referral Center Site Visits PCCC Consultant Information</td>
</tr>
<tr>
<td>11. Trauma Centers</td>
<td>California Trauma Regulations</td>
</tr>
<tr>
<td>12. Pediatric QI</td>
<td>Pediatric Audit Filters Suggestions for PdLN QA</td>
</tr>
<tr>
<td>13. Data</td>
<td>Comparison of Data Points</td>
</tr>
<tr>
<td>15. Keeping it Going</td>
<td>None</td>
</tr>
<tr>
<td>16. On-Line Resources</td>
<td>None</td>
</tr>
</tbody>
</table>
CALIFORNIA HIGHWAY PATROL (CHP) AMBULANCE EQUIPMENT REGULATIONS

Ambulance Emergency Care Equipment and Supplies.
Any equipment or supplies carried for use in providing emergency medical care must be maintained in clean condition and good working order.

(a) Essential equipment and supplies to be carried shall include as a minimum:

(1) An ambulance cot and collapsible stretcher; or two stretchers, one of which is collapsible.
(2) Straps to secure the patient to the stretcher or ambulance cot, and means of securing the stretcher or ambulance cot in the vehicle.
(3) Ankle and wrist restraints. Soft ties are acceptable.
(4) Sheets, pillow cases, blankets, and towels for each stretcher or ambulance cot, and two pillows for each ambulance.
(5) Three oropharyngeal airways, one each of a size for adults, children and infants.
(6) At least four pneumatic or rigid splints capable of splinting all extremities.
(7) A resuscitator that meets the requirements of Vehicle Code Section 2418.5. A hand operated bag-valve-mask unit with clear masks of adult, child, and infant sizes capable of use with oxygen will meet this requirement.
(8) Oxygen (USP), regulator, and means for administering oxygen, including adequate tubing and semioopen, valveless, transparent masks in adult, child, and infant sizes capable of use with oxygen will be administered by resuscitator, bag mask unit, or inhalator. (Portability required). Oxygen supply must be sufficient to provide a patient with not less than 10 liters per minute for 20 minutes.
(9) Clean bandages and bandaging supplies:
   Twelve sterile bandage compresses or equivalent
   Four 3- by 3-in. sterile gauze pads
   Six 2-, 3-, 4-, or 6-in. roller bandages
   Two rolls of 1-, 2-, or 3- in. adhesive tape.
   Bandage sheets
   Two 10- by 30-in. or larger universal dressings
(10) An emesis basin, or disposable bags and covered waster container.
(11) Portable suction equipment. Squeeze syringes alone are not sufficient.
(12) Two sandbags, loosely filled, or equivalent material to restrict movement.
(13) Two spinal immobilization devices, one at least 30-in. length and the other at least 60-in. length with straps for adequately securing patients to the devices. Combination short-long boards are acceptable.
(14) Half-ring traction splint for lower extremity with limb support slings, padded ankle hitch traction strap, and heel rest or an equivalent device.
(15) Blood pressure manometer, cuff, and stethoscope.
(16) Sterile obstetrical supplies including as a minimum: gloves, umbilical cord tape or clamps, dressings, towels, bulb syringe, and clean plastic bags.
(17) A gallon or more of potable water or two liters, saline solution in covered, secured plastic container.
(18) One bedpan or fracture pan.
(19) One urinal.

(b) Exception. Ambulances while in use for infant transportation or when staffed and equipped for use in conjunction with newborn intensive care nursery services as specified in Title 22 of this code, need not concurrently carry items of emergency care equipment or supplies that would interfere with the specialized care and transportation of an infant in an incubator or isotope.

## BLS EQUIPMENT AND SUPPLIES

### Essential
- Oropharyngeal airways: infant, child, adult (sizes 00-5)
- Self-inflating resuscitation bag: child and adult sizes
- Masks for bag-valve-mask device: infant, child, and adult
- Oxygen masks: infant, child, and adult sizes
- Nonrebreathing mask: pediatric and adult sizes
- Stethoscope
- Backboard
- Cervical immobilization device
- Blood pressure cuff: infant, child, and adult sizes
- Portable suction unit with a regulator
- Suction catheters: tonsil-tip and 6F-14F
- Extremity splints: pediatric sizes
- Bulb syringe
- Obstetric pack
- Thermal blanket
- Water-soluble lubricant

### Desirable
- Infant car seat
- Nasopharyngeal airways: sizes 18F-34F, or 4.5-8.5 mm
- Glasgow Coma Scale reference
- Pediatric Trauma Score reference
- Small stuffed toy

---

1. A self-inflating resuscitation bag should be self refilling, should have an oxygen reservoir and should not have a pop-off valve. A child bag has a reservoir of 450 mL, whereas an adult bag has a reservoir of at least 1,000 mL.
2. A neonatal mask may be necessary for rescue units that may deliver a premature infant in the field.
3. Many types of cervical immobilization devices are available. These include wedges and collars. The type of device used will depend on local preference and policies and procedures. Whatever device is chosen should be stocked in a variety of sizes to fit infants, children, adolescents, and adults. The use of sandbags to meet this requirement is discouraged because they may cause injury if a patient must be turned.
4. A thermal blanket may help minimize heat loss. Hypothermia will complicate many illnesses and injuries, particularly in infants and young children. The type of material used will depend on local preference, protocols, and procedures but may include Mylar, standard blankets, or aluminum foil for small infants.
5. Infants should be restrained in ambulances. Car seats may be used for medical emergencies or in trauma when the infant is already restrained in a seat and not critically injured. Traumatically injured infants should be restrained on a gurney if they are not already in a seat. Many types of seats are available to meet this guideline. A recently developed seat is collapsible and easy to store. The type of seat that is procured will be determined by local preference, policy, and procedure.
6. A nasopharyngeal airway may be useful when the upper airway compromises respiration and an oral airway cannot be secured. Providers must be trained in its use and know the contraindications for insertion of this device.
Contents: TRIPP Curriculum

Foreword by Senator Daniel K. Inouye
Editors and Contributors

INTRODUCTION/HOW TO USE THIS RESOURCE

EDUCATIONAL RESOURCES
1 Educational Methodologies
2 Teaching Pediatric Skills

PREHOSPITAL PEDIATRICS–CORE
3 Patient Assessment
4 Respiratory Emergencies
5 Circulatory Emergencies: Shock (Hypoperfusion)
6 Traumatic Emergencies
7 Cardiopulmonary Failure and Arrest in Children

PREHOSPITAL PEDIATRICS–MEDICAL/TRAUMA
8 Altered Mental Status
9 Seizures
10 Fever and Infections
11 Diabetic Emergencies
12 Poisonings
13 Newborn Resuscitation
14 Sudden Infant Death Syndrome/Death of a Child
15 Burns
16 Near-Drowning
17 Child Abuse and Neglect
18 Children with Special Health Care Needs

ADDITIONAL ISSUES FOR EMTs
19 Pediatric Injury Prevention
20 Medicolegal Issues in Pediatric Care
21 Adolescents
22 Critical Incident Stress Management for EMTs
23 Children’s Reaction to Stress
24 Family Reaction to Pediatric Emergencies

APPENDICES
A Glossary
B Illustrations
C Scenarios
D Task Analyses
E Pediatric Intubation
F Developmental Considerations in Pediatric Assessment
G Pediatric Equipment List
ALS EQUIPMENT AND SUPPLIES

All ALS ambulances should carry everything on the BLS list, plus the following items.

**Essential**
Transport monitor
Defibrillator with adult and pediatric paddles\(^1\)
Monitoring electrodes: pediatric sizes
Laryngoscope with straight blades 0-2, curved blades 2-4
Endotracheal tube stylets: pediatric and adult sizes
Endotracheal tubes: uncuffed sizes 2.5-6.0, cuffed sizes 6.0-8.0
Magill forceps: pediatric and adult
Nasogastric tubes: 8F-16F\(^2\)
Nebulizer
IV catheters: 16 to 24 gauge


\(^1\) A defibrillator should be able to deliver 5 to 360 joules. The addition of pediatric paddles may give the responding unit enhanced capabilities but is not essential for units that rarely use this equipment. The defibrillator may be equipped with only adult paddles/pads or pediatric paddles and adult paddles/pads. Units carrying only adult paddles/pads should insure that providers are trained in the proper use of adult paddles in infants and children. When the defibrillator cannot deliver a low dose of joules for infants, shock at the lowest possible energy level.

\(^2\) Nasogastric tubes may be useful when the transport time is greater than 30 minutes in patients who have abdominal distention that may impede respiration.
PEPP Table of Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Making a Difference</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Using a Developmental Approach</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>Pediatric Assessment</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>Respiratory Emergencies</td>
<td>58</td>
</tr>
<tr>
<td>5</td>
<td>Cardiovascular Emergencies</td>
<td>78</td>
</tr>
<tr>
<td>6</td>
<td>Medical Emergencies</td>
<td>98</td>
</tr>
<tr>
<td>7</td>
<td>Toxic Exposures</td>
<td>114</td>
</tr>
<tr>
<td>8</td>
<td>Trauma</td>
<td>128</td>
</tr>
<tr>
<td>9</td>
<td>Emergency Delivery and Newborn Stabilization</td>
<td>156</td>
</tr>
<tr>
<td>10</td>
<td>Children with Special Health Needs</td>
<td>174</td>
</tr>
<tr>
<td>11</td>
<td>Sudden Infant Death Syndrome (SIDS) and Death of a Child</td>
<td>190</td>
</tr>
<tr>
<td>12</td>
<td>Child Maltreatment</td>
<td>204</td>
</tr>
<tr>
<td>13</td>
<td>Medicolegal Considerations</td>
<td>220</td>
</tr>
<tr>
<td></td>
<td>Procedures</td>
<td>232</td>
</tr>
<tr>
<td></td>
<td>Appendix 1: Community Outreach and Education</td>
<td>303</td>
</tr>
<tr>
<td></td>
<td>Appendix 2: Pediatric Survey for State EMS Systems</td>
<td>307</td>
</tr>
<tr>
<td></td>
<td>Appendix 3: Commonly Used Acronyms and Prefixes</td>
<td>312</td>
</tr>
<tr>
<td></td>
<td>Glossary</td>
<td>313</td>
</tr>
<tr>
<td></td>
<td>Index</td>
<td>328</td>
</tr>
<tr>
<td></td>
<td>Additional Credits</td>
<td>342</td>
</tr>
<tr>
<td></td>
<td>PEPP Evaluation Form</td>
<td>343</td>
</tr>
<tr>
<td>TOPICS ESSENTIAL FOR PEDIATRIC EDUCATION OF PARAMEDICS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth and development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Medical Services for Children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illness and injury prevention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory emergencies (airway and breathing problems)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory distress, respiratory failure, respiratory arrest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possible causes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airway obstruction (upper and lower)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluid in the lungs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiovascular/circulatory emergencies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shock (compensated and uncompensated)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate and rhythm disturbances, cardiopulmonary arrest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Altered mental status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possible causes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airway/breathing problems, shock, seizures, poisoning, metabolic, occult trauma, serious infection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trauma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burns</td>
<td></td>
<td></td>
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<tr>
<td>Child abuse and neglect</td>
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<td>Behavioral emergencies</td>
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<td>Suicide, aggressive behavior</td>
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<td>Child-family communications</td>
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<td>Critical incident stress management</td>
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<td>Medicolegal issues</td>
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<td>DNR orders, consent, guardianship, refusal of care</td>
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<td>Newborn emergencies</td>
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<td>Near-drowning</td>
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<tr>
<td>Pain management</td>
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<td>Poisoning</td>
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<td>SIDS and death in the field</td>
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<td>Transport considerations</td>
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<tr>
<td>Destination issues, methods for transport (safety seats and parental transport)</td>
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<td>Infants and children with special needs</td>
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<td>Technology-assisted children (TAC)</td>
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<tr>
<td>Apnea monitors, central lines, chronic illness, gastrostomy tubes, home artificial ventilators and shunts</td>
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<tr>
<td><strong>DNR,</strong> Do not resuscitate; <strong>SIDS,</strong> sudden infant death syndrome.</td>
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## ESSENTIAL SKILLS FOR PEDIATRIC EDUCATION OF PARAMEDICS

<table>
<thead>
<tr>
<th>Skill</th>
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<tbody>
<tr>
<td>Assessment of infants and children</td>
</tr>
<tr>
<td>Use of a length-based resuscitation tape</td>
</tr>
<tr>
<td>Airway management</td>
</tr>
<tr>
<td>Mouth-to-mouth barrier devices</td>
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<tr>
<td>Oropharyngeal airway</td>
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<tr>
<td>Nasopharyngeal airway</td>
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<tr>
<td>Oxygen delivery system</td>
</tr>
<tr>
<td>Bag-valve-mask ventilation</td>
</tr>
<tr>
<td>Endotracheal intubation</td>
</tr>
<tr>
<td>Optional: Endotracheal placement</td>
</tr>
<tr>
<td>confirmation devices (CO₂ detection),</td>
</tr>
<tr>
<td>rapid sequence induction</td>
</tr>
<tr>
<td>Foreign body removal with Magill forceps</td>
</tr>
<tr>
<td>Needle thoracostomy</td>
</tr>
<tr>
<td>Nasogastric or orogastric tubes</td>
</tr>
<tr>
<td>Suctioning</td>
</tr>
<tr>
<td>Tracheostomy management</td>
</tr>
<tr>
<td>Monitoring</td>
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<tr>
<td>Cardiorespiratory monitoring</td>
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<tr>
<td>Pulse oximetry</td>
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<tr>
<td>End-tidal CO₂ monitoring and/or CO₂ detection</td>
</tr>
<tr>
<td>Vascular access</td>
</tr>
<tr>
<td>Intravenous line placement</td>
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<tr>
<td>Intraosseous line placement</td>
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<tr>
<td>Fluid/medication administration</td>
</tr>
<tr>
<td>Endotracheal</td>
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<td>Intramuscular</td>
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<tr>
<td>Intravenous</td>
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<tr>
<td>Nasogastric</td>
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<tr>
<td>Nebulized</td>
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<td>Oral</td>
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<td>Rectal</td>
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<td>Subcutaneous</td>
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<td>Cardioversion</td>
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<tr>
<td>Defibrillation</td>
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<tr>
<td>Drug dosing in infants and children</td>
</tr>
<tr>
<td>Immobilization/extrication</td>
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<tr>
<td>Car seat--extrication</td>
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<tr>
<td>Spinal immobilization</td>
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# Los Angeles County EMS Agency
## Ref. No. 808.1 - BASE HOSPITAL CONTACT AND TRANSPORT CRITERIA
### Field Reference

<table>
<thead>
<tr>
<th>PRINCIPLES:</th>
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</thead>
<tbody>
<tr>
<td>1. Contact assigned base whenever possible.</td>
</tr>
<tr>
<td>2. Clinical judgement should be exercised in situations not described in this policy.</td>
</tr>
<tr>
<td>3. Children under three years of age require base hospital contact and/or transport in accordance with this policy.</td>
</tr>
<tr>
<td>4. Thorough documentation is essential, especially if contact/transport is not performed in accordance with this policy (≠ EXCEPTION -- see SECTION III).</td>
</tr>
<tr>
<td>5. Circumstances may dictate immediate transport with base contact enroute.</td>
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<tr>
<td>6. EMT-Is shall not cancel EMT-P response if a patient meets any criteria in Section I; an ALS Unit shall be requested if one has not been dispatched.</td>
</tr>
<tr>
<td>7. In life threatening situations, consider BLS transport if ALS arrival is longer than transport time.</td>
</tr>
<tr>
<td>8. Contact shall be made with the area’s trauma hospital, when it is also a base hospital, on all injured patients meeting Trauma Criteria and/or Guidelines.</td>
</tr>
</tbody>
</table>

### SECTION I - BASE CONTACT REQUIRED
- Signs or symptoms of shock
- Symptomatic hypertension
- Cardiopulmonary arrest
  - (excluding those meeting Ref. 814 & 815)
- Chest pain or discomfort
- Shortness of breath/tachypnea
- Trauma Criteria/Guidelines
  - (Ref. 506)
- PCCC Criteria/Guidelines
  - (Ref. 510)
- 5 or more patients requiring transport (contacting MAC constitutes base contact)
- Altered LOC
  - (Ref. 809)
- Traumatic crush syndrome

<table>
<thead>
<tr>
<th>SECTION II - TRANSPORT REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Abdominal pain</td>
</tr>
<tr>
<td>2. Suspected ingestion of poisonous substance</td>
</tr>
<tr>
<td>3. Suspected isolated fx of spine, skull or hip</td>
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<tr>
<td>4. Syncope with loss of consciousness prior to EMS arrival</td>
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<tr>
<td>5. Abnormal vaginal bleeding</td>
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<tr>
<td>6. Suspected allergic reaction</td>
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<tr>
<td>7. Asymptomatic exposure to haz-mat</td>
</tr>
</tbody>
</table>
  - (If known to have delayed symptoms)
  - GI bleeding
  - Near drowning

<table>
<thead>
<tr>
<th>SECTION III - PEDIATRIC PATIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Infants ≤ 12 months of age shall be transported, regardless of chief complaint and/or mechanism of injury</td>
</tr>
<tr>
<td>2. Children 13-36 months of age require base hospital contact and/or transport</td>
</tr>
<tr>
<td>3. If a parent or legal guardian refuses transport (AMA), base contact is required prior to leaving the scene</td>
</tr>
</tbody>
</table>

**EXCEPTION -- Principle 4 does not apply to this age group**

### SECTION IV - BASE CONTACT REQUIRED FOR SFTPs
| 1. If indicated in the SFTPs |
| 2. Any criteria listed in Section I which is not addressed by SFTPs |
| Whenever consultation with the base hospital is needed |
PURPOSE: To identify the signs, symptoms, chief complaints, or special circumstances of patients for whom base hospital contact is required for medical direction and/or patient destination. In addition, this policy delineates when transport to an appropriate approved facility is indicated.

AUTHORITY: Health and Safety Code, Division 2.5, Section 1798 et seq., California Code of Regulations, Title 22, Section 100170 (5) (A)

PRINCIPLES:

1. EMT-Ps should contact their assigned base hospital whenever possible.

2. In situations not described in this policy, EMT-Ps and EMT-Is should exercise their clinical judgement as to whether ALS intervention is anticipated or indicated and base hospital contact and/or transport provided.

3. It is difficult to determine the severity of illness and injury in young children; therefore, children under three years of age require base hospital contact and or transport in accordance with this policy.

4. When base hospital contact and/or transport is not performed in accordance with this policy, appropriate explanation and documentation shall be recorded on the EMS Report Form.

5. Circumstances may dictate that transport be undertaken immediately with attempts to contact the base hospital enroute.

6. In situations where EMT-Is arrive on scene prior to EMT-Ps, EMT-Is shall not cancel the EMT-P response if a patient meets any criteria outlined in Section I of this policy. An ALS Unit shall be requested if one has not been dispatched, unless Principle 7 applies.

7. In life-threatening situations in which the estimated time of arrival (ETA) of the EMT-Ps exceeds the ETA to the most accessible receiving facility, EMT-Is should exercise their clinical judgement as to whether it is in the patient’s best interest to be transported prior to the arrival of paramedics. EMT-Is shall make every effort to notify the most accessible receiving facility via HEAR radio, telephone, dispatch, or other appropriate means of communication when exercising this principle.
1. In general, EMT-Ps shall make base hospital contact with the receiving trauma hospital, when it is also a base hospital, on all injured patients meeting base hospital contact criteria, trauma triage criteria and/or guidelines, or if in the paramedic’s judgement it is in the patient’s best interest to be transported to a trauma hospital.

POLICY:

1. EMT-Ps shall make base hospital contact for medical direction and/or patient destination on all patients meeting one or more of the following criteria:

   1. Signs or symptoms of shock
   2. Symptomatic Hypertension
   3. Cardiopulmonary arrest (excluding patients defined in Ref. Nos. 814 and 815).
   4. Chest pain or discomfort
   5. Shortness of breath and/or tachypnea
   6. Pediatric Critical Care Center (PCCC) guidelines as defined in Ref. No. 510
   7. Situations involving five or more patients who require transport (Contacting the Medical Alert Center constitutes base hospital contact)
   8. Altered level of consciousness as defined in Ref. No. 809
   9. Suspected ingestion of potentially poisonous substances
   10. Exposure to hazardous materials with a medical complaint
   11. Abdominal pain in pregnant or in a suspected pregnant patient
12. Childbirth or signs of labor

13. Suspected fractures of the pelvis or femur

14. Extremity injuries with neurological and/or vascular compromise

15. Facial, neck, electrical, or extensive burns (20% or greater BSA in adults, or 15% or greater in children, or 10% or greater in infants)

16. Trauma Triage Criteria and Guidelines as defined in Ref. No. 506. EMT-Ps shall contact the area's trauma hospital. In general, this will also be a base hospital. Special considerations:

   1. When the receiving trauma hospital is not a base hospital, EMT-Ps shall contact their assigned base hospital.

   2. When transporting patients from the Antelope Valley and undesignated areas of East San Gabriel Valley, base contact shall be made with the assigned base hospital.

17. Traumatic Crush Syndrome

II. EMT-I or EMT-P personnel shall transport all patients meeting one or more of the following criteria:

   A. Abdominal pain

   B. Suspected isolated fractures of the spine, skull or hip

   C. Syncope or loss of consciousness prior to EMS personnel arrival

   D. Abnormal vaginal bleeding

   E. Suspected allergic reaction

   F. Asymptomatic exposure to hazardous material known to have delayed symptoms

   G. Gastrointestinal bleeding

   8. Near drowning

   I. Patients who are a danger to themselves or others

III. Prehospital personnel shall manage pediatric patients under three years
of age as follows:

A. All children \( \leq \) twelve (12) months of age shall be transported, regardless of chief complaint and/or mechanism of injury.

2. All children thirteen (13) months to thirty-six (36) months of age require base hospital contact and/or transport.

3. If a parent or legal guardian refuses transport (AMA), base contact is required prior to leaving the scene.

NOTE: Principle four (4) does not apply to this age group.

IV. EMT-P personnel utilizing Standing Field Treatment Protocols (SFTPs) shall make base hospital contact for medical direction and/or patient destination on all patients meeting one or more of the following criteria:

1. If indicated in the SFTPs

2. For any criteria listed in Section I of this policy which is not addressed by SFTPs.

3. Anytime consultation with the base hospital is needed.

CROSS REFERENCES:

Prehospital Care Policy Manual:
Ref. No. 502, Patient Destination
Ref. No. 506, Trauma Triage
Ref. No. 510, Pediatric Patient Destination
Ref. No. 515, Air Ambulance Trauma Transport
Ref. No. 519, Management of Multiple Casualty Incidents
Ref. No. 809, Assessment of Level of Consciousness
Ref. No. 810, Communication Failure
Ref. No. 813, Standing Field Treatment Protocols
Ref. No. 814, Determination of Death
Ref. No. 815, Honoring Prehospital DNR Orders
Ref. No. 816, Physician at Scene
Ref. No. 832, Treatment/Transport of Minors
Ref. No. 834, Patient Refusal of Treatment or Transport
Ref. No. 838, Application of Patient Restraints
Adult Patient ALS/LALS Protocols, Continued

Trauma

T-1 General Trauma Management
T-2 Tension Pneumothorax
T-6 Extremity Injury
T-10 Thermal Burns
T-11 Electric Burns
T-20 Trauma in Pregnancy

Pediatric ALS/LALS Protocols

PED-1 Neonatal Resuscitation
PED-3 Shock
PED-7 Ventricular Fibrillation or Ventricular Tachycardia Without Pulses
PED-8 Pulseless Electrical Activity (PEA)/Electromechanical Dissociation (EMD) and Asystole
PED-10 Tachyarythmias With Pulses
PED-15 Airway Obstruction By Foreign Body
PED-16 Respiratory Arrest
PED-17 Asthma
PED-22 Allergic Reaction/Anaphylaxis
PED-26 Overdose and/or Poisoning
PED-27 Diabetic Emergency
PED-32 Decreased Mental Status
PED-33 Seizures
PED-37 Hypothermia
PED-38 Burns
### Field Treatment Guidelines

<table>
<thead>
<tr>
<th>Condition</th>
<th>Alpine</th>
<th>Santa Cruz</th>
<th>Sierra-Sac</th>
<th>Fresno</th>
<th>CA</th>
<th>San Mateo</th>
<th>EMSC</th>
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<tr>
<td>Abuse-Suspected Child Abuse</td>
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<td>Airway Obstruction by Foreign Body</td>
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<td>Allergic Reaction/Anaphylaxis</td>
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<td>Altered Level of Consciousness</td>
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<td>Bradycardia/Heart Blocks</td>
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<td>Pediatric Primary Survey</td>
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<td>Overdose/Poisonings/Toxics</td>
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<td>Smoke/Carbon Monoxide Poisoning – Respiratory Burns</td>
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<td>Trauma (multi-system) Shock</td>
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PURPOSE: To ensure that 9-1-1 pediatric patients are transported to the most appropriate facility which is staffed, equipped and prepared to administer emergency and/or definitive care appropriate to the needs of the pediatric patient.

AUTHORITY: Health and Safety Code, Division 2.5, Section 1797.220 California Code of Regulations, Title 13, Section 1105 C

DEFINITIONS: Pediatric patient: Children 14 years of age or younger.

Emergency Department Approved for Pediatrics (EDAP): A licensed basic emergency department that is approved by the County of Los Angeles EMS Agency to receive 9-1-1 pediatric patients. These emergency departments provide care to pediatric patients by meeting specific requirements for professional staff, quality improvement, education, support services equipment, supplies, medications, and established policies, procedures, and protocols.

Pediatric Critical Care Center (PCCC): A licensed acute care hospital that is approved by the County of Los Angeles EMS Agency to receive critically ill and injured 9-1-1 pediatric patients based on guidelines outlined in this policy. In addition, these centers provide tertiary-level pediatric care and serve as referral centers for critically ill and injured pediatric patients.

PRINCIPLES: 1. In all cases, the health and well-being of the patient is the overriding consideration in determining patient destination. Factors to be considered include: severity and stability of the patient’s illness or injury; current status of the pediatric receiving facility; anticipated transport time; and request by the patient, family or physician.

2. For purposes of this policy the most accessible receiving hospital is the most accessible EDAP.

POLICY:

I. Guidelines for transporting pediatric patients to an EDAP:

1. Patients who require transport and do not meet guidelines for transport to a PCCC, should be transported to the most accessible EDAP.

A. BLS units shall call for an ALS unit or transport pediatric patients to the most accessible EDAP as outlined in Reference No. 808, Base Hospital Contact and Transport Criteria.

B. Patients meeting medical guidelines for transport to a PCCC should be transported to the most accessible EDAP if transport time to a PCCC is
greater than 20 minutes.

C. Patients meeting trauma criteria/guidelines should be transported to the most accessible trauma center if transport time to a PCCC is greater than 20 minutes. If transport to the PCCC and the trauma center exceeds 20 minutes, patients meeting trauma criteria/guidelines should be transported to the most accessible EDAP.

D. Pediatric patients who have an uncontrollable, life threatening situation (e.g., unmanageable airway or uncontrollable hemorrhage) should be transported to the most accessible EDAP.

1. Pediatric patients may be transported to a non EDAP provided all the following are met:
   1. The patient, family, or private physician requests transport to a non EDAP facility.
   2. The patient, family, or private physician is made aware that the receiving facility is not an EDAP and may not meet current EDAP standards.
   3. The base hospital concurs and contacts the requested facility and ensures that the facility has agreed to accept the patient. This includes those providers functioning under SFTPs.
   4. All of the above shall be documented on the EMS Report Form.

II. Guidelines for identifying critically ill or injured pediatric patients who require transport to a PCCC:

1. Trauma triage criteria and/or guidelines identified in Ref. No. 506, Trauma Triage

E. Cardiac dysrhythmia

2. Severe respiratory distress

3. Cyanosis

4. Persistent altered mental status

5. Status epilepticus

F. ALTE (Acute Life Threatening Event)
CROSS REFERENCE:

Prehospital Care Policy Manual:
Ref. No. 502, Patient Destination
Ref. No. 506, Trauma Triage
Ref. No. 512, Burn Patient Destination
Ref. No. 519, Management of Multiple Casualty Incidents
Ref. No. 808, Base Hospital Contact and Transport Criteria
Ref. No. 809, Assessment of Altered Level of Consciousness
Ref. No. 816, Physical at Scene
Ref. No. 832, Treatment/Transport of Minors
Ref. No. 834, Patient Refusal of Treatment or Transport

Los Angeles County EDAP Standards
Los Angeles County PCCC Standards
State of California Emergency Medical Services Authority Guidelines for Children (EMSC)
EMERGENCY DEPARTMENT APPROVED FOR PEDIATRICS

PEDIATRIC EMERGENCY NURSING COURSE

WEDNESDAY, MAY 15, 1996

0730 – 0800  REGISTRATION
0800 – 0815  INTRODUCTION  
Nancy McGrath, MN, RN, CPNP, CEN
0815 – 0915  VISUAL DIAGNOSIS  
Stanley Inkelis, MD
0915 – 1015  RESPIRATORY EMERGENCIES  
James Seidel, MD, PhD
1015 – 1030  BREAK
1030 – 1130  NEAR DROWNING  
Roger Lewis, MD, PhD
1130 – 1230  NEWBORN URGENCIES AND EMERGENCIES  
Maureen McCollough, MD
1230 – 1330  LUNCH (on your own)
1330 – 1430  FAMILY PRESENCE IN THE EMERGENCY DEPARTMENT  
Deborah Parkman Henderson, MA, RN, PhD
1430 – 1445  BREAK
1445 – 1615  BREAK-OUT SESSIONS
   A  THE HEAD INURED CHILD   ST. JOHN'S LIBRARY  
      Michelle Healy, MD
   B  AIRWAY ADJUNCTS   IMAGING CENTER  
      Liz Treu, CRT
   C  RESUSCITATION   AMPHITHEATER  
      Nancy McGrath, MN, RN  
      (Newborn/Child)
1615 – 1630  EVALUATIONS/QUESTIONS AND ANSWERS (Amphitheater)
0730 – 0800  REGISTRATION

0800 – 0900  FEVER
   Carol Berkowitz, MD

0900 – 1000  FLUIDS AND MEDICATIONS
   Diana Meyer, MSN, RN, CCRN, CEN, MICN

1000 – 1015  BREAK

1015 – 1115  TOXICOLOGY
   Diana Meyer, MSN, RN, CCRN, CEN, MICN

1115 – 1200  SEIZURES
   Sandra Blaauw, MN, RN

1200 – 1300  LUNCH

1300 – 1400  TRAUMA
   Marianne Gausche, MD

1400 – 1415  BREAK

1415 – 1515  CHILD ABUSE
   Sheri Kiyohara, MSN, RN, CPNP

1515 – 1600  QUESTIONS AND ANSWERS

1600 – 1630  EVALUATIONS
EDAP
PEDIATRIC EMERGENCY NURSING CONFERENCE
HARBOR-UCLA MEDICAL CENTER

September 11, 1996
Day 1

0730 – 0800 REGISTRATION

0800 – 0815 INTRODUCTION
    Nancy McGrath, MN, RN, CPNP, CEN

0815 – 0915 THE FEBRILE CHILD
    Carol Berkowitz, MD

0915 – 1015 RESPIRATORY EMERGENCIES
    James Seidel, MD, PhD

1015 – 1030 QUESTIONS/ANSWERS

1030 – 1130 NEWBORN URGENCIES
    Nancy McGrath, MN, RN, CPNP, CEN

1130 – 1215 SEIZURES
    Sandra Blaauw, MN, RN

1215 – 1330 LUNCH

1330 – 1430 CRITICAL INCIDENT STRESS DEBRIEFING
    Deborah Parkman Henderson, MA, RN

1430 – 1445 QUESTIONS/ANSWERS

1445 – 1545 RESPIRATORY ADJUNCTS
    Elizabeth Treu, RCP, CRTT, Pediatric/Neonatal Specialist

1545 – 1615 CASE PRESENTATION
    Vincent Tamariz, MD

1615 – 1630 EVALUATIONS
0730 – 0800  REGISTRATION

0800 – 0900  VISUAL DIAGNOSIS
  Stanley Inkelis, MD

0900 – 1000  NEAR DROWNING
  Roger Lewis, MD, PhD

1000 – 1015  QUESTIONS/ANSWERS

1015 – 1115  PEDIATRIC TOXICOLOGY
  Diana Meyer, MSN, RN, CEN, CCRN, MICN

1115 – 1200  FLUIDS AND MEDICATIONS
  Diana Meyer, MSN, RN, CEN, CCRN, MICN

1200 – 1315  LUNCH

1315 – 1415  PEDIATRIC TRAUMA
  Marianne Gausche, MD

1415 – 1430  QUESTIONS/ANSWERS

1430 – 1530  CHILD ABUSE
  Sheri Kiyohara, MSN, RN, CPNP

1530 – 1600  CASE PRESENTATIONS
  Nancy McGrath, MN, RN, CPNP, CEN

1600 – 1630  EVALUATIONS
<table>
<thead>
<tr>
<th>Drug Name</th>
<th>How Supplied</th>
<th>Quantity per Container</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atropine</td>
<td>Prefilled syringe</td>
<td>10 mL (.1 mg/mL)</td>
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<tr>
<td></td>
<td></td>
<td>5 mL (.1 mg/mL)</td>
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<tr>
<td>Adenosine</td>
<td>Vial</td>
<td>1 mL (1 mg/mL)</td>
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<tr>
<td>Bretylium</td>
<td>Prefilled syringe</td>
<td>10 mL (50 mg/mL)</td>
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<tr>
<td></td>
<td>Ampule</td>
<td>10 mL (50 mg/mL)</td>
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<tr>
<td></td>
<td>Vial</td>
<td>20 mL (50 mg/mL)</td>
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<tr>
<td>Calcium chloride</td>
<td>Prefilled syringe</td>
<td>10 mL (100 mg/mL = 27.1 mg elemental calcium)</td>
</tr>
<tr>
<td>Dextrose (25% and 50%)</td>
<td>Prefilled syringe</td>
<td>10 mL</td>
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<tr>
<td>Dopamine</td>
<td>Vial</td>
<td>5 mL (40 mg/mL)</td>
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<td></td>
<td></td>
<td>10 mL (40 mg/mL)</td>
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<tr>
<td>Dobutamine</td>
<td>Vial</td>
<td>10 mL (25 mg/mL)</td>
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<td></td>
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<td>20 mL (12.5 mg/mL)</td>
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<tr>
<td>Epinephrine 1:1,000</td>
<td>Prefilled syringe</td>
<td>1 mL, 2 mL</td>
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<td></td>
<td>Vial</td>
<td>30 mL (1 mg/mL)</td>
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<tr>
<td>Epinephrine 1:10,000</td>
<td>Prefilled syringe</td>
<td>10 mL (.1 mg/mL)</td>
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<td></td>
<td>3 mL (.1 mg/mL)</td>
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<tr>
<td>Isoproterenol</td>
<td>Vial</td>
<td>5 mL (.2 mg/mL)</td>
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<tr>
<td>Lidocaine</td>
<td>Prefilled syringe</td>
<td>5 mg/mL, 10 mg/mL</td>
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<td></td>
<td>Vial</td>
<td>15 mg/mL, 20 mg/mL</td>
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<td></td>
<td>Ampule</td>
<td>40 mg/mL, 100 mg/mL</td>
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<td>200 mg/mL</td>
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<td></td>
<td></td>
<td>5 mL (20 mg/mL)</td>
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<tr>
<td>Naloxone</td>
<td>Vial</td>
<td>1 mL, 10 mL (.4 mg/mL), 2 mL (1 mg/mL)</td>
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<tr>
<td>Sodium Bicarbonate</td>
<td>Prefilled syringe</td>
<td>50 mL (8.4%) (1 mEq/mL)</td>
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<td></td>
<td></td>
<td>10 mL (8.4%) (1 mEq/mL)</td>
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<td>10 mL (4.2%) (.5 mEq/mL)</td>
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<tr>
<td>Essential Equipment and Supplies</td>
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<tr>
<td><strong>Monitoring</strong></td>
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<tr>
<td>Cardiorespiratory monitor with strip recorder</td>
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<tr>
<td>Defibrillator (0-400 J capability) with pediatric and adult paddles (4.5 cm and 8 cm)</td>
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<tr>
<td>Pediatric and adult monitor electrodes</td>
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<tr>
<td>Pulse oximeter with sensors sizes newborn through adult</td>
<td></td>
<td></td>
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<tr>
<td>Thermometer/rectal probe$^1$</td>
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<tr>
<td>Sphygmomanometer</td>
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<tr>
<td>Doppler blood pressure device</td>
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<tr>
<td>Blood pressure cuffs (neonatal, infant, child, adult, and thigh sizes)</td>
<td></td>
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<tr>
<td>Method to monitor endotracheal tube and placement$^2$</td>
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<tr>
<td><strong>Vascular access</strong></td>
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<tr>
<td>Butterfly needles (19 to 25 gauge)</td>
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<tr>
<td>Catheter-over-needle devices (15- to 24-gauge)</td>
<td></td>
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<tr>
<td>Infusion device$^3$</td>
<td></td>
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<tr>
<td>Tubing for above</td>
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<tr>
<td>Intraosseous needles (16- and 18-gauge)$^4$</td>
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<tr>
<td>Arm boards (infant, child, and adult sizes)</td>
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<tr>
<td>Intravenous fluid/blood warmers</td>
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<tr>
<td>Umbilical vein catheters (sizes 3.5 Fr and 5 Fr)$^5$</td>
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<tr>
<td>Seldinger technique vascular access kit (with pediatric sizes 3,4,5 Fr catheters)</td>
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<tr>
<td><strong>Airway management</strong></td>
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<tr>
<td>Clear oxygen masks (preterm, infant, child, and adult sizes)</td>
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<tr>
<td>Non-rebreathing masks (infant, child, and adult sizes)</td>
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<tr>
<td>Oral airways (sizes 00-5)</td>
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<tr>
<td>Nasopharyngeal airways (12 to 30 Fr)</td>
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<tr>
<td>Bag-valve-mask resuscitator, self-inflating (450 and 1,000 mL sizes)</td>
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<tr>
<td>Nasal cannulae (infant, child, and adult sizes)</td>
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<tr>
<td>Endotracheal tubes: uncuffed (sizes 2.5 to 8.5) and cuffed (sizes 5.5 to 9)</td>
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<tr>
<td>Stylets (pediatric and adult sizes)</td>
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<tr>
<td>Laryngoscope handle (pediatric and adult)</td>
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<tr>
<td>Laryngoscope blades, curved (sizes 2 and 3) and straight (sizes 0 to 3)</td>
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<tr>
<td>Magill forceps (pediatric and adult)</td>
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<tr>
<td>Nasogastric tubes (sizes 6 to 14 Fr)</td>
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<tr>
<td>Suction catheters: flexible (sizes 5 to 16 Fr) and Yankauer suction tip</td>
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<tr>
<td>Chest tubes (sizes 8 to 40 Fr)</td>
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<tr>
<td>Tracheostomy tubes (sizes 00 to 6)$^6$</td>
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<tr>
<td><strong>Resuscitation medications (see Table)</strong></td>
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<tr>
<td>Medication chart, tape, or other system to ensure ready access to information on proper per kilogram doses for resuscitation drugs and equipment sizes$^7$</td>
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<tr>
<td>Essential Equipment and Supplies</td>
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<tr>
<td><strong>Miscellaneous</strong></td>
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<tr>
<td>Infant and standard scales</td>
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<tr>
<td>Infant formula and oral rehydrating solutions</td>
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<tr>
<td>Heating source</td>
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<tr>
<td>Towel rolls/blanket rolls or equivalent</td>
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<tr>
<td>Pediatric restraining devices</td>
<td></td>
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<tr>
<td>Resuscitation board</td>
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<tr>
<td>Sterile linen</td>
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<tr>
<td><strong>Specialized pediatric trays</strong></td>
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<tr>
<td>Tube thoracotomy with water seal drainage capability</td>
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<tr>
<td>Lumbar puncture (spinal needle sizes 10-, 22-, and 25-gauge)</td>
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<tr>
<td>Urinary catheterization with pediatric Foley catheters (sizes 5 to 16 Fr)</td>
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<tr>
<td>Obstetric pack</td>
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<tr>
<td>Newborn kit</td>
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<tr>
<td>Umbilical vessel cannulation supplies</td>
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<tr>
<td>Meconium aspirator</td>
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<td>Venous cutdown</td>
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<tr>
<td>Surgical airway kit</td>
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<tr>
<td><strong>Fracture management</strong></td>
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<tr>
<td>Cervical immobilization equipment (sizes child to adult)</td>
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<tr>
<td>Extremity splints</td>
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<tr>
<td>Femur splints (child and adult sizes)</td>
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<tr>
<td><strong>Desirable equipment and supplies</strong></td>
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<tr>
<td>Medical photography capability</td>
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</tr>
</tbody>
</table>


1. Suitable for hypothermic and hyperthermic measurements with temperature capability from 25° to 44°C.
2. May be satisfied by a disposable ETCO₂ detector, bulb, or feeding tube methods for endotracheal tube placement.
3. To regulate rate and volume.
4. May be satisfied by standard bone marrow aspiration needles, 13- or 15-gauge.
5. Available within the hospital.
6. Ensure availability of pediatric sizes within the hospital.
7. System for estimating medication doses and supplies may use the length based method with color codes, or other predetermined weight (kilogram)/dose method.
8. May be met by infrared lamps or overhead warmer.
10. May include any of the following items: tracheostomy tray, cricothyrotomy tray, ET, JV (needle jet).
11. Many types of cervical immobilization devices are available. These include wedges and collars. The type of device chosen depends on local preference and policies and procedures. Whatever device is chosen should be stocked in sizes to fit infants, children, adolescents, and adults. The use of sandbags to meet this requirement is discouraged because they may cause injury if the patient has to be turned.
STANDBY RURAL EMERGENCY DEPARTMENT
APPROVED FOR PEDIATRICS (SBEDAP)

DEFINITION: A SBEDAP is a licensed standby emergency department with a physician on duty 24 hours that meets specific service criteria in order to provide optimal emergency pediatric care. The SBEDAP will be required to commit various resources to the program, including physician and nurse staffing of the Emergency Department, pediatrician on-call, back-up, a continuing education program and participation in data gathering for evaluation purposes.

1. MINIMUM REQUIREMENTS The hospital must:

   Standard 1.1 Be accredited by the Joint Commission on Accrediation of Health Care Organizations.

   Standard 1.2 Meet the requirements of a Basic 24 hour emergency facility and be licensed under Title XXII of the California Administrative Code.

   Standard 1.3 Meet and maintain specific staff and equipment guidelines as outlined in this document.

   The SBEDAP will be required to:

   Standard 1.4 Render emergency medical services to all patients without regard to their ability to pay, race or religion.

   Standard 1.5 Maintain the specific staffing, equipment and education required for SBEDAP confirmation.

   Standard 1.6 Provide the required data for program evaluation.

2. STAFFING REQUIREMENTS The emergency department shall have:

   Standard 2.1 At least 75% of the time an R.N. in the hospital that is ACLS certified.* Community physician on-call for the emergency room should be ACLS certified.*

   Standard 2.2 Community physician on-call for emergency room with 14 hours of postgraduate education in pediatric emergency care.**

   Standard 2.3 Pediatric consultation available by telephone.

   Standard 2.4 A designated Pediatric Liaison Nurse with experience in pediatrics or quality assurance and/or a two day postgraduate course in emergency pediatrics. This nurse may be shared by several hospitals. He/she may be employed in other areas of the hospital such as the ward, nursery, or quality assurance.** Responsibilities are to include:

       2.4.1 Ensuring and documentation of emergency department nurse pediatric continuing education.

       2.4.2 Maintaining a log and coordinating the review and follow-up of a sample of pediatric cardiopulmonary arrests and all pediatric emergencies transported by ALS field personnel.
Standard 2.5 At least 75% of the emergency department personnel who provide care, shall have
previous pediatric emergency care experience, or at a minimum, have completed 14 hours
of continuing education on pediatric emergencies.

*There will be an 18 month period after confirmation in which to meet these requirements.
**The postgraduate continuing education should be at least 14 hours and cover a broad spectrum of
pediatric emergency topics including: ACLS, trauma, drowning, respiratory distress, poisoning and
ingestion, child abuse and neglect, neonatal emergencies, fever, seizures, etc. There will be an 18 month
period after confirmation to meet this criteria.

3. CONTINUING EDUCATION AND INSERVICE TRAINING

Standard 3.1 The SBEDAP will include as part of its regular staff continuing education, topics
of interest and importance in the area of pediatric emergency medicine. Reference texts on current pediatric emergency medical care will be maintained
in the emergency department for use medical and technical personnel.

4. EQUIPMENT The emergency department shall have:

Standard 4.1 Monitor-defibrillator with 0-400 Watt/second capabilities.
Standard 4.2 Infusion pumps, drip or volumetric.
Standard 4.3 Venection tray
Standard 4.4 Pediatric IV supplies including volumetric sets, butterfly cannulas and IV
catheters of varying sizes, 25 gauge through 14 gauge. 250, 500, 1,000 ml bags
or bottles of NS, D5 0.25 NS, 0.5 NS and D10 /W.
Standard 4.5 Pediatric airways, endotracheal tubes (sizes 2.5 – 9.0), infant and child
laryngoscope blades, curved and straight.
Standard 4.6 Pediatric Magill forceps.
Standard 4.7 Pediatric suction catheters, 8 Fr. – 14 Fr.
Standard 4.8 Pediatric nasogastric tubes, including 3.0 and 5.0 Fr. Infant feeding tubes.
Standard 4.9 Pediatric bag-valve-mask resuscitation device (ideally with an over-rideable pop-
off valve).
Standard 4.10 Preemie, infant, child and adult size masks to use with bag-valve-mask device.
Standard 4.11 Pediatric femur splint.
Standard 4.12 Pediatric blood pressure cuffs; preemie, infant, child, adult and thigh sizes.
Standard 4.13 Pediatric Foley catheter 8-18 Fr.
Standard 4.14 Pediatric spinal tap trays with 22 gauge 1-1/2 and 2-1/2 inch spinal needles.
Standard 4.15 Pediatric cricothyrotomy tray with set up for needle cricothyrotomy, (3.5 Portex
adapter and 14 gauge angiocath).
Standard 4.16 Chest tubes 16 Fr. – 32 Fr.
Standard 4.17 CVP catheters 22-14 gauge.
Standard 4.18 Sodium bicarbonate 10 mEq/10 ml syringes, atropine in 1 cc (0.1 mg)
prefilled syringes.
Standard 4.19 Cervical spine immobilization devices: sandbags for children six years and
under, rigid four-post or flexible plastic/Velcro collars for children over six years
of age.
Standard 4.20 Doppler sensing device for blood pressure measurement.
Standard 4.21 Pediatric scales for weight measurement.
Standard 4.22 Blood warmer.
Standard 4.23 Peritoneal lavage tray.
Standard 4.24 Pediatric restraints.
Standard 4.25 Printed pediatric drug dosage reference material (calculated on dose per kilogram
basis), readily available, preferable on wall-mounted chart.
5. **TO QUALIFY FOR SBEDAP STATUS THE FOLLOWING IS REQUIRED:**

<table>
<thead>
<tr>
<th>Standard 5.1</th>
<th>Fully completed application.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard 5.2</td>
<td>Curriculum vitae for Emergency Medical Director.</td>
</tr>
<tr>
<td>Standard 5.3</td>
<td>List of Community physicians with identified pediatric education and training, and ACLS status.</td>
</tr>
<tr>
<td>Standard 5.4</td>
<td>Curriculum vitae for the Pediatric Liaison Nurse.</td>
</tr>
<tr>
<td>Standard 5.5</td>
<td>Names of nursing staff, and paraprofessional staff that support the emergency room with their pediatric qualifications and ACLS status.</td>
</tr>
<tr>
<td>Standard 5.6</td>
<td>Documentation of special services permit for Standby Emergency Department and demonstrated compliance with requirements of the special services permit.</td>
</tr>
<tr>
<td>Standard 5.7</td>
<td>Demonstrated ability to meet all requirements as outlined under the “Scope of Service for SBEDAP’s” identified with the proposal for the on-site survey team.</td>
</tr>
</tbody>
</table>
RURAL EMERGENCY DEPARTMENT APPROVED FOR PEDIATRICS (REDAP)

DEFINITION: A REDAP is a licensed standby emergency department with a physician on duty 24 hours that meets specific service criteria in order to provide optimal emergency pediatric care. The REDAP will be required to commit various resources to the program, including physician and nurse staffing of the Emergency Department, pediatrician on-call, back-up, a continuing education program and participation in data gathering for evaluation purposes.

1. MINIMUM REQUIREMENTS  The hospital must:

   Standard 1.1 Be accreditated by the Joint Commission on Accreditation of Health Care Organizations.
   Standard 1.2 Meet the requirements of a Basic 24 hour emergency facility and be licensed under Title XXII of the California Administrative Code.
   Standard 1.3 Meet and maintain specific staff and equipment guidelines as outlined in this document.

   The REDAP will be required to:

   Standard 1.4 Render emergency medical services to all patients without regard to their ability to pay, race or religion.
   Standard 1.5 Maintain the specific staffing, equipment and education required for REDAP confirmation.
   Standard 1.6 Provide the required data for program evaluation.

2. STAFF REQUIREMENTS  The emergency department shall have:

   Standard 2.1 All emergency department physicians, and at least one RN per shift certified by the American Heart Association as ACLS providers.

   Standard 2.2 At least 50% of emergency department physician coverage provided by persons that function as emergency physicians on a full-time basis. In addition, those that are not Board eligible or Board certified in Emergency Medicine or Pediatrics will have completed a post graduate course in pediatric emergency care.

   Standard 2.3 A designated pediatrician on staff and available on-call at least 50% of the time. Have a Family Practice physician with appropriate experience and training in pediatrics, on-call when the staff Pediatrician is not available. Also need to have a pediatrician available by phone when the pediatrician on staff is not on call.

   Standard 2.4 A designated pediatric liaison nurse. This nurse may be shared by several hospitals. He/she may be employed in other areas of the hospital such as the ward, ICU, nursery, or in-service education. This nurse shall have at least two years experience in pediatrics and/or quality assurance. Responsibilities of the pediatric liaison nurse shall include:
   2.4.1 Ensuring and documentation of emergency department nurse pediatric continuing education.
   2.4.2 Maintaining a log and coordinating the review and follow-up of a sample of pediatric cardiopulmonary arrests and all pediatric emergencies transported by ALS field personnel.

   Standard 2.5 At least one registered nurse per shift that has completed a postgraduate course meeting REDAP requirements (Standard 5) or has at least one year experience as an RN caring for pediatric patients in an emergency department or in a pediatric ward or ICU.

   Standard 2.6 At least one other physician on-call and available within thirty minutes to assist in critical situations.
3. CONTINUING EDUCATION AND INSERVICE TRAINING

Standard 3.1 The REDAP will include as part of its regular staff continuing education, topics of interest and importance in the area of pediatric emergency medicine. Reference texts on current pediatric emergency medical care will be maintained in the emergency department for use by medical and technical personnel.

4. EQUIPMENT The emergency department shall have:

- Standard 4.1 Monitor-defibrillator with 0-400 Watt/second capabilities.
- Standard 4.2 Infusion pumps, drip or volumetric.
- Standard 4.3 Venesection tray.
- Standard 4.4 Pediatric IV supplies including volumetric sets, butterfly cannulas and IV catheters of varying sizes, 25 gauge through 14 gauge. 250, 500, 1,000 ml bags or bottles of NS, D5 0.25 NS, D5 0.5 NS and D10/W.
- Standard 4.5 Pediatric airways, endotracheal tubes (sizes 2.5 – 9.0), infant and child laryngoscope blades, curved and straight.
- Standard 4.6 Pediatric Magill forcep.
- Standard 4.7 Pediatric suction catheters, 8 Fr. – 14 Fr.
- Standard 4.8 Pediatric nasogastric tubes, including 3.0 and 5.0 Fr. Infant feeding tubes.
- Standard 4.9 Pediatric bab-valve-mask resuscitation device (ideally with an over-rideable pop-off valve).
- Standard 4.10 Premie, infant, child and adult size masks to use with bag-valve-mask devices.
- Standard 4.11 Pediatric femur splint.
- Standard 4.12 Pediatric blood pressure cuffs; premie, infant, child, adult and thigh sizes.
- Standard 4.13 Pediatric Foley catheter 8-18 Fr.
- Standard 4.14 Pediatric spinal tap trays with 22 gauge 1-1/2 inch spinal needles.
- Standard 4.15 Pediatric cricothyrotomy tray with set up for needle cricothyrotomy, (3.5 Portex adapter and 14 gauge angiocath).
- Standard 4.16 Chest tubes 16 Fr. – 32 Fr.
- Standard 4.17 CVP catheters 22-14 gauge.
- Standard 4.18 Sodium bicarbonate 10 mEq/10 ml syringes, atropine in 1 cc (0.1 mg) prefilled syringes.
- Standard 4.19 Cervical spine immobilization devices: sandbags for children six years and under, rigid four-post or flexible plastic/Velcro collars for children over six years of age.
- Standard 4.20 Doppler sensing device for blood pressure measurement.
- Standard 4.21 Pediatric scales for weight measurement.
- Standard 4.22 Blood warmer.
- Standard 4.23 Peritoneal lavage tray.
- Standard 4.24 Pediatric restraints.
- Standard 4.25 Printed pediatric drug dosage reference material (calculated on dose per kilogram basis), readily available, preferable on wall-mounted chart.

5. TO QUALIFY FOR REDAP STATUS THE FOLLOWING IS REQUIRED:

- Standard 5.1 Fully completed application.
- Standard 5.2 Curriculum vitae for Emergency Medical Director.
- Standard 5.3 List of Emergency Department physicians, current Board status and ACLS status.
- Standard 5.4 Curriculum vitae for the Pediatric Liaison Nurse.
- Standard 5.5 Names of nursing staff, pediatric qualifications and ACLS status.
- Standard 5.6 Documentation of Joint Commission accreditation, special services permit for basic emergency department, and demonstrated compliance with requirements of the special services permit.
- Standard 5.7 Demonstrated ability to meet all requirements as outlined under the “Scope of Service for REDAP’s” identified with the proposal for the on-site survey team.
EDAP STANDARDS
NON-METROPOLITAN AREAS
(Developed with funding from the Robert Wood Johnson Foundation)

DEFINITION:

An Emergency Department Approved for Pediatrics (EDAP) is a licensed basic Emergency Department, or a standby Emergency Department with a physician on duty 24 hours that meets the requirements of a basic Emergency Department identified in Title 22, Division 5, 70413(m)(1)-(6) and 70415(c)(d)(e) and meets specific minimum standards in order to provide emergency pediatric care.

