EMSC Pediatric Disaster Preparedness Guidelines: Hospitals

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EMSC PEDIATRIC DISASTER PREPAREDNESS GUIDELINES: HOSPITALS

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FOREWORD

As in day-to-day medical emergencies, children face unique vulnerabilities during disasters. The events of Hurricane Katrina and the Southern California wildfires reinforced the need to provide pediatric-specific guidance to medical personnel responding to disasters in both the hospital and pre-hospital setting. Child-centric approaches are required for triage, treatment, and decontamination to achieve optimal outcomes for pediatric patients. Accordingly, the California EMS for Children Technical Advisory Committee appointed a Disaster Subcommittee to develop pediatric disaster medical guidelines for California's Local EMS Agencies and hospitals (published as separate documents). These guidelines supplement the *Emergency Department Guidelines for the Care of Pediatric Patients* adopted by the Emergency Medical Services Commission on March 26, 2008, which describe the minimum standards for the care of children in day-to-day emergencies.

The Disaster Subcommittee considers these guidelines to be minimum standards for large and small hospitals and Local EMS Agencies serving both urban and rural California communities. The guidelines include references that provide supporting evidence for the recommendations and tools for implementation. Additional information is available at the website of the EMS Authority (www.emsa,ca.gov).

Finally, the EMS Authority views these guidelines as living documents to be expanded and modified as resources and new information become available.

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EMSC PEDIATRIC DISASTER PREPAREDNESS GUIDELINES: HOSPITALS

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HOSPITAL CARE OF CHILDREN IN DISASTERS - OVERVIEW

Introduction

The Joint Commission (JC) requires all hospitals to have a disaster plan in place; however, the formulation of hospital guidelines specific to pediatrics is often omitted. The following overview outlines the necessary components of hospital preparedness for disasters involving children.

Hospital Personnel Roles in Disasters

Within a hospital, disaster team personnel include clinicians and non-clinicians, both of whom must acquire the appropriate knowledge and skill and be willing responders during disaster conditions.

- *Primary clinicians* include Emergency Department physicians and nurses, Critical Care physicians and nurses, surgeons and surgical nurses, and respiratory therapists.
- *Primary non-clinicians* include administrative/executive leaders or managers, safety and security personnel, psychologists/social workers, emergency planners, and facilities personnel. This group of individuals aid in the clinical operations and safety and security of the building and surrounding areas.
- *Secondary clinicians* include general pediatricians, pediatric subspecialists, family practitioners, and general surgeons. This group of clinicians can be called in for additional pediatric support, and relied upon for their knowledge about pediatric illness or injury management and their resuscitation skills.
- *Secondary non-clinicians* include laboratory personnel, pharmacy staff, engineering, secretarial support, runners/transporters, and child life personnel. These individuals or departments provide services that are vital to the hospital environment and to the management and treatment of pediatric victims.

Alert, Notification, and Mobilization

Hospitals should establish a disaster tree (call schedule) to alert, notify, and mobilize their disaster teams. The disaster tree should include a variety of contact methods, such as cell phone, pager, and home phone.

Mobilization policies and procedures must take into account contingencies such as disaster related communications and transportation barriers, and the need for hospital staff to have available childcare or elder care. Transportation arrangements to and from the hospital must be planned in advance of a disaster to include: use of personal vehicles, car pool arrangements, meeting stations, and alternative parking sites.

Knowledge and Competencies

<u>Emergency Management</u>

All personnel should be trained in the Hospital Incident Command System (HICS) to carry out their responsibilities in an organized, systematic fashion.

Chemical, Biological, Radiologic, Nuclear, Explosive, (CBRNE)

All participants who would be required to care for victims of disaster must learn through course work or on-line modules, the vulnerability of pediatric victims. Children are more susceptible to dehydration and shock, are more vulnerable to radiation, have greater effects from skin/inhaled agents, and must be treated with medications using weight based dosing and appropriate sized equipment.

Triage During a Disaster

Pediatric victims of disaster have unique triage requirements and use of pediatric specific algorithms may be required, e.g. JumpSTART, etc. Conversely, standard disaster triage protocols frequently, for example, assess the child's ability to ambulate, ("If you can hear my voice, walk to the white tent") and follow verbal commands, ("raise one hand if you can hear my voice and you are able to do so,") as the initial triage criterion. However, pediatric victims may be too developmentally immature to respond to these tasks, making pediatric specific designed protocols important. Pediatric patients provide additional challenges as they may be brought in without a parent or caregiver, and may be frightened, crying, and exhibiting uncooperative behavior. As a means of comfort and support, volunteers, child life, or mental health staff will be imperative. The pediatric victim, in addition to a physical assessment, will require psychological care.