A hospital unable to meet these licensing standards due to geographic isolation or small size may become a satellite EDAP by addressing specific staff and equipment requirements through a formal written agreement with a hospital designated as an EDAP. This facility may be a certified base hospital or a secondary or tertiary receiving facility providing definitive care to pediatric patients. Policies and procedures under Section 3 of the EDAP standards shall be in place for all satellite EDAP facilities. Satellite EDAPs shall meet professional staffing standards 1.1, 2.1, and 2.3. Agreements with base hospitals shall address medical control and training requirements necessary for the satellite hospital to meet these standards. In addition, each satellite EDAP shall maintain all items of equipment identified in Section 4 with the exception of those items which may be beyond the scope of practice of any of the facility’s medical staff. Cases beyond the level of staffing and equipment available at the satellite hospital will be transferred, pursuant to the written agreements mentioned above, to an appropriate base or receiving hospital.

The specific professional staff and equipment standards for an EDAP are as follows:

1. PROFESSIONAL STAFF: PHYSICIANS

**Standard 1.1** All physician who are not board certified or board prepared\(^1\) in Emergency Medicine shall have successfully completed the AHA Advanced Cardiac Life Support (ACLS) course and the American College of Surgeons Advanced Trauma Life Support (ATLS) course, and are encouraged to complete APLS when available. New physicians shall complete the ACLS provider course within 12 months of the date of employment. (Completion of this standard is necessary for satellite EDAPs).

**Standard 1.2** Physicians on-call for a hospital classified as a satellite EDAP shall be available within a reasonable response time pursuant to Title 22, Division 5, Section 70653 (a)(3). (See Standard 3.3 and 3.4).

**Standard 1.3** All full-time\(^2\) Emergency Physicians who are not Board certified or Board prepared\(^1\) in Emergency Medicine, Pediatrics or Family Practice must have documentation of completion of four hours of CME in pediatric topics annually.

**Standard 1.4** At least 75% of the ED coverage shall be provided by physicians functioning as Emergency Physicians on a full-time\(^2\) basis.

\(^1\)Board prepared refers to successful completion of a Board-approved residency in Emergency Medicine, Family Practice or Pediatrics.

\(^2\)Full-time refers to a physician functioning primarily as an Emergency Physician.
# 1999 Standards for Emergency Departments Approved for Pediatrics

## Table of Contents

**INTRODUCTION:**  ............................................................................................................................ Page 1

**DEFINITIONS** ............................................................................................................................... Page 1

- Emergency Department Approved for Pediatrics ................................................................. Page 1
- Board prepared/eligible ........................................................................................................ Page 1
- Promptly available .................................................................................................................. Page 1
- Qualified specialist ................................................................................................................. Page 2
- Senior resident ...................................................................................................................... Page 2
- PALS ........................................................................................................................................ Page 2
- APLS ........................................................................................................................................ Page 2
- ENPC ....................................................................................................................................... Page 2

**ADMINISTRATION/COORDINATION** ....................................................................................... Page 2

- EDAP Medical Director ......................................................................................................... Page 2
  - Responsibilities .................................................................................................................. Page 2
- Designated Pediatric Consultant .......................................................................................... Page 3
  - Responsibilities .................................................................................................................. Page 3
- Pediatric Liaison Nurse (PdLN) ............................................................................................ Page 3
  - Qualifications .................................................................................................................... Page 3
  - Responsibilities .................................................................................................................. Page 4

**PERSONNEL** ............................................................................................................................ Page 4

- Physicians-Qualifications/Education .................................................................................. Page 4
- Nurses-Qualifications/Education ......................................................................................... Page 5
- Pediatric physicians/Speciality services ............................................................................ Page 5

**POLICIES, PROCEDURES, AND PROTOCOLS** ........................................................................ Page 5

**QUALITY IMPROVEMENT (QI)** .............................................................................................. Page 6

**SUPPORT SERVICES** ............................................................................................................... Page 7

- Respiratory Therapy ............................................................................................................ Page 7
- Radiology .............................................................................................................................. Page 7
- Laboratory ............................................................................................................................. Page 7

**EQUIPMENT, SUPPLIES, AND MEDICATIONS** ..................................................................... Page 8

- General Equipment ............................................................................................................... Page 8
- Monitoring Equipment ......................................................................................................... Page 8
- Respiratory Equipment ....................................................................................................... Page 9
- Vascular Access Equipment ............................................................................................... Page 9
- Fracture Management Devices ............................................................................................ Page 10
- Specialized Trays .................................................................................................................. Page 10
- Pediatric Specific Resuscitation Medications ................................................................... Page 11
INTRODUCTION:

These standards were developed as a concerted effort by the Committee on Pediatric Emergency Medicine which is made up of representatives from the following organizations: Los Angeles Pediatric Society, Pediatric Liaison Nurses of Los Angeles County, California Chapter of the American College of Emergency Physicians, National EMSC Resource Alliance, California Chapter 2 of the American Academy of Pediatrics, Emergency Nurses Association, American College of Surgeons, and Los Angeles County Department of Health Services Emergency Medical Services Agency.

These standards have been approved by The Health Care Association of Southern California and meet or exceed Emergency Medical Services for Children (EMSC) administration, personnel, and policy guidelines for the care of pediatric patients in the emergency department set forth by the California Emergency Medical Services Authority in 1995.

DEFINITIONS:

**Emergency Department Approved for Pediatrics (EDAP):** A licensed basic emergency department that is approved by the County of Los Angeles to receive pediatric patients from the 9-1-1 system. These emergency departments provide care to pediatric patients by meeting specific requirements for professional staff, quality improvement, education, support services, equipment, supplies, medications, and established policies, procedures, and protocols.

**Board prepared/eligible:** Successful completion of a Board approved emergency medicine or pediatric residency training program.

**Promptly available:** Being in the emergency department within a period of time that is medically prudent and appropriate to the patient's clinical condition; and further, that the interval between the arrival of the patient to the emergency department and the arrival of the respondent should not have a measurably harmful effect on the course of patient management or outcome.
Qualified specialist: A physician licensed in the State of 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.

Senior resident: A physician licensed in the State of California who has completed at least two years of the residency under consideration and has the capability of initiating treatment when the clinical situation demands, and who is in training as a member of the residency program at the designated hospital.

PALS: American Heart Association Pediatric Advanced Life Support Course.


ENPC: Emergency Nurses Association-Emergency Nursing Pediatric Course

I. ADMINISTRATION/COORDINATION

A. EDAP Medical Director

1. Qualifications:
   a. Qualified specialist in Emergency Medicine or Pediatrics
   b. Completion of eight hours of CME in topics related to pediatrics every two years
   c. Current PALS or APLS provider

2. Responsibilities:
   a. Oversight of EDAP quality improvement (QI) program
   b. Member of hospital emergency department committee and pediatric committee
   c. Liaison with pediatric critical care centers (PCCC), trauma centers, base hospitals, community hospitals, prehospital care providers, and the EMS Agency.
   d. Identify needs and facilitate pediatric education for emergency department physicians
   e. Review, approve, and assist in development of all pediatric policies and procedures.
B. Designated Pediatric Consultant *

1. Qualifications: Board certified in pediatrics or having completed the written exam and actively pursuing Board certification in pediatrics.

2. Responsibilities:
   a. Member of hospital emergency department committee and pediatric committee
   b. Participation with EDAP staff in developing and monitoring pediatric QI program, protocols, and policies and procedures
   c. Consult with EDAP Medical Director and Pediatric Liaison Nurse as needed

* Pediatric Consultant may also be EDAP Medical Director

C. Pediatric Liaison Nurse (PdLN)

1. Qualifications:
   a. At least two years experience in pediatrics or in an emergency department that sees pediatric patients, within the previous five years.
   b. Experience with QI programs is recommended
   c. Current PALS or APLS provider or ENPC course
   d. Completion of a two day pediatric emergency nursing course*
   e. Completion of eight hours of Board of Registered Nursing (BRN) approved continuing education units (CEU) in pediatric topics every two years.

* A two day pediatric emergency nursing course should include a broad spectrum of topics including: resuscitation, trauma, medical conditions, near drowning, respiratory distress, ingestion, child abuse and neglect, fever, seizures, and neonatal emergencies.
EDAP STANDARDS

2. Responsibilities:
   a. Attend monthly meetings of The Pediatric Liaison Nurses of Los Angeles County.
   b. Participate in development and maintenance of pediatric QI program
   c. Liaison with PCCC’s, trauma centers, base hospitals, community hospitals, prehospital care providers, and the EMS Agency.
   d. Member of selected hospital based emergency department and/or pediatric committees.
   e. Notify the EMS Agency in writing of any change in status of the EDAP Medical Director, Pediatric Consultant, and Pediatric Liaison Nurse.

II. PERSONNEL

A. Physicians-Qualifications/Education

1. Twenty four hour emergency department coverage shall be provided or directly supervised by physicians functioning as emergency physicians or pediatricians experienced in emergency care on a full time basis. (96 hours or more per month in an emergency department)* This includes senior residents practicing at their respective hospitals only.

2. At least 75% of the emergency department coverage shall be provided by physicians Board certified or eligible in emergency medicine or pediatrics.

3. Those emergency department physicians who are not board certified or eligible shall be a current PALS or APLS provider.

*May include administrative time.

B. Nurses-Qualifications/Education

1. At least 75% of the total RN staff and at least one RN per shift in the emergency department shall be a current PALS or APLS provider.

2. At least one RN per shift shall have completed a two day pediatric emergency nursing course (within the last 4 years).

NOTE: It is highly recommended that all nurses regularly assigned to the emergency department meet the above requirements.

3. All nurses assigned to the emergency department shall attend at a
EDAP STANDARDS

minimum, eight hours of pediatric BRN approved education every two years which may include the two day pediatric emergency nursing course.

C. Pediatric physicians/Speciality services

1. Establishment of a pediatric on call panel that allows for telephone consultation and a promptly available pediatrician to the emergency department twenty four hours per day. This pediatrician shall be Board certified or eligible.

2. A plan shall exist whereby other pediatric specialists may be consulted and available in at least the following specialities: surgery, orthopedics, anesthesia and neurosurgery. This requirement may be met by a written agreement with a PCCC.

3. A plan shall exist whereby a second emergency physician or pediatrician will be available within thirty minutes to serve as back-up for the emergency department in critical situations.

III. POLICIES, PROCEDURES, AND PROTOCOLS

A. Establish procedures, and protocols for pediatric emergency patients to include but not limited to:

1. Triage and initial evaluation
2. Patient safety
3. Suspected child abuse and neglect
4. Transfers
5. Consents
6. Conscious sedation
7. Do-not-resuscitate (DNR)
8. Death to include SIDS and the care of the grieving family
9. Aeromedical transport to include landing procedure
10. Daily verification of proper location and functioning of equipment and supplies.
11. Immunizations

B. Establish a written interfacility consult and transfer agreement with a PCCC to facilitate transfers of critically ill and injured pediatric patients and twenty four hour telephone consultation.

C. Establish a written interfacility consult and transfer agreement with a
EDAP STANDARDS

California Children Services (CCS) approved Level II or Level III Neonatal Intensive Care Unit (NICU).

IV. QUALITY IMPROVEMENT (QI)

A. A pediatric QI program shall be developed and monitored by the EDAP Medical Director and Pediatric Liaison Nurse with input from the Designated Pediatric Consultant as needed.

B. The program should include an interface with prehospital care, emergency department, trauma, pediatric critical care, pediatric inpatient, and hospital wide QI activities.

C. A mechanism shall be established to easily identify pediatric (14 years & under) visits to the emergency department.

D. The pediatric QI program should include identification of the indicators, methods to collect data, results and conclusions, recognition of improvement, action(s) taken, assessment of effectiveness of above actions and communication process for participants.

12. The pediatric QI program should include review of the following pediatric patients seen in the emergency department:

   1. Deaths
   2. Cardiopulmonary and or respiratory arrests, including all pediatric intubations
   3. Suspected child abuse or neglect
   4. Transfers to and/or from another facility
   5. Admissions from the ED to an adult ward or ICU
   6. Selected return visits to the ED
   7. Pediatric transports within the 9-1-1 system

F. A mechanism to document and monitor pediatric education of EDAP staff will be established.

V. SUPPORT SERVICES

A. Respiratory Therapy

   1. At least one respiratory therapist shall be in house twenty four hours per day.
   2. Current PALS or APLS provider

B. Radiology
EDAP STANDARDS

1. Radiologist on call and promptly available twenty four hour per day

2. Radiology technician in house twenty four hours per day with a second technician on call and promptly available

3. CT scan technician on call and promptly available

C. Laboratory

1. Technician in house twenty four hours per day and a second technician on call and promptly available

2. Clinical Laboratory capabilities in house:
   a. Chemistry
   b. Hematology
   c. Blood bank
   d. Arterial blood gas
   f. Microbiology
   g. Toxicology
   h. Drug levels

NOTE: Toxicology and drug levels may be done outside if routine tests are available within two hours.

VI. EQUIPMENT, SUPPLIES, AND MEDICATIONS
Pediatric equipment, supplies, and medications shall be easily accessible, labeled, and logically organized. EDAP staff shall be appropriately educated as to the locations of all items. Each EDAP shall have a method of daily verification of proper location and function of equipment and supplies. It is highly recommended that each EDAP have a mobile pediatric crash cart.

The following are requirements for equipment, supplies, and medications for an EDAP:

GENERAL EQUIPMENT

Foley catheters (8 - 22fr.)

IV blood/fluid warmer

Length and weight tape for determining pediatric resuscitation drug dosages

Meconium Aspirator
EDAP STANDARDS

OB Kit

Posted or readily available pediatric drug dosage reference material calculated on a dose per kilogram basis.

Restraint device

Scale

Warming device

MONITORING EQUIPMENT

Blood pressure cuffs (infant, child, adult, and thigh)

Doppler

ECG monitor/defibrillator (0-400 Joules) with pediatric and adult paddles

End tidal C0₂ monitor or detector, (adult and pediatric sizes)

Hypothermia thermometer

Pulse oximeter

RESPIRATORY EQUIPMENT

Bag-valve-mask device, self inflating (pediatric size: 450-900ml and adult size: 1000-2000ml)

Bag-valve masks, clear (neonate, infant, child, and adult sizes)

Endotracheal tubes (uncuffed: 2.5-5.5 and cuffed: 6.0-9.0)

Laryngoscope (curved and straight: 0-3)

Lubricant (water soluble)

Magill forceps (pediatric and adult)

Nasal cannulae (infant, child, and adult)

Nasopharyngeal airways (infant, child, adult)

Nasogastric tubes (including 5 and 8fr feeding tubes)
EDAP STANDARDS

Oral airways (sizes 0-5)
Oxygen masks, clear (standard and non-rebreathing) for infant, child, and adult
Stylets for endotracheal tubes
Suction catheters (sizes 6-12fr)
Tracheostomy tubes (sizes 0-6)
Yankauer suction tips

VASCULAR ACCESS EQUIPMENT

Arm boards (infant, child, adult)
Butterfly needles (19-25ga)
Central venous catheters (sizes 6-12fr)
Infusion devices to regulate rate and volume
Intraosseous needles
IV administration sets with calibrated chambers
IV catheters (14-24ga)
IV solutions (D5.2NS, D5.45NS, D5NS, D10W, and NS)
Needles (18-27ga)
Stopcocks (3 way)
Syringes (TB and 1-60cc)
T-connectors
Umbilical vein catheters (may substitute 5fr feeding tube)

FRACTURE MANAGEMENT DEVICES

Cervical spine immobilization devices
EDAP STANDARDS

Pediatric femur splint

Spine board (long and short)

SPECIALIZED TRAYS

Cricothyrotomy tray

Pediatric lumbar puncture tray

Pediatric thoracotomy tray

Pediatric tracheostomy tray

Peritoneal lavage tray

Thoracostomy and chest tube tray (sizes 16-28fr)

Venous cutdown tray

PEDiatric SPECIFIC RESUSCITATION MEDICATIONS

Atropine
Adenosine
Bretylium
Calcium chloride
Dextrose (25% & 50%)
Dopamine
Dobutamine
Epinephrine (1:1000 and 1:10,000)
Flumazenol
Lidocaine
Naloxone
Racemic epinephrine for inhalation
Sodium Bicarbonate

Note: It is suggested that these drugs be immediately available in the resuscitation room and not locked in a computerized system.
Standard 1.5  At least 50% of the ED coverage shall be provided by physicians 1) board certified in either Emergency Medicine, Pediatrics or Family Practice, or 2) qualified to sit for the certifying exam in Emergency Medicine, or 3) board prepared* in Emergency Medicine, Pediatrics, or Family Practice (completion within three years).

Standard 1.6  A physician who is board certified in Pediatrics or a physician who has completed the written examination and is Board certified in actively pursuing certification in Pediatrics, shall be on-call 24 hours/day to the EDAP.

Standard 1.7  At least one additional physician shall be on call and available within 30 minutes to assist in critical situations. (This physician is the “first-call” physician of the day).

Standard 1.8  A Pediatrician shall sit on the ER/ICU committee of the hospital and participate in ED physician quality assurance activities. The Quality Assurance review shall include but not be limited to all ED pediatric deaths and all pediatric full arrests and be supported by appropriate documentation.

2. PROFESSIONAL STAFF: NURSING

Standard 2.2  At least on Registered Nurse (RN) per shift shall have successfully completed the AHA ACLS Provider course. New hospital employees shall complete the ACLS provider training program within a reasonable time, not to exceed three months from date of employment. This requirement may be set by successful completion of the AHA or the AAP-ACEP APLS course. (Completion of this standard is necessary for satellite EDAPs).

Standard 2.3  A Pediatric Liaison Nurse (PdLN) shall be designated. This nurse may be shared between institutions and may be employed in other areas of the hospital such as ward, ICU, nursery or quality assurance. Duties of the PdLN may be incorporated into existing Quality Assurance and Emergency Department review activities. Responsibilities of the PdLN include:

2.3.1  Ensuring and documenting ED nurse pediatric continuing education (see Standard 4)

2.3.2  Maintaining a log and coordinating criteria-based review and follow-up of a sample of pediatric emergency visits. This sample shall include all full arrests, all pediatric ED deaths, and all pediatric emergencies transported by the paramedics.

2.3.3  Completion of education requirements indicated in Standard 2.4.

2.3.4  Coordination of the review of paramedic transported pediatric cases with Paramedic Liaison Nurse in hospitals where the EDAP is also the paramedic base station; including tape reviews of pediatric runs.

Standard 2.4  At least one RN per shift shall have a minimum of one year’s experience as an RN caring for pediatric patients in a pediatric emergency department, pediatric ward or pediatric intensive care unit; or two years’ experience in an emergency department that sees pediatric patients; or have completed 8 hours of continuing education in pediatric emergency or critical care within the first year of EDAP designation. (Completion of this standard is necessary for satellite EDAPs).
Standard 2.5  All nurses regularly assigned to the ED shall attend a minimum of four hours BRN approved pediatric topics per year.

3. **POLICIES AND PROCEDURES:**

**Standard 3.1**  Policies/procedures concerning the transfer of critically ill and injured patients to Pediatric Critical Care Centers.

**Standard 3.2**  Policies/procedures for the identification, evaluation and referral of victims of suspected child abuse.

**Standard 3.3**  Each satellite EDAP shall develop protocols addressing the optimal response time for physician and appropriate stabilization measures in response to critically ill or injured pediatric patients.

**Standard 3.4**  Each satellite EDAP shall institute a community education program to inform residents of the importance of calling the hospital prior to bringing a critically ill or injured child to the emergency room so that physician and other appropriate on-call staff can be contacted to assure optimal response time to the facility.

4. **EQUIPMENT, TRAYS AND SUPPLIES:**

**EQUIPMENT**

**Standard 4.1**  Pediatric bag-valve resuscitation device.

**Standard 4.2**  Preemie, infant, child, and adult size transparent masks to use with bag-valve device.

**Standard 4.3**  Laryngoscope with infant and child laryngoscope blades, curved and straight (sizes 0-3).

**Standard 4.4**  Pediatric Magill forceps.

**Standard 4.5**  Cervical spine immobilization devices: sandbags for children 6 years and under. Rigid four-post or plastic/Velcro collars for children over 6 years of age in at least one pediatric size.

**Standard 4.6**  Pediatric femur splint (Pediatric antishock garments may be used to fulfill this requirement).

**Standard 4.7**  Blood warmer.

**Standard 4.8**  An infant warming procedure/device.

**Standard 4.9**  Infusion pumps, drip or volumetric.

**Standard 4.10**  Pediatric bone marrow needles or other appropriate needles for intraosseous infusion.

**Standard 4.11**  Blood pressure cuffs; infant, child, adult, and thigh sizes.

**Standard 4.12**  Doppler sensing device for blood pressure measurement.
Standard 4.13  Monitor-defibrillator with 0-300 watt/sec capability.

Standard 4.14  Pediatric scale.

Standard 4.15  An appropriate procedure/device for ensuring pediatric restraint.

TRAYS:

Standard 4.16  Pediatric thoracotomy tray including pediatric rib-spreader, and aortic clamp.

Standard 4.17  Pediatric tracheostomy tray with tracheostomy tubes, (sizes 0-3).

Standard 4.18  Set-up for needle cricothotomony (a 3.5 Portex adapter and 14 angiocath is acceptable).

Standard 4.19  Venesection tray appropriate for infants and children.

Standard 4.20  Peritoneal lavage tray.

Standard 4.21  Pediatric lumbar puncture trays with 22 gauge, 1.5 inch spinal needle.

SUPPLIES:

Standard 4.22  Pediatric oral airways (sizes 0-5).

Standard 4.23  Endotracheal tubes (sizes 2.5 – 9.0).


Standard 4.25  Pediatric suction catheters (sizes 6 – 12 Fr).

Standard 4.26  Central venous catheters (22-14 gauge).

Standard 4.27  Pediatric IV supplies, including volumetric sets, butterflies and angiocaths; 25 gauge through 14 gauge, 250 ml or 500 ml gags of NS, D5/0.25 NS, D5/0.5 NS, D5 NS, D10/W.

Standard 4.28  Printed pediatric drug dosage reference material (calculated on dose per kilogram basis), readily available, preferably on a wall-mounted chart.

Standard 4.29  Sodium bicarbonate, in 10 mEq/10 ml pre-filled syringes.

Standard 4.30  All drugs currently recommended for pediatric and adult resuscitation by the AHA.

Standard 4.31  Pediatric nasogastric tubes, including sizes 3.0 and 5.9 Fr. infant feeding tubes.

Standard 4.32  Pediatric Foley catheters (sizes 8 – 22 Fr).
Dear :

On (mm/dd/yy) the Emergency Medical Services Agency completed Phase I and Phase II of its 1999 EDAP survey process for.

Phase I of the survey process consisted of the completion of the 1999 EDAP Application. Phase II consisted of an on site inventory inspection of pediatric equipment, emergency department medical record review, verification of required certifications and continuing education, and a review of the quality improvement program. Enclosed are the results of this review.

Please respond to the action items identified on the enclosed EDAP Application and Site Review Form within 30 days of receipt of this letter. All responses must carry the signature of an administrator.

’s commitment to the pediatric population of Los Angeles County was very evident during all phases of the survey process.

If you or your staff have any questions or require further information, please contact Erin Dorsey, Pediatric Programs Coordinator at (323) 890-7744. Thank you for your cooperation in this review process.

Very truly yours,

Virginia Hastings
Director, EMS Agency

VPH:ed

Attachments

c. Pediatric Liaison Nurse
   EDAP Medical Director
   Nurse Manager of the Emergency Department
Dear 

This is to advise you that The Los Angeles County EMS Agency will be conducting an Emergency Departments Approved for Pediatrics (EDAP) survey at . The process will consist of two phases. For phase I, please complete and submit all items identified on the enclosed EDAP Application (ATTACHMENT A & B) to the EMS Agency no later than fifteen days from receipt of this letter.

Phase II of the process is an “on site” survey which has been coordinated with , ’s Pediatric Liaison Nurse (PdLN), for DATE, YEAR at 8:00 am. Please review ATTACHMENT C and have all items requested available for the survey team in a private room. The PdLN should be available to assist the survey team during this time. The survey process will require approximately four hours to complete and will consist of an inventory inspection of pediatric equipment, emergency department medical record review, verification of required certifications and continuing education, and a review of the quality improvement program.

An exit interview with the PdLN, EDAP Medical Director, Designated Pediatric Consultant, and an administrative representative will be held upon completion of the survey. At the exit interview, results of both Phase I and II will be summarized and a written report will follow.

The EDAP application and the current EDAP standards have been sent to your PdLN. If you or your staff have any questions or require further information, please contact Erin Dorsey, Pediatric Programs Coordinator at (323) 890-7744. Thank you for your cooperation in this review process.

Very truly yours,

Virginia Price Hastings  
Director  

VPH:ed  

enclosures  

c. Pediatric Liaison Nurse,
ATTACHMENT A

LOS ANGELES COUNTY
DEPARTMENT OF HEALTH SERVICES
EMERGENCY MEDICAL SERVICES AGENCY
EMERGENCY DEPARTMENT APPROVED FOR PEDIATRICS
APPLICATION

GENERAL INFORMATION

Name of Hospital_______________________________________________________

Address_______________________________________________________________

Phone_______________

State Department of Health Service License (SDHS)
exp. date:_____________

Accreditation from Joint Commission on Accreditation of Healthcare Organizations
(JCAHO)
exp. date:_____________

Permit for Basic or Comprehensive Emergency Medical Service pursuant to the
provisions of Title 22, Division 5, California Code of Regulations
exp. date:_____________

ADMINISTRATION/COORDINATION

Chief Executive Officer:       ________________________phone__________

EDAP Medical Director:       ________________________phone__________

Designated Pediatric Consultant:*      ________________________phone__________

Pediatric Liaison Nurse:       ________________________phone__________

*EDAP Medical Director may also be the Designated Pediatric Consultant
EDAP APPLICATION

PERSONNEL-PHYSICIANS

- Twenty-four hour emergency department coverage shall be provided or directly supervised by physicians functioning as emergency physicians or pediatricians experienced in emergency care on a full time basis. (96 hours or more per month in an emergency department) This includes senior residents practicing at their respective hospitals only.

- At least 75% of the emergency department coverage shall be provided by physicians Board certified or eligible in emergency medicine or pediatrics.

- Emergency department physicians (other than the EDAP Medical Director) who are not Board certified or eligible shall be a current PALS or APLS provider.

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<th>NAME</th>
<th>DATE BOARD ELIGIBLE</th>
<th>BOARD CERT EXP. DATE</th>
<th>HOURS WORKED PER MONTH</th>
<th>PALS/APLS EXP. DATE</th>
<th>PEDS CME HOURS IN LAST TWO YEARS</th>
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<tr>
<td>EDAP Medical Director*</td>
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*EDAP Medical Director shall be a qualified specialist in emergency medicine or pediatrics. If EDAP Medical Director is also the Designated Pediatric Consultant, he/she shall be board certified in pediatrics or having completed the written exam and actively pursuing Board certification in pediatrics.
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EDAP APPLICATION

PERSONNEL-NURSES

- At least one RN per shift in the emergency department shall be a current PALS or APLS provider.

- At least one RN per shift shall have completed a two day pediatric emergency nursing course.

- NOTE: It is highly recommended that all nurses regularly assigned to the emergency department meet the above requirements.

- All nurses assigned to the emergency department shall attend, at a minimum, eight hours of pediatric BRN approved education every two years.

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<thead>
<tr>
<th>NAME</th>
<th>PALS/APLS EXP. DATE</th>
<th>DATE OF LAST TWO DAY PEDS COURSE</th>
<th>PEDS BRN HOURS IN LAST TWO YEARS</th>
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<tbody>
<tr>
<td>Pediatric Liaison Nurse</td>
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## EDAP APPLICATION

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<th>NAME</th>
<th>PALS/APLS EXP. DATE</th>
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<th>PEDS BRN HOURS IN LAST TWO YEARS</th>
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EDAP APPLICATION

PEDIATRIC ON CALL PANEL

Establishment of a pediatric on call panel that allows for telephone consultation and a promptly available pediatrician to the emergency department twenty-four hours per day. Physicians listed on the On Call Panel shall be Board certified or eligible.

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<th>NAME</th>
<th>DATE BOARD ELIGIBLE</th>
<th>DATE BOARD CERT EXP.</th>
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<tr>
<td>Designated Pediatric Consultant*</td>
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*This individual may also be EDAP Medical Director
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<th>NAME</th>
<th>DATE BOARD ELIGIBLE</th>
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ATTACHMENT B

EDAP APPLICATION

PLEASE SUBMIT COPIES OF THE FOLLOWING:

Emergency Department physician schedule for the last three months
Emergency Department nursing schedule for the last three months
Pediatric on-call panel schedule for the last three months
Curriculum Vitae for Pediatric Liaison Nurse, EDAP Medical Director, and Designated Pediatric Consultant

Policies, procedures, and protocols for pediatric emergency patients to include, but not limited to:

- Triage and initial evaluation
- Patient safety
- Suspected child abuse and neglect
- Transfers
- Consents
- Conscious sedation
- Do-not-resuscitate (DNR)
- Death (include SIDS and the care of the grieving family)
- Aeromedical transport to include landing procedure
- Daily verification of proper location and functioning of equipment and supplies
- Immunizations

Interfacility consult and transfer agreement with a PCCC

Interfacility consult and transfer agreement with a CCS approved Level II or III NICU

EDAP QI Program to include:

- Criteria for cases chosen to review
- How program interfaces with other relevant departments (ie; prehospital care, trauma, in-patient etc.)
PHASE II
LOS ANGELES COUNTY
DEPARTMENT OF HEALTH SERVICES
EMERGENCY MEDICAL SERVICES AGENCY
EMERGENCY DEPARTMENT APPROVED FOR PEDIATRICS
SITE SURVEY

HOSPITAL:

DATE:

EQUIPMENT, SUPPLIES, AND MEDICATION

The survey team will tour the emergency department and perform an inventory inspection of the required equipment, supplies, and medications.

QUALITY IMPROVEMENT

Please have available for review documentation of quality improvement activities which demonstrates how EDAP quality improvement standards are being met per 1999 EDAP Standards, section IV., A through F.

MEDICAL RECORD REVIEW

Please have the following twenty pediatric emergency department charts available for review (five charts for each category):

Lumbar puncture performed.

IV was ordered for hydration.

Patients that were transferred via a critical care team.

Charts that have been reviewed by a hospital QI committee. (not including any in the above categories)
VERIFICATION OF CERTIFICATION AND CONTINUING EDUCATION RECORDS

Please provide documentation to verify the following:

Board Certification/Eligibility for the following emergency department physicians:

Current PALS certification for the following emergency department physicians:

1.
2.
3.
4.
5.

Current PALS certification for the following nurses:

Two day pediatric emergency nursing course for the following nurses:

1.
2.
3.
4.
5.
Dear:

Enclosed is a completed copy of the Los Angeles County Emergency Department Approved for Pediatrics (EDAP) Confirmation Agreement. Confirmation of EDAP status is granted for a period of three years effective (mm/dd/yy).

The Los Angeles County Emergency Medical Services Agency, the Los Angeles Pediatric Society, and the American Academy of Pediatrics would like to commend for it's commitment in caring for the pediatric population of Los Angeles County.

Please call Erin Dorsey, Pediatric Programs Coordinator, at (323) 890-7744 if we can be of further assistance.

Very truly yours,

_____________________________
Virginia Hastings
Director, EMS

_____________________________ ___________________________
Marshall Goldberg, M.D.                                          Jeffrey S. Penso, M.D.
President, Los Angeles Pediatric Society                          President, American Academy of Pediatrics, California Chapter 2

VPH:MG:JSP:ed

Enclosure

c. Chair, Committee on Pediatric Emergency Medicine
   EDAP Medical Director, Emergency Department
   Pediatric Liaison Nurse, Emergency Department
Dear [Name],

The Emergency Medical Services Agency has received and reviewed the response to action items that were identified on the EDAP Application and Site Review Form. Based on the information in your response, [Hospital Name] has met the requirements of the 1999 EDAP Standards.

Please sign the enclosed EDAP Confirmation Agreement and return it to the EMS Agency within 15 days. Recertification will be for a period of three years, commencing on the date all signatures are obtained. Your signature on the attached Confirmation Agreement denotes compliance with the 1999 EDAP Standards. In addition, [Hospital Name] agrees to allow the EMS Agency to perform a scheduled site survey, if deemed necessary, to monitor adherence to the Standards. A signed copy of the EDAP Confirmation Agreement will be returned to you.

If your hospital wishes to purchase a new EDAP sign for posting outside the emergency department, please call the National EMSC Resource Alliance (NERA) at (310) 328-0720. The cost of the sign will be $80.00 plus shipping and handling.

We would like to commend [Hospital Name] for its commitment to the pediatric population of Los Angeles County. Thank you for your cooperation in this confirmation process. Please do not hesitate to call me or Erin Dorsey at (323) 890-7744 should you or your staff have any questions or require further assistance.

Very truly yours,

Virginia Hastings
Director, EMS Agency

VPH:ed

Attachment
c. Pediatric Liaison Nurse, Emergency Department
   EDAP Medical Director, Emergency Department
EDAP CONFIRMATION AGREEMENT

Emergency Department Approved for Pediatrics (EDAP) status is hereby granted to:

, California

The above named hospital agrees to adhere to the attached 1996 EDAP Standards which include requirements for:

ADMINISTRATION/COORDINATION

PERSONNEL

POLICIES, PROCEDURES, AND PROTOCOLS

QUALITY IMPROVEMENT

SUPPORT SERVICES

EQUIPMENT, SUPPLIES, AND MEDICATIONS

__________________________________________  ____________________________________________
Signature, Chief Executive Officer                  Director, EMS Agency

__________________________________________  ____________________________________________
Name of the Above (Please type or print)               Medical Director, EMS Agency

__________________________________________  ____________________________________________
Title of the Above                                     Pediatric Program Coordinator, EMS Agency

__________________________________________  ____________________________________________
Date                                               Date

Confirmation of EDAP status is granted for a period of three years. Should the above named hospital not adhere to the provisions set forth in the 1996 EDAP Standards, they shall immediately forward written notice to the Director of the EMS Agency. The EMS Agency reserves the right to perform a scheduled on-site survey of the EDAP at any time.
Dear :

Please find enclosed the 1999 EDAP Standards as well as an EDAP application. I am sure that your emergency department already comes close to meeting these standards, so I am especially interested in discussing them with you. The Los Angeles County Emergency Medical Services Agency hopes that you will strongly consider applying for EDAP status.

Please do not hesitate to call me at (323) 890-7744 should you or your staff have any questions or wish to discuss the application process further.

Very truly yours,

Erin Dorsey
Pediatric Programs Coordinator

ED:ed
Dear:

This is to advise you that ___ is scheduled for an Emergency Department Approved for Pediatrics (EDAP) reconfirmation site survey in (date). As you will recall, the Emergency Medical Services (EMS) Agency conducted a paper survey of ‘s EDAP program in (date).

The purpose of EDAP confirmation is to ensure that pediatric 9-1-1 patients are only transported to hospitals which meet the 1996 EDAP Standards which conform with the Emergency Medical Services for Children (EMSC) Administration, Personnel, and Policy Guidelines set forth by the California Emergency Medical Services Authority in 1995.

In order for the EMS Agency to re-confirm ___ ‘s EDAP status, please complete and submit all items identified on the enclosed application within sixty days. The EMS Agency has set up a tentative date in August for an on site survey at ___.

Your participation in the EDAP program is very important and we strongly encourage you to seek reconfirmation. Please contact Erin Dorsey at (323) 890-7744 should you or your staff have any questions or require further information.

Very truly yours,

Virginia Price Hastings
Director

VPH/ed

Enclosures

c. Emergency Department EDAP Medical Director
   Emergency Department Nurse Manager
   Emergency Department PdLN
Instructions: The program on-site monitor shall review the compliance of the EDAP Standards AT LEAST ONCE EVERY THREE YEARS as specified in this Monitoring Instrument (MI). Use this MI to document the findings. Check the appropriate boxes (“Met”, “Not Met”, or “NA”) for each requirement. If “NA” is checked for any requirement, there must be an explanation in the “Comments” section. If “Not Met” is checked for any requirement, “Action Item” must be checked. Fill in any blanks with the requested information. Complete the attached Worksheets as indicated and copy additional pages as needed.

Findings and recommendations shall be reported to the Program Administrator and Contractor for corrective action.

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<thead>
<tr>
<th>I. ADMINISTRATIVE REQUIREMENTS</th>
<th>MET</th>
<th>NOT MET</th>
<th>NA</th>
<th>COMMENTS</th>
<th>ACTION ITEM</th>
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<tr>
<td>A. License/Permit/Accreditation</td>
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<td>Complete Worksheet #A1 - Licensure/Permit/Accreditation.</td>
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<td>Emergency department maintains current licenses/permits/accreditation/standards.</td>
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<th>II. SERVICE REQUIREMENTS</th>
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<th>NA</th>
<th>COMMENTS</th>
<th>ACTION ITEM</th>
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<td>A. Personnel (EDAP Standards pg. 2)</td>
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<td>1. EDAP Medical Director:</td>
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<td>a. Qualified specialist in Emergency Medicine or Pediatrics (Curriculum Vitae)</td>
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<tr>
<td>EDAP Medical Director:</td>
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**II. SERVICE REQUIREMENTS**

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b. Completion of eight hours of CME in topics related to pediatrics every two years

c. Current PALS or APLS provider

Date attended: ____________________________

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2. **Pediatric Liaison Nurse** *(EDAP Standards pg. 3)*

a. Has at least 2 years experience in pediatrics or in an ED that sees pediatric patients, within the previous 5 years *(Curriculum Vitae)*

b. Current in PALS or APLS provider or the ENPC course

c. Completion of a 2 day pediatric emergency nursing course*

d. Completion of 8 hours of Board of Registered Nursing (BRN) approved continuing education units (CEU) in pediatric topics every 2 years.

* A 2 day pediatric emergency nursing course should include a broad spectrum of topics including: resuscitation, trauma, medical conditions, near drowning, respiratory distress, ingestion, child abuse and neglect, fever, seizures, and neonatal emergencies.

Name of PdLN: ____________________________

Dates attended: ____________________________

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3. **Designated Pediatric Consultant** *(EDAP Standards pg.3)*

a. Board certified in pediatrics or having completed

Name of Pediatric Consultant: ____________
the written exam and actively pursuing Board certification in pediatrics *(Curriculum Vitae)*

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<th>II. SERVICE REQUIREMENTS</th>
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<th>COMMENTS</th>
<th>ACTION ITEM</th>
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</table>
| 4. Physicians working in the EDAP *(EDAP Standards pg. 4)*  
4) Complete Worksheet #S 1 |     |         |    |          |             |
| a. 24 hour ED coverage shall be provided or directly supervised by physicians functioning as emergency physicians or pediatricians experienced in emergency care on a full time basis. *(96 hours or more per month in an ED)*  
This includes senior residents practicing at their respective hospitals only. |     |         |    |          |             |
| b. At least 75% of the emergency department coverage shall be provided by physicians Board certified or eligible in emergency medicine or pediatrics. |     |         |    |          |             |
| c. Those ED physicians who are not board certified or eligible shall be a current PALS or APLS provider. |     |         |    |          |             |
| 5. Nurses working in the EDAP *(EDAP Standards pg. 5)*  
5) Complete Worksheet #S 2 - Nurses |     |         |    |          |             |
| a. At least 75% of the total RN staff and at least one RN per shift in the emergency department shall be a current PALS or APLS provider. |     |         |    |          |             |
### II. SERVICE REQUIREMENTS

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b. At least one RN per shift shall have completed a two day pediatric emergency nursing course (within the last 4 years).

**NOTE:** It is highly recommended that all nurses regularly assigned to the ED meet the above requirements.

c. All nurses assigned to the ED shall attend at a minimum, 8 hours of pediatric BRN approved education every 2 years which may include the 2 day pediatric emergency nursing course.

### 6. Call Panel (EDAP Standards pg. 5)

a. Establishment of a pediatric on call panel that allows for telephone consultation and a promptly available pediatrician to the emergency department 24 hours per day. This pediatrician shall be Board certified or eligible.

b. A plan shall exist whereby other pediatric specialists may be consulted and available in at least the following specialities: surgery, orthopedics, anesthesia and neurosurgery. This requirement may be met by a written agreement with a PCCC.

c. A plan shall exist whereby a second emergency physician or pediatrician will be available within 30 minutes to serve as back-up for the ED in critical situations.
II. SERVICE REQUIREMENTS

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<th>B. Policies, Procedures, &amp; Protocols (EDAP Standards pg. 5)</th>
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<tr>
<td>1. Establish procedures, and protocols for pediatric emergency patients to include but not limited to:</td>
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<td>a. Triage and initial evaluation</td>
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<td>b. Patient safety</td>
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<td>c. Suspected child abuse and neglect</td>
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<td>d. Transfers</td>
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<td>e. Consents</td>
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<td>f. Conscious sedation</td>
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<td>g. Do-not-resuscitate (DNR)</td>
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<td>h. Death to include SIDS and the care of the grieving family</td>
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<td>i. Aeromedical transport to include landing procedures</td>
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<td>j. Daily verification of proper location and functioning of equipment and supplies.</td>
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<td>k. Immunizations</td>
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<td>2. Establish a written interfacility consult and transfer agreement with a PCCC to facilitate transfers of critically ill and injured pediatric patients and 24 hour telephone consultation.</td>
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<td>3. Establish a written interfacility consult and transfer agreement with a California Children Services approved Level II or Level III Neonatal Intensive Care Unit (NICU).</td>
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II. SERVICE REQUIREMENTS

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B. Quality Improvement (QI) (EDAP Standards pg. 6)
Complete Worksheet #S3 - EDAP QI

1. BH implements its QI Plan that includes objectives, organization, scope and mechanisms of overseeing the effectiveness of the program.

2. BH designates a representative to participate in the system wide EMS QI Committee.

Name of Designee: ____________________________

C. Support Services (EDAP Standards pg. 7)

1. Respiratory Therapy
   a. At least one respiratory therapist shall be in house twenty four hours per day.
   b. Current PALS or APLS provider

2. Radiology
   a. Radiologist on call and promptly available twenty four hour per day
   b. Radiology technician in house twenty four hours per day with a second technician on call and promptly available
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<th>II. SERVICE REQUIREMENTS</th>
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<td>c. CT scan technician on call and promptly available</td>
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<td>3. Laboratory</td>
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<tr>
<td>a. Technician in house twenty four hours per day and a second technician on call and promptly available</td>
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<td>Attach Data Audit Report.</td>
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<td>b. Clinical Laboratory capabilities in house:</td>
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<td>a. Chemistry</td>
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<td>b. Hematology</td>
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<td>c. Blood bank</td>
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<td>d. Arterial blood gas</td>
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<td>f. Microbiology</td>
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<td>g. Toxicology</td>
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<td>h. Drug levels</td>
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<td><strong>NOTE:</strong> Toxicology and drug levels may be done outside if routine tests are available within two hours.</td>
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<td>D. Equipment-Worksheet #S 4</td>
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<td>Pediatric equipment, supplies, and medications shall be easily accessible, labeled, and logically organized.</td>
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<td>E. Medical Record Review-Complete Worksheet #S5</td>
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Prepared By: ____________________________ Date: __________
## EDAP SITE SURVEY TOOL
### VERIFICATION OF CERTIFICATION AND CONTINUING EDUCATION

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**COMMENTS:**

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LOS ANGELES COUNTY DEPARTMENT OF HEALTH SERVICES
EMERGENCY MEDICAL SERVICES AGENCY
**CURRENT PALS CERTIFICATION FOR EMERGENCY DEPARTMENT NURSES**

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**TWO DAY PEDIATRIC EMERGENCY NURSING COURSE FOR EMERGENCY DEPARTMENT NURSES**

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**COMMENTS:**

EDAP.CERT

COMPLETED BY: ____________________________
DEFINITIONS:

Mode of arrival: Private car, EMS system, carried, ambulatory, gurney, who with.

Triage time and assessment: Point of initial patient contact in emergency department and assessment by licensed personnel, ie; M.D. or R.N. Triage assessment documented and appropriate.

Acuity: Level of distress or acuteness based on standardized hospital specific codes, e.g., none, mild, moderate, severe, or delayed, urgent, or emergent.

Initial vital signs: Pulse, respirations, temperature, (blood pressure when appropriate)

Weight: Documented weight in kilograms or pounds.

Time of evaluation by physician: Time physical exam performed by physician.

Nursing and physician assessment: Notes should reflect a clear picture of the patient based on history and physical exam.

Pulse oximetry: Should state on room air or supplemental oxygen

Oxygen delivery/type: Time applied, liters per minute, device type. Appropriate equipment for need and age.

X-rays: Appropriate radiologic exams ordered with documented physician interpretation.

P.O. fluid challenge: Type, amount, frequency, and results of P.O. fluid challenge

Procedures: Type and appropriateness of procedures performed, e.g., urinary catheterization, lumbar puncture, etc.

Lab: Appropriate laboratory tests ordered with documented results.
Medications: Type, route, and results if indicated.

Time and type of IV: Time of successful IV access. Type of IV access including site, size of catheter, and access device used. Type of fluid utilized including amount of initial bolus and maintenance rate. Appropriate choice for each.

Time and type of consultant notified: Time initial call placed to consultant. Type of specialist notified.

Time consultant responded: Time consultant returned phone call and/or arrived in emergency department.

Time & type of transport team notified: Time initial call placed for transport team. Appropriate type of team requested ie; BLS, paramedic, nurse staffed, R.T. or M.D. on board.

Time transport team arrived & departed: Duration of time transport team in ED. Was time prolonged due to multiple procedures performed by team in ED?

Serial examinations: Documentation of serial vital signs and physical exam appropriate for the patient’s condition by M.D., and R.N.

Child abuse form on chart: Presence of form on chart with thorough documentation.

Time law enforcement or social services notified: Time and appropriateness of authorities notified.

Patient teaching and/or ACI: Evidence of patient or family teaching appropriate for diagnosis. After care instructions appropriate.

Disposition: Final disposition of patient from emergency department, e.g., home, ward, PICU, transferred.

Reviewed for QI: Was chart reviewed based on facility’s QI indicators?
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(OVER FOR COMMENTS)
GENERAL EQUIPMENT

Foley catheters (8 - 22fr.)

IV blood/fluid warmer

Length and weight tape for determining pediatric resuscitation drug dosages

Posted or readily available pediatric drug dosage reference material calculated on a dose per kilogram basis.

Restraint device

Scale

Warming device

MONITORING EQUIPMENT

Blood pressure cuffs (infant, child, adult, and thigh)

Doppler

ECG monitor/defibrillator (0-400 Joules) with pediatric and adult paddles

End tidal CO₂ monitor

Hypothermia thermometer

Pulse oximeter

RESPIRATORY EQUIPMENT

Bag-valve-mask device, self inflating (pediatric size: 450-900ml and adult size: 1000-2000ml)

Bag-valve masks, clear (neonate, infant, child, and adult sizes)

Endotracheal tubes (uncuffed: 2.5-5.5 and cuffed: 6.0-9.0)

Laryngoscope (curved and straight: 0-3)
Lubricant (water soluble)
Magill forceps (pediatric and adult)
Nasal cannulae (infant, child, and adult)
Nasopharyngeal airways (infant, child, adult)
Nasogastric tubes (including 5 and 8fr feeding tubes)
Oral airways (sizes 0-5)
Oxygen masks, clear (standard and non-rebreathing) for infant, child, and adult
Stylet for endotracheal tubes
Suction catheters (sizes 6-12fr)
Tracheostomy tubes (sizes 0-6)
Yankauer suction tips

VASCULAR ACCESS EQUIPMENT

Arm boards (infant, child, adult)
Butterfly needles (19-25ga)
Central venous catheters (sizes 6-12fr)
Infusion devices to regulate rate and volume
Intraosseous needles
IV administration sets with calibrated chambers
IV catheters (14-24ga)
IV solutions (D5.2NS, D5.45NS, D5NS, D10W, and NS)
Needles (18-27ga)
Stopcocks (3 way)
Syringes (TB and 1-60cc)
T-connectors
Umbilical vein catheters (may substitute 5fr feeding tube)

FRACTURE MANAGEMENT DEVICES

Cervical spine immobilization devices
Pediatric femur splint
Spine board (long and short)

SPECIALIZED TRAYS

Cricothyrotomy tray
Pediatric lumbar puncture tray
Pediatric thoracotomy tray
Pediatric tracheostomy tray
Peritoneal lavage tray
Thoracostomy and chest tube tray (sizes 16-28fr)
Venous cutdown tray

RESUSCITATION MEDICATIONS

Atropine
Bretylium
Calcium chloride
Dextrose (25% & 50%)
Dopamine
Epinephrine (1:1000 and 1:10,000)
Flumazenol
Lidocaine
Naloxone
Sodium Bicarbonate

**ROUTINE MEDICATIONS**

Activated charcoal
Adenosine
Antibiotics
Anticonvulsants
Antipyretics
Benzodiazepines
Beta agonist for inhalation
Dexamethasone
Diphenhydramine
Furosemide
Glucagon
Hydralazine
Hydrocortisone
Isoproterenol
Insulin
Ipecac
Mannitol
Methylprednisolone
Morphine sulfate
Non-depolarizing neuromuscular blocking agents
Phenobarbital
Phenytoin
Potassium chloride
Propranolol
Racemic epinephrine for inhalation
Succinylcholine
Verapamil
3% sodium chloride

Pediatric equipment, supplies, and medications shall be easily accessible, labeled, and logically organized. EDAP staff shall be appropriately educated as to the locations of all items. Each EDAP shall have a method of daily verification of proper location and function of equipment and supplies. It is highly recommended that each EDAP have a mobile pediatric crash cart.

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<td>1. A PEDIATRIC QI PROGRAM SHALL BE DEVELOPED AND MONITORED BY THE MEDICAL DIRECTOR AND THE PdLN WITH INPUT FROM THE DPC AS NEEDED.</td>
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<td>2. THE PROGRAM SHOULD INCLUDE AN INTERFACE WITH PREHOSPITAL, EMERGENCY DEPARTMENT, TRAUMA, CRITICAL CARE, IN-PATIENT, AND HOSPITAL WIDE QI ACTIVITIES.</td>
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<td>A LOG SHALL BE ESTABLISHED TO EASILY IDENTIFY PEDIATRIC VISITS TO THE EMERGENCY DEPARTMENT BY AGE, SEX CHIEF COMPLAINT, DIAGNOSIS, DISPOSITION, AND MEDICAL RECORD NUMBER IN ORDER TO REVIEW CHARTS AND COLLECT AGGREGATE DATA FOR THE QI PROGRAM.</td>
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5. THE PEDIATRIC QI PROGRAM SHOULD INCLUDE REVIEW OF AT LEAST THE FOLLOWING PEDIATRIC PATIENTS SEEN IN THE EMERGENCY DEPARTMENT.

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- DEATHS
- CARDIAC AND/OR RESPIRATORY ARRESTS
- SUSPECTED CHILD ABUSE OR NEGLECT
- TRANSFERS TO AND/OR FROM ANOTHER FACILITY
- ADMISSION TO THE OPERATING ROOM OR ICU
- PEDIATRIC TRANSPORTS WITHIN THE 9-1-1 SYSTEM
- SELECTED RETURN VISITS TO THE ED WITHIN 48 HOURS

COMMENTS:

6. A MECHANISM TO DOCUMENT AND MONITOR PEDIATRIC EDUCATION OF EDAP STAFF WILL BE ESTABLISHED.

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COMMENTS:
Northern California EMS Inc.
EMS-Children Project

EMERGENCY DEPARTMENT CONSULTATION VISITS

Consultation Team Training Course

January 1998
I. BACKGROUND

A. Emergency Department: Administration, Personal and Policy Guidelines for the Care of Pediatric Patients in the Emergency Department

1. Developed by Northern California EMS Inc. EMS-Children Task Force as part of a California Emergency Medical Services Authority (EMSA) block grant project. Public comments were solicited and the guidelines received final approval agency approval in 1997.

2. These guidelines are based on model guidelines developed by the California EMSC Project and are part of an overall project to improve EMS-C services in the Northern California region.

3. Guidelines are intended to update the current standards of Emergency Departments Approved for Pediatrics (EDAPs) which were developed in 1989.

4. Important of Emergency Department Pediatric Guidelines:

   ♦ EDs are an essential and critical component of a comprehensive EMS-C system.

   ♦ EDs are often the initial EMS system entry point for pediatric patients, since often children are brought directly to the nearest emergency department by parents or caregivers.

   ♦ EDs provide initial evaluation and stabilization.

   ♦ Key decisions concerning consultation and/or transport to specialized pediatric centers are often made by ED physicians.

II. IMPLEMENTATION OF PEDIATRIC ED GUIDELINES

A. Various California implementation approaches

1. Emergency Departments Approved for Pediatrics (EDAP) Model

   ♦ Development and adoption of pediatric ED standards by local EMS agency.

   ♦ Formal site reviews performed to evaluate ED’s compliance with standards.
Approval/designation of EDs by local EMS agency to receive pediatric patients via the EMS system. Pediatric prehospital triage and designation policies implemented.

This model has been utilized by Los Angeles, Santa Cruz, San Luis Obispo, San Francisco, and Nor-Cal counties.

2. The Consultation/Educational Model

- Development and adoption of voluntary pediatric ED guidelines by local EMS agency.

- Consultation visits scheduled with all EDs in a given EMS system with the intent to assist/educate facilities on meeting the criteria specified in the guidelines. Follow-up letters with comments and recommendations sent to reviewed EDs.

- No formal approval/designation of EDs to receive prehospital pediatric patients.

- This model has been implemented in Alpine, Mother Lode, Fresno, Sierra-Sacramento, Riverside, San Mateo and Santa Clara counties.