Personal Protective Equipment (PPE)

Use of PPE is essential to protect the health care worker from hazardous or potentially hazardous material. Although necessary for the care of pediatric patients, PPE will look strange and frightening to the pediatric patient; thus, emotional support and communication must occur at age-appropriate levels. Hospitals will need to stock a supply of size appropriate masks that can be utilized for pediatric patients during transport in common areas.

Decontamination

Decontamination for pediatric patients can be challenging and difficult. This is due to a number of factors, including the nature of the disaster and the patients' physiological and developmental stage. Pediatric patients, for instance, may chill easily, become hypothermic, and therefore require warm water during the washing component of decontamination. In addition, pediatric patients may not be able to follow directions, self-decontaminate, wash thoroughly, or be able to manipulate equipment. If possible, children should be sent through decontamination with a family member.

Communication

Many pediatric patients are non-verbal, and providing companionship and direction by available personnel or family members will be essential. Use of toys, coloring books, child friendly signs, or other modalities of distraction may aid in the process.

Mental Health

Pediatric victims of disaster have unique psychological needs. There will inevitably be fear and panic, and it is therefore important to establish a method of rapid psychological assessment.

Surge Capacity

It is inevitable that all hospitals in a large-scale disaster involving pediatric patients will be overwhelmed. Therefore, an inventory of space required, staffing needs, medications, equipment, and other supplies must be performed. Written arrangements and contingencies should be conducted with other hospitals and agencies so that collaboration can take place with regard to both mechanical and material needs, as well as transfer arrangements for specific patient types i.e., dialysis patients requiring a dialysis unit. Another alternative solution may include long distance consultation (e.g. telemedicine) with pediatric facilities.

Evacuation

A written pediatric disaster plan should outline the means of evacuating patients from patient floors to alternative sites in the event of an internal or external disaster. This plan should be documented and practiced in a drill format or simulation setting.

Reunification

A pediatric (family reunification) plan must exist in disaster conditions. A workable partnership between the hospital and other agencies or institutions must be arranged as part of any pediatric disaster planning process. Local and state government agencies, along with local bus service, the American Red Cross, media outlets, missing children agencies, websites, call centers, toll-free numbers, and reunification sites should all be part of the network that helps to reconvene families during and after a disaster. Hospitals will also need plans for internal Family Information Centers to provide support to the families of disaster victims and facilitate reunification.

Recovery and Continuity Plan

The purpose of this plan is to establish clinical business procedures and to designate resources for recovery after a disaster. These business arrangements help to establish both general and subspecialty pediatric care and allow families to cope more effectively with a disaster.

Management and Treatment of Pediatric Patients

Several courses will help the clinician best care for the pediatric victim of disaster. Recommended courses include, the American Heart Association (AHA), pediatric advanced life support (PALS), the AAP/ACEP Advanced Pediatric Life Support course (APLS) and for the advanced pediatric provider, the pediatric emergency assessment recognition and stabilization course (PEARS),

Basic Fluid Management

Another challenge to the non-pediatric provider is managing the dehydrated patient, secondary to the effects of CBRNE events, or a natural disaster. We later provide a chart outlining the treatment of mild, moderate, severe dehydration, and hypovolemic shock (see dehydration chart).

Medication and Supplies

As part of pediatric disaster planning, a listing of appropriate pediatric medications and supplies should exist, (see medications and supplies). In addition, items such as

diapers, varying types of formulas, child friendly toys and games should exist, along with supplies for the pediatric patient with special needs, such as replacement gastrostomy tubes, nasogastric tubes, tracheostomy tubes, and various sized ostomy bags. The clinician should be able to calculate pediatric drug dosages and equipment sizes based on established drug dosing books, charts, or a length-based dosing tape, such as the Broselow tape.

Pediatric Disaster Plan

As pediatric patients historically comprise approximately 15-20% of disaster victims, special considerations should exist for this particular population. The following should be part of the Hospital Incident Command System:

- Predictable chain of command and management for pediatric patients
- Organizational charts that allow for response to both adult and pediatric emergencies
- Development and maintenance of a response check list that incorporates the needs of pediatric patients
- Accountability among providers of disaster
- Documentation both during and after the primary event (see sample patient documentation record)
- Appropriate communication among victims of disaster (age appropriate), and within the internal and external environment

Hospital Disaster Plan – Individual Roles

Within the general hospital disaster plan, job action sheets should exist outlining responsibilities of providers. From a pediatric management prospective, job action sheets should list those functions unique to pediatric disaster care and/or be supplemented by job action sheets specific to the needs of the pediatric population.

Applicable Pediatric Disaster Training

No pediatric disaster planning strategies would be complete without drills, tabletops, and simulations that incorporate children as disaster victims. These exercises are important as they allow functional knowledge to be transformed into “semi-real practice.”

Because of the need to address these issues, this annex has been designed to assist hospitals in planning for the care of children in disasters, and includes checklists and resources for this purpose.

HOSPITAL PEDIATRIC DISASTER PREPAREDNESS

General Disaster Preparedness Checklist

Item	Yes	No	In Process
POLICIES			
1. Destination policies are in place for numerous children in a multi-casualty incident, including transport to higher levels of care for more seriously ill or injured children in a large-scale disaster.			
2. Agreements have been made with pediatric tertiary care centers and other facilities outside LEMSA jurisdiction for pediatric patients requiring higher levels of care or specialized care.			
3. Plans for disasters include means of obtaining additional pediatric equipment, supplies and medications.			
4. Disaster planning includes attention to children with special health care needs and pediatric mental health issues.			
PROTOCOLS			
1. Method for triage of pediatric patients such as incorporating the **Pediatric Assessment Triangle into the SALT framework, JumpSTART** or other means of determining severity of injury or illness of pediatric patients exists.			
2. Triage plan includes method of identifying pediatric patients and their family members to aid in reuniting them.			
3. Rapid method of determining dosages for children, e.g. length based tape, computerized decision support tool.			
4. Ensure decontamination of children, including medically stable or unstable children and children with special needs are included in disaster plans.			

Item	Yes	No	In Process
EDUCATION			
1. Hospital regularly provides support or recommends special education in pediatrics for personnel, such as PALS, APLS, or pediatric education consistent with pediatric national standards for emergency care.			
2. Interventions for biological, chemical, and radiologic disasters, with instructions specific to pediatric patients are included in training of hospital providers.			
3. Children are routinely included in disaster drills and exercises.			
4. Pediatric expertise (pediatricians, pediatric intensivists, etc.) is included in planning drills/exercises, other disaster-related activities			
5. Other local hospitals, as well as local/statewide agencies/organizations interested in pediatric care, such as public health agencies, schools, daycare facilities, health clinics, and the American Red Cross are included in planning for disasters, and in disaster exercises...			
6. Pediatric expertise is routinely included in debriefings/evaluations for disasters or disaster exercises.			
7. Evacuation plan should include supplies, equipment and strategies to safely evacuate children.			

There are many resources to aid in accomplishing these objectives. The following are a few selected items that can give an overview and some additional information:

Resources

1. http://www.aap.org/terrorism/index.html
2. http://pediatrics.aappublications.org/cgi/content/full/aap120/4/e756
3. http://www.bt.cdc.gov/children/pdf/working/execsumm03.pdf
4. http://www.ncdp.mailman.columbia.edu/program_pediatric.htm

HOSPITAL SURGE CAPACITY

Introduction

While there are several general descriptions of surge capacity in the literature, there is no universally accepted standard definition, which specifies the various detailed components. For example, the Centers for Disease Control (CDC) states that "surge capacity" is the "ability of obtaining additional resources when needed during an emergency" (1). Similarly, the Agency for Healthcare Research and Quality (AHRQ) defines surge capacity as the "healthcare systems' ability to rapidly expand beyond normal services to meet the increased demand for qualified personnel, medical care and public health in the event of bioterrorism or other large-scale public health emergencies or disasters" (2). Key issues that should be addressed in disaster surge scenarios include psychosocial behavioral considerations, convergent volunteerism, the need for special types of expertise and supplies, such as pediatrics, the mental health impact to both health care providers and victims, and areas that may require regulatory relief.

For our purposes, "Surge Capacity" may be best defined in terms of the 4 S's: Staff, Space, Supplies, and System requirements. In general, since pediatric specialists (pediatric surgeons, orthopedists, anesthesiologists, etc.) are fewer in number than adult staff; and pediatric beds, supplies, and equipment are often kept at a minimum, it is critically important to predetermine your facility's present capacity to care for children and to develop a plan to increase your pediatric surge capacity.