III. ORGANIZATION OF CONSULTATION VISITS

A. The Nor Cal EMSC Coordinator will contact each identified ED liaison (medical director, nurse manager or designee) and individual consultants to:

- schedule dates and times for each ED consultation visit,

- provide needed materials for the visit, and

- serve as contact person for questions and information.

B. Consultation Team Composition, Responsibilities and Assignments

1. Composition of consultation teams:

- EMSC Coordinator (required)

- Qualified Physician-Pediatrician, Emergency Medicine, or Family Medicine (required)

- Pediatric Liaison Nurse (required)

- EMS Trauma Coordinator and/or additional EMS staff (optional)
2. Responsibilities

♦ Each team member should thoroughly review the ED Guidelines, especially the sections that they have been assigned to. Clarify any questions with the EMSC Coordinator.

♦ Be familiar with the site visit schedule. It is important for the team to meet 10-15 minutes prior to the first group meeting. Please notify the EMSC Coordinator if you are going to be late. Leave a message with the ED charge nurse, if necessary.

♦ Seek information and ask questions. Record your findings on the survey tool. It is important to list both positive and negative findings. If criterion is not met, record if any satisfactory alternatives were noted. Be constructive in relaying negative findings during closing session.

♦ Complete your final evaluation form in a timely manner. If it is not possible to complete your evaluation at the end of the visit, please mail it to the EMSC Coordinator within 1 week of the visit.

3. Assignments:

♦ A consultation team leader will be identified by the EMSC Coordinator prior to the site visit. This position is usually assumed by the physician team member, but may be also be undertaken by the EMSC Coordinator. The leader will act as the team’s main spokesperson.

♦ Each team member will be assigned specific sections of the guidelines to review and record their findings. Many sections of the guidelines may be reviewed in a group setting.

♦ Consultants should feel free to ask questions concerning any section of the guidelines, if they wish to do so.

C. Hospital Representatives: The following hospital representatives should be notified of ED consultation visits. It will be the responsibility of the ED liaison to invite appropriate hospital representatives and inform the EMSC Coordinator who will be present prior to finalizing the visit’s schedule.

♦ ED Medical Director or designee (required)

♦ ED Nurse Manager or designee (required)

♦ Chief of Pediatrics or designee (desired)
D. Requested ED Materials

The following materials (as referenced in the ED Guidelines) will be requested to be available for review by the consultation team as:

- Curriculum vitae of the ED Medical Director and ED Nursing Manager or their designees who oversee the ED pediatric program
- Specific policies, procedures, protocols, and plans listed in Section VI. of the ED Guidelines
- Copies of transfer agreements with appropriate pediatric tertiary care center(s) and trauma center(s)
- Any available aggregate data on pediatric emergency visits
- Process Improvement (PI) plan
- Pediatric Consultants on-call schedules
- Pediatric continuing education policies and records

E. Time Frame

The time frame for visits is approximately 2-2½ hours. Try not to short schedule a site visit…it is better to allow enough time to do a thorough review and finish early than to rush through a visit due to time constraints. The number of hospital representatives participating in a review should be taken into account…the more participants the longer the review may take.

IV. FORMAT FOR CONSULTATION VISIT

A. The EMSC Coordinator will designate a time and location for the team to meet. The front lobby of hospitals is usually a good locale. It is important to allow 10-15 minutes for the team to meet prior to the first schedule group meeting with the hospital representatives. Last minute questions and scheduling can be discussed at this time.

B. Arrange to have an ED representative meet the team and escort them to the ED or area where the initial group meeting is to take place.

C. Group meeting of consultants and hospital representatives. (15-20 minutes)
1. **Introductory Remarks – Team Leader**
   - Introduce team members. Ask hospital representatives to introduce themselves.
   - Briefly explain the purpose of the visit:
     - To review and evaluate their pediatric capabilities.
     - To answer questions, address problems and to provide information/advice/general assistance pertaining to the care of pediatric patients.
     - To encourage appropriate linkages with appropriate pediatric tertiary care centers for consultation and/or transfer when indicated.

2. Verify that all hospital representatives have received a copy of the guidelines and the evaluation tool. (EMSC Coordinator will bring extra copies)

3. Provide background information on ED guidelines (See Section I).

4. Describe the format for the site visit.

5. Resource materials (optional) may be passed out at this time or any during the site visit. Resource material may include any of the following:
   - EMSC pediatric interfacility/transfer guidelines
   - Model transfer agreements from specialized pediatric referral centers
   - List of area PALS training providers
   - Other materials such as brochures, checklists for transferring pediatric patients, drug/dosage charts and EMSC related posters

6. Solicit questions and comments from hospital representatives and other team members.

7. If chosen, general sections of the guidelines may be reviewed by the group at this time. These sections may include: Section V. Process Improvement, Section VI. Policies, Procedures and Protocols, and Section VII. Support Services. (Allow approximately 20 minutes additional time, if this option is chosen.)
D. Group tour of the Emergency Department. This is done so that the team may get a general idea of the ED’s layout/organization and its locale to key services such as radiology and laboratory. At this time, it may be appropriate to review Section VIII. Equipment, Supplies and Medications. (Allow 45 minutes time, if review to be done at this time, if not 10 minutes should be sufficient for the tour)

E. Break up into small specialty groups to review specifically assigned sections of the guidelines. The EMSC Coordinator will notify team members and hospital representatives, in advance, which sections they are responsible to review. (45-60 minutes)

1. Suggested specialty groups:
   ♦ Pediatric Liaison Nurse consultant meets with ED Nurse Manager and any other nursing representatives that may be available.
   ♦ MD consultant meets with the ED Medical Director and any other physician representatives that may be available.
   ♦ EMSC Coordinator meets with hospital administration representative(s), or may “float” between the other two groups or choose to stay with one group.

F. Wrap-up Session

Everyone should reconvene as a group. The ED Nurse Manager and Medical Director (or their designees) need to be present for this session; optional for other hospital representatives. If general sections of the guidelines have not yet been reviewed, do so at this time. (20-30 minutes, allow an additional 20 minutes if general sections still need to be reviewed)

1. Team Leader thanks hospital representatives for the visit.

2. Each team member is asked to present a few comments on positive findings and areas where improvement could be made.

3. If resource materials have not already been passed out, do so now. If possible relate these materials to issues and questions that may have been raised during the review.

4. Solicit questions and comments from the hospital representatives concerning the guidelines, the site review and suggestions on how the process may be improved upon. Pass out post-survey questionnaire for the hospital representatives to fill out. Leave additional questionnaire for
participating representatives who may not be present during the wrap-up session.

5. Describe the evaluation process for the visit.

6. Review any requests from the hospital representatives for information or materials and decide who will be responsible for the follow up.

7. If time permits, team members may want to meet off site for a debriefing of the consultation visit and to fill out their survey forms.
3.32 STANDARDS FOR PEDIATRIC INTENSIVE CARE UNITS (PICUs)

A. PICU -- Definition

For the purpose of the California Children’s Services (CCS) program, a Pediatric Intensive Care Unit (PICU) shall be defined as follows:

A PICU is a unit within a CCS-approved Tertiary or Pediatric Community Hospital that has the capability of providing definitive care for a wide range of complex, progressive, rapidly changing, medical, surgical and traumatic disorders, requiring a multidisciplinary approach to care for patients between 37 weeks gestation and/or two kilograms (kg) and those under 21 years of age who meet CCS medical eligibility criteria, as per California Code of Regulations (CCR), Title 22, Division 2, Subdivision 7, Chapter 4, Section 41800 et seq.

B. PICU – General Requirements and Procedure for CCS Program Approval

1. A hospital with a PICU wishing to participate in the CCS program for the purpose of providing care to sick and injured infants, children, and adolescents shall be licensed by the Department of Health Services (DHS), Licensing and Certification Division, under California Code of Regulation (CCR), Title 22, Division 5, Chapter 1, for the following:

   a. acute general hospital, Article 1, Sections 70003, 70005; and

   b. intensive care service, Article 6, Section 70491 et seq.

2. The PICU:

   a. shall be located in a hospital approved by CCS as a Tertiary Hospital, as per Chapter 3.3.1; or

   b. shall be located in a hospital approved by CCS as a Pediatric Community Hospital, as per Chapter 3.3.2. (A PICU located in a Pediatric Community Hospital is exempt from the 21 day length of stay limitation).

3. A PICU shall meet and maintain all CCS Standards for PICUs, as contained within this Chapter.

4. A hospital which meets the above prerequisites and wishes to participate in the CCS program for the purpose of providing care to critically ill infants, children, and adolescents and meets PICU requirements, as per Chapter 3.3.2, shall complete a CCS PICU application in duplicate and submit both copies to: Department of Health Services; Chief, Children’s Medical Services (CMS) Branch; California Children’s Services Program; 714 P Street, Room 350; P.O. Box 942732; Sacramento, CA 94234-7320. Questions concerning the standards and the application process should be directed to the appropriate CMS Regional Office.
5. Review Process
   a. Upon receipt, the PICU application will be reviewed by the appropriate CMS Regional Office. A site visit will be rescheduled if the documentation submitted by the hospital appears to meet the CCS Standards for PICUs.
   
   b. The site review shall be conducted by a state CCS review team in accordance with established CCS procedures for site visits. The team shall consist of State staff augmented by consultant experts in the fields of pediatric critical care medicine and pediatric critical care nursing and, as indicated, by other medical specialists.
   
   c. Approval may be withheld if there is not a community need based on geographic considerations and a lack of sufficient caseload that is necessary to maintain proficiency in the care of critically ill infants, children, and adolescents. The CCS program may consult with other divisions or branches within the DHS, such as the Maternal and Child Health Bureau Branch and/or Licensing and Certification Division and with other state and federal agencies to determine community need.

6. After the site visit, the following types of approval actions may be taken by the CCS program:
   a. Full approval is granted when all CCS Standards for PICUs are met.
   
   b. Provisional approval may be granted when all CCS Standards for PICUs appear to be met, however, additional documentation is required by the CCS program. This type of approval may not exceed one year.
   
   c. Conditional approval, for a period not to exceed six months, may be granted when there are readily remediable discrepancies with program standards. The hospital must present a written plan for achieving compliance with program standards, and the plan must be approved by the CCS program. If the discrepancies are not corrected within the time frame specified by the CCS program, approval shall be terminated.
   
   d. Denial is based upon failure of the hospital to meet CCS program standards.

7. A hospital shall be notified in writing of the decision regarding approval status within 90 days after the site visit. A hospital whose application has been denied may appeal the decision by submitting a letter in writing to the Chief, Children’s Medical Services Branch, within 30 days of receipt of the notification of denial.
8. Annually, as determined by CMS, the hospital shall submit a list of staff who meet the qualifications as specified in the CCS Standards for PICUs to: Department of Health Services; Children’s Medical Services Branch; Attention: Center Desk; 714 P Street, Room 398; P.O. Box 942732; Sacramento, CA 94234-7320. This list shall be accompanied by a copy of the most current hospital license. Any changes in the professional staff or facility requirements mandated by these standards shall be reported to the State CMS Branch at the address in Section 3.32/B.4 above within 30 days of occurrence.

9. Periodic reviews of CCS-approved PICUs shall be conducted no less than every three years or as deemed necessary by the CCS program. If a PICU does not meet CCS program requirements, the PICU may be subject to losing CCS approval.

C. PICU – CCS Program Participation Requirements

1. Facilities providing services to CCS-eligible clients shall agree to abide by the laws, regulations, and policies of the CCS and Medi-Cal programs. Specifically, facilities shall agree to:

   a. Refer all infants, children, and adolescents with potentially eligible CCS conditions to the CCS program for review of CCS program eligibility.

   b. Assist families with the CCS referral and enrollment process by providing CCS applications forms, phone numbers, and office locations.

   c. Request prior authorization from the CCS program, as per Title 22, Section 42180.

   d. Notify the local CCS program office, in a timely manner, of specialized patient transport methods for potentially eligible infants, children, or adolescents to and from the facility.

   e. Accept referral of CCS-eligible clients, including Medi-Cal patients, whose services are authorized by CCS.

   f. Serve CCS-eligible clients regardless of race, color, religion, national origin, or ancestry.

   g. Bill client’s private insurance, Medi-Cal or Medicare within six months of service in accordance with Medi-Cal and Medicare regulations regarding claims submission time frames or within 12 months for private insurance prior to billing CCS, including Medi-Cal or Medicare, if the client is eligible for such coverage.
h. Bill CCS within:
   1) six months from the date of service if the client does not have third party
      insurance coverage; or
   2) six months from the date of receipt of insurance payment/denial, including an
      explanation of benefits from the insurance carrier; or
   3) twelve months from the date of service if insurance carrier fails to respond.

i. Utilize electronic claims submission when available, upon CCS request.

j. Accept CCS payment for authorized services in accordance with state regulations as
   payment in full.

k. Provide copies of medical records, discharge summaries, and other information as
   requested by the CCS program within ten working days of request.

l. Provide annual reports as requested by the CCS program.

m. Provide services in a manner that is family centered and culturally competent, including
   the provision of translators and written materials.

n. Permit CCS staff to visit and monitor facilities to assure ongoing compliance with CCS
   standards.

o. Assist and cooperate with CCS staff in the on-site utilization review by CCS staff of
   services provided to CCS-eligible clients.

2. Failure to abide by the regulations and procedures governing the CCS program may result in
   removal of the hospital from the list of CCS-approved facilities.

D. PICU -- Exclusions

1. Hospitals that are formally and involuntarily excluded from participation in programs of federal
   and state agencies shall automatically be excluded from participation in the CCS program.

2. A hospital may also be excluded by the CCS program because of, but not limited to, the
   following:

   a. Failure to successfully complete the CCS approval process;

   b. Inadequate and/or untimely addressing of deficiencies identified during a CCS site visit;
c. Loss of Joint Commission on Accreditation of Healthcare Organizations accreditation; or
d. Failure to abide by the laws, regulations, standards, and procedures governing the CCS program.

E. PICU -- Organization

1. There shall be a separate and identifiable administrative unit for the PICU.

2. Medical care of the PICU shall be under the direction of a medical director.
   a. Who shall meet the qualifications contained in Section 3.32/F.;
   b. Whose primary responsibility shall be the organization and supervision of the PICU; and
   c. Who shall not be the medical director of more than one PICU.

3. There shall be a PICU nurse manager:
   a. Who shall have the responsibility on a 24-hour basis for the organization, management, supervision, and quality of nursing practice of nursing care in the PICU; and
   b. Who shall meet the requirements contained in Section 3.32/F.

4. The PICU medical director and the PICU nurse manager shall have joint responsibility for the development and review of an ongoing quality improvement program.

5. The PICU medical director and the PICU nurse manager shall have joint responsibility for development and review of a Policies and Procedures Manual for the PICU which addresses, at a minimum, patient admission, patient care, discharge and transfer criteria.

6. There shall be an identified PICU multidisciplinary team:
   a. Which shall be responsible for the coordination of all aspects of patient care; and
   b. Which shall consist of, at a minimum, a CCS-paneled pediatric intensivist, a clinical nurse specialist, a respiratory care practitioner and a medical social worker whose professional requirements are defined in Section 3.32/F. Optional members of the PICU multidisciplinary team may include, but are not limited to, the following CCS-paneled providers: clinical registered dietitian, occupational therapist and physical therapist.
F. PICU – Professional Resources and Requirements

1. PICU Physician Staff

1.1 PICU Medical Director

a. There shall be a full-time CCS-paneled pediatric intensivist as the medical director:

1) Who shall overall responsibility for the quality of medical care for infants, children, and adolescents admitted to the PICU; and

2) Who shall:

   a) Be certified by the American Board of Pediatrics and certified by the American Board of Pediatrics in the subspecialty of Pediatric Critical Care Medicine, or

   b) Be certified by both the American Board of Pediatrics and the American Board of Anesthesiology and also be certified by the American Board of Anesthesiology in the subspecialty of Critical Care Medicine.

b. The facility shall maintain written documentation of the responsibilities of the PICU medical director which shall include, but not be limited to, the following:

   1) Participation in development, review and implementation of PICU policies and procedures as specified in Section 3.32/I.;

   2) Approval of patient admission and discharge criteria;

   3) Supervision of quality control and quality assessment activities (including morbidity and mortality reviews);

   4) Responsibility for assuring PICU staff competency in resuscitation techniques;

   5) Responsibility for assuring ongoing PICU staff education;

   6) Participation in PICU budget preparation;

   7) Oversight of patient transport to and from the PICU; and

   8) Responsibility for assuring the maintenance of PICU database and/or vital statistics.
1.2 PICU Pediatric Intensivist Staff

The PICU medical director shall have one or more full-time equivalent associate pediatric intensivist(s) on staff:

a. Who shall be a CCS-paneled pediatric intensivist;

b. Who shall share the clinical care responsibilities of the PICU, and

c. Who shall:

   a) Be certified by the American Board of Pediatrics and certified or eligible for subspecialty certification by the American Board of Pediatrics in the subspecialty of Pediatric Critical Care Medicine; or

   b) Be certified by both the American Board of Pediatrics and the American Board of Anesthesiology and also be certified or eligible for subspecialty certification by the American Board of Anesthesiology in the subspecialty of Critical Care Medicine; and

   d. An associate pediatric intensivist who does not have the subspecialty certification at the time of application, shall pass the subspecialty board examination within six years of becoming eligible to sit for the examination.

1.3 PICU Additional Physician Staff

a. A CCS-paneled pediatric surgeon, a CCS-paneled neurosurgeon with proficiency in the care of pediatric patients and an anesthesiologist with proficiency in the care of pediatric patients shall be on hospital staff, and available to be in the PICU in less than 30 minutes.

b. At a minimum, the following CCS-paneled pediatric subspecialties shall be on hospital staff and available on-site for consultation to the PICU in less than one hour: cardiologist, neonatologist, gastroenterologist, hematologist/oncologist, infectious disease specialist, and neurologist. In addition, a radiologist meeting requirements contained in Chapter 3.3.1 of the CCS Standards for Tertiary Hospitals shall be available for consultation to the PICU.

c. The following CCS-paneled surgical specialists with expertise in pediatrics shall be available for consultation to the PICU in less than one hour: otolaryngologist, ophthalmologist, orthopedic surgeon, plastic surgeon and/or maxillofacial surgeon, urologist and cardiovascular surgeon.
d. The following CCS-paneled specialists with expertise in pediatrics shall be available for on-site consultation to the PICU: pulmonologist, endocrinologist, nephrologist, allergist/immunologist, physiatrist, obstetrician/gynecologist and psychiatrist.

2. PICU Nurse Staff

Nurse staff titles or positions listed in CCS Standards may differ from those used in a facility. For the purpose of CCS Standards for PICUs, the facility is allowed to have an individual whose staff title is not the same as that used in the CCS standards. However, the individual shall meet the requirements described below.

2.1 PICU Nurse Manager

a. The nurse manager for the PICU shall direct the nursing administrative operation of the PICU, as per Section 3.32/E.3. and shall:

1) be a registered nurse (R.N.) licensed by the State of California holding a master’s degree in nursing, or

2) be a R.N. holding a bachelor’s of science degree in nursing (BSN) and either a master’s degree in a related field or certification in health care administration from a nationally recognized accrediting organization; and

3) have at least three years of clinical nursing experience of which at least one year shall be in pediatric critical care nursing.

b. The responsibilities of the PICU nurse manager shall include, at a minimum, personnel, fiscal and material management, and coordination of the quality improvement program for the PICU.

c. The PICU nurse manager shall directly supervise the nurse supervisor for the PICU.

d. The facility shall maintain written documentation of the qualifications and responsibilities of the PICU nurse manager.

e. The PICU nurse manager shall have direct responsibility to the hospital administrative director of nursing or individual holding an equivalent position.

2.2 PICU Nurse Supervisor

a. The PICU nurse supervisor shall directly supervise personnel and assure the quality of clinical nursing care of patients in the PICU at all times.
b. The PICU nurse supervisor shall:
   1) be a R.N. licensed by the State of California, with a BSN; and
   2) have at least three years of clinical experience one year of which shall have been in pediatric critical care nursing; and
   3) have evidence of current successful completion of the American Heart Association (AHA) approved Pediatric Advanced Life Support (PALS) or equivalent course.

c. The PICU nurse supervisor shall have 24-hour responsibility for:
   1) the direct supervision of all clinical personnel who provide patient care; and
   2) the day-to-day coordination of and quality of clinical nursing care of patients in the PICU.

d. The facility shall maintain written documentation of the qualifications and responsibilities of the PICU nurse supervisor.

e. The PICU nurse supervisor shall not be assigned direct patient care responsibilities.

2.3 PICU Clinical Nurse Specialist

a. There shall be a clinical nurse specialist (CNS) for the PICU.

b. The CNS shall:
   1) be a R.N. licensed by the State of California with experience in a clinical specialty related to pediatrics;
   2) be certified by the State Board of Registered Nursing as a CNS, as per the California Business and Professions Code, Chapter 6, Section 2838 of the Nursing Practice Act;
   3) have at least three years of clinical nursing experience at least one year of which shall have been in pediatric critical care nursing; and
   4) have evidence of current successful completion the AHA approved PALS or equivalent course.
c. The CNS shall be responsible for:

1) directing the clinical nursing practice in the PICU;

2) coordination and assessment of critical care educational development and clinical competency of the nursing staff in the PICU; and for ensuring continued critical care nursing competency through educational programs for both the newly-hired and experienced nursing staff;

3) consultation with staff on complex critical care nursing issues;

4) oversight of comprehensive parent and/or primary caretaker education activities; and

5) ensuring the implementation of a coordinated and effective discharge planning program.

d. The facility shall maintain written documentation of the qualifications and responsibilities of the CNS.

2.4 PICU Charge Nurse

a. There shall be at least one charge nurse for each shift in the PICU who shall:

1) be a R.N. licensed by the State of California;

2) have education, training and demonstrated competency in pediatric critical care nursing;

3) demonstrate competency in the role of a charge nurse; and

4) have evidence of current successful completion of the AHA approved PALS or equivalent course.

b. The responsibilities of the charge nurse during each shift shall include the following:

1) coordinating the patient care activities in the PICU; and

2) ensuring the delivery of quality patient care.

c. The facility shall maintain written documentation of the qualifications and responsibilities of the PICU charge nurse.
2.5 PICU Registered Nurses

a. R.N.s who assigned direct patient care responsibilities in the PICU shall:

1) be licensed in the State of California;

2) have education, training and demonstrated competency in pediatric critical care nursing; and

3) have evidence of current successful completion of the AHA approved PALS or equivalent course.

b. R.N.s functioning in an expanded role shall do so in accordance with standardized procedures as per CCR, Title 16, Division 14, Article 7, Sections 1470 through 1464.

c. The facility shall maintain written documentation of the qualifications and responsibilities of the R.N. staff which shall include at a minimum, the standards of competent performance of the R.N. staff providing care in the PICU.

2.6 PICU Licensed Vocational Nurses

a. Licensed vocational nurses (LVNs) who provide nursing care in a PICU shall:

1) be licensed by the State of California;

2) have demonstrated competency in pediatric critical care nursing;

3) have evidence of current successful completion of the AHA Basic Life Support (BLS) or equivalent course; and

4) be limited to those responsibilities within their scope of practice, as per CCR, Title 16, Division 25, Chapter 1.

b. LVNs providing care in the PICU shall be under the direction of a R.N.

c. The facility shall maintain written documentation of the qualifications and responsibilities of the LVN, which shall include only those responsibilities in accordance with their scope of practice, as per CCR, Title 16, Division 25, Chapter 1.

2.7 PICU Unlicensed Assistive Personnel

a. Unlicensed Assistive Personnel, as defined by the State Board of Registered Nursing Position Statement, Unlicensed Assistive Personnel (September 1994), shall function
in accordance with written policies and procedures which delineate the non-nursing task(s) the unlicensed assistive personnel is allowed to perform in the PICU under the direction of a R.N. These non-nursing tasks shall require no scientific knowledge and/or technical skills.

b. The unlicensed assistive personnel may be utilized only as assistive to licensed nursing personnel under the direction of a R.N.

c. Unlicensed assistive personnel shall not be assigned task associated with the care of the medically fragile patient and shall only be assigned non-nursing tasks as defined in Section 3.32/H.

3. PICU Respiratory Care Practitioner Staff

a. Respiratory care services shall be provided by respiratory care practitioners (RCPs) who are licensed by the State of California and who have additional training and experience in pediatric respiratory care. Additional training in pediatric respiratory care shall be demonstrated by the following:

1) Completion of a formal pediatric respiratory therapy course at an approved school of respiratory therapy that includes didactic and clinical course work; or

2) Completion of a minimum of 20 hours of didactic and four weeks of preceptored pediatric clinical experience in a hospital-based course.

b. The facility shall maintain a written job description delineating the qualifications and duties of the RCP in the PICU which reflects the provision of practice in accordance with Business and Professions Code, Respiratory Care Practice Act, Chapter 8.3, Article 1, Section 3702 and CCR, Title 16, Division 13.6, Articles 1 through 8.

c. The RCP shall be responsible, at a minimum, for the monitoring and application of respiratory equipment of all sizes for pediatric patients.

d. There shall be an identified RCP with expertise in pediatric respiratory care practice available as a resource for consultation to the PICU.

e. A RCP shall be assigned solely to the PICU when supportive ventilation is being provided and the staffing level shall be such that immediate availability of the RCP to the PICU is assured at all times.

f. There shall be a system in place for ensuring continuing clinical respiratory care competency through educational programs both for the newly-hired and experienced RCP staff in accordance with CCR, Title 16, Division 13.6, Article 5.
g. All RCP providing services in the PICU shall have evidence of current pediatric basic life support, cardiopulmonary resuscitation (CPR) certification.

4. PICU Medical Social Worker Staff
   a. Social work services shall be provided in the PICU by a CCS-paneled medical social worker (MSW) holding a master’s degree in social work and who has expertise in psychosocial issues affecting the families of seriously ill infants, children, and adolescents.
   b. The caseload per one full-time equivalent MSW shall not exceed twenty patients.
   c. The MSW shall conform to requirements contained in Section 3.32/H.10.

5. PICU Pharmaceutical Services Staff
   a. There shall be at least one licensed pharmacist holding a doctoral degree in pharmacy (Pharm D) with pediatric expertise available for consultation to PICU staff.
   b. Pharmacy staff and pharmaceutical services shall be available on a 24-hour basis to the PICU.
   c. Pharmaceutical staff shall provide pediatric and neonatal unit doses in clearly marked containers, intravenous and parenteral nutrition solutions, nutritional products, and continuous drug surveillance.
   d. Pharmaceutical services shall meet the requirements contained in Chapter 3.3.1 of the CCS Standards for Tertiary Hospitals.

6. PICU Clinical Registered Dietitian Staff
   a. Nutrition consultation in the PICU shall be provided by a CCS-paneled clinical registered dietitian who has clinical experience in pediatric and neonatal nutritional services.
   b. The clinical registered dietitian shall meet the requirements contained Chapter 3.3.1 of the CCS Standards for Tertiary Hospitals.

7. PICU Occupational Therapy Staff
   There shall be a CCS-paneled occupational therapist available to the PICU who meets the requirements contained in Chapter 3.3.1 of the CCS Standards for Tertiary Hospitals.
8. PICU Physical Therapy Staff

There shall be a CCS-paneled physical therapist available to the PICU who meets the requirements contained in Chapter 3.3.1 of the CCS Standards for Tertiary Hospitals.

9. PICU Child Life Specialist Staff

There shall be a child life specialist available to the PICU who meets the requirements contained in Chapter 3.3.1 of the CCS Standards for Tertiary Hospitals.

10. PICU Unit Clerk

There shall be at least one unit clerk present in the PICU 24 hours a day with a written job description delineating the administrative duties pertaining to patient care and traffic control.

G. PICU – Facilities and Equipment

1. The PICU shall be a distinct, separate physical area within the hospital and shall demonstrate the following:

   a. There shall be at least eight licensed intensive care beds, as per CCR, Title 22, Division 5, Section 70499, dedicated to pediatric patients, located in one contiguous area;

   b. There shall be a minimum of 350 admissions to the PICU per year of infants, children and adolescents who require care for complex, progressive, rapidly changing medical, surgical and traumatic disorders and require a multidisciplinary approach.

2. If a facility has stepdown or intermediate care-unit beds within the PICU, these beds shall not count towards the requirement of licensed intensive care beds dedicated to pediatric patients within the PICU.

3. Bed space within the PICU shall:

   a. Have a minimum of 150 square feet for each bed;

   b. Have a minimum of 100 square feet per bed for storage; and

   c. Meet the construction requirements of the State of California Uniform Building Code requirements, Section 420A.35 and the requirements of CCR, Division 5, Title 22, Section 70497.
4. The PICU shall have the following space/rooms available within, adjacent to, or in close proximity to the PICU:
   a. An on-call physicians’ room/sleeping quarter;
   b. A separate nursing station;
   c. A staff lounge;
   d. A family waiting room and accommodations shall be provided or arranged for parents staying overnight;
   e. A separate room available for parent and physician/staff counseling/conferences;
   f. A separate room for staff meetings, nursing reports, teaching/in-service education, multidisciplinary team conferences and case presentations; and
   g. A clean area for formula preparation and dilutions by trained personnel.

5. There shall be one isolation room in the PICU for every eight to twelve intensive care beds.

6. The PICU shall meet the requirements contained in CCR, Title 22, Division 5, Section 70497, and in addition:
   a. The following shall be present for each PICU bed:
      1) Sixteen electrical outlets (There shall be a common ground. Adapters, extension cords and junction boxes shall not be used.);
      2) Four oxygen outlets;
      3) Three compressed air outlets; and
      4) Three suction outlets.
   b. There shall be equipment available in the PICU, for all pediatric-sized patients including, but not limited to, the following:
      1) Emergency (“code” or “crash”) cart with emergency drugs in a range of unit doses appropriate for patients of varying sizes;
      2) Patient defibrillator/cardioverter capable of delivering energy at low doses and synchronized cardioversion;
3) Electrocardiogram (ECG) machine;
4) Automated/noninvasive blood pressure apparatus;
5) Laryngoscopes with endotracheal tubes (cuffed and uncuffed);
6) Oral and nasal airways;
7) Vascular access equipment including central catheters;
8) Surgical cut-down trays;
9) Tracheostomy trays;
10) Emergency thoracotomy trays;
11) Equipment for the placement of chest and pericardial tubes;
12) Intracranial pressure monitoring trays;
13) Peritoneal dialysis equipment;
14) Otoscopes and ophthalmoscopes;
15) Patient scale/device for accurate measuring of body weight;
16) Bag-valve-mask resuscitation devices; and
17) Chest physiotherapy and suctioning equipment.

c. Equipment available to the PICU shall include, but not be limited to, the following:
   1) Procedure lamp;
   2) Doppler ultrasonography device;
   3) Infusion pumps (with microinfusion capability/transport capability);
   4) Suction device/machine for transport and backup (in addition to bedside);
   5) Expanded scale electronic thermometer with range sufficient to identify extremes of hyperthermia and hypothermia;
   6) Cribs and beds (with head access);
7) Infant warmers, incubators;
8) Heating and cooling blankets;
9) Phototherapy lights;
10) Transport equipment with provision for temperature control, ventilation and cardiopulmonary monitoring (Transport equipment shall also be available for in-house transport of infants);
11) Electroencephalogram (EEG) machine;
12) Isolation cart;
13) Blood warming apparatus; and
14) Electric breast pump.

d. Respiratory equipment available to the PICU for all pediatric-sized patients shall include, but not be limited to, the following:
1) Oxygen tanks for transport and backup of the central oxygen supply;
2) Respired gas humidifiers;
3) Air compressor;
4) Air-oxygen blenders;
5) Mechanical ventilators;
6) Aerosol medication administration equipment;
7) Spirometers; and
8) Continuous oxygen analyzers with alarms.

e. There shall be monitoring equipment at each bedside in the PICU for all pediatric-sized patients with the capability to continuously monitor the following:
1) Heart rate with dysrhythmia monitoring capability;
2) Respiration;
3) Temperature;

4) Systemic arterial pressure;

5) Central venous pressure;

6) Pulmonary arterial pressure;

7) Intracranial pressure;

8) Oxygen saturation and/or transcutaneous PaO\(_2\); and

9) End-tidal carbon dioxide.

f. Bedside monitoring equipment features shall include, but not be limited to, the following:

1) Visible and audible high/low alarms for heart rate, respiratory rate, and all pressures (at least systemic arterial, central venous, pulmonary arterial and intracranial pressures);

2) Four simultaneous pressure capability (systemic arterial, central venous, pulmonary arterial and intracranial pressures);

3) Hard-copy capability for the rhythm strip and wave forms; and

4) Capability for routine testing and maintenance of all monitors.

7. Oxygen and compressed air, supplied from a central source, must supply 50 pounds per square inch (psi) with an alarm system to warn of a critical reductions in line pressure. Reduction valves and blenders shall produce concentrations of oxygen from 21 percent to 100 percent at atmospheric pressure for head hoods and 50 psi for mechanical ventilators. Oxygen monitoring for inspired concentrations shall be available in the PICU.

8. Diagnostic imaging procedures and consultation services necessary for the level of care provided shall be available on a 24-hour basis as specified in Chapter 3.3.1 of the CCS Standards for Tertiary Hospitals.

9. Laboratory services and consultation services necessary for the level of care provided shall be available on a 24-hour basis. There shall be capability for a ten minute turnaround time for pH and blood gas determinations.

10. There shall be an operating room available within 30 minutes, 24-hours a day that meets the requirements contained in Chapter 3.3.1 of the CCS Standards for Tertiary Hospitals.
11. There shall be a fully staffed and equipped Emergency Department open 24-hours a day which shall be accessible to ground and air transportation. Within the Emergency Department, there shall be a distinct intake/resuscitation area with equipment and supplies appropriate for infants and children.

H. PICU – Patient Care

1. The care of CCS-eligible clients in the PICU shall be under the direct supervision of the PICU medical director or CCS-paneled pediatric intensivist designee and/or the CCS-paneled attending physician in consultation with the pediatric intensivist.

2. A CCS-paneled pediatric intensivist or CCS-paneled physician shall review, evaluate, and document the clinical management of each patient, on site, at least on a daily basis.

3. It shall be the responsibility of the pediatric intensivist to ensure that information is provided, on an on-going basis, to referring physicians regarding their patients.

4. There shall be a CCS-paneled pediatric intensivist who shall be on-call to the PICU on a 24-hour basis and:
   a. shall either be in the hospital or shall be no more than 30 minutes away from the PICU at any time;
   b. shall not be on-call for more than one hospital at the same time; and
   c. shall be notified of new admissions and adverse changes in the status of patients in a timely manner, as described in Section 3.32/H.

5. There shall be 24-hour in-house coverage provided by a physician(s) who is skilled in the management of emergencies in the PICU, skilled in pediatric airway management, including endotracheal intubation. This requirement shall be met by a physician(s) who is either:
   a. A CCS-paneled pediatric intensivist; or
   b. An anesthesiologist with expertise in pediatric critical care; or
   c. A CCS-paneled pediatric subspecialist with expertise in pediatric critical care; or
   d. An in-house physician at the post-graduate residency year three level or above who is specializing in pediatrics, anesthesiology or emergency medicine and who has successfully completed the AHA approved PALS or equivalent course within the past two years.
6. If the in-house physician is not the on-call pediatric intensivist, the on-call pediatric intensivist shall be notified of all potential and actual admissions to the PICU in a timely manner.

7. Nurse staffing in the PICU shall include the following:
   a. There shall be a nurse manager assigned to the PICU who has 24-hour responsibility for the management of patient care.
   b. There shall be a nurse supervisor assigned to the PICU who has 24-hour responsibility for the supervision of patient care personnel.
      1) The nurse supervisor or designee shall be present in the PICU at all times.
      2) There shall be at least one nurse supervisor assigned to the PICU for every 30 full-time equivalent PICU positions.
   c. If the nurse manager is dedicated solely to the PICU and does not oversee more than 30 full-time equivalent positions, the position and responsibilities of the nurse manager and the nurse supervisor may be combined under the nurse manager.
   d. There shall be a designated charge nurse for each shift.
   e. There shall be a R.N. assigned to each patient in the PICU.
   f. There shall be no less than two R.N.s physically present in the PICU at all times when a patient is present.
   g. There shall be no more than one LVN for every three R.N.s assigned to provide direct nursing care in the PICU.
   h. LVNs may provide nursing care for patients in the PICU under the direction of the assigned R.N.

8. Unlicensed assistive personnel in the PICU may only be assigned non-nursing tasks which require no scientific knowledge and/or technical skill.

9. RCP staffing shall be based on the level of patient care required as determined by the attending physician or physician designee, and shall consider the acuity of, and numbers of, patients in the PICU.

10. There shall be a MSW assigned to all patients upon admission to the PICU; and:
a. A social work assessment shall be completed on suspected child abuse/neglect patients within 24-hours of identification or suspicion or prior to discharge, whichever comes first.

b. A social work assessment shall be completed within two working days of admission or prior to discharge, whichever comes first.

c. The social work assessment shall include an interview of at least one of the patient’s parents or primary caretaker(s). The parent(s) or primary caretaker(s) shall be included as early as possible in the decision-making process(es) relating to the care of their child.

d. A preliminary case service plan shall be developed with the parent(s) or primary caretaker(s) within three working days of admission to the PICU which shall include, but not be limited to, assessment of the following: significant family stress factors, environmental factors, mental health factors, and any other psychosocial factors, and how these factors in the family will be addressed.

e. Social work progress notes shall be completed at least on a weekly basis, or more often as indicated, and shall include psychosocial data, significant changes in the patient’s family, updates and results of the implementation of a service plan and plans to continue contact with the family for ongoing support.

f. MSW reports and notes shall be recorded in the patient’s chart and be readily available to other PICU team members.

g. The authorizing CCS program shall have access to social work reports in order to coordinate services.

11. The PICU shall provide physician, nursing and social work consultation on a 24-hour basis to community practitioners and facilities who refer patients to the PICU.

12. There shall be, at a minimum, weekly multidisciplinary team conferences.

   a. The PICU multidisciplinary team conference shall include representation from the PICU’s medical, nursing, medical social service, RCP staff and other specialists, i.e., the clinical registered dietitian, occupational therapist and physical therapist, when appropriate.

   b. Minutes of these weekly team conferences which document attendance and discussion of plan(s) of care for individual patients shall be included either in the patient’s chart or in a binder that shall be available for review by CCS program staff.
13. The PICU medical director shall ensure, either directly or through written agreements with other hospital departments or facilities, that an established mechanism for transport exists.

14. The medical director of the transport services shall be responsible for:
   a. Selecting the method of transport to be used;
   b. Designating team members for the transport of unstable or potentially unstable patients. The transport team shall include an R.N., and at least one other professional who has also successfully completed the AHA approved PALS or equivalent course within the last two years, and is competent in the following:
      1) Pediatric airway management (including endotracheal intubation);
      2) Needle aspiration of the chest; and
      3) Establishment and maintenance of vascular access.
   c. Designating the team member(s) for the transport of a stable patient, which may be a R.N. who has nursing experience in pediatric critical care and who has successfully completed the AHA approved PALS course within the last two years.

I. PICU – Policies and Procedures

1. There shall be a PICU Policies and Procedures Manual which shall be:
   a. Updated, reviewed and signed at least every three years, or more frequently as necessary, by the medical director and nurse manager of the PICU; and
   b. Readily available in the PICU for PICU staff.

2. The written Policies and Procedures Manual for the PICU shall address/include, but not be limited to, the following:
   a. Criteria delineating the clinical privileges granted to attending CCS-paneled physicians other than the pediatric intensivists;
   b. Criteria for admission of infants, children, and adolescents from the PICU;
   c. Criteria for discharge of infants, children, and adolescents from the PICU;
   d. Patient care including nursing management for infants, children, and adolescents admitted to the PICU;
e. Respiratory care management for infants, children, and adolescents admitted to the PICU;

f. Criteria for monitoring of patients in the PICU including the use of appropriate equipment;

g. Administration of medication, blood and blood products in the PICU;

h. Mechanism for bioethical review, when indicated, of patients admitted to the PICU;

i. Mechanism for infection surveillance, prevention and control in the PICU;

j. Parent visitation in the PICU;

k. Transport of patients (in-house, to the PICU from other facilities and from the PICU to other facilities) and describe, at a minimum, the following:

1) Staff assigned to the transport team and the equipment to be used; and

2) Assurance of a review by the PICU medical director of the transports performed, at least on a monthly basis.

l. Discharge planning process which includes the roles of the designated coordinator for discharge planning and the PICU multidisciplinary team members with the parent or caretaker and the referring physician, primary care physician and any specialized follow-up agency;

m. Routine testing and maintenance of equipment in the PICU;

n. Responsibilities and functions for social work services in the PICU;

o. Mechanism for referral to the hospital’s suspected child abuse and neglect team on a 24-hour basis;

p. Mechanism to inform a family regarding potential organ/tissue donation;

q. Use of life support and the techniques for resuscitation in the PICU;

r. Determination of brain death;

s. Pain management and conscious sedation for operative/medical procedures and for trauma; and

t. Consent for treatment and procedures.
3. The PICU shall maintain written agreements, approved by the CCS program, with hospitals requiring services relative to pediatric critical care education, consultation, transfer and transportation; and there shall be at least an annual mutual review of outcome data and modifications of agreements to reflect evaluation of outcome.

J. PICU – Discharge Planning Program

Discharge of patients from the PICU shall be the responsibility of the CCS-paneled physician responsible for the care of the patient. At a minimum, discharge planning shall include, but not be limited to, the following:

1. Designation of a coordinator for discharge planning who shall be responsible for:
   a. Ensuring collaboration between the PICU multidisciplinary team members and communication with the primary care physician, community agencies, CCS programs, CCS Special Care Centers, Medical Therapy Units (MTUs), Medi-Cal In-Home Operations Unit, and Regional Centers whose services may be required and/or related to the care needs of the infant, child, or adolescent after hospital discharge; and
   b. Ensuring that each patient discharged from the PICU shall have follow-up by a primary care physician and a specialized program of care, as applicable, in the follow-up care of the patient, i.e., rehabilitation services.

2. Identification of the responsibilities and involvement of the PICU multidisciplinary team members in discharge planning activities on an ongoing basis.

3. Ensuring that culturally and linguistically appropriate written discharge information shall be given to the parent(s) or primary caretaker(s) participating in the patient’s care at the time of discharge and shall include but is not limited to the patient’s diagnosis, medications, injury and illness prevention education, and follow-up appointments, including community agencies and instructions on any medical treatment(s) that will be given by the parent(s) or primary caretaker(s). A copy of this written discharge information shall be sent to the primary care physician and/or agency involved in providing follow-up care.

K. PICU – Quality Assurance and Quality Improvement

1. There shall be an ongoing quality assurance program specific to patient care activities in the PICU that is coordinated with the hospital’s overall quality assurance program.
   a. Documentation shall be maintained of the quality assurance and quality assessment activities provided.
b. Documentation shall include utilization review and medical records review which shall be available for on-site review by CCS program staff.

2. There shall be a morbidity and mortality review process held at least once a month to discuss pediatric critical care issues.
   a. CCS encourages multidisciplinary participation, including primary care physicians, as well as participation by outside consultants on a regular basis.
   b. Meeting agendas, lists of attendees, and minutes of such conferences shall be maintained and available for on-site review by CCS program staff.

3. There shall be a written plan that facilitates a family-centered and culturally-competent approach to PICU care by the professional staff which includes, but is not limited to, the following:
   a. A system that will encourage and provide for inclusion of the parent(s) or primary caretaker(s) in the decision-making process relating to the care and interventions of their child as early as possible; and
   b. A method shall be in place for the parent(s) or primary caretaker(s) to provide input and feedback to the PICU multidisciplinary team members regarding their child’s care and experiences in the PICU. This may be in the form of a patient/family satisfaction questionnaire to provide a mechanism to appraise the services in the PICU.

4. There shall be a formalized method for reviewing and documenting on an annual basis the skills of physicians responsible for 24-hour in-house coverage of the following:
   a. Pediatric airway management, including endotracheal intubation;
   b. Needle aspiration of the chest; and
   c. Establishment and maintenance of vascular access.

5. A transport program shall have an ongoing continuous quality improvement process and evaluation of such shall be made available to the PICU medical director.

6. The PICU shall maintain a database and/or vital statistics which shall include, but not be limited to:
   a. The number of PICU beds;
   b. The number of children admitted to the PICU, with a breakdown by disease categories, length of stay, and age;
c. The number and origin of patient transports to the PICU, the mode of transport, and

d. An annual report of mortality and numbers of patients admitted to the PICU, stratified according to Pediatric Risk of Mortality (PRISM) III scores, or the most recent version of PRISM scores, shall be maintained by the PICU.

7. The PICU medical director shall submit the annual PICU outcome data described above to the Department of Health Services; Chief, Children’s Medical Services (CMS) Branch; California Children’s Services Program; 714 P Street, Room 350, P.O. Box 942732; Sacramento, CA 94234-7320, by July 1 of each year for the patient database of the preceding calendar year.

8. Assurance of continuing education for staff providing services in the PICU shall include, at a minimum, the following:

a. There shall be a written plan for orientation of all newly-hired professionals who will be providing care in the PICU and an ongoing evaluation of the program. This written plan shall include the competencies required of the professional and documentation of successful demonstration of these competencies.

b. There shall be written plans for the continuing education of professionals involved in pediatric critical care.

9. At a minimum the latest editions of the following texts and documents shall be kept in the PICU:

a. Red Book: Report of the Committee on Infectious Diseases, Committee on Infectious Diseases, American Academy of Pediatrics;

b. Pediatric Advanced Life Support, American Heart Association;

c. Standards for Nursing Care of the Critically Ill, American Association of Critical care Nurses (AACCN);

d. Standards of Nursing Practice, American Nurses’ Association (ANA);

e. At least one current reference book pertaining to pediatric critical care;

f. At least one current reference book pertaining to pediatric critical care nursing;

g. At least one current reference book pertaining to pharmacology and therapeutics;

h. CCS Manual of Procedures, Chapter 3.32, CCS Standards for Pediatric Intensive Care Units;
i. CCS Manual of Procedures, Chapter 3.3, CCS Standards for Hospitals;

j. Current listing of CCS medically-eligible conditions; and

k. A current Policies and Procedures Manual of the PICU.
Introduction

A pediatric emergency and critical care system is an organized system of care designed to meet the special needs of critically ill & injured children. The system is an integral component of the overall emergency medical services (EMS) and health care delivery system. A special emphasis on systems of care for pediatric patients is important because, in comparison to adults, children have unique anatomical differences, physiological differences and psychological responses to illness and injury. Evaluating the severity of illness or injury in infants and young children can be considerably more difficult than in adults; this often requires specialized pediatric diagnostic and physiologic monitoring capabilities. In addition, relatively few children suffer serious illness or injury thereby making it difficult for all providers to maintain specialized pediatric skills and resources. The effective management of life-threatening conditions in children requires personnel with education in pediatric emergency and critical care, and specialized facilities and services designed to meet their unique needs.

Pediatric referral centers with specialized pediatric services, facilities, and personnel are an essential component of organized systems of care for critically ill and injured children. Studies in California and nationally indicate that pediatric morbidity and mortality can be reduced when critically ill and injured children are rapidly transported to centers with specialized pediatric capabilities. This is particularly true for children requiring intensive care.

In 1994, the California EMS Authority issued guidelines for EMS for Children (EMSC) Systems in California. Recognizing the importance of tertiary level pediatric referral centers as part of these systems, the State guidelines include Guidelines for Pediatric Critical Care Centers. The Sierra-Sacramento Valley (S-SV) EMS Agency had previously developed standards and designated two Pediatric Critical Care Centers to serve the region. The State EMSC guidelines were integrated into the S-SV EMS Agency standards. A multi-disciplinary Pediatric Advisory Committee was actively involved in the process of updating the S-SV standards. The “draft” guidelines were circulated for review and public comment, prior to the recommendation for approval by the S-SV Regional Pediatric Advisory Committee.

The Pediatric Critical Care Center (PCCC) standards that were adopted by the S-SV EMS Agency are attached. These standards include a California Children Services (CCS) approved Pediatric Intensive Care Unit (PICU) as the core component. Comprehensive pediatric critical care referral centers provide a number of essential services that are not included in the PICU standards. Therefore, in addition to CCS-PICU standards, supplemental PCCC standards provide criteria for administration, services, staffing, policies and continuous quality improvement programs appropriate for specialized centers caring for critically ill children.
I. DEFINITIONS:

A. Pediatric Critical Care Center

A Pediatric Critical Care Center (PCCC) is a licensed acute care hospital that provides specialized tertiary-level pediatric critical care personnel and services and serves as a regional referral center for critically ill and, in some instances, critically injured children. PCCCs shall provide a Pediatric Intensive Care Unit (PICU) that meets California Children Service (CCS) standards, a broad spectrum of pediatric medical and surgical sub-specialists and sub-speciality services, a licensed pediatric service, an emergency department capable of managing complex pediatric emergencies, and community outreach services including pediatric critical care consultation, pediatric transport services, and outreach education programs for community health practitioners.

Some PCCCs may also provide other specialized pediatric services such as pediatric trauma care, pediatric cardiac surgery, and pediatric rehabilitation services. PCCCs providing these services shall meet appropriate CCS and EMS agency standards and guidelines for these services.

B. Other Definitions:

1. "Available" or "available for consultation" means agreeing to respond to the pediatric critical care center in order to provide a defined service. May be provided through a written transfer agreement.

2. The terms "expertise in pediatric emergency medicine," "expertise in pediatric critical care," "pediatric expertise," and "proficiency in the care of pediatric patients" mean pediatric training and/or experience as determined by the local EMS agency.

3. "Immediately" or "immediately available" means (a) unencumbered by conflicting duties or responsibilities; (b) responding without delay when notified; and (c) being within the specified area of the pediatric critical care center.

4. "On-call" means agreeing to be available to respond to the pediatric critical care center in order to provide a defined service.

5. "Promptly" or "promptly available" means being within the trauma receiving area, emergency department, operating room, PICU, or other specified area of the pediatric critical care center within a period of time that is medically prudent and proportionate to the patient's condition and such that the interval between the request for specialty availability and the arrival of the respondent shall not have a measurably harmful effect on the course of patient management or outcome.

6. "Qualified specialist" or "qualified surgical specialist" or "qualified non-surgical 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 (6) 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.
II. STANDARDS FOR PEDIATRIC CRITICAL CARE CENTERS

A PCCC shall meet CCS-PICU Standards and the following Supplemental Standards for Pediatric Critical Care Centers.

A. Hospital organization shall include the following:

1. A Multidisciplinary Pediatric Critical Care Center Committee
   a. The committee shall include interdepartmental and interdisciplinary representation such as representatives from the pediatric intensive care unit, emergency department, pediatric surgery and surgical sub-specialties, pediatrics and pediatric sub-specialties, nursing, social services, respiratory therapy, transport service, and other relevant services.
   b. The committee shall provide for (1) the implementation of PCCC standards, (2) coordination of pediatric critical care services across departmental and disciplinary lines, (3) the implementation of a comprehensive, multidisciplinary continuous quality improvement (CQI) program, and (4) coordination with local and State agencies.

2. Department(s), Division(s), Service(s), or Section(s) which are staffed by qualified specialists with proficiency in the care of pediatric patients as specified in Section II B of these standards.

B. Physician staffing and specialty availability shall include the following:

1. Administration: A designated physician pediatric critical care coordinator who shall:
   a. Coordinate pediatric critical care services across departmental and interdisciplinary lines (including pediatric, PICU, emergency department, surgery, etc.);
   b. Be responsible for ensuring that the PCCC meets standards for pediatric critical care services, including education, quality assurance, and data collection activities; and
   c. Serve as administrative contact person for other hospitals and the local emergency medical services agency.

2. Qualified specialists in-house 24-hours/day and immediately available at all times for the care of pediatric patients:
a. A qualified specialist in emergency medicine, pediatric emergency medicine, or pediatrics with expertise in pediatric emergency medicine on duty in the emergency department; and

b. A physician skilled in pediatric airway management and the management of emergencies in the PICU who is immediately available to the PICU. This requirement may be fulfilled by a physician who is:

   (1) A qualified specialist in pediatric critical care medicine, a qualified specialist in anesthesiology with expertise in pediatric critical care, or a qualified pediatric sub-specialist with expertise in pediatric critical care.

   (2) A physician who has completed at least two years of residency in pediatrics, at least one year of residency in anesthesiology, or at least two years of residency in emergency medicine.

c. A qualified specialist in pediatric critical care medicine or anesthesiology with expertise in pediatric critical care shall be on call and promptly available at all times. The qualified specialist on call shall be advised about all patients who may require admission to the PICU.

3. Qualified specialists on call and: (a) unencumbered by conflicting duties or responsibilities; and (b) responds without delay, when notified:

   a. Pediatric critical care medicine;

   b. Pediatric surgery;

   c. Neurological surgery with proficiency in the care of pediatric patients; and

   d. Anesthesiology with proficiency in the care of pediatric patients.

4. Qualified specialists with pediatric expertise on call and promptly available by telephone or in-house for consultation, within one hour (may be met by senior residents with staff specialists on call and promptly available, as defined in California Code of Regulations, Title 22, Division 9, Chapter 7.):

   a. Surgical Specialties
      (1) Cardiovascular
      (2) Ophthalmologic
      (3) Orthopedics
      (4) Otorhinolaryngologic
      (5) Plastic and/or Maxillofacial
      (6) Urologic
b. Non-Surgical/Medical Specialties

(1) Neonatology
(2) Nephrology (capable of providing dialysis for pediatric patients)
(3) Pathology
(4) Pediatric Cardiology
(5) Pediatric Gastroenterology
(6) Pediatric Hematology/Oncology
(7) Pediatric Infectious Disease
(8) Pediatric Neurology
(9) Pediatric Pulmonology
(10) Psychiatric Services
(11) Radiology

5. Specialists with pediatric expertise available for consultation (may be provided through consultation or transfer agreement).

a. Adolescent Medicine
b. Allergy/Immunology
c. Child Development
d. Dentistry
e. Genetics/Dysmorphology
f. Gynecologic Surgery/Obstetrics
g. Neuroradiology
h. Pediatric Endocrinology
I. Pediatric Rehabilitation/Physical Medicine

C. Hospital Nursing Services Administration

1. Nursing personnel caring for critically ill and injured children shall have appropriate education, experience, and demonstrated clinical competence.

2. The PICU nursing services shall also include the following:

a. A management structure with appropriate mechanisms for determining resources for the care of the critical pediatric patient, and will:

   (1) Ensure coordination of pediatric critical care nursing services across departmental and interdisciplinary lines;
   (2) Serve as the administrative nursing contact person with hospitals served by the PCCC; and
   (3) Ensure that appropriate pediatric critical care specialty in-service and formal education programs are provided.

b. A Master’s prepared PICU nurse who will:
(1) Provide or participate in direct patient care, consultation, research and education related to the care of critically ill and injured pediatric patients, and
(2) Collaborate with the nurse managers, administrator, and physicians in establishing and maintaining standards of care for critically ill and injured pediatric patients.

c. Qualified nurses with education, experience and demonstrated clinical competence in the treatment and care of critically ill/injured children. Nursing competency shall include:

(1) Nursing care of the child with multi-system disease;
(2) CPR-advanced program, PALS or equivalent;
(3) Respiratory care of the pediatric patient;
(4) Patient vascular access;
(5) Pediatric monitoring;
(6) Other areas specific to services provided by individual PCCCs (e.g., cardiac surgery, trauma); and
(7) Compliance with all other CCS-PICU nursing standards.

D. Other professional services including social services, respiratory care services, child life services and other professional services as specified in CCS-PICU standards.

E. Special services/resources

1. A PCCC shall have the following additional specialty services or programs with personnel and services appropriate for pediatric patients:

   a. Burn care management capability or written transfer agreement with a burn center;
   b. Acute spinal cord injury management capability or written transfer agreement with a spinal cord injury center;
   c. Acute hemodialysis capability or a written transfer agreement with a facility with a hemodialysis unit;
   d. Peritoneal dialysis capabilities;
   e. CCS-approved regional neonatal intensive care unit (NICU) or written transfer agreement with a CCS-approved regional NICU;
   f. Access to a poison control center;
   g. Suspected child abuse and neglect teams (SCAN);
   h. Physical therapy service with expertise in the care of pediatric patients;
i. Pediatric rehabilitation service. In-house consultation service for immediate or acute rehabilitation, when medically prudent, shall be available, but further rehabilitation may be provided through a written transfer agreement with a pediatric rehabilitation center;

j. An organized pediatric interfacility transport program;

k. Aeromedical transport plan with designated landing site; and

l. Child Life program.

F. Support Services

1. In addition to licensure and CCS PICU requirements, a PCCC shall have the following service capabilities including technologists with appropriate pediatric experience:

   a. Radiological services:

      (1) A qualified radiologist with pediatric expertise on-call and promptly available;
      (2) Certified radiological technologist in-house and immediately available at all times for general radiological procedures;
      (3) Computerized tomography, for both head and body, with a technologist who is promptly available at all times;
      (4) Angiography with a technologist who is promptly available at all times;
      (5) Ultrasonography promptly available;
      (6) Nuclear scanning;
      (7) Magnetic resonance imaging (MRI) available; and
      (8) Fluoroscopy

   b. Clinical laboratory services:

      (1) Comprehensive blood bank or access to a community central blood bank, with the capability to provide autologous and designated donor blood transfusions; and must have adequate storage facilities and immediate availability of blood and blood products;
      (2) Clinical laboratory services as specified in CCS-PICU standards, including microtechniques and microspecimen capabilities; and
      (3) Clinical laboratory technologist in-house and promptly available.

   c. Respiratory therapy services:

      (1) At least one certified respiratory therapist with expertise in the
care of pediatric patients in-house 24-hours a day.

(2) Qualifications/education for respiratory therapists:

a) Completions of PALS or APLS; and

b) Completion of four (4) hours of CE in topics related to pediatrics within the last two (2) years (may be met by PALS or APLS).

G. Policies and Procedures

1. A PCCC shall have policies and procedures to assure appropriate care and coordination of services for critically ill and injured children.

2. The ED, PICU, surgical services, and other departments, divisions, services, and sections involved in pediatric emergency and critical care shall have the following policies and procedures, as applicable, to the services provided:

   a. Triage, admission, transfer, and discharge;
   b. Availability of physician and other personnel;
   c. In-house and interfacility pediatric transport;
   d. General assessment;
   e. Patient monitoring;
   f. Physician and non-physician qualifications and privileges;
   g. Infection control and patient isolation;
   h. Safety;
   i. Resuscitation and no resuscitation;
   j. Life support techniques (e.g., mechanical ventilation);
   k. Consent;
   l. Coordination of medical care;
   m. Physical and sexual child abuse and child neglect;
   n. Pediatric pain management and conscious sedation;
   o. Organ or tissue donation, procurement, and transplantation;
   p. Rehabilitation;
   q. Discharge planning to include illness and injury prevention;
   r. Disaster plan;
   s. Death; and
   t. Care of the grieving family.

H. Continuous Quality Improvement (CQI) Program

1. All departments, division, services, and sections involved in pediatric emergency and critical care shall have an organized pediatric CQI program
appropriate for the services provided. The CQI program shall interface with the multidisciplinary CQI program of the PCCC.

2. The PCCC shall have an organized, coordinated, multidisciplinary CQI program for pediatric patients for the purpose of improving patient outcome and coordinating all pediatric emergency and critical care CQI activities.

3. The PCCC CQI program shall develop methods for:
   a. Tracking all critically ill/injured pediatric patients;
   b. Developing indicators/monitors for reviewing and monitoring patient care, including all deaths, major complications, and transfers;
   c. Integrating findings from CQI audits and critiques into patient standards of care and education programs; and
   d. Integrating reviews of prehospital, ED, trauma, inpatient pediatrics, pediatric critical care, pediatric surgical care and pediatric transport CQI activities.

4. Mechanisms to monitor professional education.

I. Education and Outreach Programs

1. All departments, divisions, services, and sections involved in pediatric emergency and critical care shall develop education and outreach programs appropriate for the services provided.

2. Education and outreach programs shall include telephone and on-site consultations with physicians, nurses, and other health care providers in the community and outlying areas and with affiliated and referring institutions. This includes assisting the local EMS agency, as needed, in providing pediatric education for local EMS personnel.

3. Specific requirements for continuing education in pediatric emergency and critical care for PCCC staff and formal continuing education programs in pediatric emergency and critical care for:
   a. Staff physicians;
   b. Staff nurses; and
   c. Staff allied health personnel;

J. Transfer Agreements

PCCCs shall have written pediatric interfacility transfer agreements with affiliated and referring hospitals and with hospitals providing specialty services listed in Section E.

K. Pediatric Intensive Care Unit approved by California Children Services

In addition to CCS PICU standards, a PCCC shall have:

1. Revised PICU R.N. standards, as specified in Section C, Page 5.
2. An organized CQI program, as specified in Section H, Page 9.
4. Education and outreach programs, as specified in Section I, Page 9.

L. Surgical Service/Post Anesthetic Care Unit (PACU)

1. A PCCC shall have an operating suite available within the main operating room for pediatric emergencies;

2. Surgery and PACU nursing services shall include the following:
   a. A nurse manager(s) who shall:
      (1) Collaborate with the pediatric critical care team to ensure quality care for all acutely ill or injured pediatric patients;
      (2) Ensure that appropriate pediatric critical care specialty in service and formal education programs are provided;
      (3) Participate in the development of policies and procedures for pediatric surgical services; and
      (4) Ensure clinical competencies of OR/PACU RNs in the care of critically ill and injured children.
   b. Staffing 24 hours per day by qualified nurses with education, experience, and demonstrated clinical competence to care for pediatric patients requiring and/or recovering from anesthesia.
   c. RNs who care for pediatric patients in the OR or PACU shall participate in continuing education in topics related to pediatric surgery or pediatric peri-operative care; including but not limited to:
      (1) Neurosurgery;
      (2) Orthopedic surgery;
      (3) Cardiothoracic surgery;
      (4) Burns;
(5) General surgery; and
(6) Trauma.

3. OR equipment and supplies appropriate for pediatric patients (neonatal to adult) including:
   a. Pediatric orthopedic instruments for internal and external skeletal fixation
   b. Pediatric endoscopes, including bronchoscopes, esophagoscopes, and gastrosopes
   c. Cardiopulmonary bypass

4. Appropriate anesthesia personnel, services and equipment for pediatric patients;

5. Post-anesthesia care (may be provided in the PACU or the PICU) with appropriate personnel and pediatric equipment for monitoring and resuscitation of pediatric patients including:
   a. Equipment for the continuous invasive and non-invasive monitoring of temperature, hemodynamics, and gas exchange.
   b. Equipment for the continuous monitoring of intracranial pressure
   c. Thermal control equipment for patients and blood

6. A continuous quality improvement (CQI) program for pediatric surgical patients, as specified in Section H, Page 9.

7. Surgical services policies and procedures, as specified in Section G., Page 8.

M. Emergency Department (ED)

1. A PCCC shall have the following supplemental service which requires a special permit pursuant to California Code of Regulations, Title 22, Chapter 1, Articles 5 and 6.

   A basic or comprehensive emergency department, division, service or section staffed, so that it is capable of managing complex pediatric emergencies. The emergency department physicians shall be capable of evaluating critically ill and injured children, providing initial resuscitation and stabilization, and performing necessary surgical procedures not requiring general anesthesia.

2. ED Medical Administration
   a. Medical director for the ED who is a qualified specialist in emergency
medicine and/or pediatric emergency medicine.

b. Physician coordinator for pediatric emergency services (may be met by the medical director for the ED or a staff physician currently assigned other roles in the emergency department).

(1) Qualifications:

(a) Qualified specialist in emergency medicine, pediatric emergency medicine, or pediatric critical care;
(b) Completion of PALS, APLS or equivalent; and
(c) Completion of eight (8) hours of continuing education related to pediatric emergency care every two (2) years (may be met by PALS, APLS or equivalent pediatric emergency course).

(2) Responsibilities in collaboration with the medical director of the ED:

(a) Medical direction and leadership including serving as a clinical resource in pediatric emergency services;
(b) Development of policies and procedures for pediatric emergency services;
(c) Development and supervision of pediatric emergency education programs (e.g., PALS or APLS) for hospital personnel, outreach programs, community hospitals and health care providers, and prehospital personnel;
(d) Development of a pediatric ED CQI plan and monitoring of pediatric CQI activities;
(e) Coordination with other hospital departments, divisions, services, sections;
(f) Coordination with EMS agencies, community hospitals and other pediatric specialty centers; and
(g) Verification of credentials and training of ED MDs as they relate to proficiency in the care of pediatric patients.

3. ED Nursing Administration

a. ED nursing service(s) shall be staffed by qualified nurses with education, experience, and demonstrated clinical competence in the care of critically ill/injured children.

b. The ED nursing services shall include:

(1) An ED nurse manager.
(2) A nursing coordinator for pediatric emergency care; for example, a pediatric liaison nurse - PDLN (may be met by the
ED nurse manager or a staff nurse currently assigned other roles in the emergency department).

(a) Qualifications

1) At least two (2) years experience in pediatric emergency or pediatric critical care nursing within the previous five (5) years;
2) Completion of PALS, APLS or other equivalent pediatric emergency care course; and
3) Completion of eight (8) hours of continuing education in topics related to pediatric emergency care, every two (2) years (may be met by PALS, APLS or equivalent pediatric emergency course).

(b) Responsibilities in collaboration with the nurse manager of the ED and the physician coordinator for emergency services:

1) Ensure coordination of pediatric emergency and critical care nursing services across departmental and interdisciplinary lines;
2) Collaborate with the pediatric critical care team to ensure quality of care for all critically ill or injured pediatric patients;
3) Serve as ED nursing contact person with hospitals served by the PCCC;
4) Ensure that appropriate pediatric emergency and critical care specialty in-service and formal education programs are provided;
5) Develop policies and procedures for pediatric emergency services;
6) Assist in the development and implementation of ED CQI activities;
7) Ensure that pediatric emergency training programs (PALS, APLS or other equivalent pediatric emergency course) are available for hospital personnel, community hospitals and health care providers, and prehospital personnel;
8) Coordinate services with EMS agencies, community hospitals and other pediatric specialty centers; and
9) Ensure clinical competence of ED RNs in the care of critically ill/injured children and
document ED nursing continuing education in pediatrics.

4. ED Personnel - Physicians

a. Physician staffing:

(1) In-house 24-hours/day on duty in the ED

(a) At least one qualified specialist in emergency medicine, pediatric emergency medicine, or pediatrics with expertise in pediatric emergency medicine, or

(b) A sub-specialty resident in pediatric emergency medicine who has completed at least one year of sub-specialty residency education (PL5) in pediatric emergency medicine, and who is (a) capable of assessing emergency situations in pediatric patients and (b) providing for initial resuscitation and stabilization When this resident is the responsible emergency physician in-house:

1) A qualified specialist in pediatric emergency medicine, emergency medicine with pediatric expertise, or pediatrics with expertise in pediatric emergency medicine shall be on call and promptly available.

2) The qualified specialist on call shall be notified of all patients who require significant resuscitation, operative surgical intervention, or intensive care unit admission.

(2) Additional emergency physician (similarly qualified) promptly available to the ED when needed.

b. Qualifications/Education:

(1) Qualified specialist in emergency medicine or pediatric emergency medicine; or

(2) ED physicians who are not qualified specialists in emergency medicine or pediatric emergency medicine shall have experience in pediatric emergency medicine and shall complete, within 12 months, at least a PALS or APLS course; and,

(3) All ED physicians shall complete eight (8) hours of continuing education in topics related to pediatric emergency medicine,
c. Backup physician specialty services

(1) Designated pediatric consultant on-call and promptly available to the ED 24 hours/day;
(2) A list of qualified specialists on-call for consultation at all times, (Title 22, California Code of Regulations). The list shall include specialists listed in Section II.B of the PCCC guidelines; and
(3) A PCCC that is not also a Pediatric Trauma Center (PTC) shall have a transfer agreement with a PTC or a general trauma center which includes the availability of 24-hour telephone consultation with pediatric trauma specialists.

5. ED Personnel - Nurses

a. Qualifications/Education

(1) At least one ED RN per shift educated in PALS, APLS or other equivalent pediatric emergency nursing course; and
(2) All RNs regularly assigned to the ED shall complete six (6) hours continuing education in topics related to pediatric emergency care, every two (2) years. (May be met by PALS, APLS or equivalent pediatric emergency care course).

6. ED Continuous Quality Improvement (CQI) Program for Pediatric Patients, as specified in Section H, Page 9.


8. Education and outreach programs, as specified in Section I, Page 9.

9. Support services available to the ED, as specified in Section F, Page 7.

10. Other ED requirements:

a. Communications: Two-way communication capability with the EMS system in accordance with local EMS policies and procedures, and a dedicated phone line to communicate with other hospitals for patient information such as transfers and patients arriving by paramedic ambulance.

b. Current references and resource documents and treatment protocols, including medication dosages and ET tube sizes and an airway chart.
11. ED equipment, supplies and medications

a. Pediatric equipment, supplies, trays, and medications shall be easily accessible, labeled, and logically organized. Staff shall be appropriately educated about the locations of various items, and about the process for obtaining items not in the ED. A list of locations of such items shall be in a visible location. The ED shall have a method of daily verification of proper location and function of equipment.

b. In the general ED, essential pediatric equipment shall be stored on a mobile, designated "pediatric crash cart" or an equivalent housing apparatus. In the pediatric ED, this may not be necessary.

c. Pediatric equipment, supplies and medications are presented in three categories of availability:

   (1) "CC" - On the pediatric crash cart;
   (2) "ED" - In the ED.
   (3) "IA" - Immediately available to the ED. IA items may be located in the Nursery, Central Supply, or elsewhere in the hospital. While IA items may be lifesaving in specific cases (although very rarely used), they are not required for stocking in the ED.

   EDs may wish to have certain items more accessible, and some items both in the ED and on the crash cart. The following list is not meant to be completely inclusive but rather to include the most commonly needed items for the general ED.

**GENERAL EQUIPMENT NEEDS**

- Pediatric crash carts to store all supplies in an organized manner
  - ED
  
  (in children’s hospitals or hospitals with a separate pediatric emergency treatment area, this recommendation may be met by a crash room.)

- Scales for measuring weights of infants and children
  - ED

- Patient warming device
  - ED

- Portable X-ray equipment
  - IA

- Medication chart, tape or other system to assure ready access to a proper dosage of medication or proper sizing of resuscitation equipment
  - CC

- Current references and resource documents for treatment protocols, including medication dosages and ET tube sizes or airway charts
  - IA

**MONITORING EQUIPMENT**
Blood pressure cuffs (preemie, neonatal, infant, child)  CC
Blood pressure cuffs (adult-arm and thigh)  ED
Doppler ultrasound devices  ED
ECG monitor or/defibrillator (5-400 J capacity) with pediatric and adult sized paddles  ED
End tidal CO$_2$ determination (detector or monitor)  ED
Hypothermia thermometer  ED
Invasive and non-invasive hemodynamic pressure monitoring system  ED
Pulse oximeter with pediatric sensor  ED
Intracranial pressure monitoring system  IA

**RESPIRATORY EQUIPMENT AND SUPPLIES**

Endotracheal tubes
- (uncuffed: 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5)  CC
- (cuffed: 6.0, 6.5, 7.0, 7.5, 8.0, 9.0)  CC

Stylets for endotracheal tubes (pediatric and adult)  CC

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

Magill forceps (pediatric and adult)  CC

Nasopharyngeal airways (infant, child and adult)  CC

Oral airways (sizes 0-5)  CC

Tracheostomy tubes (Shiley tube sizes (0-6)  CC

Aerosol nebulizer face mask  ED

Bag-valve-mask (BVM) device, self-inflating, (pediatric size - 450 ml and adult size - 1000 ml)  ED

Masks to fit BVM adaptor (neonatal, infant, child and adult sizes)  ED

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

Nasal cannulae (infant, child and adult)  ED

**VASCULAR ACCESS SUPPLIES AND EQUIPMENT**

Arm boards (infant, child and adult sizes)  CC

Butterflies (19-25 gauge)  CC

Catheter over the needle (14-24 gauge)  CC
Intraosseous needles

Umbilical catheters (sizes 3.5 and 5 Fr)

Vascular access supplies utilizing Seldinger technique

Infusion devices with ability to regulate rate and volume of infusate

IV solutions to include:

- Isotonic balanced salt solutions (e.g., NS)
- D$_5$0.2 NS
- D$_5$0.45 NS
- D10 W

IV fluid/blood warmer

**FRACTURE MANAGEMENT DEVICES**

Cervical and extremity immobilization equipment or devices suitable for pediatric patients (a cervical immobilization device shall be a device that can immobilize the neck of an infant, child or adult in a neutral position. It may be towel rolls, or a commercially available specific neck cradling device.)

- Spine board (child and adult)

**SPECIALIZED PEDIATRIC TRAYS OR KITS**

- Lumbar puncture tray
- Peritoneal lavage tray
- Surgical airway tray (equipment to perform needle and surgical cricothyrotomy)
- Thoracotomy tray
- Tube thoracostomy tray
- Urinary catheterization kit
- Vascular cutdown tray
- Intracranial pressure monitoring kit
- Gastric lavage tubes and equipment

**MEDICATIONS**
The following list of medications represents a minimum inventory of medications to be stocked by emergency department that care for pediatric patients. This list is not meant to be all inclusive and it is expected that emergency departments will supplement this inventory based on local resources and needs:

- Atropine
- Bretylium
- Calcium chloride
- Dextrose (D25W)
- Epinephrine (1:1,000 and 1:10,000)
- Lidocaine (20mg/cc)
- Naloxone
- Sodium bicarbonate (0.5 mEq/ml in premixed syringes)
- Activated charcoal
- Adenosine
- Antibiotics
- Antipyretics
- Benzodiazepines
- Beta Agonist for inhalation
- Dexamethasone
- Diphenhydramine
- Dobutamine
- Dopamine
- Flumazenil
- Furosemide
- Glucagon
- Heparin (1:1000)
- Insulin
- Ipecac, Syrup of
- Mannitol
- Methylprednisolone
- Narcotics
- Nifedipine
- Non-depolarizing neuromuscular blocking agents (This recommendation may be satisfied if policies exist that ensure the immediate availability of these medications for emergency intubation of the pediatric patient).
  - Phenobarbital
  - Phenytoin
  - Potassium chloride
  - Propranolol
  - Succinylcholine
  - Verapamil
  - Hydralazine
  - Hydrocortisone
  - Racemic epinephrine for inhalation
  - 3% sodium chloride
INTRODUCTION

DEFINITIONS
Pediatric Critical Care Center
Immediately available
Promptly available
On call
Qualified Specialist/Qualified Surgical Specialist/ Qualified Non-Surgical Specialist
Pediatric Expertise
Senior Resident
PALS
APLS
ENPC

HOSPITAL ORGANIZATION
A Multidisciplinary Pediatric Critical Care Center Committee

ADMINISTRATION/COORDINATION
PCCC Medical Director
PCCC Nurse Coordinator

PHYSICIANS, TWENTY-FOUR HOUR COVERAGE
Anesthesiology
Emergency Medicine
Pediatric Surgeon
Pediatric Critical Care

QUALIFIED SPECIALISTS
Promptly available
Medical specialists on call and promptly available
Medical specialists available for consultation

HOSPITAL WIDE EQUIPMENT, SUPPLIES AND MEDICATIONS
General Equipment
Monitoring Equipment
Respiratory Equipment and Supplies
Vascular Access Supplies and Equipment
Fracture Management Devices
COMPREHENSIVE INTERDISCIPLINARY QI PROGRAM ................................................. 36
TRANSFER AGREEMENTS .................................................................................. 37
OUTREACH AND EDUCATION PROGRAM ......................................................... 37
ANCILLARY SERVICES ......................................................................................... 37
  Clinical Laboratory ......................................................................................... 38
  Radiology ...................................................................................................... 38
  Pharmacy ...................................................................................................... 39
INTRODUCTION:
These standards were developed in an effort to promote a higher level of care for critically ill/injured pediatric patients within Los Angeles County. The Committee on Pediatric Emergency Medicine (COPEM) which is made up of representative from the following organizations: Los Angeles County Pediatric Society, Pediatric Liaison Nurses of Los Angeles County, California Chapter of the American College of Emergency Physicians, National Emergency Medical Services for Children (EMSC) Resource Alliance, California Chapter 2 of the American Academy of Pediatrics, Emergency Nurses Association, American College of Surgeons and Los Angeles County Department of Health Services Emergency Medical Services Agency made significant contributions in the development of these standards.

The PCCC standards have been approved by The Health Care Association of Southern California and meet or exceed EMSC administration, personnel and policy guidelines for the care of pediatric patients in the emergency department set forth by the California Emergency Medical Services Authority in 1995.

DEFINITIONS:

*Pediatric Critical Care Center (PCCC):* A licensed acute care hospital that is approved by the County of Los Angeles to receive patients from the 9-1-1 system. In addition, this center provides tertiary-level pediatric care services and serves as a referral center for critically ill and injured pediatric patients. The PCCC shall also meet the following criteria:

- JCAHO accredited
- Emergency Department Approved for Pediatrics (EDAP) confirmed by Los Angeles County
- Meet State of California Pediatric Trauma Center Requirements (Los Angeles County designation not required)
- Meet California Children Services Standards for Pediatric Intensive Care Units
NOTE: Requirements that are consistent with the EDAP Standards and State Trauma Center requirements have been omitted from the body of these Standards. These documents are included in the appendices.

*Immediately available:* Unencumbered by conflicting duties or responsibilities, responding without delay when notified and being physically available to the specified area of the PCCC.

*Promptly available:* Unencumbered by conflicting duties or responsibilities, responding without delay when notified to provide initial consultation and being physically available to the specified area of the PCCC within a period of time that is medically prudent.

When the term “promptly available” is used, it is presumptively met if the response occurs within a thirty minute time frame of the initial call, or if the presence of the physician is requested he/she is in house within thirty minutes. Responses in excess of thirty minutes will be reviewed on a case by case basis to determine whether the response was medically prudent and proportionate to the patient’s clinical condition and whether the failure to respond within thirty minutes had a measurable harmful effect on the course of the patient’s management or outcome.

*On call:* Agreeing to be available, according to a predetermined schedule, to respond to the PCCC in order to provide a defined service.

*Qualified Specialist/Qualified Surgical Specialist/ Qualified Non-Surgical Specialist:* A physician licensed in the State of California who is board certified or board eligible in a specialty by the American Board of Medical Specialties (ABMS), the Advisory Board for Osteopathic Specialties, a Canadian board or other appropriate foreign specialty board as determined by the American Board of Medical Specialists for that specialty. A non-board certified physician may be recognized as a “qualified specialist” by the Emergency Medical Service (EMS) Agency.

*Pediatric Expertise:* May be met by a qualified pediatric specialist or completion of a fellowship for subspecialties that may not be recognized by the ABMS or documentation that demonstrates the subspecialist is experienced, credentialed, and proficient in the care of pediatric patients.

*Senior Resident:* A physician licensed in the State of California who has completed at least two years of the residency under consideration and has the capability of initiating treatment, including surgery, and who is in training as a member of the residency program at the designated PCCC. Residents in general surgery shall have completed three years of residency in order to be considered a senior resident.
PCCC STANDARDS
Draft

PALS: Pediatric Advanced Life Support course sponsored by the American Heart Association.
ENPC: Emergency Nurses Association-Emergency Nursing Pediatric Course.

I. HOSPITAL ORGANIZATION

A. A Multidisciplinary Pediatric Critical Care Center Committee
   1. The committee shall include interdepartmental and interdisciplinary representatives from prehospital care, emergency department, pediatric critical care, trauma services, surgical sub specialties, pediatrics, pediatric sub specialties, nursing, social services, respiratory services, discharge planning, pediatric interfacility transport team and other relevant services.
   2. The committee shall provide for:
      a. Implementation of PCCC standards
      b. Coordination of pediatric critical care services across departmental and disciplinary lines
      c. Implementation of comprehensive, interdisciplinary quality improvement (QI) program
   4. Identification and exclusion of those physicians who are providing pediatric critical care and no longer meet standards. ???

II. ADMINISTRATION/COORDINATION

A. PCCC Medical Director
   1. Must be a qualified specialist in pediatric critical care medicine, pediatric surgery with expertise in pediatric trauma care, trauma surgeon with expertise in pediatric trauma care, or pediatric emergency medicine.
2. Responsibilities:
   a. Correct deficiencies in the delivery of pediatric critical care.
   b. Serve as chairperson of PCCC Committee
   c. Coordinate medical care across departmental and interdisciplinary lines.
   d. Direct involvement in the development, implementation and maintenance of comprehensive interdisciplinary QI program.
   e. Review, approve and assist in development of all PCCC policies and procedures.
   f. Liaison with other PCCCs, trauma centers, base hospitals, community hospitals and prehospital care providers.
   g. Serve as a contact person for the EMS Agency.

3. A written document defining the authority and responsibilities of the PCCC Medical Director shall exist.

B. PCCC Nurse Coordinator

1. Must be a registered nurse with a bachelor’s degree in nursing licensed by the State of California, have three years experience in the care of critically ill and/or injured children, and quality improvement.
2. Responsibilities:
   a. Serve as a member of PCCC Committee
   b. Direct involvement in the development, implementation and maintenance of comprehensive interdisciplinary QI program.
   c. Coordinate pediatric critical care nursing across departmental and interdisciplinary lines.
   d. Coordinate collection and entry of required data into TEMIS.
5. Liaison with other PCCCs, trauma centers, base hospitals, community hospitals and prehospital care providers.

6. Serve as the contact person for the EMS Agency.

g. Notify the EMS Agency in writing when there is a personnel change of the PCCC Medical Director or PCCC Coordinator.

h. Ensure that appropriate pediatric critical care education programs are provided to the staff.

3. A written document defining responsibilities of PCCC Coordinator shall exist.

III. PHYSICIANS, TWENTY-FOUR HOUR COVERAGE

A. The following qualified specialists with pediatric expertise shall be in-house and immediately available at all times:

1. **Anesthesiology**: May be met by a supervised senior resident or certified registered nurse anesthetist with pediatric experience who is capable of assessing emergent situations in pediatric patients and providing any indicated treatment. In such cases, the on-call qualified anesthesiologist with pediatric expertise shall be advised about the patient, be promptly available and be present for all operations.

2. **Emergency Medicine**: May be met by a qualified specialist in pediatric emergency medicine, a qualified specialist in emergency medicine with pediatric expertise or a subspecialty resident in pediatric emergency medicine who has completed at least one year of subspecialty residency education in pediatric emergency medicine. When a senior resident is the responsible emergency physician in-house, a qualified specialist in pediatric emergency medicine, or emergency medicine with pediatric expertise shall be promptly available. In such cases, the on-call qualified emergency physician shall be advised of all patients who require resuscitation, operative surgical intervention or intensive care unit admission.

3. **Pediatric Surgeon**: May be met by a qualified specialist in pediatric surgery with expertise in pediatric trauma care, or trauma surgeon with expertise in pediatric trauma care or a senior general surgical resident who has completed at least three clinical years of
surgical residency training. The senior resident shall be able to provide the overall control and surgical leadership necessary for the care of the patient, including initiating surgical care. In such cases, a pediatric surgeon with expertise in pediatric trauma care or a trauma surgeon with expertise in pediatric trauma care shall be on-call and promptly available. This surgeon shall be advised of all pediatric trauma admissions, and other cases requiring immediate surgical intervention. In addition, this surgeon shall be present in the emergency department for major resuscitations, in the operating room for all operative procedures.

4. **Pediatric Critical Care**: May be met by a qualified specialist in pediatric critical care medicine, a qualified specialist in anesthesiology with expertise in pediatric critical care or a senior resident who has completed at least two years of residency in pediatrics. In such cases, a qualified specialist in pediatric critical care medicine or an anesthesiologist with expertise in pediatric critical care shall be on-call and promptly available. The qualified specialist on-call shall be advised about all patients who may require admission to the PICU and shall participate in all major therapeutic decisions and interventions.

IV. **QUALIFIED SPECIALISTS**
A. The following qualified surgical specialists with pediatric expertise shall be on call and **promptly** available:

1. Cardiothoracic*
2. Pediatric Neurologic* / Neurologic**
3. Pediatric Orthopaedic* / Orthopaedic**
4. Pediatric Ophthalmologic* / Ophthalmologic**
5. Pediatric Oral or maxillofacial or head/neck* / Oral or maxillofacial or head/neck **
6. Obstetric/gynecologic (*may be provided through a written transfer agreement*)
7. Plastic
8. Reimplantation/microsurgery capability (*may be provided through a written transfer agreement*)
9. Urologic

* Level I trauma center  ** Level II trauma center

B. The following qualified pediatric non-surgical medical specialists shall be on call and promptly available:

1. General pediatrics
2. Neonatology
3. Pathology
4. Pediatric anesthesiology
5. Pediatric cardiology
6. Pediatric critical care
7. Pediatric emergency medicine
8. Pediatric gastroenterology
9. Pediatric hematology/oncology
10. Pediatric infectious disease
11. Pediatric nephrology
12. Pediatric neurology
13. Pediatric psychiatry
14. Pediatric pulmonology
15. Pediatric radiology
16. Rehabilitation/physical medicine (may be met by a written transfer agreement)

C. The following qualified pediatric non-surgical medical specialists shall be available for consultation:

1. Adolescent medicine
2. Child Development
3. Genetics/dysmorphology
4. Obstetrics
5. Neuroradiology
6. Pediatric allergy/Immunology
7. Pediatric dentistry
8. Pediatric endocrinology

V. HOSPITAL WIDE EQUIPMENT, SUPPLIES AND MEDICATIONS

Pediatric equipment, supplies and medications shall be easily accessible, labeled and logically organized. Each department in the PCCC shall have a method of daily verification of proper location and functioning of pediatric equipment and supplies. PCCC staff shall be appropriately educated as to the locations of all items. It is highly recommended that pediatric crash carts are located in all appropriate areas in the hospital where critically ill or injured pediatric patients may be.

1. General Equipment
   1. Crash cart shall contain medication chart, tape or other system to assure ready access to proper dosage of medication or proper sizing of resuscitation equipment.
   2. In the emergency department there shall be a patient warming device.
   3. Pediatric crash cart in the emergency department to store all supplies in an organized manner. Hospitals with a separate pediatric emergency treatment area, this recommendation may be met by a crash room.

2. Monitoring Equipment
1. Blood pressure cuffs (neonate, infant, child) shall be stored on the crash cart.

2. Intracranial pressure monitoring system shall be immediately available to the emergency department.

3. Monitoring equipment in the emergency department:
   1. Blood pressure cuffs (adult-arm and thigh)
   2. ECG monitor or/defibrillator (5-400 J capacity) with pediatric and adult sized paddles
   3. End tidal CO\textsubscript{2} determination (detector or monitor)
   4. Hypothermia thermometer
   5. Intravascular pressure monitoring system
   6. Pulse oximeter

3. Respiratory Equipment and Supplies

1. Respiratory equipment in the crash cart:
   1. Endotracheal tubes
      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, 8.5, 9.0
   2. Feeding tubes (5-8 Fr)
   3. Laryngoscope blades (curved 2-3; straight 0, 1, 2, 3)
   4. Laryngoscope handle
   5. Water soluble lubricant
   6. Pediatric and adult magil forceps
   7. Infant, child and adult nasopharyngeal airways
   8. Oral airways (sizes 0-5)
   9. Stylets for endotracheal tubes (pediatric and adult)
   10. Tracheostomy tubes (Shiley tube sizes 0-6)
   11. Yankauer suction tips
   12. Suction catheters (infant, child and adult)

2. Respiratory equipment in the emergency department:
   1. Aerosol nebulizer face mask
   2. Bag-valve-mask (BVM) device, self-inflating, (pediatric size-450 ml and adult size - 1000 ml)
   3. Clear oxygen masks (standard and non-rebreathing) for an infant, child and adult
   4. Masks to fit BVM adaptor (neonatal, infant, child and adult)
4. Vascular Access Supplies and Equipment

1. On the crash cart:

   1. Arm boards (infant, child and adult sizes)
   2. Butterflies (19-25 gauge)
   3. Catheter over the needle (14-24 gauge)
   4. Intraosseous needles
   5. IV administration sets with calibrated chambers and extension tubing
   6. IV tubing (30 inches)
   7. Stopcocks
   8. Syringes (TB, 3-60 ml)
   9. T-connectors
   10. Umbilical catheters (sizes 3.5 and 5 Fr)
   11. Vascular access supplies utilizing Seldinger technique

2. Emergency department

   1. Infusion devices with ability to regulate rate and volume of infusate
   2. IV solutions to include:
      - Isotonic balanced salt solutions (e.g. NS)
      - D50.2 NS
      - D50.45 NS
   3. Needles (18-27 gauge)

3. Immediately Available to the Emergency Department

   1. D10 W
   2. IV fluid/blood warmer

E. Fracture Management Devices

1. Emergency department

   1. Cervical immobilization equipment or devices suitable for
pediatric patients
2. Spine board (child and adult)

6. Specialized Pediatric Trays or Kits

1. Emergency department
   1. Lumbar puncture tray
   2. Peritoneal lavage tray
   3. Surgical airway tray
   4. Thoracotomy tray
   5. Tube thoracostomy tray with chest tubes for infant, child and adult
   6. Urinary catheterization kit with urinary catheters for infant, child and adult
   7. Vascular cutdown tray

2. Immediately available to the emergency department
   1. Intracranial pressure monitoring kit

7. Medications

1. Available on the crash cart
   1. Atropine
   2. Adenosine
   3. Bretylium
   4. Calcium chloride
   5. Dextrose (25% & 50%)
   6. Dopamine
   7. Epinephrine (1:1,00 and 1:10,000)
   8. Flumazenol
   9. Lidocaine
   10. Naloxone
   11. Racemic epinephrine for inhalation
   12. Sodium bicarbonate
   13. Verapamil

Note: It is suggested that these drugs be immediately available in the resuscitation room and not locked in a computerized system.

2. Available in the emergency department
1. Activated charcoal
2. Antibiotics
3. Antipyretics
4. Benzodiazepines
5. Beta agonist for inhalation
6. Dexamethasone
7. Diphenhydramine
8. Furosemide
9. Glucagon
10. Insulin
11. Ipecac syrup
12. Mannitol
13. Methylprednisolone
14. Morphine sulfate
15. Non-depolarizing neuromuscular blocking agents
16. Phenobarbital
17. Phenytoin
18. Potassium chloride
19. Propranolol
20. Succinylcholine

3. Immediately available to the emergency department
   1. Anticonvulsants
   2. Hydralazine
   3. Hydrocortisone
   4. Isoproterenol
   5. 3% sodium chloride

VI. PICU

A. General Requirements for the PICU
   1. Shall be a distinct, separate unit within the hospital.
   2. Minimum of eight contiguous beds
   3. Minimum of 350 admissions per year
   4. A separate nursing station shall exist
5. One isolation room

B. PICU Medical Director

1. Qualifications:
   1. Be certified by the American Board of Pediatrics and certified by the American Board of Pediatrics in the subspecialty of Pediatric Critical Care Medicine or:
   2. Be certified by both the American Board of Pediatrics and the American Board of Anaesthesiology in the subspecialty of Critical Care Medicine.

2. Responsibilities:
   a. Serve as a member of PCCC Committee
   2. Oversee the multidisciplinary medical direction of patients in the PICU.
   3. Shall not be the medical director of more than one PICU
   c. Monitor with the PICU Nurse Manager, the development and review of policies, procedures and QI activities involving the PICU.
   4. Ensure that twenty-four hour telephone consultation is available to the surrounding medical community.
   5. Ensure that Federal, State and Los Angeles County patient transfer guidelines are followed.
   6. Identify educational needs and facilitate education for the medical staff in the PICU.
   7. Oversee patient transportation to and from the PICU.
   8. Participate in PICU budget preparations.
   9. Ensure PICU medical staff competency for management of patients in the PICU.
   10. Ensure that there is at least one full time associate that
meets the qualifications of PICU medical director who shares the medical management of patients in the PICU.

11. Ensure that the care of the patient in the PICU is under the direct supervision of the PICU Medical Director or pediatric intensivist designee and/or the attending physician in consultation the pediatric intensivist.

12. Ensure that information is provided on an on-going basis, to referring physicians regarding their patients.

13. Ensure that a qualified specialist in Pediatric Critical Care Medicine is on call to the PICU on a twenty four hour basis and promptly available to the PICU and is not on call for more than one facility at the same time.

14. Ensure that if the in-house physician is not the on-call pediatric intensivist, the on-call pediatric intensivist shall be notified of all potential and actual admissions to the PICU in a timely manner.

3. A written document defining responsibilities of the PICU Medical Director shall exist.

C. PICU Nurse Manager

1. Must be an RN licensed by the State of California, have a master’s degree in nursing or hold a bachelor’s degree in nursing and either a master’s degree in a related field or certification in nursing or health care administration from a nationally recognized accrediting organization. In addition, the nurse manager shall be a current PALS or APLS provider and have at least three years of clinical nursing experience of which at least one year shall have been in pediatric critical care nursing. This position shall not be assigned direct patient care duties.

0. Responsibilities:

1. Ensure coordination of care in the PICU across departmental and interdisciplinary lines.

2. Maintain twenty-four hour responsibility for management of patient care in the PICU.
a. Maintain joint responsibility with the Clinical Nurse Specialist to ensure that appropriate education programs are provided to staff.

d. Collaborate with PCCC Coordinator on QI activities.

e. Serve as a member of PCCC Committee

f. Maintain joint responsibility with the PICU Medical Director for the development and review of policies, procedures and QI activities in the PICU.

g. Maintain joint responsibility with the Clinical Nurse Specialist (CNS) for assuring PICU staff competency for management of patient care in the PICU.

h. Participate in PICU budget preparation.

i. Ensure there is at least one RN designated as a charge nurse for each shift in the PICU, at least one RN is assigned to each patient in the PICU, no less than two RNs physically present in the PICU at all times when a patient is present and no more than one LVN for every three RNs assigned to provide direct nursing care in the PICU.

j. Ensure that adequate patient/staff ratios are met.

3. A written document defining responsibilities of the PICU Nurse Manager shall exist.

D. PICU Nurse Supervisor

If the nurse manager is dedicated solely to the PICU and does not oversee more than 30 full time equivalent positions, the position and responsibilities of the nurse manager and the nurse supervisor may be combined under the nurse manager.

1. Must be an RN licensed by the State of California, hold a bachelor’s degree in nursing and be a current PALS or APLS provider. In addition, the nurse supervisor shall have had at least three years of clinical nursing experience of which at least one year shall have been in pediatric critical care nursing. This position shall not be assigned direct patient care duties.
2. Responsibilities:

1. Maintain twenty-four hour responsibility for the direct supervision of all clinical personnel who provide patient care.

2. Maintain twenty-four hour responsibility for the day to day coordination and quality of clinical nursing care of patients in the PICU.

3. The nurse supervisor shall not be assigned direct patient care responsibilities.

3. A written description defining responsibilities of the nurse supervisor shall exist.

E. PICU Clinical Nurse Specialist (CNS)

1. Must be an RN licensed by the State of California, hold a master’s degree in nursing, and be a current PALS or APLS provider. In addition, the CNS shall have at least three years of clinical nursing experience and at least one year shall have been in pediatric critical care nursing. This shall be a separate position from the Nurse Manager/Supervisor.

2. Responsibilities:

1. Maintain and upgrade the staff's clinical skills.

2. Participate in consultation, research, and education related to the care of the critically ill/injured pediatric patient.

3. Collaborate with Nurse Manager, administration, physicians, and nursing staff in establishing standards of care in the PICU.

4. Develop and oversee critical care educational programs for the staff in the PICU.

5. Maintain joint responsibility with the nurse manager for documenting and assuring PICU staff competency for the management of patient care in the PICU.
b. Oversee provision of educational needs of parents and/or caretakers.

3. A written document defining responsibilities of the CNS shall exist.

F. PICU Charge Nurse

1. Must be an RN licensed by the State of California and be a current PALS or APLS provider. In addition, the charge nurse will have education, training and demonstrated competency in pediatric critical care nursing. This position shall be free of direct patient care duties whenever possible.

2. Responsibilities:

1. Function as a clinical resource for patients and their families.

b. Ensure quality of patient care delivered for each shift.

3. A written document of responsibilities of the PICU charge nurse shall exist.

G. PICU Registered Nurses

1. Must be an RN licensed by the State of California, and be a current PALS or APLS provider. In addition, the RN in the PICU shall have education, training and demonstrated competency in pediatric critical care nursing.


H. PICU Licensed Vocational Nurses (LVN)

1. Must be an LVN licensed by the State of California, and be a current PALS or APLS provider. In addition, the LVN shall have education, training and demonstrated competency in pediatric critical care nursing.

2. Shall be under the direction of an RN.

3. A written document of responsibilities, the standards of competency in accordance with the LVN scope of practice shall
exist.

I. PICU Unlicenced Assistive Personnel

1. Unlicenced assistive personnel, as defined by the State Board of Registered Nursing Position Statement (September 1994) shall be utilized only as assistive to licensed nursing personnel under the direction of an RN and not be assigned tasks associated with the medically fragile patient.

2. A written document of the assigned limited tasks that an unlicenced assistive personnel can perform shall exist.

10. PICU Respiratory Care Practioner (RCP)

1. Must be an RCP licensed by the State of California, be a current PALS or APLS provider and successfully completed additional training which shall be met by the following:

   1. Completion of a formal pediatric respiratory therapy course at an approved school of respiratory therapy that includes didactic and clinical course work or,

   c. Completion of a minimum of 20 hours of didactic and four weeks of precepted pediatric clinical experience in a hospital based course.

2. There shall be an identified PICU RCP available twenty-four hours per day.

3. RCPs shall be assigned solely to the PICU when supportive ventilation is being provided and the staffing level shall be such that immediate availability of the RCP to the PICU is assured at all times.

4. There shall be a system in place for documenting and ensuring continuing clinical respiratory care competency through educational programs for both the newly hired and experienced RCP staff assigned to the PICU.

5. A written document of the roles and responsibilities of the RCP shall exist.

K. Medical Social Worker (MSW)
1. Must have a master’s degree in social work.

2. The case load per one full time equivalent MSW shall not exceed twenty patients.

3. There shall be an MSW assigned to all patients upon admission to the PICU.

4. A social work assessment shall be completed on suspected child abuse/neglect patients within twenty four hours of identification or suspicion or prior to discharge, whichever comes first.

5. A social work assessment shall be completed within two working days of admission or prior to discharge, whichever comes first.

6. The social work assessment shall include an interview of at least one of the patient’s parents or primary caretaker. The parent(s) or primary caretaker(s) shall be included as early as possible in the decision making process relating to the care of their child.

7. A preliminary case service plan shall be developed with the parent(s) or primary caretaker(s) within three working days of admission to the PICU which shall include but not limited to the assessment of the following: significant family stress factors, environmental factors, mental health factors, and any other psycho social factors and how these factors in the family will be addressed.

8. Social work progress notes, shall be completed at least on a weekly basis or more often as indicated and shall include psycho social data, significant changes in the patient’s family , updates and results of the implementation of a service plan and plans to continue contact with the family for ongoing support.

9. MSW reports and notes shall be recorded in the patient’s chart and be readily available to other PICU team members.

L. Other professional services with pediatric expertise shall be available to the PICU:
M. PICU Policies and Procedures

There shall be a PICU policy and procedure manual which is reviewed and signed, at least every three years or more frequently as necessary, by the medical director and nurse manager of the PICU. This manual shall be readily available in the PICU for PICU staff.

The PICU shall establish specific policies and procedures which address but not limited to the following:

1. Criteria delineating the privileges granted to attending physicians other than the pediatric intensivist.

2. Criteria for admission and discharge of infants, children, and adolescents to the PICU.

3. Patient care including nursing and respiratory management for infants, children and adolescents admitted to the PICU.

4. Criteria for monitoring of patients in the PICU including the use of appropriate equipment.

5. Administration of medication, blood, and blood products in the PICU.


9. Method for contacting appropriate clergy per the request of the
parents or primary caretakers.

N. Required Equipment, Supplies and Medications for the PICU

Pediatric equipment, supplies and medications in the PICU shall be easily accessible, labeled and logically organized. The PICU staff shall be appropriately educated as to the location of all items. The PICU shall have a method of daily verification of proper location and function of equipment and supplies.

1. General equipment available in the PICU:

- Blood pressure cuffs, neonate, infant, child, adult, obese
- Blood pump device
- Cervical collars, pediatric and adult sizes
- Chest tubes (10-28Fr)
- Crash Cart
- Intra osseous needles
- Length and weight tape
- Monitor/defibrillator (0-400ws with peds paddles)
- Oxygen, portable
- Ophthalmoscope
- Otoscope
- Pace maker
- Peritoneal dialysis equipment
- Quick reference drug dose chart or book on crash cart
- Rocking chair
- Scale, infant and sling
- Spinal immobilization device
- Spotlight, portable
- Suction devices, portable and bedside
- Thermometers (capable of measuring hypothermia)
- Thoracostomy drainage system
- Three way stopcock
- Urinary catheters (8-22 Fr)

10. Airway/respiratory equipment

- Bag-valve mask device, child and adult
- Bag-valve masks, neonate, infant, child, small and large adult
- Endotracheal tubes (2.5-8.0)
- Endotracheal tube stylets
- Laryngoscope handle and blades, pediatric and adult
- Magill forceps, pediatric and adult
Nasal cannulae, infant, child and adult
Nasogastric tubes, (5-18 Fr)
Nasopharyngeal airways (4.5mm-9.0mm)
Oropharyngeal airways (neonate, infant, child, and adult small, medium, large)
Oxygen masks, standard and non rebreathing infant, child, and adult
Suction catheters, (6-12 Fr)
Trach tubes (00-4)

2. Continuous monitoring equipment

Arterial pressure
Central venous pressure
ECG and heart rate
End tidal carbon dioxide
Intracranial pressure
Pulmonary arterial pressure
Pulse oximetry
Respiration
Temperature
Simultaneous pressure monitoring capability, arterial, central venous, pulmonary arterial and intracranial
Transport monitor

3. Specialized trays

Central line trays (pediatric and adult catheter sizes)
Cricothyrotomy tray with compatible apparatus for bag-valve mask or jet ventilation
IV cutdown tray
Lumbar puncture tray (pediatric with needles 22g 1-1/2)
Peritoneal lavage tray
Thoracostomy tray
Thoracotomy tray with pediatric rib spreader and aortic clamp
Tracheostomy tray with trach tubes (00-4)

11. Portable equipment for the PICU (promptly available in hospital)

Air-oxygen blenders (21-100%)
Bedside EKG (12 lead)
Bedside echocardiography
Bedside ultrasound
Bedside nuclear scan
Bilirubin lights
Blood warmer
Compressors
Cribs
Doppler ultrasound device
Heating/cooling blankets
Infusion pumps including micro fusion capability
IV fluid warmer
Incubators
Metabolic bed scale
Servo-controlled heating units (with or without open crib)
Transcutaneous pO$_2$ monitor
Transcutaneous pCO$_2$ monitor
Portable EEG
Tray for insertion of ICP monitor

VII. SURGERY AND POST ANESTHETIC CARE UNIT (PACU)

Nursing services in Surgery and the PACU shall be staffed by qualified nurses and technicians with education, experience, and demonstrated clinical competence in the care of critically ill and/or injured pediatric patients. A method of documenting clinical competence shall exist. Areas of pediatric expertise shall include:

A. General Surgery
B. Neurosurgery
C. Orthopedic Surgery
D. Cardiothoracic Surgery
E. Burns

VIII. OTHER NURSING SERVICES

Other nursing services such as the pediatric ward, special procedures, step down unit shall be staffed by qualified nurses with education, experience and demonstrated clinical competence for their area. A method of documenting clinical competence shall exist.

IX. SPECIAL SERVICES/RESOURCES APPROPRIATE FOR PEDIATRIC PATIENTS
These services may be met by contractual or written transfer agreements

A. Critical Care Transport Team
B. Acute burn care management
C. Acute spinal cord injury management
D. Hemodialysis
E. Peritoneal dialysis (must be onsite)
F. Pediatric rehabilitation
G. Organ transplantation
H. Reimplantation
I. Home health

1. A SCAN Team evaluation/consultation shall be available to all areas of the hospital twenty four hours per day.

2. A written document of the roles and responsibilities of all SCAN Team members shall exist.

3. A multidisciplinary SCAN Committee shall meet at least quarterly monthly. It is recommended that members of this committee include hospital representatives from the emergency department, pediatrics and social services. In addition, other members should include outside representatives from law enforcement, social services, district attorneys, prehospital care providers and medical experts.

4. The SCAN Committee shall be responsible for developing, monitoring and evaluating guidelines for the following:

   1. Effectiveness of identification of suspected child abuse
   2. Timeliness of reporting
   3. Appropriate referral to outside expertise
   4. Data collection
5. Identification of cases for review

6. Review and evaluation of documented exam, treatment and referral

7. Mechanism for identification of medical records that involve suspected child abuse.

8. Overall effectiveness of SCAN Team activities.

4. PEDIATRIC INTERFACILITY TRANSPORT (PIFT) PROGRAM

If the PCCC does not have a pediatric interfacility transport program, written agreements shall exist with agencies that provide transportation of critically ill/injured patients in order to ensure that transportation of critically ill/injured pediatric patients are transported to and from the PCCC in a timely manner.

1. PIFT Medical Director

   1. Must be a qualified specialist in pediatric emergency medicine, pediatric critical care, or neonatal-perinatal medicine. In addition, must have documented completion of specialized training experience, or expertise in pediatric and/or neonatal transport.

2. Responsibilities

   1. Ensure joint coordination with PIFT Nurse Coordinator for the oversight of structure, administration, operational components, fiscal management, information management, development and review of PIFT policies, procedures and QI activities.

   d. Maintain authority over transport utilization, including triage of transport requests, when they exceed operational capacity.

2. Ensure that a medical control physician is assigned to each critical care transport for purposes of providing medical direction to the transport team during transport.

   e. Coordinate specialists and services required in the transport of patients.

   3. Establish guidelines for transport team composition and
mode of transportation.

4. Ensure the competence of transport team physicians through appropriate orientation, training and continuing education.

5. Appoint an associate or assistant medical director(s).

6. Oversee medical care delivered during transports.

7. Attend regular meetings of the PIFT Program staff concerning policies, procedures, safety, and QI activities.

j. Ensure immediate availability of PIFT medical director or their designee for consultation with transport team and referral sources.

11. Verify acceptance and disposition of the patient.

2. PIFT Nurse Coordinator

1. Must be a registered nurse licenced by the State of California, hold a bachelor’s degree in nursing or another health related field, be a current PALS or APLS provider, and have at least two years of clinical experience in pediatric critical care transport.

3. Responsibilities

1. Monitor joint responsibility with the PIFT medical director for oversite of structure, administration, operational components, fiscal management, information management, development and review of PIFT policies, procedures and QI activities.

2. Ensure that the transport program meets all applicable federal, state and local laws and regulations.

3. Ensure that all transport team members are appropriately licensed and certified in the State of California.

4. Notify transport team members regarding insurance coverage and implications of being transport team members.
5. Ensure the competence of transport team personnel and the development of appropriate orientation, training and continuing education.

f. Ensure that the transport team is able to routinely mobilize and depart from the transport program facility within 60 minutes when the medical control physician deems it necessary. Mobilization time is measured from the time of the agreement to transport to the patient to the time of the team’s departure.

6. Coordinate the collection and analysis of data necessary for evaluation of the safety and effectiveness of the program.

7. Periodically evaluate competency and performance of transport team personnel.

g. Provide outreach education related to the PIFT program.

h. Liaison with PICU staff, referring hospitals, ground and air transportation providers, other PIFT coordinators and the EMS Agency.

A. Transport Team Personnel

1. For the transport of patients that are deemed critical by the referring and receiving physicians, the transport team shall consist of at least two individuals, one of whom must be a qualified nurse or physician.

2. A transport team leader shall be assigned by the medical control physician for each transport. This individual shall be the team member that has highest medical authority and will be responsible for the following:

   a. Stabilization and care of the patient prior to and during transport under the direction of standardized protocols.

8. Maintain communications with the medical control physician and receiving health care professionals.

9. Obtain consents required for the transport and admission to
the receiving hospital.

3. Communications

1. The PIFT Program should have a special location where transport requests are received and processed.

2.

   1. Designated phone lines and two-way radio capability to communicate with transport team

   2. Transport protocols

   3. A reference data base on hospitals and ground/air transportation providers

   4. Mechanism for documenting all transport transactions

3. Communication personnel should be trained and skilled in handling transport transactions. They should not have other duties of more primary importance that might cause delays in the transport process.

4. All communications for individual transport requests should be documented.

4. A reference data base should be maintained and should include regional information pertinent to pediatric interfacility transport, including hospitals, ambulance providers, air ambulance providers, airports, FAA approved helipads, interfacility distances and interfacility transport times by the various ground and air ambulance providers. This information shall be stored in a manner which allows for immediate accessibility.

5. The transport program should provide a communications system that facilitates communications between the transport team, the communication personnel, the medical control physician, the referring and receiving facilities and ground and air ambulance providers.

4. Consultation Services

Medical and nursing consultation services should be provided by the PIFT Program. Consultation should be available at all times to health care personnel requesting information concerning the care of pediatric
patients who might require interfacility transport.

5. Written Agreements with Ambulance Providers

1. The PIFT Program should have written agreements with ground and air ambulance providers utilized by the program for emergency and/or elective transports. Agreements should be in place prior to the initiation of the utilization of an ambulance provider. These agreements should include at least the following:

   1. Responsibilities for patient care

   2. Recording and transferring appropriate information and records

   3. Financial and indemnification provisions

   4. Term of agreement

   5. The PIFT Program should be responsible for assuring the coordination of ambulance services.

B. Affiliated Hospital Agreements

1. PIFT Programs should have written agreements with referring and receiving hospitals that utilize the program.

2. Agreements should specify the role and responsibilities of the transport program and the hospitals to include the following:

   1. Agreement to transfer and receive appropriate pediatric patients when indicated.

   2. Policies and procedures for evaluating, transferring or receiving pediatric patients.

   3. Responsibilities for patient care before, during, and after transport.

   4. Private physician and family involvement.

   5. Recording and transferring appropriate information and records.

7. Term of agreement.

6. PIFT QI Program

1. The PIFT Program should have an organized multidisciplinary QI program. This program shall be developed, monitored and reviewed by the PIFT medical director and coordinator.

2. Components of the program should include an interface with prehospital, emergency department, trauma, pediatrics and PICU QI activities.

3. The PIFT QI Program should include the following:
   1. Utilize concurrent review, generic screen and focused studies to monitor care provided by the PIFT Team.
   3. Assurance of appropriate and adequate response to findings from QI activities including the identification of opportunities to improve patient care and other aspects of the PIFT Program.
   4. Assurance for the appropriate and efficient use of the PIFT Program.
   5. Evaluation and review of patient and staff safety to include safe restraining of the patient and personnel during transport, properly functioning of equipment, correct equipment inventory and air ambulance safety.
   6. Review of response times
   7. Monitoring and review of appropriate utilization of the transport program, transport personnel, equipment, supplies and mode of transport.
   9. Evaluation of the flow of information, prioritization of
resource allocation, selection of ambulance provider, and selection of receiving facility.


11. Collection and review of data for evaluation of the program.

XI. DISCHARGE PLANNING

1. There shall be a designated coordinator for discharge planning which is responsible for the following:

   1. Ensuring collaboration between multidisciplinary team members and communication with the primary care physician, community agencies whose services may be required or related to the needs of the patient after discharge.

   2. Ensuring that each patient discharged shall have follow-up by a primary care physician and a program specialized, as applicable, in the follow-up care of the patient.

   3. Identification of the responsibilities and involvement of the multidisciplinary team members in discharge planning activities on an ongoing basis.

   6. Ensuring that written discharge information shall be given to the parent(s) or primary caretaker(s) participating in the patient’s care at the time of discharge and shall include but is not limited to the patient’s diagnosis, medications injury and illness prevention education, follow-up appointments, including community agencies and instructions on any medical treatments that will be given by the parent(s) or primary care giver(s). A copy of this written discharge information shall be sent to the primary care physician and/or agency involved in providing follow-up care.

XII. POLICIES AND PROCEDURES

The PCCC shall establish specific policies and procedures in departments where applicable services are provided:

A. Critical Care Transport Team

B. SCAN Team
C. Child abuse and neglect
D. Poison control center reference
E. Integrated disaster plan including preparedness
F. Organ or tissue donation, procurement and transplantation
G. Transfer in/out
H. PCCC diversion of 9-1-1 patients
I. Do Not Resuscitate
J. Liaison with Juvenile Court for consent for minors
K. Liaison with Ethics Committee
L. Coroner’s cases
13. Child death
N. Grieving families and caretakers
O. Critical stress debriefing of staff
P. Pain management
Q. Conscious sedation
R. Discharge planning
S. Monitoring of professional education
T. Rehabilitation referral
21. Family presence during resuscitation
22. Monitoring patients in protective custody
23. Restraints

XIII. COMPREHENSIVE INTERDISCIPLINARY QI PROGRAM
A. The QI Program shall be organized, comprehensive and interdisciplinary for the purpose of improving patient outcome.

B. The QI Program shall include methods for:

1. Tracking all critically ill and injured patients from the prehospital care setting to discharge planning.

2. Developing indicators/monitors for reviewing and monitoring patient care, including major complications, deaths, transfers in/out, suspected child abuse cases and tracking times when specialists are called, answer page and arrive.

3. Reporting of findings to PCCC Committee and QI Committees.

4. Integration of findings into standards of care.

5. Providing for integration of findings to the appropriate staff as evidenced by focused education or minutes from staff meetings and committee meetings.

7. Tracking and monitoring professional education for all staff providing care to pediatric patients.

8. Submission of selected data elements, as determined by the EMS Agency, including Pediatric Risk of Mortality (PRISM) III scores on patients admitted to the PICU to the EMS TEMIS data base.

9. Documenting the QI activity for the above requirements. Meeting agendas, list of attendees by title, and minutes shall be available for on-site review by the EMS Agency.

XIV. TRANSFER AGREEMENTS

The PCCC shall have written pediatric interfacility transfer agreements with local EDAPs and other referring hospitals. The PCCC shall provide the name and telephone number of a contact person to arrange for facilitation of agreements for EDAPs and other referring hospitals.

XV. OUTREACH AND EDUCATION PROGRAM

The Outreach and Education Program shall include:
A. Twenty-four hour telephone consultation with a pediatric intensive care physician, nurse and social worker for affiliated and referring hospitals.

B. Continuing education programs for staff physicians, nurses, and allied personnel, EMS personnel and community based physicians and nurses.

C. Injury/illness prevention for the public

4. Mechanisms to provide feedback of care rendered including outcome by referring facilities shall exist.

XVI. ANCILLARY SERVICES

Ancillary services shall have the capabilities and technologists with appropriate training for the critically ill and/or injured pediatric patient in house and available twenty-four hours per day.

A. Clinical Laboratory

1. Qualified clinical laboratory technologists and phlebotomist

2. Comprehensive blood bank to include: typing, matching, transfusions, blood components, capability to provide autologous and designated donor transfusions and adequate storage facilities.

3. Coagulation studies

4. Blood gas determinations

5. Electrolyte and chemistries determinations

6. Standard analysis of blood, urine, spinal fluid, and other body fluids

7. Toxicology

8. Bacteriology

9. Microtechnique

B. Radiology

1. Qualified radiology technicians
2. General radiology
3. Angiography
4. Ultrasonography to include doppler flow with gray and color scale
5. Nuclear medicine
6. Computerized Tomography
7. Magnetic Resonance Imaging
8. Fluoroscopy
9. Intravenous Pyelogram
10. Esophagrams
11. Gastro-intestinal studies

C. Pharmacy

Pharmacy services including a qualified pharmacist shall be available twenty-four hour per day.
Santa Clara County
Emergency Medical Services

EMSC
GUIDELINES FOR INTERFACILITY
CONSULTATION AND/OR TRANSFER OF
PEDIATRIC NON-TRAUMA AND TRAUMA PATIENTS

Policy Number:  2003.1
Effective Date:  6/20/96
**EMSC Guidelines for Interfacility Consultation and/or Transfer of Pediatric Non-Trauma and Trauma Patients**

**Purpose of this Policy**

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 available in local hospitals.

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, when indicated, rapid transport to specialized referral for pediatric, medical, surgical and trauma patients who require intensive care when it is not internally available.

**I. Non Trauma Patients**

**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. Invasive arterial pressure monitoring.
   b. Central venous pressure or pulmonary artery monitoring.
   c. Intracranial pressure monitoring.
   d. Vasoactive medications.
EMSC Guidelines for Interfacility Consultation and/or Transfer of Pediatric Non-Trauma and Trauma Patients

9. Severe hypothermia or hyperthermia.
11. Renal failure: acute or chronic requiring immediate dialysis.
12. Bleeding disorders that require massive transfusions.

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 dehydration.
   7. Potentially life-threatening infections, including sepsis.
   8. Severe metabolic disturbances.
  10. Any child who may benefit from consultation with, or transfer to, a Pediatric Critical Care Center.

II. Trauma Patients

A. Depressed or deteriorating neurologic status.
B. Respiratory distress or failure.
C. Children requiring endotracheal intubation and/or ventilatory support.
D. Injuries requiring any blood transfusion.
E. Children requiring any of the following:

   1. Invasive arterial pressure monitoring.
   2. Central venous pressure or pulmonary artery monitoring.
   3. Intracranial pressure monitoring.
   4. Vasoactive medications.

F. 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. Traumatic amputation of an extremity with potential for replantation.
   5. Head injury when accompanied by any of the following:
EMSC Guidelines for Interfacility Consultation and/or Transfer of Pediatric Non-Trauma and Trauma Patients

a. Cerebrospinal fluid leaks.
b. Open head injuries, excluding simple scalp injuries.
c. Depressed skull fractures.

6. Significant penetrating wounds to the head, neck, thorax, abdomen or pelvis.
7. Major pelvic fractures.
8. Significant blunt injury to the chest or abdomen.

G. Other Criteria

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

H. Burns Criteria: Thermal, Electrical 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 (10) years of age.
2. Second and third degree burns of greater than 20% of the body surface area for children over ten (10) 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.

I. Spinal Cord or column injuries: Contact should be made with a spinal cord injury center.
MODEL PEDIATRIC INTERFACILITY TRANSFER AGREEMENT

AGREEMENT

This AGREEMENT is made between SPECIALIZED REFERRAL CENTER (CENTER)* LOCATED AT _______________________________ and
HOSPITAL ______ located at _______________________________

______________________________________, hence forth referred to as HOSPITAL or referring hospital.

This Agreement serves as documentation of the arrangements, policies, and procedures governing the transfer of critically ill and/or injured pediatric patients (...Add other types of patients or services, if desired...) between the above named institutions in order to facilitate timely transfer, continuity of care, and appropriate transport for these patients.

THE CENTER AND HOSPITAL DO MUTUALLY AGREE AS FOLLOWS:
1. HOSPITAL recognizes that on certain occasions pediatric patients require specialized care and services beyond the scope of services available at HOSPITAL and that optimal care of these children requires transfer from the emergency department or inpatient services to centers with specialized pediatric critical care or pediatric trauma services.

2. The medical staff and hospital administration of HOSPITAL have identified the CENTER as a pediatric referral center with specialized staff and facilities for tertiary-level care of critically ill and/or injured children.

3. The CENTER agrees to maintain a regional (Tertiary) (1) Pediatric Critical Care Center, (2) Pediatric Trauma Center or (3) General Trauma Center that is equipped and staffed to provide a full range of pediatric medical and surgical services for critically ill pediatric patients and/or pediatric trauma patients in accordance with currently published Pediatric Intensive Care Unit standards, or applicable State and local EMS Agency standards for Pediatric Critical Care Centers, Pediatric Trauma Centers, or General Trauma Centers.

4. The CENTER agrees to accept transfers of critically ill and injured pediatric patients from HOSPITAL, if beds, personnel, and appropriate services are available, if the transfer has been approved by the receiving physician, and if the transfer is consistent with current patient transfer laws.
5. Pursuant to CCS requirements for regional (tertiary) level approval and State Trauma System regulations, CENTERS will provide 24-hour telephone consultation services, 24-hour pediatric transport services, and educational programs related to pediatric emergency, critical care, and/or trauma care that can be made available to community health professionals involved in such care.

* Specialized referral centers for pediatric critical care and/or pediatric trauma care, may include: (1) Pediatric Critical Care Center(s), (2) Pediatric Trauma Centers(s), or (3) General Trauma Center(s).

6. HOSPITAL and CENTER recognize the privilege of an attending physician and the right of the patient, or the patient through a relative or guardian, to request transfer to an alternate facility.

Indications for Pediatric Transfers

7. The referring physician has examined the patient, documented the patient's condition, and has determined that the patient requires a higher level of care than provided at HOSPITAL or requires specialized services provided at the CENTER.

8. The referring physician has evaluated the patient and has determined that the transport is compatible with the patient's condition and is in the best interests of the patient's medical care.
Transfer Arrangements

9. Requests for consultation or transport team support and patient transfer can be generated by telephone to:

(List appropriate telephone numbers for pediatric critical care, trauma, transport, and other services, as appropriate.)

10. When it appears that a pediatric patient requires specialized services or medical care beyond the scope of services provided at HOSPITAL, the referring physician shall contact an appropriate specialist at the CENTER to obtain consultation. The referring physician in conjunction with the CENTER consultant shall be responsible for determining the need for admission to the CENTER. The consent of appropriately authorized staff at the CENTER to receive the patient shall be obtained prior to the patient's release from HOSPITAL and shall be documented in the patient's medical record.

11. Transfer arrangements will be made by mutual consent of the referring and consulting physician. It shall be the responsibility of the physician to whom the patient is transferred to arrange the admission of the patient to the CENTER. If the CENTER is unable to accept the patient because of lack of physical or
professional resources, the CENTER personnel will assist the referring hospital in locating an alternative center for patient placement.

12. The referring physician, in consultation with the receiving physician, shall determine the method of transport to be used. The CENTER may, at its option, provide a specially-trained pediatric transport team. The team shall be in attendance during the entire transport.

13. To the extent possible, patients will be stabilized prior to transfer and treatment initiated to ensure that the transfer will not, within reasonable medical probability, result in harm to the patient or jeopardize survival. Responsibility for the stabilization and care of patients prior to and during transport should be specified.

14. The referring hospital shall be responsible for informing the patient, patient's parent(s), legal guardian, or other relatives of the transfer process and for obtaining any release to effect the transfer. The referring hospital shall use its best efforts to arrange for the parent(s) or guardian to be present at the time of transport.

15. The referring hospital shall be responsible for the transfer or other appropriate disposition of any personal belongings of the patient.
Records and Transmission of Information

16. Subject to federal and state laws regarding consents of minors for medical care and confidentiality of medical information the referring hospital shall send with the patient, or arrange to be immediately transmitted (via FAX), at the time of transfer the necessary documents and completed forms containing the medical, social, and/or other information necessary to ensure continuity of care to the patient. Such documentation shall include at least the following:

a. Identification of the patient
b. Diagnosis
c. Copies of the relevant portions of the patient's medical record (including medical, nursing, dietary, laboratory, X-rays, and medication records)
d. Relevant transport forms
e. Copy of signed consent for transport of a minor

17. Subject to limitations regarding confidentiality, the CENTER shall provide information on the patient's diagnosis, condition, treatment, prognosis, and any complications to the referring physician during the time that the patient is hospitalized at the CENTER and upon discharge or transfer from the CENTER.

Return of Patient to Referring Hospital
18. When the patient's physician at the CENTER determines that the patient is medically fit for return to the referring hospital, that physician should contact an appropriate physician at the referring hospital to arrange for the return of the patient. The CENTER shall send with the patient at the time of transfer the necessary documents and forms containing the medical, social, and/or other information necessary to ensure continuity of care to the patient. The CENTER shall be responsible for informing the patient, patient's parent(s) or legal guardian of the transfer process and for obtaining any releases required for the transfer or the appropriate disposition of any personal effects of the patient. The CENTER will be responsible for arranging patient transport to referring hospital.

19. The return transfer of pediatric patient for continued care upon completion of the treatment at the CENTER will be made by mutual agreement.

Charges for Services

20. Charges for services performed by either institution shall be made and collected by the institution in accordance with its regular policies and procedures. Unless special arrangements have been made to the contrary, the transfer of a patient from one institution to the other shall not be construed as imposing any financial liability by one institution on the other. The parties shall cooperate with each
other in the exchange of information about financial responsibility for the services rendered by them to patients who are transferred to the CENTER.

Authority of Governing Bodies

21. The Governing Body of each institution shall have exclusive control of its policies, management, assets and affairs, and neither shall incur any responsibility by virtue of this Agreement for any debts or other financial obligations incurred by the other. Further, nothing in this Agreement shall be construed as limiting the rights of either institution to contract with any other facility on a limited or general basis.

Term of Agreement

22. The term of this Agreement shall commence on ________________ and shall continue in full force and effect until _________________. Either institution may terminate this Agreement at any time upon giving the other written notice not less than thirty (30) days in advance of the termination date. However, should either institution fail to maintain its license or certification, this Agreement shall automatically terminate as of the date of termination of the license or certification.
Indemnification

23. The parties agree to indemnify, defend and hold one another, their officers, agents and employees harmless from and against any and all liability, loss, expense, attorney's fees, or claims for injury or damages arising out of their performance of this Agreement, but only in proportion to and to the extent such liability, loss, expense, attorney's fees, or claims for injury or damages are caused by or result from the negligent or intentional act or omission of the indemnifying party.

Compliance with Laws and Regulations

24. This Agreement is entered into and shall be performed by both parties in compliance with local, state and federal laws, rules, regulations, and guidelines, including COBRA and OBRA.

Insurance Provisions

25. The parties hereto warrant they shall obtain and maintain during the term hereof, at their own sole cost and expense, insurance or a program of self insurance covering their activities in performance hereof.

General Provisions
26. This Agreement constitutes the entire understanding of the parties hereto with respect to the matters discussed herein and supersedes any and all written or oral agreements, representations or understandings, whether made by the parties or others purportedly on behalf of one of the parties. No changes, amendments, or alterations of this Agreement shall be effective, unless made in writing and signed by both parties.

27. It is not the intention of either party that any person or entity be a third party beneficiary of this Agreement.

28. Neither party may assign, sell, or otherwise transfer this Agreement, or any interest in it, without the express prior written approval of the other.

29. Any notice required or permitted by this Agreement shall be effective and shall be deemed delivered five (5) business days after placing it in the mail, by certified mail, return receipt requested, postage prepaid, or upon personal delivery as follows:

   To: Administrator                     To: Administrator
       CENTER Address                    HOSPITAL Address
IN WITNESS WHEREOF, the parties have executed this Agreement of the date written below.

HOSPITAL (Name and Address)                      CENTER (Name and Address)

_______________________________  ______________________________

_______________________________  ______________________________

_______________________________  ______________________________

Chief Executive Officer                      Chief Executive Officer

Name__________________________  Name__________________________

Title____________________________  Title__________________________

Date____________________________  Date__________________________

_______________________________  ______________________________

Chief of Medical Staff                      Medical Director of PICU

_______________________________  ______________________________

Chief of Pediatrics                          Chief of Pediatrics
Chief of Trauma Service

__________________________________________________
Chief of Emergency Medicine            Medical Director of

__________________________________________________
Emergency Dept.
GUIDELINES FOR PEDIATRIC INTERFACILITY TRANSPORT PROGRAMS IN CALIFORNIA

I. DEFINITIONS

Ambulance Provider. Provider of air or ground ambulances.

Medical Control Physician. The attending physician responsible for directing the medical care of the patient during transport.

Pediatric. The term “pediatric” includes neonates, infants, children and adolescents. For general purposes pediatric is defined as <18 years.

Pediatric Interfacility Transport. The transport of ill or injured pediatric patients between health care facilities.

Pediatric Interfacility Transport Program. A transport program organized to provide pediatric interfacility transport on a regular basis. This program may be hospital-based or non-hospital-based.

Regional Interfacility Pediatric Transport Program. An organized program that provides pediatric transport services for multiple facilities in a geographic area.

Transport Team. A medical team, composed of a minimum of two individuals responsible for providing clinical care and monitoring for a patient during transport.

Transport Team Nurse. A registered nurse providing clinical care for a patient during transport.

Transport Team Physician. The physician providing clinical care for a patient during transport.
### EVALUATION CRITERIA

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<tr>
<th>II. ORGANIZATION AND PERSONNEL</th>
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<tbody>
<tr>
<td>A. Administrative Director</td>
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<tr>
<td>1. Qualifications</td>
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<tr>
<td>a. Appropriate training and experience in transport administration.</td>
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<tr>
<td>2. Responsibilities</td>
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<tr>
<td>a. Oversight of structure, administration, operational components, fiscal management, information nagement and a quality improvement mechanism for the pediatric transport program.</td>
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<tr>
<td>b. Assurance that the transport program meets all applicable federal, state and local laws and regulations.</td>
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<tr>
<td>c. Assurance that all transport program personnel are appropriately licensed or certified in the State of California.</td>
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<tr>
<td>d. Notification of transport team members about insurance coverage and implications of being transport team members.</td>
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**COMMENTS:**

¹ qualified specialist means a physician licensed in California who has taken special postgraduate medical training, or has met other specified requirements, and has become sub-board certified within six (6) years of qualification for sub-board certification in the corresponding sub-specialty.
## EVALUATION CRITERIA

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<tr>
<th>B. Medical Director</th>
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<tbody>
<tr>
<td>1. Qualifications</td>
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<tr>
<td>a. Completion of specialized training, experience, or expertise in pediatric and neonatal transport.</td>
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<tr>
<td>b. Qualified specialist in pediatric emergency medicine, pediatric critical care or neonatal-perinatal medicine.</td>
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<tr>
<td>2. Responsibilities</td>
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<tr>
<td>a. Concurrent service as administrative director if individual meets qualifications in A (1) a.</td>
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<tr>
<td>b. Authority over transport utilization, including triage of transport requests when transport demand exceeds operational capacity.</td>
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<tr>
<td>c. Coordination of specialists and services required in the transport of patients.</td>
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<tr>
<td>d. Establishment of guidelines for transport team composition and mode of transportation.</td>
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<tr>
<td>e. Appointment and assurance of competence of medical control physicians and transport team physicians and the development of appropriate orientation, training, and continuing education programs for these physicians.</td>
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<tr>
<td>f. Appointment of associate and/or assistant medical director(s) as necessary.</td>
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<tr>
<td>(1) The associate and assistant medical director(s) should have specialized training, experience and expertise in pediatric transport and pediatric critical care, including advanced skills in monitoring and life support techniques.</td>
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<tr>
<td>(2) In the absence of the medical director, an associate or assistant director should be designated to function as medical director.</td>
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<tr>
<th>C. Nursing Director/Transport Coordinator:</th>
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<tr>
<td>1. Qualifications</td>
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<tr>
<td>a. Registered nurse with a baccalaureate degree in nursing or another health related field.</td>
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<tr>
<td>b. Specialized training and at least 2 years of clinical experience in pediatric transport.</td>
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<tr>
<td>c. Advanced skills and knowledge of the standards of practice in pediatric monitoring and life support techniques and a minimum of 3 years of clinical experience in pediatric critical care, neonatal intensive care or pediatric emergency services.</td>
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**COMMENTS:**

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Riverside County EMS Agency’s EMS for Children   Guidelines for Pediatric Interfacility Transport Programs

3
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<tr>
<td>2. Responsibilities</td>
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<tr>
<td>a. Concurrent service as the administrative director if individual meets qualifications on A (1) a.</td>
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<tr>
<td>b. Appointment and assurance of competence of transport nurses and development of appropriate orientation, training and continuing education programs for these nurses.</td>
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<tr>
<td>D. Joint responsibilities of the Administrative, Medical and Nursing Directors</td>
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</tr>
<tr>
<td>1. Collaborative responsibilities of the administrative, medical and nursing directors include, but are not limited to, the following:</td>
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<tr>
<td>a. Implementation of these guidelines for the pediatric interfacility transport program.</td>
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<tr>
<td>b. Development, implementation and annual review of policies, protocols and standards for the transport program including policies and procedures for patient care.</td>
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<tr>
<td>c. Collection and analysis of data necessary for evaluation of the safety and effectiveness of the transport program.</td>
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<tr>
<td>d. Integration of orientation, training and continuing education programs for personnel involved in the transport program.</td>
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<tr>
<td>e. Selection and periodic evaluation of competency and performance of personnel involved in the transport program.</td>
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<tr>
<td>f. Implementation of an organized quality improvement program, including the review of quality of care provided by the transport program and appropriate utilization of the transport program and its resources.</td>
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<tr>
<td>g. Development of the budget</td>
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<tr>
<td>h. Appropriate interface with the local EMS agency.</td>
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<tr>
<td>I. Periodic review of transactions of individual transports.</td>
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<tr>
<td>j. Development of outreach education related to the pediatric interfacility transport program.</td>
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### EVALUATION CRITERIA

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<tr>
<th>E. Medical Control Physician</th>
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<tr>
<td>1. Qualifications</td>
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<tr>
<td>a. Qualified specialist¹ in at least one of the following: pediatrics, pediatric emergency medicine, or pediatric critical care.</td>
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<tr>
<td>b. 2 years of clinical experience in pediatric transports.</td>
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<tr>
<td>c. Expertise in pediatric critical care, neonatal intensive care or pediatric emergency medicine.</td>
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<tr>
<td>2. Responsibilities</td>
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<tr>
<td>a. Oversight of medical care delivered during individual transports.</td>
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<tr>
<td>b. Attendance at regular meetings of the transport program staff concerning policies and procedures, quality improvement and safety.</td>
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<tr>
<td>c. Immediate availability when on call for consultations and communication with transport team and referral sources.²</td>
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<tr>
<td>d. Verification of acceptance and disposition of the patient.</td>
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<tr>
<td>e. Determination of the transport team composition, the mode of transport and direction of the clinical care for an individual transport.</td>
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<tr>
<td>f. Delegation of specific responsibilities for the medical care of an individual patient to another physician who has special training in the medical care required; however, the medical control physician retains overall medical responsibility for the transport.</td>
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### COMMENTS:

³Immediately available means (a) unencumbered by conflicting duties or responsibilities; and (b) responding without delay when notified.
### EVALUATION CRITERIA

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<tr>
<th>F. Transport Team Personnel</th>
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<tbody>
<tr>
<td>1. Qualifications</td>
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<tr>
<td>a. For the transport of neonatal and pediatric patient deemed critical by the referring and receiving physicians the transport team should consist of at least 2 individuals and at least one of the team members should be a transport nurse or physician.</td>
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<tr>
<td>b. Certification as a physician, registered nurse, respiratory care practitioner, EMT-I or paramedic as determined appropriate by the medical control physician.</td>
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<tr>
<td>c. Training and experience in pediatric transport and pediatric or neonatal critical care.</td>
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<tr>
<td>d. Transport team personnel who are responsible for the stabilization and transport of ill or injured pediatric patients should collectively possess the skills and knowledge to provide a level of care commensurate with the specific and anticipated clinical needs of the patient.</td>
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**COMMENTS:**

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<tr>
<th>2. Responsibilities</th>
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<tbody>
<tr>
<td>a. Stabilization and care during transport of ill or injured pediatric patients.</td>
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<tr>
<td>b. The transport team leader should:</td>
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<tr>
<td>(1) Be assigned by the medical control physician for each transport team.</td>
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<tr>
<td>(2) Be responsible for patient care under the direction of the medical control physician.</td>
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<td>(3) Coordinate, supervise and/or participate in the patient care delivered.</td>
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<tr>
<td>(4) Maintain communications with the medical control physician and the receiving and referring health care personnel.</td>
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<td>(5) Be responsible for obtaining consents required for the transport and for admission to the receiving hospital.</td>
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<tr>
<td>(6) Attend formal orientation and education programs as required by the transport program.</td>
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<tr>
<td>(7) The transport team should be able to depart from the transport program facility within 60 minutes when the medical control physician deems it to be necessary. Mobilization time is measured from the time of the agreement to transport the patient to the time of the team’s departure.</td>
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**COMMENTS:**
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<tr>
<th>G. Communication Center</th>
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<tr>
<td>1. The Pediatric Interfacility Transport Program should have a transport communication center or special location where transport requests are received and processed. The essential components are:</td>
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<tr>
<td>a. Designated phone lines and two-way communication capability;</td>
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<tr>
<td>b. Transport protocols;</td>
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<tr>
<td>c. A reference database on hospitals and ambulance providers; and</td>
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<tr>
<td>d. Mechanism of documenting all transport transactions.</td>
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<tr>
<td>2. Communication personnel should be trained and skilled in handling transport transactions. They should not have other duties of more primary importance that might cause delays in the transport process.</td>
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<tr>
<td>3. All communications for individual transports should be documented.</td>
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<tr>
<td>4. A reference database should be maintained and should include regional information pertinent to pediatric interfacility transport, including hospitals, ambulance providers, airports, interfacility distances, interfacility transport times by the various ambulance providers, and other essential information stored in a manner which allows immediate accessibility.</td>
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<tr>
<td>5. The transport program should provide a communications system that facilitates communications between the transport team, the communication center personnel, the medical control physician, the referring receiving facilities, and the ambulance providers.</td>
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### III. CONSULTATION SERVICES

Medical and nursing consultation services should be provided by Pediatric Interfacility Transport Programs. Consultation should be available at all times to health care personnel wishing information concerning the care of pediatric patients who might need interfacility transport.

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<tr>
<td><strong>V. AFFILIATED HOSPITAL AGREEMENTS</strong></td>
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<tr>
<td>A. Pediatric Interfacility Transport Programs should have written agreements with referring and receiving hospitals that routinely utilize the program.</td>
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<tr>
<td>B. Agreements should specify the roles and responsibilities of the transport program and the hospitals including:</td>
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<tr>
<td>1. Agreement to transfer and receive appropriate pediatric patients when indicated.</td>
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<tr>
<td>2. Policies and procedures for evaluating, transferring or receiving pediatric patients.</td>
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<tr>
<td>3. Responsibilities for patient care before, during, and after transport.</td>
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<tr>
<td>4. Private physician and family involvement.</td>
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<tr>
<td>5. Recording and transferring appropriate information and records.</td>
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<tr>
<td>7. Term of agreement.</td>
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<tr>
<td>C. Agreements should include provisions for education programs related to pediatric transport, evaluation and stabilization of critically ill and injured pediatric patients, and availability of pediatric critical care consultation and other pediatric critical care services.</td>
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<tr>
<td>D. Agreements should include provision/mechanism for follow-up notification of patients transported. This may include, but not limited to, follow-up letters, phone calls, and case review.</td>
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<td><strong>COMMENTS:</strong></td>
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<tr>
<th>VI. CONTINUOUS QUALITY IMPROVEMENT PROGRAM</th>
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<tbody>
<tr>
<td>A. The Pediatric Interfacility Transport Program should have an organized multidisciplinary quality improvement program.</td>
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<tr>
<td>B. Components of the plan must include an interface with the prehospital, emergency department, trauma, inpatient pediatrics, and pediatric critical care quality improvement activities.</td>
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<tr>
<td>C. The quality improvement program should utilize concurrent review, generic screens and focused studies to monitor pediatric care provided by the Pediatric Interfacility Transport Program.</td>
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<tr>
<td>D. The quality improvement program should:</td>
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<tr>
<td>1. Establish, maintain, support and document evidence of a planned, systematic quality improvement program.</td>
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<tr>
<td>2. Assure appropriate and adequate response to findings from quality improvement activities, including the identification of opportunities to improve patient care and pediatric transport program.</td>
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<tr>
<td>3. Assure appropriate and efficient use of the transport programs and resources.</td>
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<tr>
<td>E. The quality improvement program should address the following:</td>
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<tr>
<td>1. Safety</td>
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<tr>
<td>a. Patient safety for transport under the circumstances.</td>
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<tr>
<td>b. Transport team safety and fitness, including flight arrangements, safety restraints.</td>
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<tr>
<td>c. Equipment safety, including records of equipment used, maintenance, and testing of function.</td>
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<tr>
<td>d. Untoward events</td>
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<tr>
<td>2. Expediency: Recording and review of response times for each component of the transport program.</td>
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<tr>
<td>3. Resource allocation and cost-effectiveness</td>
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<tr>
<td>a. Monitoring and review of appropriate utilization of the transport program, transport personnel, equipment, supplies, and mode of transport.</td>
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<tr>
<td>b. Monitoring and review of transport costs and cost-effectiveness.</td>
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<tr>
<td>5. Patient Care and Management: Evaluation of patient care and management in terms of patient outcome.</td>
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<th>VII. INFORMATION MANAGEMENT</th>
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<tr>
<td>A. Accurate and current records should be maintained on all components of the Pediatric Interfacility Transport Program.</td>
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<tr>
<td>B. Where available, centralized data center should receive data from each transport program.</td>
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<tr>
<td>C. Data should be collected and reviewed on a regular basis for planning, evaluation and quality improvement.</td>
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<td>D. Cooperation should exist between programs in the development, analysis and distribution of data.</td>
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**COMMENTS:**

### VIII. PEDIATRIC INTERFACILITY TRANSPORT EQUIPMENT AND SUPPLIES

<table>
<thead>
<tr>
<th>A. The following equipment and supplies should be available and maintained in proper operating condition for use by the Pediatric Interfacility Transport Program.</th>
<th>MET</th>
<th>NOT MET</th>
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<tbody>
<tr>
<td>1. Transport devices</td>
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<tr>
<td>a. Transport isolette should be capable of providing a neutral thermal environment and should allow for continuous intensive care at all times.</td>
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<tr>
<td>b. The transport gurney or isolette should be capable of being loaded into an ambulance by the ambulance personnel and safely secured within the ambulances.</td>
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<tr>
<td>c. Transport devices should be capable of ensuring that patients can be safely secured.</td>
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<tr>
<td>2. Portable patient equipment</td>
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<tr>
<td>a. Portable patient monitoring equipment should be capable of monitoring the patient’s heart rate, respiratory rate, blood pressure, oxygen saturation and temperature in a moving environment.</td>
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<tr>
<td>b. Transport equipment should have an independent battery power capability of at least 1 ½ hours.</td>
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<th>EVALUATION CRITERIA</th>
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<tr>
<td>3. Transport oxygen/air systems</td>
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<tr>
<td>a. The primary oxygen/air system for transport isolettes should have the capability of blending air and oxygen and providing a precise oxygen concentration from 21% to 100%.</td>
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<tr>
<td>b. Oxygen/air systems should have the capability to operate for twice the anticipated duration of the transport as estimated by the transport program.</td>
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<tr>
<td>4. Ambulance Power</td>
<td></td>
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<tr>
<td>a. Inverter adequate to power the transport equipment.</td>
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<tr>
<td>b. Built-in suction.</td>
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<td></td>
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<tr>
<td>5. Power and oxygen/air connections</td>
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<tr>
<td>a. The transport equipment system should be capable of direct connection to ambulance oxygen/air and power supplies.</td>
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<tr>
<td>(1) 50 PSI oxygen/air source.</td>
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<tr>
<td>(2) Standard oxygen and air connections.</td>
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<tr>
<td>(3) Standard oxygen/air flow meter, capable of delivery of up to 15 liters/minute.</td>
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<tr>
<td>6. Means of securing equipment</td>
<td></td>
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<tr>
<td>a. Positive attachments for all of its components.</td>
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<td></td>
</tr>
<tr>
<td>b. The transport equipment should be stressed and secured such that it will maintain physical and functional integrity when subjected to an impact deceleration.</td>
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<tr>
<td>7. Dedicated equipment and supplies</td>
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<tr>
<td>a. All medical supplies, medications and equipment used on a regular basis by the transport program should be dedicated to it. (See Appendix I.)</td>
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<tr>
<td>6. Means of securing equipment</td>
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<tr>
<td>a. Positive attachments for all of its components.</td>
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<tr>
<td><strong>B. Operation and Maintenance</strong></td>
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<tr>
<td>1. All medical equipment and supplies should meet applicable federal and state requirements, including FAA hazardous material regulations.</td>
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<tr>
<td>2. All equipment should be maintained in working order and be ready for use on transport.</td>
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<tr>
<td>3. Medical equipment, supplies and medications shall be checked on a regular basis and prior to each transport and be compatible with each other and with the equipment of the surface and air ambulance.</td>
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COMMENTS:
### EVALUATION CRITERIA

#### APPENDIX A

The following equipment, medication and supplies should be stocked and immediately available for transport. Selection for the individual transport should be based on the patient’s needs as determined by the medical control physician and the referring physician.

<table>
<thead>
<tr>
<th>a. Monitoring Equipment</th>
<th>MET</th>
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<tbody>
<tr>
<td>1. Stethoscope</td>
<td></td>
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<tr>
<td>2. Cardio-respiratory monitor</td>
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<tr>
<td>3. Pulse oximeter</td>
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<tr>
<td>4. Blood pressure cuffs (automatic and manual) neonatal, infant, child, and adult</td>
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<tr>
<td>5. Patient thermometer</td>
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<tr>
<td>6. ECG monitor/defibrillator (5-400 J capacity) with pediatric and adult sized paddles.</td>
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<tr>
<td>7. Inspired oxygen monitor</td>
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<th>EVALUATION CRITERIA</th>
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<tbody>
<tr>
<td><strong>b. Respiratory Equipment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Oxygen delivery (50 psi with alarm system)</td>
<td></td>
<td></td>
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<tr>
<td>2. End-tidal CO\textsubscript{2} monitor (adult and pediatric)</td>
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<tr>
<td>3. Flowmeter- 1/4 to 15L/minute</td>
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<tr>
<td>4. Neonatal ventilator; pediatric ventilator optional</td>
<td></td>
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<tr>
<td>5. Access to high PEEP system</td>
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<tr>
<td>6. Bag valve mask (BVM) device, self inflating (neonatal, pediatric size 450 ml and adult size 1000 ml).</td>
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<tr>
<td>7. Clear face masks (infant, child, adult)</td>
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<tr>
<td>8. Laryngoscope, blades, (curved 2,3; straight 00,0,1,2,3), light bulbs and batteries</td>
<td></td>
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<tr>
<td>9. Endotracheal tubes (uncuffed 2.5-5.5 and cuffed 6.0-9.0)</td>
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<tr>
<td>10. Magill forceps (pediatric and adult)</td>
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<tr>
<td>11. Endotracheal tube stylettes pediatric and adult)</td>
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<tr>
<td>12. Oral airways (0-5)</td>
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<tr>
<td>13 Chest tubes, placement equipment and Heimlich valve</td>
<td></td>
<td></td>
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<tr>
<td>14. Portable air and oxygen cylinders</td>
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<td></td>
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<tr>
<td>15. Nebulizer</td>
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<tr>
<td>16. Suction:</td>
<td></td>
<td></td>
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<tr>
<td>a) Bulb syringe</td>
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<tr>
<td>b) Portable suction</td>
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<tr>
<td>17. Suction catheters (tracheal and pharyngeal) (infant, child, adult)</td>
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<tr>
<td>18. Nasopharyngeal airways (infant, child, adult)</td>
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<tr>
<td>19. Oxygen delivery devices (e.g. nasal cannulas and oxygen masks)</td>
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<tr>
<td>20. Nasogastric tubes (infant, child, adult)</td>
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<th>EVALUATION CRITERIA</th>
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<tbody>
<tr>
<td>c. Other Equipment</td>
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<td></td>
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<tr>
<td>1. Adhesive tape</td>
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<tr>
<td>2. Arterial line maintenance system</td>
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<tr>
<td>3. Urinary bladder catheters (infant, child, adult)</td>
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<tr>
<td>4. Vascular access:</td>
<td></td>
<td></td>
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<tr>
<td>a) catheters</td>
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<td></td>
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<tr>
<td>b) tubing</td>
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<td></td>
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<tr>
<td>c) intraosseous needles</td>
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<tr>
<td>d) central line</td>
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<tr>
<td>e) UAC/UVC catheters and placement equipment</td>
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<tr>
<td>5. Infusion pumps</td>
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<tr>
<td>6. Penlight/flashlight</td>
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<tr>
<td>7. Warming devices</td>
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<td>8. Child restraint devices for transport devices</td>
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<th>EVALUATION CRITERIA</th>
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<tbody>
<tr>
<td>d) Medications</td>
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</tr>
<tr>
<td>1. Pulmonary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Bronchodilator - aerosol</td>
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<td></td>
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<tr>
<td>b) Racemic epinephrine</td>
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<td></td>
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<tr>
<td>2. Cardiac</td>
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<td></td>
</tr>
<tr>
<td>a) Adenosine</td>
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<td></td>
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<tr>
<td>b) Atropine</td>
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<td></td>
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<tr>
<td>c) Calcium Chloride</td>
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<tr>
<td>d) Furosemide</td>
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<tr>
<td>e) Dobutamine</td>
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<td></td>
</tr>
<tr>
<td>f) Dopamine</td>
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<tr>
<td>g) Epinephrine (1:1,000 and 1:10,000)</td>
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<tr>
<td>h) Lidocaine</td>
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<td></td>
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<tr>
<td>i) Prostaglandin (E1)</td>
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<tr>
<td>j) Sodium bicarbonate</td>
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### EVALUATION CRITERIA

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#### 3. Neurologic

- a) Anticonvulsant (Lorezapam, Phenobarb, Phenytoin, Ativan)
- b) Mannitol
- c) Muscle relaxants
- d) Naloxone
- e) Opiates
- f) Sedatives

**COMMENTS:**

#### 4. Other medications

- a) Broad spectrum antibiotics
- b) Colloids
- c) 25% and 50% Dextrose
- d) IV solutions
- e) Diphenhydramine
- f) Steroids

**COMMENTS:**
EMSC

GUIDELINES FOR

PEDIATRIC INTERFACILITY TRANSPORT PROGRAMS

Policy Number: 2003.2
Effective Date: 6/20/96
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>1</td>
</tr>
<tr>
<td>I. Definitions</td>
<td>2</td>
</tr>
<tr>
<td>II. Organizations and Personnel</td>
<td>2</td>
</tr>
<tr>
<td>A. Administrative Director</td>
<td>2</td>
</tr>
<tr>
<td>B. Medical Director</td>
<td>3</td>
</tr>
<tr>
<td>C. Nursing Director</td>
<td>3</td>
</tr>
<tr>
<td>D. Joint Responsibilities of the Administrative, Medical and Nursing Directors</td>
<td>4</td>
</tr>
<tr>
<td>E. Medical Control Physician</td>
<td>5</td>
</tr>
<tr>
<td>F. Transport Team Personnel</td>
<td>5</td>
</tr>
<tr>
<td>G. Communication Center</td>
<td>6</td>
</tr>
<tr>
<td>III. Consultation Services</td>
<td>7</td>
</tr>
<tr>
<td>IV. Operations Agreements with Ambulance Providers</td>
<td>7</td>
</tr>
<tr>
<td>V. Affiliated Hospital Agreements</td>
<td>7</td>
</tr>
<tr>
<td>VI. Continuous Quality Improvement Program</td>
<td>8</td>
</tr>
<tr>
<td>VII. Records and Information Management</td>
<td>9</td>
</tr>
<tr>
<td>VIII. Pediatric Interfacility Transport Equipment and Supplies</td>
<td>9</td>
</tr>
<tr>
<td>A. Equipment and Supplies</td>
<td>9</td>
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<tr>
<td>B. Operation and Maintenance</td>
<td>10</td>
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<tr>
<td>Appendix</td>
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<td>Endnotes</td>
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Introduction

Safe and effective emergency transport of pediatric patients between health care facilities and specialized pediatric centers (e.g. Pediatric Critical Care Centers, Pediatric Trauma Centers, and Trauma Centers) is an essential component of organized systems of care for critically ill and injured children. Assuring access and appropriate linkage to such specialized centers should be part of local and regional EMS plans for children’s care.

Specialized centers for neonatal and pediatric emergency and critical care have developed rapidly in California. Increasing numbers of neonates and critically ill and injured children are being transported from community health facilities, including emergency departments, to centers with specialized pediatric personnel and services. Specialized interfacility transport programs have also recently evolved to improve access to these centers and to facilitate earlier delivery of specialized critical care services. Ideally all pediatric interfacility transports should occur rapidly and safely by qualified interfacility pediatric transport programs functioning with prospectively developed operational guidelines, consultation agreements and transfer agreements.

In 1994 the California State Emergency Medical Services for Children published the first guidelines within the state for pediatric interfacility transport programs to assure quality of care, cost efficiency, coordination of transports, and adherence to state and federal regulations upon which Santa Clara County’s Guidelines are based.

Pediatric interfacility transport programs, like other components of pediatric emergency and critical care systems, must be tailored to the special needs and resources of each region. These guidelines are intended to apply to both hospital-based and non-hospital based programs that regularly provide pediatric interfacility transport services. Prehospital care providers are currently involved in the interfacility transport of pediatric patients. If such transport services are rendered routinely, as part of a prehospital care provider’s service plan or contract, then the provider is subject to these guidelines. Determination of the level of capability of the transporting service, whether an ambulance provider or an organized pediatric interfacility transport program, is the responsibility of the transferring and receiving physicians. When ambulance providers predominantly involved in prehospital care conduct pediatric interfacility transfers, the appropriateness of such transports and quality of care provided should be reviewed and monitored by the local EMS agency in concert with prehospital care providers.
I. Definitions

A. Ambulance Provider: Provider of air or ground ambulances

B. Medical Control Physician: The physician responsible for directing the medical care of the patient during transport.

C. Pediatric: The term “pediatric” includes neonates, infants, children and adolescents. For data collection purposes, pediatric is defined as <18 years.

D. Pediatric Interfacility Transport: The transport of ill or injured pediatric patients, who might require critical care intervention during transport between health care facilities.

E. Pediatric Interfacility Transport Program: A transport program organized to provide pediatric interfacility transport available on a 24-hour, 7-day-a-week basis. This program may be hospital-based or non-hospital-based.

F. Regional Interfacility Pediatric Transport Program: An organized program that provides pediatric transport services for multiple facilities in a geographic area.

G. Transport Team: A medical team, composed of a minimum of two individuals responsible for providing clinical care and monitoring for a patient during transport.

II. Organization and Personnel

A. Administrative Director

1. Qualifications

   a. Appropriate training and experience in transport administration.

2. Responsibilities

   a. Oversight of structure, administration, operational components, fiscal management, information management and a quality improvement mechanism for the pediatric transport program.

   b. Assurance that the transport program meets all applicable federal, state and local laws and regulations. Assurance that all transport program personnel are appropriately licensed or certified in the State of California.

   c. Notifications of transport team members about insurance coverage and implications of being transport team members.

B. Medical Director or Designee for Pediatric Transport
1. Qualifications
   a. Qualified specialist\(^1\) in emergency medicine, pediatric emergency medicine, pediatric critical care or neonatal-perinatal medicine.
   
b. Completion of specialized training, experience, or expertise in pediatric and neonatal transport.

2. Responsibilities
   a. Concurrent service as administrative director if individual meets qualifications in A-1-a.
   
b. Authority over transport utilization, including triage of transport requests when transport demand exceeds operational capacity.
   
c. Coordination of specialists and services required in the transport of patients.
   
d. Establishment of guidelines for transport team composition and mode of transportation.
   
e. Appointment and assurance of competence of medical control physicians and transport team physicians and the development of appropriate orientation, training, and continuing education programs for these physicians.
   
f. Appointment of associate and/or assistant medical director/s as necessary.
      i. The associate and assistant medical director/s should have specialized training, experience and expertise in pediatric transport and pediatric critical care, including advanced skills in monitoring and life support techniques.
      
ii. In the absence of the medical director, an associate or assistant medical director should be designated to function as medical director.

C. Nursing Director or Designee for Pediatric Transport
1. Qualifications
   a. Registered nurse, preferably with a baccalaureate degree in nursing or another health-related field.
   
b. Specialized training and at least 2 years of clinical experience in pediatric transport.
c. Advanced skills and knowledge of the standards of practice in pediatric monitoring and life support techniques and a minimum of 3 years of clinical experience in pediatric critical care or pediatric emergency services.

2. Responsibilities

a. Concurrent service as the administrative director if individual meets qualifications on A-1-a.

b. Appointment and assurance of competence of transport nurses and development of appropriate orientation, training, and continuing education programs for these nurses.

D. Joint Responsibilities of the Administrative, Medical, and Nursing Directors

1. Collaborative responsibilities of the administrative, medical and nursing directors include, but are not limited to, the following:

a. Implementation of these guidelines for the pediatric interfacility transport program.

b. Development, implementation and annual review of policies, protocols, and standards for the transport program including policies and procedures for patient care.

c. Collection and analysis of data necessary for evaluation of the safety and effectiveness of the transport program.

d. Integration of orientation, training and continuing education programs for personnel involved in the transport program.

e. Selection and periodic evaluation of competency and performance of personnel involved in the transport program.

f. Implementation of an organized quality improvement program, including the review of quality of care provided by the transport program and appropriate utilization of the transport program and its resources.

g. Responsibility for the budget.

h. Appropriate interface with the local EMS agency.

i. Periodic review of transactions of individual transports.

j. Development of outreach education related to the pediatric interfacility transport program.
E. Medical Control Physician

1. Qualifications
   a. Qualified specialist in at least one of the following: pediatrics, pediatric emergency medicine, emergency medicine or anesthesiology.
   b. 2 years of clinical experience in pediatric transport.
   c. Expertise in pediatric critical care or pediatric emergency medicine.

2. Responsibilities
   a. Oversight of medical care delivered during individual transports.
   b. Attendance at regular meetings of the transport program staff concerning policies and procedures, quality improvement and safety.
   c. Immediate availability when on-call for consultations and communication with transport team and referral sources.
   d. Verification of acceptance and disposition of the patient.
   e. Determination of the transport team composition, the mode of transport and direction of the clinical care for an individual transport.
   f. Delegation of specific responsibilities for the medical care of an individual patient to another physician, who has special training in the medical care required. However, the medical control physician retains overall medical responsibility for the transport.

F. Transport Team Personnel

1. Qualifications
   a. For the transport of neonatal and pediatric patients deemed critical by the referring or receiving physicians, the transport team should consist of at least 2 individuals, at least one of whom is a transport nurse or physician currently trained in PALS or NRP (as applicable) and advanced airway management.
   b. Physicians, registered nurses, respiratory care practitioners, EMT-Is, EMT-IIs or paramedics may serve as additional team members as determined appropriate by the medical control physician.
   c. Training and experience in pediatric transport and pediatric critical care.
   d. Transport team personnel who are responsible for the stabilization and transport of ill or injured pediatric patients should collectively possess the skills and knowledge to provide a level of care commensurate with the specific and anticipated clinical needs of the patient.
2. Responsibilities
   a. Stabilization and care during transport of ill or injured pediatric patients.
   b. A transport team leader will be assigned by the medical control physician for each transport team, and should:
      i. Be responsible for patient care under the direction of the medical control physician.
      ii. Coordinate, supervise and/or participate in the patient care delivered.
      iii. Maintain communications with the medical control physician and the receiving and referring health care personnel.
      iv. Be responsible for obtaining consents required for the transport and for admission to the receiving hospital.
      v. Attend formal orientation and education programs as required by the transport program.
   c. The transport should be able to depart from the transport program facility within 60 minutes when the medical control physician deems it necessary. Mobilization time is measured from the time of acceptance to transport the patient to the time of the team’s departure.

G. Communication Center
   1. The Pediatric Interfacility Transport Program should have a transport communication center or special location where transport requests are received and processed. The essential components are:
      a. Designated phone lines and two-way communication capability.
      b. Transport protocols.
      c. A reference data base *(See G-3 below).*
      d. Mechanism of documenting all transport transactions
   2. Communication personnel should be trained and skilled in handling transport transactions. They should not have other duties of more primary importance that might cause delays in the transport process.
   3. A reference data base should be maintained and should include regional information pertinent to pediatric interfacility transport, including hospitals, ambulance providers, airports, interfacility distances, interfacility transport times by the various ambulance providers, and other essential information stored in a manner which allows immediate accessibility.
4. The transport program should provide a communications system that facilitates communications between the transport team, the communication center personnel, the medical control physician, the referring and receiving facilities, and the ambulance providers.

III. Consultation Services

Medical and nursing consultation services should be provided by Pediatric Interfacility Transport Programs. Consultation should be available at all times to health care personnel wishing information concerning the care of pediatric patients who might need interfacility transport.

IV. Operations Agreements with Ambulance Providers

A. The Pediatric Interfacility Transport Program should have written operations agreements with ground and air ambulance providers used by the program for emergency and/or elective transports. Agreements should be in place prior to the initiation of the utilizations of an ambulance provider. Agreements should include but not be limited to:

1. Responsibilities for patient care.
2. Recording and transferring appropriate information and records.
3. Financial and indemnification provision.
4. Term of agreement.

B. The Pediatric Interfacility Transport Program should be responsible for coordinating the mode of transport.

V. Affiliated Hospital Agreements

A. Pediatric Interfacility Transport Program should have written agreements with referring and receiving hospitals that routinely utilize the program.

B. Agreements should specify the roles and responsibilities of the transport program and the hospitals including:

1. Agreement to transfer and receive appropriate pediatric patients when indicated.
2. Policies and procedures for evaluating, transferring or receiving pediatric patients.
3. Responsibilities for patient care before, during, and after transport.
4. Private physician and family involvement.

5. Recording and transferring appropriate information and records.


7. Term of agreement.

C. Agreements should include provisions for educational programs related to pediatric transport, evaluation and stabilization of critically ill and injured pediatric patients, and availability of pediatric critical care consultation and other pediatric critical care services.

VI. Continuous Quality Improvement Program

A. The Pediatric Interfacility Transport Program should have an organized multidisciplinary quality improvement program.

B. Components of the plan must include the ability to interface with each other. These components include transport providers, emergency department, trauma, inpatient pediatrics, and pediatric critical care quality improvement activities.

C. The quality improvement program should utilize concurrent review, generic screens, and focused studies to monitor pediatric care provided by the Pediatric Interfacility Transport Program.

D. The quality improvement program should:

1. Establish, maintain, support, and document evidence of a planned, systematic quality improvement program.

2. Assure appropriate and adequate response to findings from quality improvement activities, including the identification of opportunities to improve patient care and the pediatric transport programs.

3. Assure appropriate and efficient use of the transport programs and resources.

E. The quality improvement program should address the following transport issues:

1. Safety to include patient, transport team, and equipment.

2. Expediency to include recording and review of response times for each component of the transport program.


4. Patient Care Management.
VII. Records and Information Management

A. Accurate and current records should be maintained.

B. Data should be collected and reviewed on a regular basis for planning, evaluation and quality improvement.

C. Cooperation should exist between programs in the development, analysis and distribution of data.

VIII. Pediatric Interfacility Transport Equipment and Supplies

A. The following equipment and supplies should be available and maintained in proper operating condition for use by the Pediatric Interfacility Transport Program.

1. Transport Isolette
   a. Transport isolette should be capable of providing a neutral thermal environment and should allow for continuous intensive care at all times.
   b. The transport gurney or isolette should be capable of being loaded into the transport vehicle and safely secured.
   c. Transport Isolettes should be available either from the transporting hospital or from transporting programs.

2. Portable Patient Equipment
   a. Portable patient monitoring equipment should be capable of monitoring the patient’s heart rate, respiratory rate, blood pressure, blood oxygenation and temperature in a moving environment.
   b. Transport equipment should have an independent battery power capability of at least 1½ hours.

3. Transport Oxygen/Air Systems
   a. The primary oxygen/air system for transport isolettes should have the capability of blending air and oxygen and providing a precise oxygen concentration from 21% to 100%.
   b. Oxygen/air systems should have the capability to operate for twice the anticipated duration of the transport as estimated by the transport program.
4. Ambulance Power
   a. Inverter adequate to power the transport equipment.
   b. Built-in suction.

5. Power and Oxygen/Air Connections
   a. The transport equipment system should be capable of direct connection to
      ambulance oxygen/air and power supplies.
      i. 50 PSI oxygen/air source.
      ii. Standard oxygen and air connections.
      iii. Standard oxygen/air flow meter, capable of delivery of up to 15
           liters/minute.

6. Means of Securing Equipment
   a. Positive attachments for all of its components.
   b. The transport equipment should be stressed and secured such that it will
      maintain physical and functional integrity when subjected to an impact
      deceleration.

7. Dedicated Equipment and Supplies
   a. All medical supplies, medications and equipment used on a regular basis by the
      transport program should be dedicated to it. (See Appendix)

B. Operation and Maintenance
   1. All medical equipment and supplies should meet applicable federal and state
      requirements, including FAA regulations.
   2. All equipment should be maintained in working order and be ready for use on
      transport.
   3. Medical equipment, supplies and medications shall be checked on a regular basis
      and prior to each transport and be compatible with each other and with the
      equipment of the surface and air ambulance.
Appendix

The following equipment, medication and supplies should be stocked and immediately available for transport. Selection for the individual transport should be based on the patient’s needs as determined by the transport team.

1. Monitoring Equipment
   a. Stethoscope
   b. Cardiac-respiratory monitor
   c. Pulse oximeter
   d. Blood pressure cuffs (automatic and manual) neonatal, infant, child, and adult
   e. Patient thermometer
   f. ECG monitor/defibrillator with external pacing capability (5-400 J capacity) with pediatric and adult sized paddles.
   g. Inspired oxygen monitor

2. Respiratory Equipment
   a. Oxygen delivery (50 psi with alarm system)
   b. Flowmeter: 15 L/minute
   c. Neonatal ventilator; pediatric ventilator optional
   d. Access to high PEEP system
   e. Bag valve mask (BVM) device, self inflating and/or anesthesia bag, as appropriate – neonatal, pediatric size 450 ml and adult size 1000 ml.
   g. Laryngoscope, blades (curved 2.3; straight 0,1,2,3), light bulbs and batteries.
   h. Endotracheal tubes: uncuffed 2.5-5.5 and cuffed 6.0-9.0.
   i. Magill forceps: pediatric and adult.
   j. Endotracheal tube stylettes: pediatric and adult.

l. Chest tubes, placement equipment and Heimlich valve and/or needle decompression kits.

m. Portable oxygen cylinders.

n. Nebulizer.

o. Suction:
   i. Bulb syringe
   ii. Portable suction


q. Nasopharyngeal airways: infant, child, adult.

r. Oxygen delivery devices: i.e., nasal cannulas and oxygen masks.

s. Nasogastric tubes: neonatal, infant, child, adult.

3. Other Equipment

   a. Adhesive tape.

   b. Arterial line maintenance system.

   c. Vascular access:
      i. Catheters: 24-18 gauge
      ii. Tubing: micro, macro, blood administration, T-piece, and stopcocks.
      iii. Intraosseous needles.
      iv. Central line: infant, child, adult.

   d. Infusion pumps.

   e. Penlight/flashlight.

   f. Warming devices, insulated blanket.

   g. Approved child restraint devices for isoclette and gurney.
4. Medications

a. Pulmonary
   i. Bronchodilators -- aerosol
   ii. Racemic epinephrine
   iii. Steroid

b. Cardiac
   i. Adenosine
   ii. Atropine
   iii. Bretylium
   iv. Calcium Chloride
   v. Diuretic: Lasix
   vi. Dobutamine
   vii. Dopamine
   viii. Epinephrine
   ix. Lidocaine
   x. Sodium bicarbonate
   xi. Vasodilators

c. Neurologic
   i. Anticonvulsants: short and long acting
   ii. Mannitol
   iii. Paralytic agents
   iv. Naloxone
   v. Opiate
vi. Sedative

vii. Decadron

d. Other Medications

i. IV Solutions

   a. Balanced salt solutions

   b. Dextrose & saline

ii. Colloids, preferable

iii. 25% & 50% Dextrose

iv. Diphenhydramine

v. Antipyretics
Endnotes

1. “Qualified specialist” means a physician licensed in California who has taken special postgraduate medical training, or has met other specified requirements, and has become subboard certified within six (6) years of qualification for sub-board certification in the corresponding subspecialty.

2. “Immediately available” means a) unencumbered by conflicting duties or responsibilities and b) responding without delay when notified.

3. *EMSC Interfacility Consultation and/or Transfer of Pediatric Non-Trauma and Trauma Patients Guidelines.*
PROCEDURES AND MATERIALS REQUIRED FOR PEDIATRIC REFERRAL CENTER SITE VISITS AND DESIGNATION

Status

1. Develop and adopt Standards for Pediatric Critical Care Centers and Pediatric Interfacility Transport Program Standards (or Guidelines). (Other types of pediatric referral centers, e.g., trauma, if desired).

2. Request letters of intent from hospitals interested in being designated. (Model letter, Attachment 1). If there are questions/issues regarding which hospitals might be interested in designation, circulate final standards to all hospitals in the region. Let hospitals decide if they meet the standards and wish to submit a letter of intent. If it is clear which hospitals will be PCCCs, circulate standards to just these hospitals and request letters of intent.

3. Develop EMS agency PCCC Review and Designation Process. Suggested process (Attachment 2). This document explains to hospitals and other interested parties who can apply for PCCC approval and how the EMS agency will proceed in evaluating and approving/designating PCCCs. This document may help EMS agencies avoid legal issues regarding which hospitals may apply for and possibly gain PCCC approval.

4. Develop application form or information form to obtain information from hospital prior to visit. (Attachment 3) Relatively few EMS agencies in Northern and Central CA have required formal applications as part of their pediatric referral center designation process. Other EMS systems have, e.g., Los Angeles County. Applications can be useful in collecting data/information for weeding out hospitals that clearly cannot meet the standards and, therefore, avoiding unnecessary site visits, etc. In addition, application forms (or requests for information from hospitals) can provide information that is valuable for agency representatives and consultants to have prior to the visit in order to evaluate the hospital at the site visit.

5. Send letter to hospitals submitting a letter of intent stating that their letter of intent has been received. Ask hospital to designate a hospital contact person to work with EMS agency to develop detailed schedule for the site visit. Enclose copy of PCCC Review and Designation Process (and application form/information form, as appropriate). (Model letter, Attachment 4).

6. Develop general format for site visit. (Attachment 5) This format can be used to give centers an idea of how the site visit will be conducted and used as a basis for developing detailed site visit schedules. If a detailed site visit schedule has not been developed prior to the site visit, this abbreviated schedule can be sent to hospitals and consultants.

7. Decide on the hospital personnel who should participate in site visits. (Recommendations, Attachment 6) Hospital Coordinator will need to know this in order to find a date for the site visit and develop a detailed schedule for the visit.
8. Decide on **materials hospitals should have available** at site visits for consultants to review. (Attachment 7) These materials (e.g., curriculum vitae, policies, etc.) will help consultants to decide if specific standards are met. **Be sure to list these materials under appropriate standards in the survey document.**

9. Develop **survey document** for visit. This is generally a copy of the standards/guidelines with columns marked “Met” and “Not Met” on the right side of the page. If possible, include materials hospital is requested to have available for review under appropriate standards (Attachment 7) to remind hospital personnel and consultants that they should review these materials when reviewing specific standards.

   It is suggested that the each of the sections of the standards that apply to all services involved in pediatric emergency and critical care (i.e., Participation in hospital multidisciplinary PCCC committee, Coordination and integration with other services involved in pediatric critical care, Policies, CQI, Outreach and Education) be repeated and included in the survey document for each service involved in pediatric emergency and critical care. These services would include: ED, PICU, Pediatric Service, Surgical Service, Pediatric transport service, Trauma Service, Social Services, respiratory care services, etc.

   It is recommended that hospitals be asked to complete a copy of the survey document (self-assessment/survey) and send this to the EMS agency prior to the visit. This can be sent to consultants as background information prior to the visit (or made available at the time of the site visit).

10. Decide on **number and types of consultants** to be used, payment, expense, invoices, etc. (Recommendations, Attachment 8, and 14) Numbers and types of consultants will vary depending on (1) whether a complete survey of the PICU will be conducted or CCS-PICU approval accepted, and (2) whether a Pediatric trauma survey will be conducted.

11. Decide **which consultants will meet with which hospital representatives** to review specific sections of standards and times required. Develop guidelines to help hospital contact person to develop detailed schedule for site visits. (Recommendations, Attachment 9)

   Even if the EMS agency is not designating pediatric trauma centers, it is recommended that consultants meet with trauma service representatives if the hospital is a trauma center. Consultants need to review the trauma service with regard to PCCC standards that apply to all hospital services involved in pediatric critical care (e.g., policies, CQI, education, etc).

12. (A) To get **specific dates and times for site visit and develop detailed schedule and arrangements for site visit**. This generally takes at least one month. Send this person (1) the model format for the site visit, (Attachment 5), (2) the list of hospital representatives who should participate in the site visit (Attachment 6), and (3) and information on how to develop detailed site visit schedule (Attachment 9).
13. Develop model visit confirmation letter and packet of materials to be sent to hospitals regarding site visit and arrangements. (Model letter, Attachment 10).

14. If all sections to be reviewed by each consultant are not included in the individual consultant survey documents, then develop cover sheets for survey documents for each consultant listing sections to be reviewed and special instructions. (Model: Attachment 11)

15. Develop model letter and materials for consultants:
   a. Model visit confirmation letter to be sent to consultants at least two weeks prior to the visit regarding date, time, schedule, for the visits. (Model letter, Attachment 12)
   b. Information and guidelines for consultants; (Model guidelines, Attachment 13)
   c. Information for consultants regarding reimbursement, travel, overnight accommodations (if needed), etc. to go with Invoice. Consultants traveling long distances should arrive the night before the visit and be helped to get accommodations. (Attachment 14)
   d. Model Invoice. (Attachment 15)
   e. Consultant site visit Evaluation Form. (Attachment 16)
   f. Other materials to be included in consultant packets of materials. (Listed at end of consultant letter). (Attachment 12)

16. When potential dates for visits have been found, obtain consultants for visit. This often requires a month to find consultants who are available on the date(s) selected.

17. Develop list of consultants with specialties and titles for each visit. If available, this can be sent to hospitals and consultants prior to visit, or distributed at the beginning of the visit. (Attachment 17)

18. Develop guidelines for PCCC consultation visit team leader. It is recommended that the site team leader be a representative of the EMS agency (or an EMS agency consultant). Experienced physicians, who have done PCCC site visits can also serve as the team leaders. In addition to instructions on the role of site visit consultant, the team leader will need specific instructions on his/her role and responsibilities as the team leader. (Attachment 18)

   Orientation of site team member and leader. Orientation and questions answered can be done (1) the evening before the visit at the hotel where consultants are staying, if consultants come in the day before the site visit, or (2) the morning of the visit in the lobby of the center being visited (approximately 45 minutes).
19. Develop format for feedback letter to hospitals. (Model format, Attachment 19) Draft feedback letter should be prepared by EMS agency based on consultants’ reports. Draft letter should be circulated to consultants for review with a time limit listed for submitting corrections or changes. It should be stated that if consultants do not make changes, the letter will be sent out as is.

20. Prepare and send feedback letter to hospital with consultants’ findings and recommendations. State whether hospital is: (1) designated, (2) will be designated pending corrections by _____ date ___, or (3) not designated. State reasons if not designated. The letter should name an EMS agency contact person to answer any questions the hospital might have. (Suggestions for letter, Attachment 19)

21. Send thank you letters to hospital and consultants. (Model letters, Attachments 20 and 22)

22. [Optional: Prepare and send evaluation forms to hospitals and consultants for evaluation and comments on site visit]. (Model forms, Attachments 21 and 23)

23. *Follow up on corrections required. Send final letter regarding EMS agency designation.
ATTACHMENT I

MODEL LETTER TO HOSPITALS REGARDING INTEREST IN PCCC
DESIGNATION AND SUBMISSION OF LETTERS OF INTENT

(This letter can be sent to all hospitals in the county/region to provide all hospitals with an
opportunity to seek designation; or to selected hospitals, if it is clear that only certain hospitals
can qualify).

Date________________

Name of Hospital Administrator
Address

RE: Pediatric Critical Care Center Standards and Designation
(Add other types of pediatric centers, if appropriate)

Dear__________________________:

The Sierra-Sacramento Valley EMS agency revising and updating the Pediatric Emergency and
Critical Care System. This effort is supported by a grant from the California Emergency
Medicine Services Authority.

Specialized pediatric referral centers for critically ill and injured children are a key component of
the Pediatric Emergency and Critical Care system, and standards for Pediatric Critical Care
Centers have been revised and updated. The EMS agency plans to resurvey and designate
pediatric critical care referral centers (PCCCs) that serve our pediatric population. The agency
does not plan to survey and designate pediatric trauma centers. The purpose of this letter is to
request letters of intent from centers interested in seeking designation as pediatric critical care
centers.

A copy of the revised Standards for Pediatric Critical Care Centers is enclosed. Standards (or
guidelines) for Pediatric Interfacility Transport Programs are also enclosed and are required for
all centers seeking PCCC designation. These standards are based on guidelines for EMSC
systems developed by the State EMS Authority, California Children Services Standards for
Pediatric Intensive Care Units, recognized national guidelines, and standards developed by other
EMSC projects in California.

Please review the enclosed standards. If your hospital meets the standards and is interested in
seeking redesignation as a PCCC please submit a letter stating your intent to apply for
designation and to comply with the standards.

Letters of intent should be sent to: Name and address by Date. Upon receipt
of your letter of intent, the EMS agency will contact your hospital to arrange a site visit to
evaluate hospital services and verify compliance with the standards.

(Page 1 of 2)
We look forward to working with you to assure appropriate pediatric referral centers for critically ill and injured children in our region. If you have any questions, please contact [Name and Telephone Number].

Sincerely,

EMS Agency Director (and/or)
EMSC Coordinator

cc: [Optional] Key County representatives, e.g.,
    Director of Public Health, or agency overseeing EMS Chair, EMS Commission
Key EMS Agency Personnel, e.g.,
    EMS Director/Administrator
    EMS Medical Director
    EMSC Coordinator
Chair, EMSC Advisory Committee
Chairs of other key EMS agency committees (if appropriate)
Medical Director of PICU
Chief of Pediatrics
Medical Director of Emergency Department
Hospital Nursing Director
[Others, e.g., EMSC system development consultant]

Encl: Copy of PCCC standards
Copy of Pediatric Interfacility Transport Program Standards or guidelines
ATTACHMENT 2

MODEL PEDIATRIC CRITICAL CARE CENTER DESIGNATION/APPROVAL PROCESS

[This model can be used by EMS agencies to develop their own process for PCCC designation (or approval). It can be distributed to hospitals seeking designation and others, as needed. Include information about PCCC application forms, if required].

All correspondence and materials related to pediatric critical care center designations should be mailed to:

Name
Title
Address
Telephone #

Hospitals seeking designation as a pediatric critical care center should obtain appropriate standards from the EMS agency. No hospital will be approved as a Pediatric Critical Care Center unless they have (1) a CCS approved PICU and (2) an emergency department that meets PCCC standards. Hospitals should review the relevant standards and determine whether the standards are met.

1. **Letter of Intent** Hospitals that believe they meet the standards, should submit a letter of intent to the EMS agency. The letter should (1) state that the hospital intends to seek designation, and (2) state that the hospital will meet the appropriate EMS agency standards.

2. Within two weeks of receipt of the letter of intent, the EMS agency will contact the hospital to discuss the designation/approval process.

3. The hospital should designate a hospital contact person to work with the EMS agency to obtain necessary information from the hospital and to organize a site visit to verify compliance with the standards.

4. Hospital site visits.

   A. Hospital site visits require one full day (usually from approximately 9:00 AM to 5:00 PM).

   B. Hospital representatives who should participate and be scheduled for meetings with site visit consultants include:

   (1) **Essential Hospital Representatives:**
   - Medical Director, Pediatric Intensive Care Unit
   - Nursing Director, Pediatric Intensive Care Unit
   - Medical Director, Emergency Department
   - Emergency Department Physician Coordinator for Pediatric Emergency Services
5. Consultation Teams

The EMS agency will organize a team of consultants to participate in the site visit, evaluate services, and advise the EMS agency regarding compliance with standards.

Consultants will be Board Certified, recognized experts in their respective fields. Consultants will be selected from designated pediatric referral centers located outside the EMS agency service area and have no financial or other affiliation with applicant hospitals in order to promote objective reviews and avoid conflicts of interest.

Consultant teams will consist of:

A. A Pediatric Critical Care Physician.

B. An Emergency Physician with expertise in pediatric emergency medicine.

C. A Registered Nurse with expertise in pediatric emergency and critical care. (For comprehensive surveys of the PICU including CCS PICU standards: a Registered Nurse with expertise in pediatric emergency nursing and a Registered Nurse with expertise in pediatric critical care nursing).
D. EMS agency representative

6. Hospitals should have documentation and other supportive materials (e.g., curriculum vitae, policies and procedure manuals, QI procedures, data, etc.) as well as information, materials, and records requested by the EMS agency available at the time of the visit for consultants to review.

7. Site Visit Follow-Up.

Following the site visit, the EMS agency will compile the findings and recommendations submitted by consultants. A composite letter with consultants’ findings and recommendations will be sent to the hospital within two months of the visit.

8. Designation/Approval Process

EMS agency staff will review consultants findings and recommendations and notify the hospital of one of the following actions:

Designation/Approval. If the hospital has substantially met all relevant standards, the EMS Agency Administrative Director will send the hospital’s Chief Administrative Officer a letter stating that the hospital has been designated/approved by the EMS agency as a pediatric critical care center.

Designation/Approval Subject to Corrections of Deficiencies. If the hospital has met most of the standards, but there are deficiencies that the EMS agency determines need to be corrected prior to designation/approval, the EMS Agency Administrative Director will send the hospital a letter stating that the hospital has met most of the standards, but correction of specific deficiencies must be made prior to formal approval. A list of specific deficiencies and recommendations for correction will be included.

The hospital is responsible for notifying the EMS agency when deficiencies have been corrected. If satisfactory corrections are made within six months of receipt of the EMS agency letter, or a satisfactory “plan of correction” is submitted, the EMS agency will send a formal designation/approval letter to the hospital. If the hospital does not make satisfactory corrections of deficiencies, the EMS agency will send a letter to the hospital denying designation/approval.

Denial of Designation/Approval. If the hospital does not substantially meet the EMS agency standards, or does not make satisfactory corrections or submit a satisfactory plan of corrections, within six months of receiving the EMS agency letter notifying the hospital of corrections required, the EMS Agency Administrative Director will send the hospital a denial of designation/approval. The letter will state the reasons for denial.

Hospitals may appeal letters of denial to the EMS Agency by submitting a written appeal to the EMS Administrative Director. Hospitals denied designation/approval may reapply after ________________ year from the date of the letter of denial.

9. Contracts [Whatever EMS agency wants to require.]

Approved pediatric referral centers should immediately notify the EMS Agency Administration Director in writing of any changes in the center’s personnel or services resulting in non-compliance with EMS agency standards. The EMS agency will make a determination as to whether the center’s designation/approval will be revoked.

11. Resurvey and Re-evaluation

The EMS agency will establish a schedule for resurveying and re-evaluation of pediatric referral center designations/approvals.
ATTACHMENT 3

MODEL REQUEST FOR DATA/INFORMATION FORM

(EMS agencies should decide if they want to require formal application forms for PCCC designations. If application forms are not required, the EMS agency may wish to develop a form for requesting data and information that would be helpful for the agency and consultants to have prior to the visit. The names, titles, etc. will be helpful to the EMS agency in communicating with hospital personnel and sending copies of various letters.)

Hospitals seeking designation as a Pediatric Critical Care Center should complete and return the following data and information to: (Name, Title, Address, Telephone, FAX, and Page #).

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<th>Name of Hospital</th>
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Chief Administrative Officer

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Designated Hospital Representative for Coordinating with EMS Agency and Hospital Personnel for PCCC Site Visit Arrangements

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General Information

1. Type of Hospital
   a. General
   b. Children’s
   c. Governmental
   d. University
   e. Kaiser/HMO

2. Is the hospital a designated trauma center? Yes _________  No _________
   Trauma Center Level?

   Is there a specific pediatric trauma program? Yes _________  No _________
3. Does the hospital have an approved pediatric residency program or an affiliation with an approved pediatric residency program?  
   Yes _________  No _________

4. Does the hospital have an approved pediatric critical care fellowship program or a formal affiliation with an approved program?  
   Yes _________  No _________

5. Is the hospital a designated regional referral Center for the following?  
   a. Neonatal intensive care  
      Yes _________  No _________
   b. Pediatric intensive care  
      Yes _________  No _________
   c. Pediatric rehabilitation  
      Yes _________  No _________
   d. Burn care  
      Yes _________  No _________
   e. Spinal cord injuries  
      Yes _________  No _________
   f. Pediatric cardiac surgery  
      Yes _________  No _________
   g. Pediatric organ transplants  
      Yes _________  No _________

6. Hospital Beds  
   a. Total licensed hospital beds  
      ______________________________
   b. Total licensed pediatric beds  
      (excluding NICU and PICU beds)  
      ______________________________
   c. Total licensed NICU beds  
      ______________________________

Pediatric Intensive Care Unit (PICU)

1. Does the hospital have a separate PICU  
   a. Is the PICU CCS-approved?  
      Yes _________  No _________

2. Total PICU beds  
   a. Acute PICU  
      ______________________________
   b. Stepdown/intermediate PICU  
      ______________________________

3. Please provide the following data for the last two calendar (or fiscal) years.  
   Year 1  Year 2  
   a. Total PICU admissions  
      (1) Acute PICU  
      ______________________________  
      (2) Intermediate/stepdown PICU  
      ______________________________
   b. Average length of stay  
      (1) Acute PICU  
      ______________________________  
      (2) Intermediate/stepdown PICU  
      ______________________________
   c. Average occupancy rate  
      (1) Acute PICU  
      ______________________________  
      (2) Intermediate/stepdown PICU  
      ______________________________
   d. Transports to PICU
Emergency Department

1. Please provide the following information (or estimates) for the average number of pediatric patients (as defined by the hospital) treated in the ED by either month or year.

   a. Approximate number of children treated in the ED.                                     
      (1) Pediatric trauma patients                                                      
      (2) Major pediatric trauma patients.                                             
      (3) Pediatric medical patients.                                                   

   b. Approximate number of pediatric ED patients admitted directly to the operating room.  

   c. Approximate number of pediatric ED patients admitted directly to the PICU.       

   d. Approximate number of pediatric ED patients transferred from the ED to another facility.  

2. ED physician staff

   a. Total full-time ED physicians                                                         
      Total part-time ED physicians                                                        

   b. How many ED physicians are Board Certified/Prepared or Eligible in: 
      (1) Emergency Medicine                                                               
      (2) Pediatric Emergency Medicine                                                     
      (3) Pediatrics                                                                      
      (4) Other specialties                                                                

   c. How many ED shifts per month are covered solely by physicians who are not Board Certified/Prepared or Eligible in specialties (1), (2), or (3) above?  

   d. Percent of ED physicians trained in:  
      (1) PALS or APLS                                                                    
      (2) ATLS                                                                          
      (3) ACLS                                                                          

(1) Acute PICU
(2) Intermediate/stepdown PICU

Deaths
(1) Acute PICU
(2) Intermediate/stepdown PICU

1. Please provide the following information (or estimates) for the average number of pediatric patients (as defined by the hospital) treated in the ED by either month or year.

   a. Approximate number of children treated in the ED.                                     
      (1) Pediatric trauma patients                                                      
      (2) Major pediatric trauma patients.                                             
      (3) Pediatric medical patients.                                                   

   b. Approximate number of pediatric ED patients admitted directly to the operating room.  

   c. Approximate number of pediatric ED patients admitted directly to the PICU.       

   d. Approximate number of pediatric ED patients transferred from the ED to another facility.  

2. ED physician staff

   a. Total full-time ED physicians                                                         
      Total part-time ED physicians                                                        

   b. How many ED physicians are Board Certified/Prepared or Eligible in: 
      (1) Emergency Medicine                                                               
      (2) Pediatric Emergency Medicine                                                     
      (3) Pediatrics                                                                      
      (4) Other specialties                                                                

   c. How many ED shifts per month are covered solely by physicians who are not Board Certified/Prepared or Eligible in specialties (1), (2), or (3) above?  

   d. Percent of ED physicians trained in:  
      (1) PALS or APLS                                                                    
      (2) ATLS                                                                          
      (3) ACLS                                                                          

(1) Acute PICU
(2) Intermediate/stepdown PICU

Deaths
(1) Acute PICU
(2) Intermediate/stepdown PICU
3. ED nursing staff.
   a. Total full-time equivalent ED nurses ______________________________
   b. Percent of ED nurses trained in:
      (1) PALS or equivalent pediatric nursing Course. ______________________________
      (2) ATLS ______________________________
      (3) ACLS ______________________________

Surgery Department

1. Are pediatric surgical patients (as defined by the hospital) who require intensive care routinely cared for in the PICU? Yes _______ No _______
   a. If no, where do they receive ICU care? ______________________________
   b. Are pediatric patients cared for in adult specialty ICUs (e.g., burn, spinal cord injury, etc. units) Yes _______ No _______
   c. Described any age or other criteria for determining where pediatric surgical patients receive ICU care. __________________________________________

Hospital Training/Education Programs

1. Does the hospital provide formal training/education programs in pediatric emergency and critical care (such as PALS) for:
   a. Hospital physicians Yes _______ No _______
   b. Hospital nurses Yes _______ No _______
   c. Respiratory therapists Yes _______ No _______
   d. Social service personnel Yes _______ No _______
   e. Prehospital personnel Yes _______ No _______

Continuos Quality Improvement Program for Pediatric Patients.

1. Is there an integrated CQI program for pediatric patients that involves all major hospital services involved in pediatric emergency and critical care? Yes _______ No _______

2. List hospital committees responsible.
Multidisciplinary Pediatric Critical Care Committee

1. Attach list of members of the committee and indicate medical, nursing, or other specialties represented by each member.

Statement of Commitment

The hospital affirms its commitment to meet the “Standards for Pediatric Critical Centers” and “Standards for Pediatric Interfacility Transport Programs” adopted by the Sierra-Sacramento Valley EMS agency.

Signatures

________________________________
Individual Completing Form

______________________________
Name (Please type)

______________________________
Title

______________________________
Date

______________________________  ________________________________
Medical Director, Pediatric Medical Director, Emergency Department
Intensive Care Unit

______________________________  ________________________________
Name (Please type) Name (Please type)

______________________________  ________________________________
Title Title

______________________________  ________________________________
Date Date

??? Others
KEY HOSPITAL PERSONNEL  Please provide the following information to facilitate communications and arrangements for your site visit.

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(???? Others, e.g., Trauma Coordinator, Chief of Surgery, etc.)
ATTACHMENT 4

LETTER TO HOSPITALS SUBMITTING A LETTER OF INTENT TO BE DESIGNATED AS A PCCC

(Send the “PCCC Review and Designation/Approval Process” and the “Request for Data/Information Form” if these have been developed with letter. This letter is often sent directly to the PICU Medical Director since he/she usually coordinates the designation process, with a copy of the letter and attachments to the hospital administrator.)

Date _____________

PICU Medical Director (with copy of letter and attachments to Hospital Administrator)

Address

RE: Pediatric Critical Care Center Designation

Dear _________________:

The Sierra-Sacramento Valley EMS agency has received a letter expressing the interest of your medical center in being designated as a Pediatric Critical Care Center (PCCC) for our region.

Enclosed is a description of the PCCC Review and Designation Process (and a request for information from your hospital. This information will assist our agency to evaluate your center and communicate with appropriate personnel at your center. The information will also be helpful for site visit consultants to have prior to the visit.)

It is essential that your hospital identify a contact person to work with the EMS agency and hospital personnel on the designation/approval process and the submission of the data/information requested. Please submit the name of your contact person to me as soon as possible.

The designation process includes a site visit by EMS agency personnel and expert physician and nursing consultants to evaluate your pediatric emergency and critical care services. The evaluation will be based on the Standards for Pediatric Critical Care Centers and Standards (or Guidelines) for Pediatric Interfacility Transport Programs adopted by the Sierra-Sacramento EMS agency. The site visit will be at no cost to your hospital.

(Optional: Also enclosed are copies of the survey documents listing Pediatric Critical Care Center Standards and Pediatric Interfacility Transport Standards (or Guidelines) that will be used to evaluate your center. We suggest that you use these documents to complete a self survey of your services. Please return a copy of your self survey to the EMS agency as soon as possible (or Please have copies of your self survey available for consultants at the time of the site visit.)

When we receive the name of your contact person, an EMS agency representatives will call to provide assistance in working out arrangements for the site visit.)
We appreciate your interest and commitment to serve as a pediatric referral center for critically ill and injured children in our region. If you have any questions, please do not hesitate to contact me at (telephone number).

Sincerely,

Name
EMSC Coordinator

cc: Send letter and attachments to: Medical Director of PICU and Hospital Administrator
  (Letter only)
  EMS Agency Administrator
  EMS Agency Medical Director
  Chair, EMSC Advisory Committee, if appropriate

Chief of Pediatrics
Medical Director of Emergency Department
Hospital Nursing Director
(Medical Director of Trauma Program, if appropriate)

Encl: (If appropriate)

  PCCC Review and Designation/Approval Process
  Request for data/information Form

  ??? Survey document for self survey!
ATTACHMENT 5

MODEL FORMAT FOR PCCC SITE VISIT

(Site visits require one full day. A detailed schedule indicating times and rooms for meetings of consultants and hospital representatives and other meetings should be worked out with center contact person for each visit.)

9:00 A.M. Site visit team meets at Information Desk in main lobby for brief orientation.

9:25 A.M. Center representative meets consultant team in lobby and escorts team to room where group orientation meeting will be held.

9:30 A.M. Group orientation meeting of site visit team and center representatives for introductions, explanation of purpose and format of the visit, and questions. Representatives from hospital administration and nursing administration and representatives who will be involved in the visit are encouraged to attend. (Center is requested to arrange a meeting room where site visit team and hospital representatives can be comfortably seated.)

10:00 A.M. Individual meetings of consultants and center representatives to review specific sections of standards and tour specific units/services. (Specific schedule for times and places for these meetings to be worked out with the center. Center is requested to arrange meeting rooms that will seat approximately 6-8 persons for these meetings.)

12:30 P.M. Lunch and private meeting of consultants to discuss findings and review records. Requested records should be available for review. (Lunch and room to be arranged by center.)

2:00 P.M. Continuation of individual meetings of consultants and center representatives to review specific sections of standards and tour specific units/services. (Specific schedule for times and places for these meetings to be worked out with the center. Center is requested to arrange meeting rooms that will seat approximately 6-8 persons for these meetings.)

4:00 P.M. Private meeting of consultants to discuss findings and prepare comments for exit meeting. (Room to be arranged by center for approximately ________ persons.)

4:30 P.M. Group summation meeting of site visit team and center representatives to discuss general findings, explain feedback letter to center and designation process, answer questions, and thank center. (Room to be arranged by center.)

DETAILED SCHEDULES FOR TIMES AND PLACES FOR INDIVIDUAL MEETINGS OF CONSULTANTS AND CENTER REPRESENTATIVES WILL BE ARRANGED WITH THE CENTER AND MAILED TO CONSULTANTS AND THE CENTER PRIOR TO THE VISIT.

(See Attachment 9 for guidelines on how to develop detailed schedules for PCCC visits.)
ATTACHMENT 6

HOSPITAL REPRESENTATIVES WHO SHOULD PARTICIPATE AND MEET WITH CONSULTANTS DURING SITE VISITS

A. Essential Hospital Representatives:

1. Medical Director, Pediatric Intensive Care Unit
2. Nursing Director, Pediatric Intensive Care Unit
3. Medical Director, Emergency Department
4. Emergency Department Physician coordinator for Pediatric Emergency Services
5. Nursing Director, Emergency Department
6. Emergency Department Nursing Coordinator for Pediatric Emergency Services
7. Medical Director, Department of Pediatrics
8. Medical Director, Pediatric Interfacility Transport Service

B. Hospital Representatives or their designees:

9. Hospital Chief Administrative Officer, or designee
10. Hospital Nursing Director, or designee
11. Nursing Director, Department of Pediatrics or designee
12. Medical Director, Surgical Service, or designee
13. Nursing Director, Surgical Service, or designee
14. Medical Director, Anesthesia Service, or designee
15. Director of Radiology Service, or designee
16. Director of Laboratory Service, or designee
17. Director of Social Service, or designee
18. Director of Respirator Care Service, or designee

C. For Hospitals that are Pediatric Trauma Centers or General Trauma Centers:

19. Medical Director of the Trauma Service and/or Pediatric Trauma Service
20. Trauma Coordinator and/or Pediatric Trauma Coordinator

D. Optional participants:

1. Hospital Chief of Medical Staff
2. Hospital Quality Improvement representative
ATTACHMENT 7

MATERIALS HOSPITALS SHOULD HAVE AVAILABLE FOR CONSULTANTS TO REVIEW AT SITE VISITS

(The following materials should be available for review by consultants during PCCC site visits.)

_______ 1. MEMBERSHIP of the hospital’s multidisciplinary Pediatric Critical Care Committee.

_______ 2. EVIDENCE OF CCS PICU APPROVAL or current application to CCS for approval.

_______ 3. PEDIATRIC POLICIES for the following services:
   a. Emergency Department
   b. Pediatric Intensive Care Unit
   c. Surgical/PACU Services
   d. Pediatric Service
   e. Trauma Service

_______ 4. PEDIATRIC QUALITY IMPROVEMENT PROCESS AND PROCEDURES for the following services:
   a. Emergency Department
   b. Pediatric Intensive Care Unit
   c. Surgical/PACU Services
   d. Pediatric Service
   e. Trauma Service

_______ 5. CURRICULUM VITAE for the following:
   a. Medical Director of the ED
   b. Physician Coordinator for Pediatric Emergency Services
   c. Nursing Coordinator for Pediatric Emergency Services
   d. Medical Director and Associate Director of the PICU
   e. Nurse Manager and PICU Clinical Nurse Specialist of the PICU
   ?? others

_______ 6. CURRENT ON-CALL SCHEDULE for:
   a. Physician coverage of the PICU
   b. Physician coverage of the ED
   c. Qualified specialists with pediatric expertise

_______ 7. TRANSFER AGREEMENTS
   a. Hospital transfer agreement for signing with community hospitals
   b. Transfer agreements with specialty centers for services not provided by the hospital (e.g., burn, spinal cord injury, transplants, etc.)

_______ 8. MEDICAL RECORDS FOR REVIEW
The following records should be available for consultants to review during the lunch break in the room where consultants will have lunch. Strict confidentiality will be maintained in reviewing these records and no information from these records will be recorded or communicated.

a. Ten (10) consecutive PICU admissions beginning with January 1, 1997
b. Ten (10) consecutive pediatric ED records beginning with January 1, 1997
c. Ten (10) consecutive pediatric surgical records beginning with January 1, 1997
d. Five (5) records of major pediatric trauma cases (if applicable)

???? Copies of self assessment survey document for consultants

(Note: EMS agency may ask hospitals to have other information/documents, if they wish)
ATTACHMENT 8

RECOMMENDED CONSULTANTS FOR PCCC SITE VISITS

All consultants should be Board Certified/Prepared and be recognized experts in their respective specialties. Consultants should be selected from designated Pediatric Referral Centers from outside the EMS area and have no financial, professional, or other conflict of interest related to the hospitals to be visited.

An EMS agency representative (staff person or consultant) should accompany each site visit consultant during the site visit and be oriented as to format of the site visit and their role and responsibilities.

It is recommended that consultant teams for PCCC site visits that will not include a detailed survey of the PICU consist of the following types of consultants:

1. A Pediatric Critical Care (PICU) Physician.

2. An Emergency Physician (preferably Board Certified in Pediatric Emergency Medicine) with expertise in pediatric emergency medicine.

3. A Registered Nurse with expertise in pediatric emergency and pediatric critical care nursing.

4. EMS agency administrative representatives.
ATTACHMENT 9

SUGGESTIONS FOR DEVELOPMENT OF SPECIFIC SCHEDULES FOR PCCC SITE VISITS

(The EMS agency PCCC site visit coordinator will need to work with the hospital coordinator to work out a specific schedule for each PCCC site visit. Specific schedules will vary depending on when hospital representatives are available to meet with consultants. Schedules will also vary depending on whether or not a complete survey of the PICU is being conducted.)

The following guidelines for developing PCCC visit schedules are based on EMS agency acceptance of CCS PICU approval, a limited survey of the PICU, and a consultant team consisting of three consultants (a pediatric emergency physician, a pediatric critical care physician, and a pediatric emergency/critical care nurse).

**PEDIATRIC EMERGENCY PHYSICIAN CONSULTANT**

1. A block of time (two and a half hours) needs to be scheduled when the (1) ED Medical Director and Physician Coordinator for Pediatric Emergency Services and (2) the ED Nurse Manager and Nursing Coordinator for Pediatric Emergency Services are available to meet with the ED physician and nurse consultants. These meetings are usually scheduled for the morning of the visit when the ED is generally less busy.

   Consultants will review PCCC standards related pediatric ED services; physician specialty availability, ED pediatric policies, quality improvement, education, and outreach programs; participation in the hospital pediatric critical care committee; and integration with PICU and other pediatric critical care services. Review of special services/resources as time permits. (Tour of ED.)

2. The ED physician consultant also needs to be scheduled to meet with the following hospital representatives. These meetings are usually scheduled in the afternoon after the ED physician consultant has completed the survey of the ED. Meeting times should be arranged according to when hospital representatives are available.

   (1) **Director of the Radiology Service, or designee (approximately 30 minutes)** to review PCCC standards related to radiology services and tour the radiology services.

   (2) **Director of Laboratory Services, or designee (approximately 30 minutes)** to review PCCC standards related to laboratory services and tour laboratory facilities.

   (3) (If the hospital is a trauma center) **Director of Trauma (or Pediatric Trauma) Service and Trauma Coordinator (approximately 45 minutes)**. The consultant will review PCCC standards that relate to all hospital services involved in pediatric emergency and critical care, e.g., pediatric policies, quality improvement, education, and outreach program; participation in the hospital pediatric critical care committee; integration with PICU and other pediatric critical care services,
and physician specialty availability as they relate to the trauma service. Review of special services/resources as time permits.

If the hospital is not a trauma center, and there are no specific pediatric trauma services to be reviewed, the ED consultant should be scheduled to join other consultants in interviews they are conducting or scheduled to “continue record reviews.”

**NURSING CONSULTANT**

1. The nursing consultant must be scheduled with the ED physician consultant for the survey of the ED (approximately two and a half hours) usually the morning of the visit.

2. The RN consultant will also need to be scheduled to meet with the following hospital representatives. These meetings are usually scheduled in the afternoon after the nurse consultant has completed the survey of the ED.

   (1) **Hospital Director of Nursing, or designee, (20 minutes).**
   The consultant will review the overall commitment of nursing leadership to the pediatric critical care center; nursing involvement in the hospital pediatric critical care committee; mechanisms to assure appropriate education, experience, and competence of nurses involved in pediatric emergency and critical care; nursing education and staff development programs; and nursing quality improvement programs. These topics will also be reviewed in detail with nursing representatives from specific nursing services such as the PICU, ED, Surgery, etc.

   (Optional) The Nursing Director may wish to invite other nursing representatives responsible for nursing education, quality improvement, etc. to participate in this meeting.

   (2) **Nurse Manager of the PICU (approximately 45 minutes).**
   The consultant will review nursing standards for the PICU; PICU nursing policies, quality improvement, education, and outreach programs; participation of nurses in the pediatric critical care committee; integration of PICU nursing services with other nursing services involved in pediatric critical care; and nursing standards for pediatric interfacility transport program.

   (3) **Nurse Manager of the Pediatric Service or designee (20 minutes).**
   This meeting can be combined with the meeting with the Nurse Manager of the PICU. The consultant will review pediatric service nursing policies, quality improvement, education, and outreach programs; and the integration of pediatric nursing services with other nursing services involved in pediatric critical care.

   (4) **Nurse Manager of the Surgical/PACU Service or designee (30 minutes).**
   The consultant will review PCCC nursing standards for the surgery and post anesthetic care (PACU) units; surgical and PACU nursing policies, quality improvement, education, and outreach programs; participation of nurses in the pediatric critical care committee; and integration of surgical/PACU nursing services with other nursing services involved in pediatric critical care.
1. A block of time (approximately two hours) needs to be scheduled when the Medical Director of the PICU is available to meet with the pediatric critical care consultant. (Other PICU physicians, nursing representatives, etc. are welcome to attend, if desired.)

The consultant will review PCCC standards related to the PICU; PICU policies, quality improvement, education, and outreach programs (including PICU social services and respiratory care services), detailed review of PCCC standards related to physician specialty availability and special services/resources; hospital and PICU pediatric critical care committees; and integration with other pediatric critical care services. (Tour the PICU.)

a. Meetings with the Directors of representatives from Social Services and Respiratory Care Services (approximately 15 minutes each). The consultant will review policies, quality improvement, education, and outreach programs related to these services for the hospital as a whole and as they relate to the PICU.

It is recommended that these meetings be spliced into the block of time when the consultant is meeting with the PICU Director. Exact times will depend on when the representatives from these services are available. If they are not available during the time that the pediatric critical care consultant meets with the PICU medical director, separate meetings with them will need to be fitted into the site visit schedule.

2. The pediatric critical care consultant will also need to meet with the following hospital representatives. Meetings should be fitted into the visit schedule according to when these representatives are available.

A. Director of the Pediatric Interfacility Transport Program (approximately 45 minutes).

The consultant will review the EMS agency Pediatric Interfacility Transport Standards/Guidelines. Other transport personnel should be invited to participate in this meeting if they wish.

B. Hospital Administrator or designee (20 minutes).

The consultant will review the overall commitment of the hospital to serve as a pediatric critical care center and provide organized, integrated pediatric critical care services. The review will include: the definition of a Pediatric Critical Care Center and the hospital’s support for the Multidisciplinary Pediatric Critical Care Center Committee, and coordinated Continuous Quality Improvement Programs. These sections will also be reviewed in detail by consultants with hospital representatives from specific services such as the PICU, ED, Surgery, etc.

(Optional) The hospital may wish to invite other hospital representatives to participate in this meeting, such as the Chief of the Medical Staff, hospital QI representative, hospital education program representative, etc.

C. Medical Director, Department of Pediatrics (30 minutes).
The consultant will review PCCC standards for policies, quality improvement, education, and outreach programs; participation in the hospital pediatric critical care committee; integration with PICU and other pediatric critical care services; and limited review physician specialty availability and special services/resources. (Tour pediatric unit, if time permits.)

D. Medical Director, Surgical Service or designee and Medical Director, Anesthesia Service or designee (30 minutes).
The consultant will review PCCC standards related to surgical, anesthesia, and PACU services; policies, quality improvement, education, and outreach programs; participation in the hospital pediatric critical care committee, integration with PICU and other pediatric critical care services, and limited review of PCCC standards related to specialty availability and special services/resources.

(Tour surgical/post anesthesia units, if time permits.)

Hospitals should feel free to include other hospital representatives in these meetings or schedule meetings with other hospital representatives if they wish and if consultant schedules permit.
ATTACHMENT 10

MODEL LETTER TO HOSPITALS CONFIRMING ARRANGEMENTS FOR PCCC SITE VISIT

(Letter should be sent to center when the date for the PCCC site visit has been set. Also send materials listed at end of letter.)

Date _________________________
Name (Usually sent to PICU Director)
Title _________________________
Address _________________________
________________________________________

RE: Pediatric Critical Care Center Site Visit

Dear ____________________:

The Sierra-Sacramento Valley EMS agency has received a letter of intent from _____ Name of Hospital _____ requesting designation as a Pediatric Critical Care Center.

This letter is to confirm that a site visit to your medical center has been scheduled for    Day and Date    . This will be a one day visit beginning at    A.M. and ending at approximately    P.M.

The purpose of the site visit is to evaluate your center’s compliance with the Pediatric Critical Care Center Standards and Pediatric Interfacility Transport Program Standards adopted by the EMS agency.

Copies of the survey documents that will be used to evaluate your hospital during the site visit are enclosed (or have been sent to you previously). The survey documents list the standards you will be required to meet. The evaluation of your pediatric services will be based on these standards.

A general outline of how the site visit will be conducted is attached. A more detailed schedule indicating times and places that consultants will meet with specific hospital representatives is being developed with your designated hospital coordinator. Please make sure that your coordinator distributes copies of the survey documents and final site visit schedule to all hospital representatives who will participate in the visit.

The evaluation of your facility will be conducted by a team of consultants with expertise in pediatric emergency an critical care from designated pediatric critical care centers in Northern and Central California. Representatives from the EMS agency will also participate in the visit (list EMS agency representatives who will participate).

A list of consultants for your site visit will be sent to you and your hospital coordinator in the next few weeks. Each consultant will meet with various hospital representatives to review specific sections of the standards in accordance with the site visit schedule.
During the site visit, consultants will need to review certain documents and materials. The hospital is requested to have the materials on the attached list available for review at the time of the visit.

The site visit will be at no cost to your medical center. However, to make most efficient use of consultant time, it would be appreciated if the hospital could provide a light lunch for the consultants and EMS agency staff, _____ persons (list # of persons e.g., 7-8 depending on how many people you expect will participate in the visit.) In addition, we request that a private meeting room be made available for consultants throughout the day to review documents, records, discuss findings, and have lunch.

We appreciate your interest in serving as a designated pediatric critical care center for ill and injured children from our region, and the efforts that you and your hospital representatives have made to arrange the site visit. Please do not hesitate to contact me if you have any questions or would like further information at ________.

Sincerely,

Name
EMSC Project Coordinator

cc: (Letter plus attachments) Medical Director, PICU
Hospital Coordinator for site visit

(Letter only)
Hospital Chief Executive Officer
Hospital Nursing Director
Medical Director, ED
Medical Director, Department of Pediatrics
Medical Director, Department of Surgery
Medical Director, Trauma Service

EMS Agency Administrator
EMS Agency Medical Director
EMSC Medical Consultant (if participating in visit)

Attachments:
PCCC survey document (if not previously sent)
Pediatric Interfacility Transport Standards/Guidelines survey document (if not previously sent)
General PCCC site visit schedule.
List of materials hospital should have available for review at the time of the site visit.
??  Other
ATTACHMENT 11

SURVEY DOCUMENT AND COVER SHEETS FOR EACH CONSULTANT

(The EMS agency should develop survey documents for PCCC Standards and Pediatric Interfacility Transport Program standards/guidelines. This can most easily be done by adding columns marked “Met” and “Not Met” to the right hand margin of the standards.

It is helpful to include materials that the hospital should have available for consultants to review (Attachment 7) under appropriate standards. This will remind consultants and hospital representatives that these documents should be reviewed in order to determine if the standards are met.

Attach cover sheet to the survey document sent to each consultant listing standards each consultant should review and other instructions.

EXAMPLES OF COVER SHEETS PRESENTED BELOW:
Consultant should take the lead in each interview by reading each standards and asking questions to determine if the standards is met or if there is a satisfactory alternative. Review supportive materials provided by hospital, if available.

1. **Emergency Department (With Nurse Consultant)**
   - Basic or Comprehensive ED
   - ED MD Administration
   - ED Physician staffing
   - Backup MD specialty services including physician specialty availability
   - ED Policies
   - ED CQI
   - ED Education/Outreach Programs
   - Other ED requirements
   - ED Equipment, supplies, medications (in treatment room(s) used for children)
   - Special services/resources as Appropriate for ED

2. **Radiology Services** PCCC Standards

3. **Laboratory Services** PCC Standards

4. **Trauma Services** (if applicable)
   - Participation in PCCC Committee
   - Integration with other PCCC services
   - Pediatric Policies
   - Pediatric CQI
   - Pediatric Education/Outreach Programs
   - Trauma personnel for peds. Patients
   - Physician specialty availability appropriate for trauma service
   - Special services/resources as appropriate for trauma service

If consultant has unscheduled time, join interviews with other consultants or continue record reviews.
Consultant should take the lead in each interview by reading each standard and asking questions to determine if the standard is met or if there is a satisfactory alternative. Review supportive materials provided by hospital, if available.

List standards

1. **Emergency Department (With ED Physician Consultant)**
   - ED RN Administration
   - ED Personnel-nurses
   - ED Policies
   - ED CQI
   - ED Education/Outreach Programs
   - Other ED requirements
   - ED Equipment, supplies, medications
     (in treatment room(s) used for children)

2. **Hospital Nursing Administration**
   - Organization/integration of hospital nursing
     Services related to pediatric patients
   - Hospital nursing policies
   - Hospital nursing CQI
   - Hospital nursing education/outreach
   - Participation in PCCC committee

3. **PICU Nursing Service**
   - PICU Nursing standards
   - PICU Nursing policies
   - PICU Nursing CQI
   - PICU Nursing Education
   - PICU Outreach services
   - Participation in PCCC committee
   - Coordination with other RN services related to Peds. Emergency/critical care
   - R.N. Standards for Peds. Interfacility Transport Services

4. **Pediatric Service**
   - Peds. Nursing policies
   - Peds. Nursing CQI
   - Peds Nursing Education
   - Coordination with other RN services related to Peds. Emergency/critical care
5. **Surgical/PACU Nursing Service**

Surg/PACU Nursing standards  
Surg/PACU Nursing policies  
Surg/PACU Nursing CQI  
Surg/PACU Nursing Education  
Surg/PACU Outreach services  
Surg/PACU peds. Equipment/supplies  
Coordination with other RN services related to Peds. Emergency/critical care
Consultant should take the lead in each interview by reading each standard and asking questions to determine if the standard is met or if there is a satisfactory alternative. Review supportive materials provided by hospital, if available.

List standards

1. PICU

   Multidisciplinary Pediatric Critical Care Committee
   PICU Physician staffing and specialty availability
   (detailed review)
   Standards related to PICU (if applicable)
   PICU policies
   PICU CQI
   PICU education
   PICU outreach
   Special services/resources (detailed review)
   Coordination with other services involved
   in Peds. Emergency/critical care
   Questions related to CCS PICU standards (if needed)
   Tour PICU

A. Social Services

   Pediatric policies
   Pediatric CQI
   Pediatric education
   Pediatric outreach services
   Participation in PCCC committee
   Coordination with other services involved
   in Peds. Emergency/critical care
   Questions related to CCS PICU standards (if needed)

B. Respiratory Care Services

   Pediatric policies
   Pediatric CQI
   Pediatric education
   Pediatric outreach services
   Participation in PCCC committee
   Coordination with other services involved
   in Peds. Emergency/critical care
   Questions related to CCS PICU standards (if needed)
2. **Pediatric Interfacility Transport Program**

   Standards/Guidelines for transport programs

3. **Surgical/Anesthesia/PACU Services**

   Surgical, Anesthesia, PACU standards
   Pediatric Policies
   Pediatric CQI
   Pediatric Education/Outreach Programs
   Participation in PCCC Committee
   Integration with other PCCC services
   Physician specialty availability (limited review)
   Tour Surgical suites if time permits

4. **Pediatric Service**

   Pediatric Policies
   Pediatric CQI
   Pediatric Education/Outreach Programs
   Participation in PCCC Committee
   Integration with other PCCC services
   Physician specialty availability (limited review)
   Special services/resources (limited review)

5. **Hospital Administration**

   Definition of PCCC
   Discuss PCCC committee
   Broadly discuss;
   Integration of peds. Emergency critical care Services
   Integrated peds. CQI program
   Integrated peds. education programs
   Determine institutional support/commitment for hospital wide PCCC programs
ATTACHMENT 12

MODEL LETTER TO CONSULTANTS CONFIRMING ARRANGEMENTS
FOR PCCC SITE VISIT

(Send letter and attachments to consultants at least two weeks prior to visit.
If time is short, send by express mail.)

Date __________________
Name __________________
Title __________________
Address __________________

RE: Pediatric Critical Care Center Site Visit

Dear __________________________:

Thank you for agreeing to serve as a member of the consultant team to evaluate ___Name of hospital/medical center_ for designation as a Pediatric Critical Care Center. The site visit is being conducted under the authority of the Sierra-Sacramento Valley EMS agency.

This letter is to confirm that the site visit is scheduled for ___Day and Date___ from ___A.M.__ to approximately ___P.M.__ Consultants are requested to meet 30 minutes before the visit at ___A.M.__ at the information desk in the main lobby of the hospital for a brief orientation.

___Name of hospital/center___ is located at __________ Address __________. The enclosed map shows the location of the hospital, parking areas, and directions to the hospital. (See Attachment 1) If you are delayed in getting to the hospital, please call the PICU ___Telephone #___ and ask them to notify the consultation team at the information desk in the Main Lobby.

A general outline of how the visit will be conducted is enclosed. A detailed visit schedule with times and locations of individual meetings between consultants and specific hospital representatives will be sent to you prior to the visit or distributed at the beginning of the visit. (Note: enclose detailed schedule if it is available.) (See Attachment 2)

The purpose of the site visit is to evaluate the hospital’s compliance with the Pediatric Critical Care Center and Pediatric Interfacility Transport Program standards (or guidelines) adopted by the EMS agency. These are listed in the enclosed survey documents and should be used as a basis for evaluating the hospital’s services. (See Attachment 3) Please note that the EMS agency is accepting CCS PICU approval as evidence that the PICU meets CCS PICU standards. Therefore, a detailed survey of the PICU will not be conducted. However, consultants should feel free to ask questions related to CCS PICU standards, if needed, in order to evaluate PICU and other services covered in CCS PICU standards. (A copy of current CCS PICU standards is enclosed for your information.)
The consultant team for the site visit will consist of a pediatric critical care physician, a pediatric emergency physician, a pediatric emergency/critical care nurse, and EMS agency representatives. [If you have the names of the consultants, substitute: A list of the consultants participating in the visit is attached. (Attachment 4).]

Each consultant will meet with various hospital representatives to review specific sections of the standards. The sections that you are responsible for reviewing are listed on the cover sheet of the enclosed survey document with reference numbers to the standards listed in the survey document. These sections are also highlighted in the enclosed survey documents. Please bring these documents with you and use them as survey documents to evaluate services and record your comments and recommendations during the site visit.

[If the hospital has submitted a data/information form, state: A copy of a data/information form submitted by the hospital is enclosed and contains information that may be helpful to consultants in reviewing specific services. It also contains the names and titles of key hospital personnel involved in pediatric emergency and critical care. (See Attachment 5)]

A list of specific documents and information that the hospital has been requested to have available for consultants to review at the time of the visit is also enclosed. (Attachment 6) This information should be reviewed in conjunction with appropriate standards to determine if standards are met. (??? In addition a copy of the hospital’s self assessment will be available at the time of the visit.) Medical records will be reviewed during the lunch break.

General information and guidelines related to the role and responsibilities of site visit consultants are enclosed. (Attachment 7) It should be emphasized that consultants’ findings and information contained in medical records are CONFIDENTIAL and should not be discussed with anyone except authorized EMS agency representatives.

Consultants are requested to record their findings and recommendations on the survey documents during the visit. At the group summation meeting at the end of the visit, consultants will be requested to make a brief (five minute) general presentation of their key positive findings as well as areas that need improvement.

After the visit, consultants should record their detailed findings, comments, and recommendations on the enclosed Site Visit Evaluation Form. (Attachment 8) These forms will be used by the EMS Agency to prepare a formal report to the hospital with composite findings and recommendations of all consultants. Evaluation forms should be returned to the EMS agency within two weeks. A stamped, addressed envelope is provided for your convenience.

Consultants will be reimbursed $ _____ for the visit plus travel expenses. Consultants are requested to make their own travel arrangements. If you require overnight accommodations or need assistance, please do not hesitate to contact me. An invoice and an explanation of expenses covered are enclosed. (Attachment 9) The invoice should be returned with the site visit evaluation form in the envelope provided.
Thank you, again, for participating in this visit and assisting us to evaluate and designate appropriate pediatric critical care centers for our region. If you have any questions, or require any assistance, please do not hesitate to contact me at __telephone #__.  

Sincerely,  

Name  
EMSC Project Coordinator  

cc: EMS Agency Administrator  
EMS Agency Medical Director  
EMS Agency EMSC Medical Consultant  

Enclosures: (Be sure you have all of these and include them in consultants’ packets of materials.)  

(1) Map with location of hospital, parking areas, and directions to hospital.  
(2) General outline of site visit (or detailed schedule if available. If not, send later or hand out at site visit.)  
(3) Survey document(s) (listing standards to be reviewed).  
(Note: Include a cover sheet that lists the standards each consultant is supposed to review with page references to the survey document. Also highlight or mark sections each consultant is to review on their survey documents.) Include a copy of CCS PICU standards, if EMS agency is accepting CCS PICU approval in lieu of detailed survey of the PICU.  
(4) List of consultants participating in the visit, if available. (If not, send later or hand out at site visit.)  
(5) Data/information hospital has submitted, if available. (?? Copy of hospital self survey)  
(6) List of information hospital has been requested to have available for review at the site visit.  
(7) Information and guidelines for consultants  
(8) Site visit evaluation form  
(9) Consultant reimbursement/travel/and expenses information and Invoice  
(10) Stamped, self-addressed envelope
ATTACHMENT 13

PEDIATRIC CRITICAL CARE CENTER SITE VISIT
INFORMATION AND GUIDELINES FOR CONSULTANTS

The Sierra-Sacramento Valley EMS agency is reviewing and updating its Pediatric Emergency and Critical Care System to ensure appropriate emergency and critical care services for all children in our region. Pediatric referral centers, with specialized pediatric personnel and services are an essential component of the system. The EMS agency intends to site visit and redesignate pediatric critical care centers (PCCCs) to serve our region.

Standards for Pediatric Critical Care Referral Centers (PCCC):

Standards for PCCCs have been adopted by the EMS agency. The standards include: (use agency titles for) Pediatric Critical Care Center Standards and Pediatric Interfacility Transport Program Standards (or guidelines). These standards are based on California Children’s Service (CCS) standards for Pediatric Intensive Care Units (PICUs), State EMS Authority Guidelines for Pediatric Critical Care Centers, and standards and guidelines developed by EMSC projects in California and recognized professional organizations.

Purpose of the Site Visit:

The purpose of the site visit is to evaluate compliance with the Pediatric Critical Care Center and Pediatric Interfacility Transport Program standards (guidelines). All hospitals meeting the standards will be designated as pediatric referral centers for the region.

Consultants:

Site visit consultants will consist of a pediatric critical care physician, a pediatric emergency physician, and a pediatric emergency/critical care nurse. Consultants are recognized experts in their particular specialties. All are from designated pediatric critical care centers located outside the EMS agency area and have no financial or other affiliation with the hospital to avoid conflicts of interest.

Site Visit Team Leader and Other Site Visit Participants:

An EMS agency representative will serve as the site visit team leader. The team leader will chair the opening and closing meetings of the visit and provide guidance to consultants and hospital representatives during the visit. EMS agency representatives will also participate in the site visit interviews and may ask a few questions, but their primary role is to answer any questions that may arise about the standards, make sure all standards are reviewed, and maintain the site visit schedule.

Responsibilities of Consultants:

1. Consultants should thoroughly review the standards, site visit schedule, and other materials sent to them prior to the visit.

2. Consultants have the primarily responsibility for determining if standards are met. Each consultant will interview various hospital representatives, as listed on the site visit
schedule to review specific sections of the standards. These sections are listed on the cover sheet and highlighted on the survey document sent to each consultant.

3. **Consultants should take the lead in each interview by reading each standards and asking questions to determine if the standard is met.** If the standard is not met, determine if there is a satisfactory alternative.

Consultants should also review materials that the hospital has been requested to have available (e.g., curriculum vitae, on-call schedules, policies, transfer agreements, etc.) in conjunction with the relevant standards to determine if the standards are met. (State either that these materials are listed in the survey document or to see Attachment _____ for a list of these materials.)

4. Consultants should feel free to ask questions and seek information about other areas related to pediatric emergency and critical care, if needed, e.g., the integration of the service being reviewed with other hospital pediatric services.

5. Consultants should record their findings on the survey document and keep track of major findings during the visit.

6. Consultants will be asked to present a brief (five minute) summary of their major positive findings and areas that need improvement at the summation meeting at the end of the visit.

7. After the visit, consultants should fill out the Site Visit Evaluation Form (included in the packet of materials sent to consultants). The major findings and recommendations listed should be consistent with comments made at the site visit summation meeting. However, consultants are encouraged to provide more detailed comments, clarifications, and recommendations to assist the EMS agency on the findings of the site visit. Consultants should primarily fill out sections of the Evaluation Form related to services they reviewed, but should also include comments or information they might have gathered on other hospital services.

8. **Within two weeks,** consultants should return their Site Visit Evaluation Form to the EMS agency in the addressed, stamped envelope provided.

9. Invoices may be sent in the same envelope or sent to:

   _________________________________. Please allow
   ___________________________ time for processing invoices.

**Survey Documents:**

Survey documents for the site visit are included in the packet of materials sent to consultants. The document list the standards with columns to the right marked “Met” and “Not Met.” The standards listed are the criteria by which the center should be judged. Survey documents should be used to record findings and recommendations throughout the visit.
The cover sheet on the survey document lists the specific sections of the standards (or guidelines) each consultant should review. These sections are also highlighted in the survey documents sent to consultants. For certain sections of the standards, the cover sheet also indicates whether the consultant should do a detailed review of the standards or a limited review, as time permits, focusing on the standards that most apply to the hospital services being reviewed. (See additional instructions for reviewing standards below.)

**PICU Standards:**

The PCCC standards require centers to have a CCS-approved PICU as a core component of pediatric critical care centers. The EMS agency is accepting CCS PICU approval as evidence that the PICU meets basic CCS PICU standards. Thus, the PCCC standards do not include detailed PICU standards, and a complete survey of the PICU will not be conducted. However, consultants are encouraged to ask questions and review materials related to CCS PICU standards if needed to get an overall picture of PICU services and other services included in the CCS PICU standards (e.g., nursing services, social services, respiratory care, and other PICU support services). A copy of CCS PICU standards is enclosed for reference.

**PCCC Standards**

The PCCC standards represent primarily updates/revisions of CCS PICU standards and additional, supplemental standards for pediatric emergency and critical care services that are not included in CCS PICU standards. These services are considered essential for comprehensive pediatric critical care referral centers (e.g., a hospital pediatric critical care committee, pediatric emergency services, surgical services, etc.).

The PCCC standards do not include specific standards for pediatric trauma services since the EMS agency does not plan to designate pediatric trauma centers. However, PCCCs, particularly those that are general trauma centers, care for a significant number of pediatric trauma patients. Therefore, consultants should ask questions and evaluate services related to the care of pediatric trauma patients when reviewing hospital services, particularly the ED, PICU, surgical service, etc.

In addition, PCCC standards include standards that should be met by all hospital services involved in pediatric emergency and critical care, e.g., pediatric policies, CQI, education/outreach programs, participation in the hospital PCCC committee, integration with other hospital services, etc. These sections will be reviewed with trauma service representatives for hospitals that are trauma centers. For hospitals that are not trauma centers standards related to interfacility transfer agreements with pediatric or general trauma centers, transfer of trauma patients, etc. will be reviewed.

Instructions for Reviewing Specific Sections of PCCC Standards:

1. Consultants should review specific PCCC standards listed on the cover sheet and highlighted in their survey documents.

2. Some sections of the PCCC standards apply to all major hospital services involved in pediatric emergency and critical care. These standards may not be specifically listed under each service, but they should be reviewed with hospital representatives from each
major service. Consultants will need to flip to these sections and review them with hospital personnel.

These sections include:

a. Participation in the hospital multidisciplinary pediatric critical care committee. (Section ____, p. _____)

b. Coordination and integration with other pediatric emergency and critical care services.

c. Physician Staffing and Availability. (Section _____, p. _____) Detained reviewed by pediatric critical care consultant. Other consultants review as appropriate for hospital service being reviewed and time permits.

d. Special Services/Resources. (Section _____, p. _____) Detailed review by pediatric critical care consultant. Other consultants review as appropriate for hospital service being reviewed and time permits.

e. Pediatric policies. (Section _____, p. _____)

f. Continuous Quality Improvement programs. (Section _____, p. _____)

g. Outreach and Education Programs. (Section _____, p. _____)

Consultants should review these sections with hospital representatives from all major hospital services, including:

a. Emergency Department
b. PICU (including Social Services and Respiratory Care Services)
c. Surgical/Anesthesia Service
d. Pediatric Service
e. Nursing Services
f. Trauma Service (if applicable)
g. ??? others

3. Hospital Services With Limited or No Specific Standards.

For interviews with some hospital representatives there are few specific detailed PCCC standards, e.g., hospital administration, nursing administration, social services, respiratory care, etc. Consultants interviewing hospital representatives from these services should review the standards that exist and then focus on such topics as:

a. Commitment/support for the hospital as a PCCC and integration of pediatric emergency and critical care services.

b. Participation in the multidisciplinary pediatric critical care committee and integration of the service with other pediatric emergency and critical care services.
c. Appropriate policies, CQI, education, and outreach programs related to pediatric emergency and critical care.

d. Open ended questions to evaluate the service and obtain additional information, e.g., “How do you feel your service meets the special needs of critically ill and injured children?”

Site Visit Schedule:

A detailed schedule for the site visit indicating center representatives each consultant will interview, times and rooms for meetings, and services to be reviewed will be sent to consultants or distributed at the beginning of the visit.

Consultants should time interviews so that all guidelines related to the service are covered and keep within the time limits set. An EMS agency representative will help to cover all standards, keep on schedule, and answer any questions that may arise.

At the end of each interview, consultants should ask hospital representatives to assist them in locating the room where their next meeting will be held.

Hospital Materials, Information, and Records:

Site visit findings, information from medical records, and materials provided by the hospital for review are CONFIDENTIAL and should not be discussed with anyone except authorized EMS agency representatives.

Materials provided by the hospital are the property of the hospital. Please do not ask for any of these materials at the site visit. If you would like copies for your personal use, please contact the hospital after the site visit to request them.

If you have any questions, please contact ______ Name and telephone # ___________. 
CONSULTANT REIMBURSEMENT, TRAVEL, AND EXPENSES

Reimbursement: Consultants will receive $________ for the site visit and written report of findings/recommendations.

Travel: Ground travel will be reimburse at 24 cents/mile. Airfare (if required) will be reimbursed. Please attach original airline ticket receipt to invoice.

Taxi/shuttle fares to and from airport and hospital will be reimbursed. (Attach receipts to invoice).

Parking: Parking fees at the hospital and/or airport will be reimbursed. (Attach receipts to invoice). Parking areas at the hospital are marked on the enclosed map.

Hotel/Motel: Overnight accommodations (if required) will be reimbursed. (Attach receipts to invoice). If you need overnight accommodations, please contact _____________________________ for assistance in making reservations.

Travel Arrangements: Please make your own travel arrangements. If you are traveling by air, you should fly into the _______________________ airport. The airport is approximately ___________ miles from the hospital. Ground travel to and from the airport to the hospital requires approximately __________ minutes during heavy traffic times. Please allow ample time for this travel.

Please save all receipts and attach them to the consultant invoice and expense form attached.

If you have any questions or require assistance, please contact _____________________________.

## CONSULTANT INVOICE AND EXPENSE SHEET

### HONORARIUM
($_____ for site visit and reports) $ _______

### AIR TRAVEL

- Ground travel to and from airport
  (Miles _____ x 24 cents/mile) $ _______
- Airfare (Attach original ticket receipt) $ _______
- Airport parking $ _______
- Taxi to and from airport $ _______

### GROUND TRAVEL

Miles ________ x 24 cents/mile $ _______

### OTHER EXPENSES

- Hospital Parking $ _______
- Hotel/Motel $ _______
- Other (Please specify) $ _______

### TOTAL

$ __________

---

**PLEASE ATTACH ORIGINAL RECEIPTS AND RETURN BY** TO:

Name ____________________________
Agency __________________________
Address __________________________

**NAME:**
________________________________
(Please print)

**ADDRESS:**
________________________________
(To which check should be sent)

**SS #:**
________________________________

**SIGNATURE:** ______________________  **DATE** _____________
ATTACHMENT 16

SITE VISIT CONSULTANT EVALUATION REPORT

(The following is based on State EMSC PCCC Guidelines and must be modified to reflect the specific PCCC standards adopted by EMS agencies.)

SITE VISIT CONSULTANTS:

Please complete the enclosed evaluation form with your comments and recommendations for the sections of the PCCC standards that you reviewed. Also include comments on other sections if you have any. Your report may be hand written (please write clearly) or typed. Please use the reverse side of the page if you need additional space.

Your comments and recommendations will provide a basis for the EMS agency to: (1) prepare a composite letter to the center stating site visit findings and recommendations and (2) approve or deny the center’s request for PCCC designation.

Your comments will be held in strictest confidence. The letter to the hospital will be a composite letter combining comments from all site team consultants, and will not identify comments from specific consultants.

PLEASE SEND YOUR REPORT BY Date To:

Name
Title
Address

An addressed, stamped envelope is enclosed for your convenience.

Again, thank you for your contribution and participation in the site visit. If you have any questions, please do not hesitate to contact me at: Tel. #____________.
Name of Hospital  _____________________________________

Name of Consultant  _____________________________________

I. A.  DEFINITION OF A PACC?  (PCCC Standards p.  )

Does the center adequately meet the definition?  Yes _____  No _____

If no, what components are not met?

Comments:
Name of Hospital ________________________________

Name of Consultant ________________________________

II.A.1. HOSPITAL ORGANIZATION  (PCCC Standards, p.   )

   Multidisciplinary Pediatric Critical Care Center Committee
   (Membership/participation for all major hospital services reviewed)

Does the center adequately meet the standards?  Yes _____  No ____

If no, what standards are not met?

Comments:
II.B. PHYSICIAN STAFFING AND SPECIALTY AVAILABILITY
(PCCC Standards, p.  )

(Indicate the services you reviewed)
1. ED
2. PICU (detailed review)
3. Surgical Service/Post Anesthetic Care Unit
4. Pediatric Service
5. Trauma Service (if applicable)

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are not met?

Comments:
II.C. NURSING SERVICES/ADMINISTRATION  (PCCC Standards, p. )

(Review of policies, CQI, education, outreach, etc. for: )
1. Hospital as a whole.
2. Pediatric service.
3. Trauma Services (if applicable)
4. ED – record findings under ED section, p. )
5. PICU – record findings under PICU section p. )
6. Surgical/PACU – record findings under Surgical section, p. )

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are not met?

Comments:
II.D. OTHER PROFESSIONAL SERVICES (PCCC Standards, p. )
(Comments on Social Services, Respiratory Care Services, etc.)

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are not met?

Comments:
II.E. EMERGENCY DEPARTMENT (PCCC Standards, p. )

1. Basic or comprehensive ED
2. Medical Administration and ED Personnel – Physicians
3. Nursing Administration and ED Personnel – Nurses
4. Specialty Availability (On-call physicians)

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are met?

Comments:
II.E. EMERGENCY DEPARTMENT

1. ED Education programs and outreach, (PCCC Standards, p. ___)
2. Other ED Requirements, (PCCC Standards, p. _____)

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are not met?

Comments:
Name of Hospital  

Name of Consultant  

II.E.  EMERGENCY DEPARTMENT  

Pediatric Equipment, Supplies, Medications.  

(PCCC Standards, p. _____)  

Does the center adequately meet the standards?  

Yes _____ No ____ 

If no, what standards are not met?  

Comments:
Name of Hospital ___________________________________

Name of Consultant ___________________________________

II.F. SURGICAL SERVICE/POST ANESTHETIC CARE UNIT
(PCCC Standards, pp._ )

Include medical and nursing consultant findings regarding:

1. PCCC standards (PCCC Standards, p. )
2. Pediatric Policies (PCCC Standards, p. )
3. Pediatric CQI (PCCC Standards, p. )
4. Education and Outreach Services (PCCC Standards, p. )
5. Physician Specialty Availability (PCCC Standards, p. )

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are not met?

Comments:
Name of Hospital ________________________________

Name of Consultant ________________________________

II.G. PEDIATRIC INTENSIVE CARE UNIT (PCCC Standards, p. )

Include medical and nursing consultant findings regarding:

1. Physician staffing and specialty availability, (PCCC Standards, p. )
2. Nursing personnel and staffing, (PCCC Standards, p. )

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are not met?

Comments:
II.G. PEDIATRIC INTENSIVE CARE UNIT (PCCC Standards, p. )
Include medical and nursing consultant findings regarding:

1. PICU Policies (PCCC Standards, p. )
2. PICU Continuous Quality Improvement, (PCCC Standards, p. )

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are not met?

Comments:
II.G. PEDIATRIC INTENSIVE CARE UNIT (PCCC Standards, p. )

Include medical and nursing consultant findings regarding:

1. PICU Outreach and Education Programs, (PCCC Standards, p. )
2. Other PICU Related Services, e.g., social services and respiratory care services. (PCCC Standards, p. )

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are not met?

Comments:
Name of Hospital  

Name of Consultant  

II.H. SPECIAL SERVICES/RESOURCES  (PCCC Standards, p. )

Does the center adequately meet the standards?  Yes _____ No _____

If no, what standards are not met?

Comments:
Name of Hospital  ______________________________

Name of Consultant  ______________________________

II.I  SUPPORT SERVICES  (PCCC Standards, p.  )

Does the center adequately meet the standards?  Yes _____ No _____

If no, what standards are not met?

Comments:
Name of Hospital ______________________________

Name of Consultant ______________________________

II.J. POLICIES (PCCC Standards, pp. )

Additional Physician and Nurse consultant comments on PCCC policies as a whole or for individual services

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are not met?

Comments:
Name of Hospital ________________________________

Name of Consultant ________________________________

II.K. CONTINUOUS QUALITY IMPROVEMENT PROGRAM (PCCC Standards, pp. )

Additional Physician and Nurse consultant comments on PCCC QI as a whole or for individual services)

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are not met?

Comments:
II.K. OUTREACH AND EDUCATION PROGRAMS (PCCC Standards, pp. )

Additional Physician and Nurse consultant comments on PCCC Outreach and Education programs as a whole or for individual services)

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are not met?

Comments:
Name of Hospital  

Name of Consultant  

II.M. TRANSFER AGREEMENTS  (PCCC Standards, p. )

 Does the center adequately meet the standards?  Yes _____  No _____

If no, what standards are not met?

Comments:
Name of Hospital _____________________________________

Name of Consultant ___________________________________

PEDIATRIC INTERFACILITY TRANSPORT SERVICES

Does the center adequately meet the standards or guidelines? Yes _____ No _____

If no, what standards are not met?

Comments:
Name of Hospital ______________________________

Name of Consultant ______________________________

TRAUMA SERVICES (if applicable)

Include medical and nursing consultant findings regarding:
1. Trauma services related to the PICU, ED, Surgical/PACU, Pediatric Services
2. Pediatric Trauma Policies, CQI, Education, and Outreach Services
3. Physician Specialty Availability
4. Special Services/Resources

Does the center adequately meet the standards? Yes _____ No _____

If no, what standards are not met?

Comments:
Name of Hospital                              
Name of Consultant                           

GENERAL COMMENTS

What are the center’s major strengths and weaknesses?

Strengths:

Weaknesses:

Are the various services involved in pediatric critical care adequately integrated and coordinated. Yes _____ No ____

Other suggestions for actions the center should take to comply with PCCC standards or improve pediatric emergency or critical care.
RECOMMENDATIONS

Do you recommend:

1. _________________ Designation
2. _________________ Designation Subject to Corrections
3. _________________ Denial

IF DESIGNATION SUBJECT TO CORRECTIONS:

A. List specific corrections that need to be made before designation can be granted.

B. List corrections that need to be made, but can be done after designation.

IF DENIAL: List specific reasons for denial.
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<th>Name</th>
<th>Title</th>
<th>Affiliation</th>
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<td>Name</td>
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<td>Affiliation</td>
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<tr>
<td></td>
<td>EMSC Project Medical Consultant (if applicable)</td>
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Note: If you have not located a particular consultant, state the following:

To be determined Type of consultant
ATTACHMENT 18

GUIDELINES FOR PCCC SITE VISIT TEAM LEADER

ORIENTATION OF SITE VISIT TEAM AT BEGINNING OF SITE VISIT

1. Introductions – Thank consultants for participation.

2. Purpose of visit: To evaluate Center for designation as PCCC. (Other types of centers, if appropriate).

3. Ask consultants if they have received materials and if they have any questions. Make sure consultants have:
   a. PCCC survey document. Note that services to be reviewed by each consultant are listed on cover sheet and highlights in the survey document.
   b. Pediatric Interfacility Transport Standards or Guidelines (Pediatric Critical Care Consultant)

4. Remind consultants that they should:
   a. Take the lead in each interview by reading the standards and assume primary responsibility for evaluating services.
   b. Ask questions to evaluate services and determine if standards are met or if there are satisfactory alternatives.
   c. Feel free to ask questions about related services.
   d. Review supportive materials, e.g., policies, curriculum vitae, CQI materials, etc. related to specific standards.
   e. Ask for help from EMS agency representatives if there are questions about the standards.

5. Explain whether standards are a complete set of PCCC standards or supplemental standards based on acceptance of CCS PICU approval. If supplemental standards, explain that:
   a. There are limited standards for the PICU and other services included in CCS PICU standards, e.g., social services, respiratory care, and nursing services.
   b. Consultants should review what standards there are and then focus on sections of the standards related to policies, CQI, education, outreach, physician staffing and specialty availability, and special services/resources for the services being reviewed.
c. If needed, ask questions related to CCS PICU standards, or general questions to get a more complete picture of PICU and other services being reviewed.

6. Explain special aspects of standards.
   a. Some sections of the standards apply to all major services being reviewed, i.e., participation in the PCCC committee, policies, CQI, education, and outreach programs.

   These sections need to be reviewed for ED, PICU, surgery/PACU, pediatric, nursing, and trauma services. If not included in the standards for these services, consultants should flip to these sections and go over them.
   
   b. Physician specialty availability and special services/resources will be reviewed in detail by the pediatric critical consultant, but other consultants should briefly review these sections as they apply to the services they review and as time permits.
   
   c. For all services, consultants should emphasize coordination with other pediatric emergency and critical care services.

7. If there are no specific standards for pediatric trauma, explain how these services will be reviewed:
   a. The consultant meeting with trauma representatives should address: participation in the PCCC committee; coordination with other pediatric emergency and critical care services; trauma service pediatric policies, CQI, education, and outreach; physician specialty availability; and special services/resources.
   
   b. Other consultants should ask questions about pediatric trauma care during reviews of other services.

8. Briefly review consultant schedules:
   a. **CLARIFY WHICH STAFF WILL ACCOMPANY EACH CONSULTANT**
   
   b. Tell consultants to ask persons being interviewed for directions to room for next interview.
   
   c. Decide on which EMS agency representative will accompany each consultant.

9. Remind consultants to record their findings on their survey documents and keep track of major findings for presentation at the summation meeting at end of visit.

10. **QUESTIONS**

    **GROUP ORIENTATION MEETING – OPENING REMARKS OF TEAM LEADER**

1. Introduce yourself (name, title). Explain your role: To act as a resource person and to help coordinate site visit.
2. Thank hospital for arrangements and preparation for the visit especially hospital coordinator and PICU Director. State that you hope the visit will be constructive and of benefit to all.

3. Ask site team to introduce themselves (names, titles, type of consultant). Explain that consultants are specialists in their respective fields and were selected from designated PCCCs.

4. Ask hospital representatives to introduce themselves (names and titles).

5. State purpose of the site visit: To evaluate your center for redesignation as a PCCC by EMS agency. State that the PCCC standards have been updated and revised based on statewide guidelines developed by the EMS for Children Project of the State EMS Authority.

6. Ask if everyone has seen the PCCC standards. State that these will be used as the criteria for evaluating the center.
   a. These were developed by the Sierra-Sacramento Valley EMS agency. Representatives from the hospital participated in their development.
   b. The standards are based on the guidelines developed by the State EMS Authority as well as other State and national standards and guidelines for pediatric centers.
   c. The PCCC standards require a CCS-approved PICU. The EMS agency decided to accept CCS PICU approval as evidence that your PICU meets CCS PICU standards. Therefore, a complete survey of the PICU and other services covered by CCS standards will not be conducted. However, consultants may ask questions related to CCS PICU standards.

   The PCCC standards adopted by the EMS agency are supplementary standards to the CCS PICU standards. They include updates of current CCS standards and standards for other services considered essential for pediatric referral centers that are not included in CCS PICU standards.

   d. The standards relate primarily to pediatric critical care services, and do not include specific standards for pediatric trauma services. However, consultants will ask questions about pediatric trauma care in reviewing sections of the standards that apply to all hospital services involved in pediatric emergency and critical care.

7. Ask if EMS agency representatives or consultants have comments they would like to add. Ask if hospital representatives have any questions.

8. Site Visit Schedule.
   a. Ask if everyone has a schedule.
b. ASK HOSPITAL REPRESENTATIVES TO HELP CONSULTANTS TO GET TO NEXT APPOINTMENT.

c. State that EMS agency representatives will accompany consultants during each interview to answer questions and provide assistance if needed.

9. State that site visit team will meet again as a group at _______ PM in _______Room____ ____________________________ for lunch and chart reviews. Then break up and follow the site visit schedule

LUNCH AND RECORD REVIEWS

1. Ask site team members report on services they have reviewed. Ask if there are any problems or questions.

2. Ask if additional information is needed or additional time to complete reviews. If so, try to make arrangements.

3. Record reviews: Ask each consultant to review as many records as they can related to their particular specialty.
   a. Stress confidentiality of information.
   b. Identify and discuss any problems to be mentioned at exit conference.

PRIVATE MEETING OF SITE TEAM (IN AFTERNOON)

1. Ask each consultant to briefly summarize key deficiencies and positive findings (including findings from record reviews.) (Resolve any conflicts in findings.)

2. Have consultants practice comments each will present at exit meeting.

3. Decide the order consultants will present comments.

GROUPsummation MEETING

1. Thank hospital and center representatives for their hospitality and efforts.

2. Say something positive about center’s services and commitment.

3. Explain that each consultant will make a few GENERAL comments about the services that they reviewed. Consultant will send detailed comments to the EMS agency. These will be integrated into a composite report on site visit findings and recommendations which will be sent to the hospital within approximately two months.

4. Ask consultants present comments in order decided on. (approximately 5 minutes each)

5. Ask whole group for any comments, questions, clarifications. Consultants and EMS agency representatives should respond as needed.
6. Ask EMS agency rep. To state what happens next regarding designation/approval.
   
   a. Letter with site visit findings to be sent to hospital in about two months.
   
   b. Discuss types of actions, i.e., approval, approval subject to corrections, or disapproval. State letter to hospital will indicate EMS agency’s decision.

7. Again, thank hospital and say something positive.

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**AT END OF SITE VISIT**

1. Check that consultants have their consultation evaluation form, expense sheet, and envelope for return.

2. Emphasize importance of sending in site visit evaluation reports as soon as possible.

3. Tell consultants to call you if they have any questions.
ATTACHMENT 19

FEEDBACK LETTER TO HOSPITALS

Date: __________________
Name: Hospital Administrator
Address: __________________

RE: Pediatric Critical Care Center Designation

Dear: __________________________:

Hospital requested designation as a Pediatric Critical Care Center by the Sierra-Sacramento Valley EMS agency. A site review of your facility was conducted on ______________. Thank you for the arrangements that were made for the site visit and the hospitality extended to the site visit team. (Add, if appropriate: The active participation of so many of your hospital representatives was impressive.)

The findings and recommendations of the site visit consultants have been carefully reviewed. The following is a composite summary:

(For each major section of the standards:

1. Based on the findings of the site visit, consultants recommended approval. Therefore, this letter represents a formal approval of your hospital (medical center) as a Pediatric Critical Care Center by the Sierra-Sacramento Valley EMS agency.

   (If appropriate:) We hope that the site visit was of value to your facility and that you will follow-up on any recommendations suggested in this letter to further improve your pediatric emergency and critical care services.

2. Based on the findings of the site visit, consultants recommended approval subject to correction of deficiencies. The following areas were noted to lack full compliance with the PCCC standards (and/or Pediatric Interfacility Transport standards/guidelines.)

   (List deficiencies and how you want them corrected, e.g.,)

   1. __________________________ representatives did not appear to participate in the hospital Pediatric Critical Care Committee. A representative should be appointed to this committee and participate in the committee meetings.

   2. __________________________ physicians (or other staff) do not meet the qualifications listed in the PCCC standards. Qualified individuals should be appointed to this position.

   3. A pediatric interfacility transfer agreement that can be signed with community hospitals has not been developed. A transfer agreement that includes provisions
for consultation and transfer of critically ill and injured children from community hospitals should be developed, etc.

Please submit in writing how these areas that are not in compliance with the standards have been corrected to the EMS agency within _____ months. If satisfactory corrections have been made, the EMS agency will send a letter of formal approval of your hospital (medical center) as a Pediatric Critical Care Center.

(In addition, we hope that you will follow-up on other recommendations suggested in this letter to further improve your pediatric emergency and critical care services.

3. Based on the findings of the site visit, consultants recommended denial of your request for designation as a Pediatric Critical Care Center. The reasons for this denial are listed below: (E.g.):

1. The hospital does not have a separate, distinct PICU that meets the PCCC standards. Such a unit is a core, essential component of a PCCC and must be provided for designation as a ____________________.

2. The hospital does not have qualified staff, as defined in the PCCC standards, for ____________________ (unit, service, etc.). Qualified staff that are essential for the provision of specialized pediatric critical care services must be provided for designation as a ____________________.

Should you wish to discuss these findings, please contact, or submit a written response, to Name, tel #, address ____. In the future, if you determine that your medical center has addressed the issues listed above and is in full compliance with PCCC standards, you may request re-evaluation for designation after ______ years from the date of this letter.

(Final paragraph - *** modify as appropriate)

Again, on behalf of the EMS agency and site visit consultants, we wish to thank you and your medical center representatives for your participation and cooperation during the site visit and designation process. *** Your medical center provides outstanding services for children. We appreciate your dedication and participation as a major resource for our Pediatric Emergency and Critical Care System.

If you have any questions or concerns, please do not hesitate to contact me at _____ tel # ____. 

Sincerely,

EMS Agency Administrator

Cc: (Optional) Key County representatives, e.g.,
   Director of Public Health, or agency overseeing EMS
   Chair, EMS Commission
Key EMS Agency personnel, e.g.,
   EMS Director/Administrator
   EMS Medical Director
EMSC Coordinator
EMSC Medical Consultant
Chair, EMSC Advisory Committee
Chairs of other key EMS agency committees (if appropriate)

Medical Director of PICU
Nursing Director of PICU
Chief of Pediatrics
Medical Director of Emergency Department
Nursing Director of Emergency Department
Hospital Nursing Director

Hospital site visit coordinator – Ask her/him to distribute letter to other hospital representatives who participated in the site visit.

(Also suggest sending a copy to the director of any hospital service where major deficiencies have been found and corrections are required.)

All Site Visit Consultants
Name of Hospital ______________________________________________________________
Name of Person Completing form _________________________________________________

Thank you for participating in the recent site visit for Pediatric Critical Care Center designation organized by the Sierra-Sacramento Valley EMS Agency. In order to make these visits helpful to centers being reviewed, we would appreciate any comments or suggestions you might have on the visit. Please complete the following questionnaire and return it in the enclosed envelope. If you have any questions, please do not hesitate to contact: __________________________.

1. Was the purpose of the visit clear? Yes _____ No ____
2. Were preparations and arrangements for the visit adequate? Yes _____ No ____
3. Was the composition and size of the consultant team satisfactory? Yes _____ No ____
4. Was the format/schedule for the visit satisfactory (e.g., times for interviews)? Yes _____ No ____
5. Did the consultants adequately cover standards and responded questions and concerns? Yes _____ No ____
6. Were the materials distributed adequate? Yes _____ No ____
7. Was the visit of value? Yes _____ No ____

Please list any suggestions you have for improving the visits or other comments on the back of this sheet.
MODEL THANK YOU LETTER TO CONSULTANTS

Date ______________________________
Name ______________________________
Title ______________________________
Address  ____________________________

Dear ___________________________

Thank you for participating as a consultant in the recent pediatric critical care site visit to
_______________________. Your experience and expertise contributed a great deal to the
success of the visit.

When we receive all of the site visit evaluation reports from consultants, the findings and
recommendations will be reviewed by EMS agency staff. A composite summary of consultants’
findings will be prepared and a determination made regarding designation. If you would like to
review the summary for accuracy prior to being sent to the hospital, please let me know.
Otherwise, a copy of the final letter sent to the hospital will be sent to you.

(Optional) Enclosed is a site visit evaluation form for consultants. We would appreciate it if you
would fill this out and return it to us. The evaluations will assist us to improve future site visits.

Again, thank you for taking the time from your busy schedule to participate in the site visit. If
you have any questions, please do not hesitate to contact me at ______phone #____.

Sincerely,

Name _______________________________________
Title EMSC Coordinator

cc: EMS Agency Administrator

(Optional: Enclosure Site visit Evaluation Form
Stamped, self-addressed envelope for return)
ATTACHMENT 23

OPTIONAL: PCCC SITE VISIT EVALUATION FORM FOR CONSULTANTS
(Type on two pages if needed to provide adequate space.)

Name of Hospital ___________________________________
Name of Consultant ____________________________________________

Thank you for participating in the recent site visit for Pediatric Critical Care Center designation organized by the Sierra-Sacramento Valley EMS Agency. In order to improve future site visits and make appropriate use of consultants, we would appreciate any comments or suggestions you might have on the visit. Please complete the following questionnaire and return it in the enclosed envelope. If you have any questions, please do not hesitate to contact: Name, Title, tel # ______.

1. Was the purpose of the visit clear? Yes _____  No _____
2. Were preparations and arrangements for the visit adequate? Yes _____  No _____
3. Were materials sent to consultants adequate? Yes _____  No _____
4. Was the composition and size of the consultant team satisfactory? Yes _____  No _____
5. Was the format/schedule for the visit satisfactory (e.g., time for interviews)? Yes _____  No _____
6. Do you feel you met with appropriate hospital representatives? Yes _____  No _____
7. Were you able to adequately cover standards and responded questions and concerns? Yes _____  No _____
8. Did hospital representatives understand the standards and visit purpose? Yes _____  No _____
9. Was the visit of value? Yes _____  No _____

Please list any suggestions you have for improving the visits or other comments on the back of this sheet.
Background:

The Sierra-Sacramento Valley (S-SV) EMS Agency is completing a one year EMSA Special Projects Grant entitled “Assessment and Update of the S-SV Pediatric Emergency and Critical Care System.” A major objective of the grant project is to evaluate and redesignate Sutter Memorial Hospital and the University of California Davis Medical Center as Pediatric Critical Care Centers. Both of these facilities were designated in 1992.

Beginning in FY 1988, the S-SV EMS Agency completed a series of three EMSA special projects grants that made possible the development and implementation of a regional pediatric critical care system. State EMS for Children (EMS-C) guidelines and recommendations have been developed since S-SV implemented the various components of the regional pediatric critical care system. The process of updating the Standards for Pediatric Critical Care Centers (enclosed) and the Standards for Interfacility Transport Programs (enclosed) has been completed. These standards are based on California Children’s Service (CCS) Standards for Pediatric Intensive Care Units (PICU) as the core components. In addition, State EMS Authority Guidelines for Pediatric Critical Care Centers (PCCC) and standards and guidelines developed by EMSC projects in California and recognized professional organizations were also utilized. The purpose of the site visit is to evaluate compliance with the Pediatric Critical Care Center Standards and the Pediatric Interfacility Transport Program Standards.

When the S-SV Pediatric Emergency and Critical Care System Development Project began on September 1, 1988, the S-SV EMS Region was comprised of the seven (7) Joint Powers Agreement member counties of Sacramento, Placer, Nevada, Yolo, Yuba, Sutter and Sierra. Sacramento County withdrew from the S-SV Region on September 6, 1990, however, there was agreement for Sacramento County to continue to participate and support the third-year grant. S-SV has continued to maintain the regional Pediatric Advisory Committee that was established in 1988. The Committee provides expertise on pediatric protocols, policies,prehospital education and other pediatric-related issues. Sacramento County hospitals and EMS Agency representatives are active members on the advisory committee. Although both designated Pediatric Critical Care centers are located in Sacramento County, S-SV maintains the PCCC designation contract. UCDMC is also designated as a Pediatric Trauma Center. However, the evaluation of pediatric trauma care will not be included in the PCCC evaluation since the trauma center designation is maintained by the Sacramento County EMS Agency. UCDMC completed an ACS review for Level I Trauma Center and Pediatric Trauma Center redesignation within the past six months.
Site Visit Team Leader and Other Site Visit Participants:

Enclosed is a list of consultants and EMS Agency staff that will participate in the site visits. We are very pleased and grateful that we will be able to secure this outstanding group of consultants! All consultants are from designated pediatric critical care centers, located outside the EMS Agency area, and have no financial or other affiliation with the hospital. An EMS Agency representative will serve as the site visit team leader. The team leader will chair the opening and closing meetings of the visit and provide guidance to consultants and hospital representatives during the visit. EMS Agency representatives will also participate in the site visit interviews and may ask a few questions, but their primary role is to answer any questions that may arise about the standards, make sure all standards are reviewed, and maintain the site visit schedule.

Responsibilities of Consultants:

1. Consultants should thoroughly review the standards, site visit schedule, and other materials sent to them prior to the visit.

2. Consultants have the primary responsibility for determining if standards are met. Each consultant will interview various hospital representatives, as listed on the site visit schedule, to review specific sections of the standards. These sections are listed on the site review schedule sheet and highlighted on the survey document sent to each consultant.

3. Consultants should take the lead in each interview by reading each standard and asking questions to determine if the standard is met. If the standard is not met, determine if there is a satisfactory alternative.

Consultants should also review materials that the hospital has been requested to have available (e.g., curriculum vitae, on-call schedules, policies, transfer agreements, etc.) in conjunction with the relevant standards to determine if the standards are met. (See attached lists of these materials.)

4. Consultants should feel free to ask questions and seek information about other areas related to pediatric emergency and critical care, if needed, e.g., the integration of the service being reviewed with other hospital pediatric services.

5. Consultants should record their findings on the survey document and keep track of major findings during the visit.

6. Consultants will be asked to present a brief five-minute summary of their major positive findings and areas that need improvement at the summation meeting at the end of the visit.
7. After the visit, consultants should fill out the Site Visit Evaluation Form (included in the packet of materials sent to consultants). The major findings and recommendations listed should be consistent with comments made at the site visit summation meeting. However, consultants are encouraged to provide more detailed comments, clarifications, and recommendations to assist the EMS Agency to prepare a composite feedback letter to the hospital on the findings of the site visit. Consultants should primarily fill out sections of the Evaluation Form related to services they reviewed, but should also include comments or information they might have gathered on other hospital services.

8. Within two weeks, consultants should return their Site Visit Evaluation Form to the S-SV EMS Agency in the self-addressed, stamped envelope provided.

9. Invoices may be sent in the same envelope or sent to: S-SV EMS Agency - 3853 Taylor Road, Suite G - Loomis, CA 95650. Please allow three weeks for processing invoices.

Survey Documents:

Survey documents for the site visit are included in the packet of materials sent to consultants. The documents list the standards with columns to the right marked "Met" and "Not Met." The standards listed are the criteria by which the center should be judged. Survey documents should be used to record findings and recommendations throughout the visit.

The site evaluation schedule sheet lists the specific sections of the standards each consultant should review. These sections are also highlighted in the survey documents sent to consultants. The evaluation will consist of either a detailed review of the standards or a limited review, as time permits. The consultant will focus on the standards that most apply to the hospital services being reviewed. (See additional instructions for reviewing standards below.)

PICU Standards:

The PCCC standards require centers to have a CCS-approved PICU as a core component of pediatric critical care centers. The EMS agency is accepting CCS PICU approval as evidence that the PICU meets basic CCS PICU standards. Thus, the PCCC standards do not include detailed PICU standards, and a complete survey of the PICU will not be conducted. However, consultants are encouraged to ask questions and review materials related to CCS PICU standards, if needed, to get an overall picture of PICU services and other services included in the CCS PICU standards (e.g., nursing services, social services, respiratory care, and other PICU support services). A copy of CCS PICU standards is enclosed for reference.
PCCC Standards

The PCCC standards primarily represent updates/revisions of CCS PICU standards and additional supplemental standards for pediatric emergency and critical care services that are not included in CCS PICU standards. These services are considered essential for comprehensive pediatric critical care referral centers (e.g., a hospital pediatric critical care committee, pediatric emergency services, surgical services, etc.).

The PCCC standards do not include specific standards for pediatric trauma services since the EMS agency does not plan to designate pediatric trauma centers. However, PCCCs, particularly those that are general trauma centers, care for a significant number of pediatric trauma patients. Therefore, consultants should ask questions and evaluate services related to the care of pediatric trauma patients when reviewing hospital services, particularly the ED, PICU, surgical service, etc.

In addition, PCCC standards include standards that should be met by all hospital services involved in pediatric emergency and critical care, e.g., pediatric policies, CQI, education/outreach programs, participation in the hospital PCCC committee, integration with other hospital services, etc. For hospitals that are not trauma centers, standards related to interfacility transfer agreements with pediatric or general trauma centers, transfer of trauma patients, etc. will be reviewed.

Instructions for Reviewing Specific Sections of PCCC Standards:

1. Consultants should review specific PCCC standards listed on the site visit schedule and highlighted in their survey documents.

2. Some sections of the PCCC standards apply to all major hospital services involved in pediatric emergency and critical care. These standards may not be specifically listed under each service, but they should be reviewed with hospital representatives from each major service. Consultants will need to flip to these sections and review them with hospital personnel.

These sections include:

a. Participation in the hospital multidisciplinary pediatric critical care committee. (Section II.A., p.3)

b. Coordination and integration with other pediatric emergency and critical care services.

c. Physician Staffing and Availability. (Section I.B., p.3) Detailed review by pediatric critical care consultant. Other consultants review as appropriate for hospital service being reviewed and time permits.
d. **Special Services/Resources.** (Section II.E., p.6) Detailed review by pediatric critical care consultant. Other consultants review as appropriate for hospital service being reviewed and time permits.

e. **Pediatric policies.** (Section II.E., p.8)

f. **Continuous Quality Improvement programs.** (Section II.H., p.9)

g. **Outreach and Education Programs.** (Section II.I., p.9)

Consultants should review these sections with hospital representatives from all major hospital services, including:

1. Emergency Department
2. PICU (including Social Services and Respiratory Care Services)
3. Surgical/Anesthesia Service
4. Pediatric Service
5. Nursing Services
6. Trauma Service (if applicable)

3. **Hospital Services With Limited or No Specific Standards.**

For interviews with some hospital representatives there are few specific detailed PCCC standards, e.g., hospital administration, nursing administration, social services, respiratory care, etc. Consultants interviewing hospital representatives from these services should review the standards that exist and then focus on such topics as:

a. Commitment/support for the hospital as a PCCC and integration of pediatric emergency and critical care services.

b. Participation in the multidisciplinary pediatric critical care committee and integration of the service with other pediatric emergency and critical care services.

c. Appropriate policies, CQI, education, and outreach programs related to pediatric emergency and critical care.

d. Open-ended questions to evaluate the service and obtain additional information, e.g., "How do you feel your service meets the special needs of critically ill and injured children?"
Site Visit Schedule:

A detailed schedule for the site visit indicating center representatives each consultant will interview, times and rooms for meetings, and services to be reviewed will be sent to consultants or distributed at the beginning of the visit.

Consultants should time interviews so that all guidelines related to the service are covered and keep within the time limits set. An EMS agency representative will help you to cover all standards, keep on schedule, and answer any questions that may arise.

At the end of each interview, consultants should ask hospital representatives to assist them in locating the room where their next meeting will be held.

Hospital Materials, Information, and Records:

Site visit findings, information from medical records, and materials provided by the hospital for review are CONFIDENTIAL and should not be discussed with anyone except authorized EMS agency representatives.

Materials provided by the hospital are the property of the hospital. Please do not ask for any of these materials at the site visit. If you would like copies for your personal use, please contact the hospital after the site visit to request them.

If you have any questions, please contact Mary Bacho, R.N., at (916) 652-3690, extension 204.
Article 1. Definitions

§ 100236. Abbreviated Injury Scale
“Abbreviated Injury Scale” or “AIS” is an anatomic severity scoring system. For the purposes of data sharing, the standard to be followed is AIS 90. For the purpose of volume performance measurement auditing the standard to be followed is AIS 90, using AIS code derived or computer derived scoring.


§ 100237. Immediately Available
"Immediately" or "immediately available" means (a) unencumbered by conflicting duties or responsibilities; (b) responding without delay when notified; and (c) being physically available to the specified area of the trauma center when the patient is delivered in accordance with local EMS agency policies and procedures.


§ 100238. Implementation
"Implementation" or "implemented" or "has implemented" means the development and activation of a trauma care system plan by a local EMS agency, including the actual triage, transport and treatment of trauma patients in accordance with the plan.


§ 100239. Injury Severity Score
“Injury Severity Score” or “ISS” means the sum of the squares of the Abbreviated Injury Scale score of the three most severely injured body regions.


§ 100240. On-Call
"On-call" means agreeing to be available to respond to the trauma center in order to provide a defined service.

§ 100241. Promptly Available

"Promptly" or "promptly available" means:
(a) responding without delay when notified and requested to respond to the hospital; and
(b) being physically available to the specified area of the trauma center within a period of time that is medically prudent and in accordance with local EMS agency policies and procedures.


§ 100242. Qualified Specialist

"Qualified specialist" or "qualified surgical specialist" or "qualified non-surgical specialist" means a physician licensed in California who is board certified in a specialty by the American Board of Medical Specialties, the Advisory Board for Osteopathic Specialties, a Canadian board or other appropriate foreign specialty board as determined by the American Board of Medical Specialties for that specialty.

(a) A non-board certified physician may be recognized as a "qualified specialist" by the local EMS agency upon substantiation of need by a trauma center if:
   (1) the physician can demonstrate to the appropriate hospital body and the hospital is able to document that 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 substantial education, training and experience in treating and managing trauma patients which shall be tracked by the trauma quality improvement program; and
   (3) the physician has successfully completed a residency program.


§ 100243. Receiving Hospital

"Receiving hospital" means a licensed general acute care hospital with a special permit for basic or comprehensive emergency service, which has not been designated as a trauma center according to this Chapter, but which has been formally assigned a role in the trauma care system by the local EMS agency. In rural areas, the local EMS agency may approve standby emergency service if basic or comprehensive services are not available.


§ 100244. Residency Program

"Residency program" means a residency program of the trauma center or a residency program formally affiliated with a trauma center where senior residents can participate in educational rotations, which has been approved by the appropriate Residency Review Committee of the Accreditation Council on Graduate Medical Education.

§ 100245. Senior Resident
"Senior resident" or "senior level resident" means a physician, licensed in the State of California, who has
completed at least three (3) years of the residency or is in their last year of residency training and has the
capability of initiating treatment and who is in training as a member of the residency program as defined in
Section 100244 of this Chapter, at the designated trauma center.


§ 100246. Service Area
"Service area" means that geographic area defined by the local EMS agency in trauma care system plan as
the area served by a designated trauma center.


§ 100247. Trauma Care System
"Trauma care system" or "trauma system" or "inclusive trauma care system" means a system that is designed
to meet the needs of all injured patients. The system shall be defined by the local EMS agency in its trauma care
system plan as described in Section 100256 of this Chapter.


§ 100248. Trauma Center
"Trauma Center" or "designated trauma center" means a licensed hospital, accredited by the Joint Commission
on Accreditation of Healthcare Organizations, which has been designated as a Level I, II, III, or IV trauma
center and/or Level I or II pediatric trauma center by the local EMS agency, in accordance with Articles 2
through 5 of this Chapter.

and Safety Code.

§ 100249. Trauma Resuscitation Area
"Trauma Resuscitation Area" means a designated area within a trauma center where trauma patients are
evaluated upon arrival.

§ 100250. Trauma Service
A “trauma service” is a clinical service established by the organized medical staff of a trauma center that has oversight and responsibility of the care of the trauma patient. It includes, but is not limited to, direct patient care services, administration, and as needed, support functions to provide medical care to injured persons.


§ 100251. Trauma Team
"Trauma team" means the multidisciplinary group of personnel who have been designated to collectively render care for trauma patients at a designated trauma center. The trauma team consists of physicians, nurses and allied health personnel. The composition of the trauma team may vary in relationship to trauma center designation level and severity of injury which leads to trauma team activation.


§ 100252. Triage Criteria
"Triage criteria" means a measure or method of assessing the severity of a person’s injuries that is used for patient evaluation and that utilizes anatomic or physiologic considerations or mechanism of injury.


Article 2. Local EMS Agency Trauma System Requirements

§ 100253. Application of Chapter
(a) A local EMS agency which has implemented or plans to implement a trauma care system shall develop a written trauma care system plan that includes policies and/or procedures to assure compliance of the trauma system with the provisions of this Chapter.

(b) A local EMS agency may specify additional requirements in addition to those specified in this Chapter.

(c) A local EMS agency implements a trauma care system on or after the effective date of this Chapter shall submit its trauma system plan to the EMS Authority and have it approved prior to implementation.

(d) A local EMS agency has implemented a trauma system prior to the effective date of the revisions to this Chapter shall submit its updated trauma system plan to the EMS Authority within two (2) years of the effective date of the revisions to this Chapter which is August 12, 1999.
(e) The EMS Authority shall notify the local EMS agency submitting its trauma care system plan within fifteen (15) days of receiving the plan that:
   (1) its plan has been received, and
   (2) it contains or does not contain the information requested in Section 100255 of this Chapter.

(f) The EMS Authority shall:
   (1) notify the local EMS agency either of approval or disapproval of its trauma system plan within sixty (60) days of receipt of the plan; and
   (2) provide written notification of approval or the reasons for disapproval of a trauma system plan.

(g) If the EMS Authority disapproves a trauma system plan, the local EMS agency shall have six (6) months from the date of notification of the disapproval to submit a revised trauma system plan which conforms to this Chapter or to appeal the decision to the Commission on Emergency Medical Services (EMS) which shall make a determination within four (4) months of receipt of the appeal. If a revised trauma system plan is approved by the EMS Authority the local EMS agency shall begin implementation of the plan within six (6) months of its approval.

(h) If the EMS Authority determines that a local EMS agency has failed to implement the trauma system in accordance with the approved plan, the approval of the plan may be withdrawn. The local EMS agency may appeal the decision to the Commission on EMS, which shall make a determination within six (6) months of the appeal.

(i) After approval of a trauma system plan, the local EMS agency shall submit to the EMS Authority for approval any significant changes to that trauma system plan prior to the implementation of the changes. In those instances where a delay in approval would adversely impact the current level of trauma care the local EMS agency may institute the changes and then submit the changes to the EMS Authority for approval within thirty (30) days of their implementation.

(j) The local EMS agency shall submit a trauma system status report as part of annual EMS Plan update. The report shall address, at a minimum, the status of trauma plan goals and objectives.

(k) No health care facility shall advertise in any manner or otherwise hold themselves out to be a trauma center unless they have been so designated by the local EMS agency, in accordance with this Chapter.

(l) No provider of prehospital care shall advertise in any manner or otherwise hold itself out to be affiliated with the trauma system or a trauma center unless they have been so designated by the local EMS agency, in accordance with this Chapter.

§ 100254. Trauma System Criteria
(a) A local EMS agency that plans to implement or modify a trauma system shall include with the trauma plan, a description of the rationale used for trauma system design planning for number and location of trauma centers including:
   (1) projected trauma patient volume and projected number and level of trauma centers necessary to provide access to trauma care;
       (A) No more than one (1) Level I or II trauma center shall be designated for each 350,000 population within the service area.
       (B) Where geography and population density preclude compliance with subsection (a)(1)(A), exemptions may be granted by the EMS Authority with the concurrence of the Commission on EMS on the basis of documented local needs.
   (2) resource availability to meet staffing requirements for trauma centers;
   (3) transport times;
   (4) distinct service areas; and
   (5) coordination with neighboring trauma systems.
(b) The local EMS agency may authorize the utilization of air transport within its jurisdiction to geographically expand the primary service area(s) provided that the expanded service area does not encroach upon another trauma system, or that of another trauma center, unless written agreements have been executed between the involved local EMS agencies and/or trauma centers.
(c) A local EMS agency may require trauma centers to have helicopter landing sites. If helicopter landing sites are required, then they shall be approved by the Division of Aeronautics, Department of Transportation pursuant to Division 2.5, Title 21 of the California Code of Regulations.
(d) All prehospital emergency medical care personnel rendering trauma patient care within an organized trauma system shall be trained in the local trauma triage and patient care methodology.
(e) All trauma patient transport vehicles shall be equipped with two-way telecommunications equipment capable of accessing hospitals, in accordance with local EMS agency policies regarding communication.
(f) All prehospital providers shall have a policy approved by the local EMS agency for the early notification of trauma centers of the impending arrival of a trauma patient.


§ 100255. Policy Development
A local EMS agency planning to implement a trauma system shall develop policies which provide a clear understanding of the structure of the trauma system and the manner in which it utilizes the resources available to it. The trauma system policies shall address at least the following:
(a) system organization and management;
(b) trauma care coordination within the trauma system;
trauma care coordination with neighboring jurisdictions, including EMS agency/system agreements;
(d) data collection and management;
(e) fees, including those for application, designation and redesignation, monitoring and evaluation;
(f) establishment of service areas for trauma centers;
(g) trauma center designation/redesignation process to include a written agreement between the local EMS agency and the trauma center;
(h) coordination with all health care organizations within the trauma system to facilitate the transfer of an organization member in accordance with the criteria set forth in Article 5 of this Chapter;
(i) coordination of EMS and trauma system for transportation including intertrauma center transfer and transfers from a receiving hospital to a trauma center;
(j) the integration of pediatric hospitals, if applicable;
(k) trauma center equipment;
(l) ensuring the availability of trauma team personnel;
(m) criteria for activation of trauma team;
(n) mechanism for prompt availability of specialists;
(o) quality improvement and system evaluation to include responsibilities of the multidisciplinary trauma peer review committee;
(p) criteria for pediatric and adult trauma triage, including destination;
(q) training of prehospital EMS personnel to include trauma triage;
(r) public information and education about the trauma system;
(s) marketing and advertising by trauma centers and prehospital providers as it relates to the trauma care system; and
(t) coordination with public and private agencies and trauma centers in injury prevention programs.


§ 100256. Trauma Plan Development
(a) The initial plan for a trauma care system that is submitted to the EMS Authority shall be comprehensive with objectives that shall be clearly stated. The initial trauma care system plan shall contain at least the following:
(1) summary of the plan;
(2) organizational structure;
(3) needs assessment;
(4) inclusive trauma system design, which includes those facilities involved in the care of acutely injured patients, including coordination with neighboring agencies;
(5) documentation that any intercounty trauma center agreements have been approved by the EMS agencies of both counties;
(6) objectives;
implementation schedule;
(8) fiscal impact of the system;
(9) policy and plan development process;
(10) written documentation of local approval; and
(11) table of contents identifying where the information in this Section and Sections 100254, 100255 and 100257 of this Chapter can be found in the plan.

(b) The system design shall address the operational implementation of the policies developed pursuant to Section 100255 and the following aspects of hospital service delivery:
(1) Critical care capability including but not limited to burns, spinal cord injury, rehabilitation and pediatrics;
(2) medical organization and management; and
(3) quality improvement.

(c) A local EMS agency shall advise the EMS Authority when there are any changes or revisions in policy or plan development pursuant to the sections of this Article.


§ 100257. Data Collection
(a) The local EMS agency shall develop and implement a standardized data collection instrument and implement a data management system for trauma care.
(1) The system shall include the collection of both prehospital and hospital patient care data, as determined by the local EMS agency;
(2) trauma data shall be integrated into the local EMS agency and State EMS Authority data management system; and
(3) all hospitals that receive trauma patients shall participate in the local EMS agency data collection effort in accordance with local EMS agencies policies and procedures.

(b) The prehospital data shall include at least those data elements required on the EMT-II or EMT-P patient care record, as specified in Section 100129 of the EMT-II regulations and Section 100176 of the EMT-P regulations.

(c) The hospital data shall include at least the following, when applicable:
(1) Time of arrival and patient treatment in:
   (A) Emergency department or trauma receiving area; and
   (B) operating room.
(2) Dates for:
   (A) Initial admission;
   (B) intensive care; and
   (C) discharge.
(3) Discharge data, including:
§ 100258. Trauma System Evaluation

(a) The local EMS agency shall be responsible for the development and ongoing evaluation of the trauma system.

(b) The local EMS agency shall be responsible for the development of a process to receive information from EMS providers, participating hospitals and the local medical community on the evaluation of the trauma system, including but not limited to:
   (1) trauma plan;
   (2) triage criteria;
   (3) activation of trauma team; and
   (4) notification of specialists.

(c) The local EMS agency shall be responsible for periodic performance evaluation of the trauma system, which shall be conducted at least every two (2) years. Results of the trauma system evaluation shall be made available to system participants.

(d) The local EMS agency shall be responsible for ensuring that trauma centers and other hospitals that treat trauma patients participate in the quality improvement process contained in Section 100265.


Article 3. Trauma Center Requirements

§ 100259. Level I and Level II Trauma Centers

(a) A Level I or II trauma center is a licensed hospital which has been designated as a Level I or II trauma center by the local EMS agency. While both Level I and II trauma centers are similar, a Level I trauma center is required to have staff and resources not required of a Level II trauma center. The additional Level I requirements are located in Section 100260. Level I and II trauma centers shall have appropriate pediatric equipment and supplies and be capable of initial evaluation and treatment of pediatric trauma patients. Trauma centers without a pediatric intensive care unit, as outlined in (e)(1) of this section, shall establish and utilize written criteria for consultation and transfer of pediatric patients needing intensive care. A Level I or Level II trauma center shall have at least the following:
   (1) A trauma program medical director who is a board-certified surgeon, whose responsibilities...
include, but are not limited to, factors that affect all aspects of trauma care such as:

(A) recommending trauma team physician privileges;
(B) working with nursing and administration to support the needs of trauma patients;
(C) developing trauma treatment protocols;
(D) determining appropriate equipment and supplies for trauma care;
(E) ensuring the development of policies and procedures to manage domestic violence, elder and child abuse and neglect;
(F) having authority and accountability for the quality improvement peer review process;
(G) correcting deficiencies in trauma care or excluding from trauma call those trauma team members who no longer meet standards;
(H) coordinating pediatric trauma care with other hospital and professional services;
(I) coordinating with local and State EMS agencies;
(J) assisting in the coordination of the budgetary process for the trauma program; and
(K) identifying representatives from neurosurgery, orthopaedic surgery, emergency medicine, pediatrics and other appropriate disciplines to assist in identifying physicians from their disciplines who are qualified to be members of the trauma program.

(2) A trauma nurse coordinator/manager who is a registered nurse with qualifications including evidence of educational preparation and clinical experience in the care of the adult and/or pediatric trauma patient, administrative ability, and responsibilities that include but are not limited to:

(A) organizing services and systems necessary for the multidisciplinary approach to the care of the injured patient;
(B) coordinating day-to-day clinical process and performance improvement as it pertains to nursing and ancillary personnel; and
(C) collaborating with the trauma program medical director in carrying out the educational, clinical, research, administrative and outreach activities of the trauma program.

(3) A trauma service which can provide for the implementation of the requirements specified in this Section and provide for coordination with the local EMS agency.

(4) A trauma team, which is a multidisciplinary team responsible for the initial resuscitation and management of the trauma patient.

(5) Department(s), division(s), service(s) or section(s) that include at least the following surgical specialties, which are staffed by qualified specialists:

(A) general;
(B) neurologic;
(C) obstetric/gynecologic;
(D) ophthalmologic;
(E) oral or maxillofacial or head and neck;
(F) orthopaedic;
(G) plastic; and
(H) urologic
(6) Department(s), division(s), service(s) or section(s) that include at least the following non-surgical specialties, which are staffed by qualified specialists:
(A) anesthesiology;
(B) internal medicine;
(C) pathology;
(D) psychiatry; and
(E) radiology;

(7) An emergency department, division, service or section staffed with qualified specialists in emergency medicine who are immediately available.

(8) Qualified surgical specialist(s) or specialty availability, which shall be available as follows:
(A) general surgeon capable of evaluating and treating adult and pediatric trauma patients shall be immediately available for trauma team activation and promptly available for consultation;
(B) On-call and promptly available:
1. neurologic;
2. obstetric/gynecologic;
3. ophthalmologic;
4. oral or maxillofacial or head and neck;
5. orthopaedic;
6. plastic;
7. reimplantation/microsurgery capability. This surgical service may be provided through a written transfer agreement; and
8. urologic.
(C) Requirements may be fulfilled by supervised senior residents as defined in Section 100245 of this Chapter who are capable of assessing emergent situations in their respective specialties. When a senior resident is the responsible surgeon:
1. the senior resident shall be able to provide the overall control and surgical leadership necessary for the care of the patient, including initiating surgical care;
2. a staff trauma surgeon or a staff surgeon with experience in trauma care shall be on-call and promptly available;
3. a staff trauma surgeon or a staff surgeon with experience in trauma care shall be advised of all trauma patient admissions, participate in major therapeutic decisions, and be present in the emergency department for major resuscitations and in the operating room for all trauma operative procedures.
Available for consultation or consultation and transfer agreements for adult and pediatric trauma patients requiring the following surgical services:

1. burns;
2. cardiothoracic;
3. pediatric;
4. reimplantation/microsurgery; and
5. spinal cord injury.

Qualified non-surgical specialist(s) or specialty availability, which shall be available as follows:

(A) Emergency medicine, in-house and immediately available at all times. This requirement may be fulfilled by supervised senior residents, as defined in Section 100245 of this Chapter, in emergency medicine, who are assigned to the emergency department and are serving in the same capacity. In such cases, the senior resident(s) shall be capable of assessing emergency situations in trauma patients and of providing for initial resuscitation. Emergency medicine physicians who are qualified specialists in emergency medicine and are board certified in emergency medicine shall not be required by the local EMS agency to complete an advanced trauma life support (ATLS) course. Current ATLS verification is required for all emergency medicine physicians who provide emergency trauma care and are qualified specialists in a specialty other than emergency medicine.

(B) Anesthesiology. Level II shall be promptly available with a mechanism established to ensure that the anesthesiologist is in the operating room when the patient arrives. This requirement may be fulfilled by senior residents or certified registered nurse anesthetists who are capable of assessing emergent situations in trauma patients and of providing any indicated treatment and are supervised by the staff anesthesiologist. In such cases, the staff anesthesiologist on-call shall be advised about the patient, be promptly available at all times, and be present for all operations.

(C) Radiology, promptly available; and

(D) Available for consultation:

1. cardiology;
2. gastroenterology;
3. hematology;
4. infectious diseases;
5. internal medicine;
6. nephrology;
7. neurology;
8. pathology; and
9. pulmonary medicine.
(b) In addition to licensure requirements, trauma centers shall have the following service capabilities:

1. Radiological service. The radiological service shall have immediately available a radiological technician capable of performing plain film and computed tomography imaging. A radiological service shall have the following additional services promptly available:
   (A) angiography; and
   (B) ultrasound.

2. Clinical laboratory service. A clinical laboratory service shall have:
   (A) a comprehensive blood bank or access to a community central blood bank; and
   (B) clinical laboratory services immediately available.

3. Surgical service. A surgical service shall have an operating suite that is available or being utilized for trauma patients and that has:
   (A) Operating staff who are promptly available unless operating on trauma patients and back-up personnel who are promptly available; and
   (B) appropriate surgical equipment and supplies as determined by the trauma program medical director.

(c) A Level I and II trauma center shall have a basic or comprehensive emergency service which has special permits issued pursuant to Chapter 1, Division 5 of Title 22. The emergency service shall:

1. designate an emergency physician to be a member of the trauma team;
2. provide emergency medical services to adult and pediatric patients; and
3. have appropriate adult and pediatric equipment and supplies as approved by the director of emergency medicine in collaboration with the trauma program medical director.

(d) In addition to the special permit licensing services, a trauma center shall have, pursuant to Section 70301 of Chapter 1, Division 5 of Title 22 of the California Code of Regulations, the following approved supplemental services:

1. Intensive Care Service:
   (A) the ICU shall have appropriate equipment and supplies as determined by the physician responsible for the intensive care service and the trauma program medical director;
   (B) The ICU shall have a qualified specialist promptly available to care for trauma patients in the intensive care unit. The qualified specialist may be a resident with two (2) years of training who is supervised by the staff intensivist or attending surgeon who participates in all critical decision making; and
   (C) the qualified specialist in (B) above shall be a member of the trauma team.

2. Burn Center. This service may be provided through a written transfer agreement with a Burn Center.

3. Physical Therapy Service. Physical therapy services to include personnel trained in physical therapy and equipped for acute care of the critically injured patient.
(4) Rehabilitation Center. Rehabilitation services to include personnel trained in rehabilitation care and equipped for acute care of the critically injured patient. These services may be provided through a written transfer agreement with a rehabilitation center.
(5) Respiratory Care Service. Respiratory care services to include personnel trained in respiratory therapy and equipped for acute care of the critically injured patient.
(6) Acute hemodialysis capability.
(7) Occupational therapy service. Occupational therapy services to include personnel trained in occupational therapy and equipped for acute care of the critically injured patient.
(8) Speech therapy service. Speech therapy services to include personnel trained in speech therapy and equipped for acute care of the critically injured patient.
(9) Social Service.

(e) A trauma center shall have the following services or programs that do not require a license or special permit.

(1) Pediatric Service. In addition to the requirements in Division 5 of Title 22 of the California Code of Regulations, the pediatric service providing in-house pediatric trauma care shall have:
   (A) a pediatric intensive care unit approved by the California State Department of Health Services’ California Children Services (CCS); or a written transfer agreement with an approved pediatric intensive care unit. Hospitals without pediatric intensive care units shall establish and utilize written criteria for consultation and transfer of pediatric patients needing intensive care; and
   (B) a multidisciplinary team to manage child abuse and neglect.
(2) Acute spinal cord injury management capability. This service may be provided through a written transfer agreement with a Rehabilitation Center;
(3) Protocol to identify potential organ donors as described in Division 7, Chapter 3.5 of the California Health and Safety Code;
(4) An outreach program, to include:
   (A) capability to provide both telephone and on-site consultations with physicians in the community and outlying areas; and
   (B) trauma prevention for the general public;
(5) Written interfacility transfer agreements with referring and specialty hospitals;
(6) Continuing education. Continuing education in trauma care shall be provided for:
   (A) staff physicians;
   (B) staff nurses;
   (C) staff allied health personnel;
   (D) EMS personnel; and
   (E) other community physicians and health care personnel.

§100260. Additional Level I Criteria

In addition to the above requirements, a Level I trauma center shall have:

(a) One of the following patient volumes annually:
   (1) a minimum of 1200 trauma program hospital admissions, or
   (2) a minimum of 240 trauma patients per year whose Injury Severity Score (ISS) is greater than 15, or
   (3) an average of 35 trauma patients (with an ISS score greater than 15) per trauma program surgeon per year.

(b) Additional qualified surgical specialists or specialty availability on-call and promptly available:
   (1) cardiothoracic; and
   (2) pediatrics;

(c) A surgical service that has at least the following:
   (1) operating staff who are immediately available unless operating on trauma patients and back-up personnel who are promptly available.
   (2) cardiopulmonary bypass equipment; and
   (3) operating microscope.

(d) Anesthesiology immediately available. This requirement may be fulfilled by senior residents or certified registered nurse anesthetists who are capable of assessing emergent situations in trauma patients and of providing treatment and are supervised by the staff anesthesiologist.

(e) An intensive care unit with a qualified specialist in-house and immediately available to care for trauma patients in the intensive care unit. The qualified specialist may be a resident with two (2) years of training who is supervised by the staff intensivist or attending surgeon who participates in all critical decision making.

(f) A Trauma research program; and

(g) An ACGME approved surgical residency program.

100261. Level I and Level II Pediatric Trauma Centers

(a) A Level I or II pediatric trauma center is a licensed hospital which has been designated as a Level I or II pediatric trauma center by the local EMS agency. While both Level I and II pediatric trauma centers are similar, a Level I pediatric trauma center is required to have staff and resources not required of a Level II pediatric trauma center. The additional Level I requirements for pediatric trauma centers are located in Section 100262. A Level I or Level II pediatric trauma center shall have at least the following:

(1) A pediatric trauma program medical director who is a board-certified surgeon with experience in pediatric trauma care (may also be trauma program medical director for adult trauma services), whose responsibilities include, but are not limited to, factors that affect all aspects of pediatric trauma care such as:
   (A) recommending pediatric trauma team physician privileges;
   (B) working with nursing and administration to support the needs of pediatric trauma patients;
   (C) developing pediatric trauma treatment protocols;
   (D) determining appropriate equipment and supplies for pediatric trauma care;
   (E) ensuring the development of policies and procedures to manage domestic violence and child abuse and neglect;
   (F) having authority and accountability for the pediatric trauma quality improvement peer review process;
   (G) correcting deficiencies in pediatric trauma care or excluding from trauma call those trauma team members who no longer meet standards;
   (H) coordinating pediatric trauma care with other hospital and professional services;
   (I) coordinating with local and State EMS agencies;
   (J) identifying representatives from neurosurgery, orthopedic surgery, emergency medicine, pediatrics and other appropriate disciplines to assist in identifying physicians from their disciplines who have pediatric trauma care experience and who are qualified to be members of the pediatric trauma program.

(2) A pediatric trauma nurse coordinator/manager who is a registered nurse with qualifications (may also be trauma nurse coordinator/manager for adult trauma services) including evidence of educational preparation and clinical experience in the care of pediatric trauma patients, administrative ability, and responsibilities that include but are not limited to factors that affect all aspects of pediatric trauma care, including:
   (A) organizing services and systems necessary for the multidisciplinary approach to the care of the injured child;
   (B) coordinating day-to-day clinical process and performance improvement as it pertains to pediatric trauma nursing and ancillary personnel; and
(C) collaborating with the pediatric trauma program medical director in carrying out the educational, clinical, research, administrative and outreach activities of the pediatric trauma program.

(3) A pediatric trauma service which can provide for the implementation of the requirements specified in this section and provide for coordination with the local EMS agency.

(4) A pediatric trauma team, which is a multidisciplinary team responsible for the initial resuscitation and management of the pediatric trauma patient.
   (A) the pediatric trauma team leader shall be a surgeon with pediatric trauma experience as defined by the trauma program medical director;
   (B) the remainder of the team shall include physician, nursing and support personnel in sufficient numbers to evaluate, resuscitate, treat and stabilize pediatric trauma patients.

(5) Department(s), division(s), service(s) or section(s) that include at least the following surgical specialties and which are staffed by qualified specialists with pediatric experience:
   (A) neurologic;
   (B) obstetric/gynecologic (may be provided through a written transfer agreement with a hospital that has a department, division, service, or section that provides this service);
   (C) ophthalmologic;
   (D) oral or maxillofacial or head and neck;
   (E) orthopaedic;
   (F) pediatric
   (G) plastic;
   (H) urologic; and
   (I) microsurgery/reimplantation (may be provided through a written transfer agreement with a hospital that has a department, division, service, or section that provides this service).

(6) Department(s), division(s), service(s), or section(s) that include at least the following non-surgical specialties which are staffed by qualified specialists with pediatric experience:
   (A) anesthesiology;
   (B) cardiology,
   (C) critical care,
   (D) emergency medicine,
   (E) gastroenterology
   (F) general pediatrics,
   (G) hematology/oncology,
   (H) infectious disease,
   (I) neonatology,
   (J) nephrology,
   (K) neurology,
   (L) pathology,
   (M) psychiatry,
   (N) pulmonology
   (O) radiology, and
(P) rehabilitation/physical medicine. This requirement may be provided through a written agreement with a pediatric rehabilitation center.

(7) An emergency department, division, service or section staffed with qualified specialists in emergency medicine with pediatric trauma experience, who are immediately available.

(8) Qualified surgical specialist(s) or specialty availability, which shall be available as follows:

(A) Pediatric surgeon, capable of evaluating and treating pediatric trauma patients shall be immediately available for trauma team activation and promptly available for consultation. This requirement may be fulfilled by:

1. a staff pediatric surgeon with experience in pediatric trauma care; or
2. a staff trauma surgeon with experience in pediatric trauma care; or
3. a senior general surgical resident who has completed at least three clinical years of surgical residency training. When a senior resident is the responsible surgeon:
   a. the senior resident shall be able to provide the overall control and surgical leadership necessary for the care of the patient, including initiating surgical care; and
   b. a staff pediatric surgeon with experience in pediatric trauma care or a staff trauma surgeon with experience in pediatric trauma care shall be on-call and promptly available; and
   c. a staff pediatric surgeon or a staff surgeon with experience in pediatric trauma care shall participate in major therapeutic decisions, be advised of all pediatric trauma patient admissions and be present in the emergency department for major resuscitations and in the operating room for all trauma operative procedures.

(B) On-call and promptly available with pediatric experience;

1. neurologic;
2. obstetric/gynecologic. This surgical service may be provided through a written transfer agreement;
3. ophthalmologic;
4. oral or maxillofacial or head and neck;
5. orthopaedic;
6. plastic;
7. reimplantation/microsurgery capability. This surgical service may be provided through a written transfer agreement;
8. urologic;
(C) Requirements may be fulfilled by supervised senior residents as defined in Section
100245 of this Chapter who are capable of assessing emergent situations in their
respective specialties. When a senior resident is the responsible surgeon:
1. The senior resident shall be able to provide the overall control and surgical
   leadership necessary for the care of the patient, including initiating surgical care;
2. a staff trauma surgeon or a staff surgeon with experience in trauma care shall
   be on-call and promptly available;
3. a staff trauma surgeon or a staff surgeon with experience in trauma care shall
   be advised of all trauma patient admissions, participate in major therapeutic
decisions, and be present in the emergency department for major resuscitations
and in the operating room for all trauma operative procedures.

(D) Available for consultation or consultation and transfer agreements for pediatric trauma
patients requiring the following surgical services;
1. burns;
2. cardiothoracic
3. spinal cord injury.

(9) Qualified nonsurgical specialist(s) or specialty availability, which shall be available as follows:
(A) Emergency medicine, in-house and immediately available at all times. This requirement
may be fulfilled by a qualified specialist in pediatric emergency medicine; or a qualified
specialist in emergency medicine with pediatric experience; or a subspecialty resident
in pediatric emergency medicine who has completed at least one year of subspecialty
residency education in pediatric emergency medicine. In such cases, the senior
resident(s) shall be capable of assessing emergency situations in trauma patients and of
providing for initial resuscitation. Emergency medicine physicians who are qualified
specialists in emergency medicine and are board certified in emergency medicine or
pediatric emergency medicine shall not be required by the local EMS agency to
complete an advanced trauma life support course. Current ATLS verification is
required for all emergency medicine physicians who provide emergency trauma care
and are qualified specialists in a specialty other than emergency medicine. When a
senior resident is the responsible emergency physician in-house:
1. a qualified specialist in pediatric emergency medicine, or emergency medicine
   with pediatric experience shall be promptly available; and
2. the qualified specialist on-call shall be notified of all patients who require
   resuscitation, operative surgical intervention, or intensive care unit admission.

(B) Anesthesiology, Level II be promptly available with a mechanism established to
ensure that the anesthesiologist is in the operating room when the patient arrives. This
requirement may be fulfilled by a senior resident or certified registered nurse anesthetists
with pediatric experience who are capable of assessing emergent situations in pediatric
trauma patients and of providing any indicated treatment and are supervised by the staff
anesthesiologist. In such cases, the staff anesthesiologist with pediatric experience on-call shall be advised about the patient, be promptly available at all times, and be present for all operations.

(C) Radiology, promptly available; and

(D) Available for consultation or provided through transfer agreement, qualified specialists with pediatric experience:
   a. adolescent medicine;
   b. child development;
   c. genetics/dysmorphology;
   d. neuroradiology;
   e. obstetrics,
   f. pediatric allergy and immunology;
   g. pediatric dentistry;
   h. pediatric endocrinology;
   i. pediatric pulmonology; and
   j. rehabilitation/physical medicine.

(E) Pediatric critical care, in-house and immediately available. The in-house requirement may be fulfilled by:
   1. a qualified specialist in pediatric critical care medicine; or
   2. a qualified specialist in anesthesiology with experience in pediatric critical care;
   3. a qualified surgeon with expertise in pediatric critical care; or
   4. a physician who has completed at least two years of residency in pediatrics. When a senior resident is the responsible pediatric critical care physician then:
      a. a qualified specialist in pediatric critical care medicine, or a qualified specialist in anesthesiology with experience in pediatric critical care, shall be on-call and promptly available; and;
      b. the qualified specialist on-call shall be advised about all patients who may require admission to the pediatric intensive care unit and shall participate in all major therapeutic decisions and interventions;

(F) Qualified specialists with pediatric experience shall be on the hospital staff and available for consultation:
   1. general pediatrics,
   2. mental health,
   3. neonatology,
   4. nephrology,
   5. pathology,
   6. pediatric cardiology,
   7. pediatric gastroenterology
   8. pediatric hematology/oncology
9. pediatric infectious disease,
10. pediatric neurology, and
11. pediatric radiology.

(b) In addition to licensure requirements, pediatric trauma centers shall have the following service capabilities:

(1) Radiological service. The radiological service shall have in-house and immediately available a radiological technician capable of performing plain film and computed tomography imaging. A radiological service shall have the following additional services promptly available for children:
   (A) angiography; and
   (B) ultrasound.

(2) Clinical laboratory service. A clinical laboratory service shall have:
   (A) a comprehensive blood bank or access to a community central blood bank; and
   (B) clinical laboratory services immediately available with micro sampling capability.

(3) Surgical service. A surgical service shall have an operating suite that is available or being utilized for trauma patients and that has:
   (A) operating staff who are promptly available unless operating on a trauma patient and back up personnel who are promptly available; and
   (B) appropriate surgical equipment and supplies as determined by the pediatric trauma program medical director.

(4) Nursing services that are staffed by qualified licensed nurses with education, experience, and demonstrated clinical competence in the care of critically ill and injured children.

(c) A Level I and II pediatric trauma center shall have a basic or comprehensive emergency service which have special permits issued pursuant to Chapter 1, Division 5 of Title 22. The emergency service shall:

(1) designate an emergency physician to be a member of the pediatric trauma team;

(2) provide emergency medical services to pediatric patients; and

(3) have appropriate pediatric equipment and supplies as approved by the director of emergency medicine in collaboration with the trauma program medical director.

(d) In addition to the special permit licensing services, a pediatric trauma center shall have, pursuant to Section 70301 of Chapter 1, Division 5 of Title 22 of the California Code of Regulations, the following approved supplemental services:

(1) Burn Center. This service may be provided through a written transfer agreement with a Burn Center;

(2) Physical Therapy Service. Physical therapy services to include personnel trained in pediatric physical therapy and equipped for acute care of the critically injured child;

(3) Rehabilitation Center. Rehabilitation services to include personnel trained in rehabilitation care and equipped for acute care of the critically injured patient. These services may be provided through a written transfer agreement with a rehabilitation center;

(4) Respiratory Care Service. Respiratory care services to include personnel trained in respiratory therapy and equipped for acute care of the critically injured patient;
(5) Acute hemodialysis capability;
(6) Occupational therapy service. Occupational therapy services to include personnel trained in pediatric occupational therapy and equipped for acute care of the critically injured child;
(7) Speech therapy service. Speech therapy services to include personnel trained in pediatric speech therapy and equipped for acute care of the critically injured child; and
(8) Social Service.

(e) A trauma center shall have the following services or programs that do not require a license or special permit.

(1) A Pediatric Intensive Care Unit (PICU) approved by the California State Department of Health Services California Children Services (CCS).
   (A) The PICU shall have appropriate equipment and supplies as determined by the physician responsible for the pediatric intensive care service and the pediatric trauma program medical director;
   (B) the pediatric intensive care specialist shall be promptly available to care for trauma patients in the intensive care unit; and
   (C) the qualified specialist in (B) above shall be a member of the trauma team.

(2) Acute spinal cord injury management capability. This service may be provided through a written transfer agreement with a Rehabilitation Center;

(3) Protocol to identify potential organ donors as described in Division 7, Chapter 3.5 of the California Health and Safety Code;

(4) An outreach program, to include:
   (A) capability to provide both telephone and on-site consultations with physicians in the community and outlying areas;
   (B) trauma prevention for the general public;
   (C) public education and illness/injury prevention education.

(5) written interfacility transfer agreements with referring and specialty hospitals; and

(6) continuing education. Continuing education in pediatric trauma care shall be provided for:
   (A) staff physicians;
   (B) staff nurses;
   (C) staff allied health personnel;
   (D) EMS personnel; and
   (E) other community physicians and health care personnel.
(7) In addition to special permit licensing services, a pediatric trauma center shall have:
   (A) outreach and injury prevention programs specifically related to pediatric trauma and injury prevention;
   (B) a suspected child abuse and neglect team (SCAN);
   (C) an aeromedical transport plan with designated landing site; and
   (D) Child Life program.


§100262. Additional Level I Pediatric Trauma Criteria
In addition to the above requirements, a Level I pediatric trauma center shall have:
(a) A pediatric trauma program medical director who is a board-certified pediatric surgeon, whose responsibilities include, but are not limited to, factors that affect all aspects of pediatric trauma care.
(b) Additional qualified pediatric surgical specialists or specialty availability on-call and promptly available:
   (1) cardiothoracic,
   (2) pediatric neurologic,
   (3) pediatric ophthalmologic,
   (4) pediatric oral or maxillofacial or head and neck, and
   (5) pediatric orthopaedic.
(c) A surgical service that has at least the following:
   (1) operating staff who are immediately available unless operating on trauma patients and back-up personnel who are promptly available.
   (2) cardiopulmonary bypass equipment; and
   (3) operating microscope.
(d) Additional qualified pediatric non-surgical specialists or specialty availability on-call and promptly available:
   (1) pediatric anesthesiology,
   (2) pediatric emergency medicine,
   (3) pediatric gastroenterology,
   (4) pediatric infectious disease,
   (5) pediatric nephrology,
   (6) pediatric neurology,
   (7) pediatric pulmonology, and
   (8) pediatric radiology.
(e) the qualified pediatric PICU specialist shall be immediately available, advised about all patients who may require admission to the PICU, and shall participate in all major therapeutic decisions and interventions;
Anesthesiology shall be immediately available. This requirement may be fulfilled by a senior resident or certified registered nurse anesthetists who are capable of assessing emergent situations in trauma patients and providing treatment and are supervised by the staff anesthesiologist.

Pediatric trauma research program.

Maintain an education rotation with an ACGME approved and affiliated surgical residency program.


§ 100263. Level III Trauma Centers
A Level III trauma center is a licensed hospital which has been designated as a Level III trauma center by the local EMS agency. A Level III trauma center shall include equipment and resources necessary for initial stabilization and personnel knowledgeable in the treatment of adult and pediatric trauma. A Level III trauma center shall have at least the following:

(a)

A trauma program medical director who is a qualified surgical specialist, whose responsibilities include, but are not limited to, factors that affect all aspects of trauma care such as:

1. recommending trauma team physician privileges;
2. working with nursing administration to support the nursing needs of trauma patients;
3. developing trauma treatment protocols;
4. having authority and accountability for the quality improvement peer review process;
5. correcting deficiencies in trauma care or excluding from trauma call those trauma team members who no longer meet the standards of the quality improvement program; and
6. assisting in the coordination of budgetary process for the trauma program.

(b)

A trauma nurse coordinator/manager who is a registered nurse with qualifications including evidence of educational preparation and clinical experience in the care of adult and/or pediatric trauma patients, administrative ability, and responsibilities that include, but are not limited to:

1. organizing services and systems necessary for the multidisciplinary approach to the care of the injured patient;
2. coordinating day-to-day clinical process and performance improvement as pertains to nursing and ancillary personnel, and
3. collaborating with the trauma program medical director in carrying out the educational, clinical, research, administrative and outreach activities of the trauma program.

(c)

A trauma service which can provide for the implementation of the requirements specified in this Section and provide for coordination with the local EMS agency.

(d)

The capability of providing prompt assessment, resuscitation and stabilization to trauma patients.

(e)

The ability to provide treatment or arrange for transportation to a higher level trauma center as appropriate.

(f)

An emergency department, division, service, or section staffed so that trauma patients are assured of immediate and appropriate initial care.
(g) Intensive Care Service:
(1) the ICU shall have appropriate equipment and supplies as determined by the physician responsible for the intensive care service and the trauma program medical director;
(2) the ICU shall have a qualified specialist promptly available to care for trauma patients in the intensive care unit. The qualified specialist may be a resident with two (2) years of training who is supervised by the staff intensivist or attending surgeon who participates in all critical decision making; and
(3) the qualified specialist in (2) above shall be a member of the trauma team;
(h) A trauma team, which will be a multidisciplinary team responsible for the initial resuscitation and management of the trauma patient.
(i) Qualified surgical specialist(s) who shall be promptly available:
(1) general;
(2) orthopedic; and
(3) neurosurgery (can be provided through a transfer agreement)
(j) Qualified non-surgical specialist(s) or specialty availability, which shall be available as follows:
(1) Emergency medicine, in-house and immediately available; and
(2) Anesthesiology, on-call and promptly available with a mechanism established to ensure that the anesthesiologist is in the operating room when the patient arrives. This requirement may be fulfilled by senior residents or certified registered nurse anesthetists who are capable of assessing emergent situations in trauma patients and of providing any indicated emergent anesthesia treatment and are supervised by the staff anesthesiologist. In such cases, the staff anesthesiologist on-call shall be advised about the patient, be promptly available at all times, and be present for all operations.
(3) The following services shall be in-house or may be provided through a written transfer agreement:
   (A) Burn care.
   (B) Pediatric care.
   (C) Rehabilitation services.
(k) The following service capabilities:
(1) Radiological service. The radiological service shall have a radiological technician promptly available.
(2) Clinical laboratory service. A clinical laboratory service shall have:
   (A) a comprehensive blood bank or access to a community central blood bank; and
   (B) clinical laboratory services promptly available.
(3) Surgical service. A surgical service shall have an operating suite that is available or being utilized for trauma patients and that has:
   (A) Operating staff who are promptly available; and
   (B) appropriate surgical equipment and supplies requirements which have been approved by the local EMS agency.
(l) Written transfer agreements with Level I or II trauma centers, Level I or II pediatric trauma centers, or other specialty care centers, for the immediate transfer of those patients for whom the most appropriate medical care requires additional resources.

(m) An outreach program, to include:
   (1) capability to provide both telephone and on-site consultations with physicians in the community and outlying areas; and
   (2) trauma prevention for the general public.

(n) Continuing education. Continuing education in trauma care, shall be provided for:
   (1) staff physicians;
   (2) staff nurses;
   (3) staff allied health personnel;
   (4) EMS personnel; and
   (5) other community physicians and health care personnel.


§ 100264. Level IV Trauma Center
A Level IV trauma center is a licensed hospital which has been designated as a Level IV trauma center by the local EMS agency. A Level IV trauma center shall include equipment and resources necessary for initial stabilization and personnel knowledgeable in the treatment of adult and pediatric trauma. A Level IV trauma center shall have at least the following:

(a) A trauma program medical director who is a qualified specialist whose responsibilities include, but are not limited to, factors that affect all aspects of trauma care, including pediatric trauma care, such as:
   (1) recommending trauma team physician privileges;
   (2) working with nursing administration to support the nursing needs of trauma patients;
   (3) developing treatment protocols;
   (4) having authority and accountability for the quality improvement peer review process;
   (5) correcting deficiencies in trauma care or excluding from trauma call those trauma team members who no longer meet the standards of the quality improvement program; and
   (6) assisting in the coordination of the budgetary process for the trauma program.

(b) A trauma nurse coordinator/manager who is a registered nurse with qualifications including evidence of educational preparation and clinical experience in the care of adult and/or pediatric trauma patients, administrative ability, and responsibilities that include, but are not limited to:
   (1) organizing services and systems necessary for the multidisciplinary approach to the care of the injured patient;
   (2) coordinating day-to-day clinical process and performance improvement as it pertains to nursing and ancillary personnel; and
   (3) collaborating with the trauma program medical director in carrying out the educational, clinical, research, administrative and outreach activities of the trauma program.
(c) A trauma service which can provide for the implementation of the requirements specified in this Section and provide for coordination with the local EMS agency.
(d) The capability of providing prompt assessment, resuscitation and stabilization to trauma patients.
(e) The ability to provide treatment or arrange transportation to higher level trauma center as appropriate.
(f) An emergency department, division, service, or section staffed so that trauma patients are assured of immediate and appropriate initial care.
(g) A trauma team, which will be a multidisciplinary team responsible for the initial resuscitation and management of the trauma patient.
(h) The following service capabilities:
   (1) Radiological service. The radiological service shall have a radiological technician promptly available.
   (2) Clinical laboratory service. A clinical laboratory service shall have:
       (A) a comprehensive blood bank or access to a community central blood bank; and
       (B) clinical laboratory services promptly available.
(i) Written transfer agreements with Level I, II or III trauma centers, Level I or II pediatric trauma centers, or other specialty care centers, for the immediate transfer of those patients for whom the most appropriate medical care requires additional resources.
(j) An outreach program, to include:
   (1) capability to provide both telephone and on-site consultations with physicians in the community and outlying areas; and
   (2) trauma prevention for the general public.
(k) Continuing education. Continuing education in trauma care, shall be provided for:
   (1) staff physicians;
   (2) staff nurses;
   (3) staff allied health personnel;
   (4) EMS personnel; and
   (5) other community physicians and health care personnel.

Article 4. Quality Improvement
100265. Quality Improvement
Trauma centers of all levels shall have a quality improvement process to include structure, process, and outcome evaluations which focus on improvement efforts to identify root causes of problems, intervene to reduce or eliminate these causes, and take steps to correct the process. In addition the process shall include:
A detailed audit of all trauma-related deaths, major complications and transfers (including interfacility transfer);
(a) A multidisciplinary trauma peer review committee that includes all members of the trauma team;
(b) Participation in the trauma system data management system;
(c) Participation in the local EMS agency trauma evaluation committee; and
(d) Each trauma center shall have a written system in place for patients, parents of minor children who are patients, legal guardian(s) of children who are patients, and/or primary caretaker(s) of children who are patients to provide input and feedback to hospital staff regarding the care provided to the child.
(e) Following of applicable provisions of Evidence Code Section 1157.7 to ensure confidentiality.


Article 5. Transfer of Trauma Patients
100266. Interfacility Transfer of Trauma Patients
(a) Patients may be transferred between and from trauma centers providing that:
   (1) any transfer shall be, as determined by the trauma center surgeon of record, medically prudent; and
   (2) in accordance with local EMS agency interfacility transfer policies.
(b) Hospitals shall have written transfer agreements with trauma centers. Hospitals shall develop written criteria for consultation and transfer of patients needing a higher level of care.
(c) Hospitals which have repatriated trauma patients from a designated trauma center shall provide the information required by the system trauma registry, as specified by local EMS agency policies, to the transferring trauma center for inclusion in the system trauma registry.
(d) Hospitals receiving trauma patients shall participate in system and trauma center quality improvement activities for those trauma patients who have been transferred.

Audit Filters Recommended by the Pediatric Emergency Department Standards Subcommittee of the S-SV Pediatric Critical Care Task Force

a. All pediatric patients who are admitted, who are transferred, or who die in the emergency department
b. Pediatric patients requiring cardiopulmonary resuscitation
c. All pediatric critical trauma or burn cases
d. Pediatric patients meeting the S-SV Pediatric Critical Care System Guidelines for Pediatric Consultation/Transfer

Types of audit filters recommended for PCCCs and PTCs:

a. All pediatric deaths
b. All cardiopulmonary arrests
c. Major complications
d. Treatment, medication, and procedure errors
e. Treatment and diagnostic delays
f. Delayed or missed diagnosis
g. Delays in disposition from ED > two hours
h. Delays in disposition to OR
i. Return to OR after initial surgery (when return is related to a previously performed procedure)
j. Appropriateness of medical and surgical procedures when compared to diagnosis
k. Appropriateness and timeliness of diagnostic procedures
l. Accuracy of admitting diagnosis when compared to discharge diagnosis
m. Patients < 14 admitted to an adult ICU
n. Unplanned transfers to PICU
o. PICU stay > five days
p. Hospital stays in pediatric ward > seven days
q. Readmission to hospital within 10 days of discharge
r. Failure or delay of trauma surgeon to meet patient on the patient’s arrival (PTC only)
s. Delay/failure to activate trauma team (PTC only)
t. Delay in disposition from trauma resuscitation area/ED > two hours (PTC)

Required pediatric data collection and registries
a. A log or registry of all PICU admissions
b. Annual summary of children admitted to the PICU with a breakdown by disease categories, length of stay, age, mortality, and occupancy
c. The number and hospital origin of PICU transports
d. Number of PICU beds (acute and stepdown/intermediate)
e. A method (e.g. log or registry) for identifying pediatric patients who are admitted through the ED, transferred to another hospital, or who die in the ED
f. Trauma registry that meets state requirements and that specifically identifies pediatric patients (PTC only)
g. Trauma system data management system (PTC only)

Required reports
a. Annual reports to California Children Services
b. Periodic and regular reports to the local EMS agency*
c. Pediatric trauma reports (PTC only) including:*  
   (1) The total pediatric trauma patients triaged to the PTC  
      (a) Percent meeting one or more pediatric trauma triage criteria  
      (b) Percent non-critical
(2) Arrival mode
   
   (a) Ambulance/helicopter/other
   (b) Transfers from other facilities

(3) EMS response reports
   
   (a) Percent received/not received
   (b) Percent with completed trauma triage information
   (c) Above by service provider

(4) Median times – from injury to emergency department, and from on-scene to emergency department
   
   (a) By ambulance
   (b) By helicopter
   (c) Percent with on-scene time > 20 minutes

(5) Percent of pediatric patients by major trauma criteria
   
   (a) Anatomy
   (b) Mechanism of injury
   (c) Anatomy and mechanism of injury
   (d) CRAMS
   (e) CRAMS and mechanism of injury
   (f) CRAMS and anatomy
   (g) Not indicated

*These standards for data collection and reports have been in effect for two years and are currently undergoing review and revision.

(6) Percent of pediatric patients by mechanism of injury
   
   (a) Blunt, penetrating, other combination
   (b) Motor vehicle injury, motor vehicle injury at greater than 40 MPH, motor cycle injury, gun shot wound, stab wound, falls, drowning, and burns
   (c) Patients with injuries involving greater than two Abbreviated Injury Score regions

(7) Pediatric emergency department dispositions
   
   (a) Number admitted, transferred, expired discharged
   (b) Number admitted to intensive care unit/ward
(c) Number admitted to intensive care, operating room, and ward by CRAMS score/MAPS

(8) Hospital disposition

(a) Expired
(b) Home
(c) Left against medical advice
(d) Other acute care facility
(e) Rehabilitation
(f) Long-term care facility
(g) Other

(9) LD 50 isobars; ages for blunt/penetrating trauma (patients less than fifteen years of age) (for medical audit committee only)

(10) Trauma surgeon arrival time; other consultant’s arrival time (patients less than fifteen years of age) (for medical audit committee only)
SOME SUGGESTIONS FOR PdLN QUALITY ASSURANCE REVIEW

The following are some questions which can be asked when reviewing charts, or assessing quality of care of pediatric patients in the EMS system. This list is not complete, nor is it expected that every patient or every topic can be reviewed. It might be useful to consider one aspect of care for review each month, or each six-week period, dividing the topic into measurable criteria (example of form attached). Results obtained through review could then be shared with staff, and improvements suggested. A follow-up review and reassessment could then be done at a later date after implementation of action. There are many ways to review quality of care—this is only one of many effective ways.

SOME Q.A. TOPICS FOR REVIEW

I. Review of Care
   A. Prehospital Care
      1. Use of EMS system by parents/patient appropriate?
      2. EMS response appropriate?
      3. Call to Base Station?
      4. Assessment of Patient
         a. Documentation?
         b. Consistent with ER findings?
         c. Appropriately conveyed to Base Station?
      5. Treatment Appropriate?
         a. IV’s attempted/started?
         b. Medications?
         c. Equipment?
   B. ER Care
      1. Medical Issues
         a. ER diagnosis/discharge diagnosis agree?
         b. Pediatrician called/arrived?
         c. Consultants called/arrived?
         d. Length of time in ER appropriate?
         e. Discharge instructions given/documentated?
      2. Nursing Issues
         a. Assessment of patient
            i. Documented?
            ii. Consistent?
            iii. Thorough? (Vital signs? Head to toe/systems? Reassessment/)
         b. Treatment of patient
            i. Meds given, documented?
            ii. Responses to treatment documented?
            iii. Patient teaching documented?
         c. Staffing adequate?
         d. Mock codes?
      3. Ancillary services
         a. Called?
         b. Available?
         c. Care documented?
C. In-House Care
1. Medical Issues (for physician review)
   a. Length of stay?
   b. Diagnosis appropriate?
   c. Consultants appropriately called?
   d. Treatment appropriate?
   e. Outcome?
   f. Transfer?
2. Nursing Issues
   a. Assessments?
   b. Age-related care?
   c. Family involvement?
   d. Discharge preparation?
3. Ancillary Services Issues
   a. Care appropriate?
   b. Care documented?

II. Education/Training
A. Nursing
   1. Pediatric training
   2. CEU attendance
   3. Mock codes

III. Types of Review
A. Review by Grouping
   1. Nursing/physician
   2. Shift
   3. Type of patient
      a. Diagnosis/type of injury arrests, traumas)
      b. Outcome (i.e., all deaths)
      c. Transfers in/out

B. Retrospective Review: Criteria-based chart review

C. Prospective Review

D. Follow-up Review(after implementing change)
GENERIC SCREENS FOR PEDIATRIC EMERGENCY CARE

Focus on *high risk, high volume, problem prone* aspects of care. Some “Occurrences” for Screening:

1. Cardiopulmonary resuscitation was performed on patient.
2. Patient was dead on arrival.
3. Patient died in the emergency department or within 48 hours of admission.
4. Caretaker(s) refused treatment for child, left without completion of treatment, or refused hospitalization.
5. Suspicion or allegation of child abuse, sexual abuse, or rape.
6. Patient had symptoms of pain in neck, headache, or seizure with fever; no lumbar puncture performed.
7. Patient had abdominal pain; no CBC or urinalysis were done.
8. Emergency physician’s interpretation of x-rays differed from radiologist’s.
9. Patient returned to emergency department within 48 hours for same complaint.
10. Patient was sent home before results of x-rays or lab tests were obtained.
11. Lab tests were in critical range, and patient was discharged.
12. Major invasive procedures: chest tubes, subclavian catheters, intubation, lumbar punctures performed.
13. Patient had laceration or puncture wound; no documentation of immunization.
14. Patient was given blood or blood products.
15. Patient’s visit lasted more than *(number of)* hours.
16. Referral or transfer to another facility for emergency care.

“Adverse outcomes…are not conclusive evidence of defective care; they are only a means for selecting for review cases that are likely to involved errors in management.”

Kenneth J. Rhee, M.D.
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### COMPARISON OF RECOMMENDED DATA POINTS

(x = recommended data point.)

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<td>Mechanism of injury</td>
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<td>Vital signs (RR, HR, temperature)</td>
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<tr>
<td>OR procedure codes</td>
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1 ACS data set includes Abbreviated Injury Scale (AIS).
2 ACS lists “+” flag if estimate.
3 JCAHO includes EMS scene arrival date/time, departure date/time, and ED arrival date/time.
4 ACS vital signs on arrival in ER: systolic BP, pulse, respiratory rate, GSC, intubated (yes/no).
5 ACS list in OR: ICD-9 procedure code, date, time, and surgeon identifier for each operation.
6 See table 3 for JCAHO detailed procedure list and additional data requested.
NATIONAL ORGANIZATIONS LISTED AS POTENTIAL PARTICIPANTS

(NOTE: In cases where an official acronyms was altered to avoid duplication, the standard acronym appears in parentheses after the name).

AAA American Ambulance Association
AACAP American Academy of Child and Adolescent Psychiatry
AACN American Association of College of Nursing
AACCN American Association of Critical-Care Nurses (AACN)
AACOM American Association of Colleges of Osteopathic Medicine
AACT American Academy of Clinical Toxicology
AADS American Association of Dental Schools
AAFP American Academy of Family Physicians
AAHD American Association of Hospital Dentists
AAHE Association for the Advancement of Health Education
AAHPERD American Alliance for Health, Physical Education, Recreation and Dance
AAMC Association of American Medical Colleges
AAMS Association of Air Medical Services
AAON American Association of Office Nurses
AAOS American Academy of Orthopaedic Surgeons
AAP American Academy of Pediatrics
AAPA American Academy of Physician Assistants
AAPCC American Association of Preferred Provider Organizations
AAPHD American Association of Public Health Physicians
AAPHP American Association of Public Health Physicians
AAPM&R American Academy of Physical Medicine and Rehabilitation
AAPPO American Association of Preferred Provider Organizations
AASCIN American Association of Spinal Cord Injury Nurses
AAUAP American Association of University Affiliated Programs
ACEP American College of Emergency Physicians
ACFP American College of Osteopathic Family Physicians
ACM American College of Medicine
ACPM American College of Preventive Medicine
ACRM American Congress of Rehabilitation Medicine
ACS American College of Surgeons
AFDH American Fund for Dental Health
AFHHA American Federation of Home Health Agencies
AFT American Federation of Teachers
AHA American Heart Association
AHAS Advocates for Highway and Auto Safety
AHCPR Agency for Health Care Policy and Research
AhospA American Hospital Association (AHA)
AJLI Association of Junior Leagues International
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<td>AmbPA</td>
<td>Ambulatory Pediatrics Association (APA)</td>
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<tr>
<td>AMCHP</td>
<td>Association of Maternal and Child Health Programs</td>
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<tr>
<td>AMCRA</td>
<td>American Managed Care and Review Association</td>
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<td>American Medical Informatics Association</td>
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<td>AMSA</td>
<td>American Medical Student Association</td>
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<td>AOA</td>
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<td>AOHA</td>
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<tr>
<td>AOTA</td>
<td>American Occupational Therapy Association</td>
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<tr>
<td>APA</td>
<td>American Psychiatric Association, or American Psychological Association</td>
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<td>APCO</td>
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<tr>
<td>APHA</td>
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<td>DOT</td>
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<td>DTEMS</td>
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</table>
ENA  Emergency Nurses Association
ENCARE  Emergency Nurses Cancel Alcohol Related Emergencies
FEMA  Federal Emergency Management Agency
FHA  Future Homemakers of America
FICEMS  Federal Interagency Council on Emergency Medical Services
HCFA  Health Care Financing Administration
HIAA  Health Insurance Association of America
HRSA  Health Resources and Services Administration
IAFC  International Association of Fire Chiefs
IAFF  International Association of Fire Fighters
ICHP  Institute for Child Health Policy
ICMA  Individual Case Management Association
IHS  Indian Health Service
JCAHO  Joint Commission on Accreditation of Healthcare Organizations
MADD  Mothers Against Drunk Driving
MCHB  Maternal and Child Health Bureau, HRSA
NACHC  National Association of Community Health Centers
NACHRI  National Association of Children’s Hospitals and Related Institutions
NAEMD  National Academy of Emergency Medical Dispatchers
NAEMSP  National Association of Emergency Medical Services Physicians
NAEMT  National Association of Emergency Medical Technicians
NAEYC  National Association for the Education of Young Children
NAHC  National Association for Home Care
NAHDO  National Association of Health Data Organizations
NAHMOR  National Association of Health Maintenance Organization Regulators
NAPNAP  National Association of Pediatric Nurse Associates and Practitioners
NASEMSD  National Association of State EMS Directors
NASMHPD  National Association of State Mental Health Program Directors
NASN  National Association of School Nurses
NASPE  National Association for Sport and Physical Education
NASTD  National Association of State Telecommunications Directors
NASW  National Association of Social Workers
NCCMHS  National Consortium for Child Mental Health Services
NCEMCH  National Center for Education in Maternal and Child Health
NCSEMSSTC  National Council of State Emergency Medical Systems Training Coordinators
NCHS  National Center for Health Statistics, CDC
NCOIL  National Conference of Insurance Legislators
NCIPC  National Center for Injury Prevention and Control, CDC
NCSL  National Conference of State Legislatures
NDMS  National Disaster Medical System
NEA  National Education Association
NEMSA  National Emergency Medical Services Alliance
NENA  National Emergency Number Association
NFNA  National Flight Nurses Association
NFPA  National Flight Paramedics Association
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