**It should be assumed that 15-20% of victims from a mass-casualty incident will be children.

Hospital Surge Capacity Checklist

Item	Yes	No	In Process
STAFF			
1. A list is maintained on a regular basis of pediatric specialists: critical care, anesthesiologists, otolaryngologists, surgeons, RN, RT, etc.).			
2. A training log is kept of staff that have been trained in the care of pediatric patients in emergencies.			
3. Annual training in pediatric disaster preparedness is provided.			
4. Training for pediatric disaster management for staff is provided.			
5. Staff is trained in methods of familial reunification.			
6. Pediatric hospital staff participate as part of the incident command system during training drills. (Please see sample Job Action Sheets at the end of the section). #			
SPACE			

Item	Yes	No	In Process
1. The number of available pediatric ward beds, critical care beds, neonatal care bed capacity, pediatric operating room capacity, etc. is updated on a daily basis.			
2. The adult beds/rooms that may be converted to pediatric beds has been determined.			
3. There is a mechanism in place to cancel pediatric surgeries or appointments.			
4. There is a method to implement early discharge of pediatric patients to facilitate admissions of disaster victims.			
5. A discharge holding area and appropriate supervision for children has been identified, where they may have access to toys, books, and other distractions.			
SUPPLIES			
1. A pediatric medications and equipment stockpile is maintained, as discussed in the section on medications/equipment.			
2. There are other non-medical supplies on-hand, such as toys, books, art supplies, and other distractions for children.			
3. Have formula, bottles, cribs, and sleep mats in stockpile.			
SYSTEMS			
1. Mutual aid agreements have been made with other healthcare facilities, such as pediatric long-term care and rehabilitation centers.			
2. Schools, faith-based facilities, and pediatric clinics for potential use as alternate treatment areas have been identified and included in disaster plans.			
3. Relationships have been established with pediatric tertiary care centers for assistance in disasters.			

#Job action sheets for the 1) pediatric services unit leader, 2) pediatric logistics unit leader, and 3) pediatric safe area (for unaccompanied, uninjured children) coordinator are adapted from "Hospital Guidelines in Pediatrics in Disasters 2nd Edition," created by the New York City Centers for Bioterrorism Preparedness Program Pediatric Task Force and can be found at www.emsa.ca.gov/tba.

References

1. http://www.cdc.gov/ncidod/sars/guidance/core/app2.htm. Accessed May 22, 2006.
2. www.ahrq.gov. Accessed May 21, 2006

Introduction

Pediatric safety and security issues are critically important for all hospitals. Although previous pediatric security issues focused upon infant abductions, Hurricane Katrina and Rita demonstrated the importance of establishing protocols for patient tracking for both accompanied and unaccompanied child and family reunification.

The “unaccompanied” or displaced child must be identified immediately to ensure his/her safety. This child may or may not need medical treatment. Your hospital should be surveyed for such unaccompanied children, as they will likely be listed as “missing,” by family members. All of these children should be tracked, and reported to the Hospital Emergency Operations Center. They should also be reported to the National Center for Missing and Exploited Children (NCMEC) at 1-888-544-5475. The NCMEC can then cross-check them with the names of children who have been reported missing.

There are two types of “accompanied” children in the aftermath of a disaster that may present to your hospital:

1. The pediatric patient who is a victim of a disaster and is with a responsible parent or a parent that is also a disaster victim.
2. The pediatric patient who is not a victim of the disaster (does not warrant medical treatment) but is accompanying an adult victim of a disaster.

The identification document or band to be placed on the “accompanied” child should include the following, if available:

- Name of pediatric patient/visitor and date of birth
- Name of adult, relationship to child, and date of birth
- Admission date of adult (if the adult is a victim)
- Admission date of injured pediatric patient
- Date of visit of uninjured pediatric patient

Your facility should have the capability to establish a Pediatric Safe Area, which is defined as an area of the hospital where unaccompanied pediatric visitors and unaccompanied released pediatric patients may be grouped together under supervision. Security personnel and staff must be trained to handle and manage these children.

The Pediatric Safe Area should be “kid-friendly” and safe:

- Distractions (toys, books, art supplies, etc.) should be readily available.
- The area must be proofed from choking hazards and poisonous substances.
- There should be no injury-prone objects in the area (sharp objects, etc.).
- Bathrooms should be readily available to the children.
- Windows should be locked.
- The area should be away from stairwells and other fall-risks.
- Pediatric snacks should be available.
- There should be enough staff and security to ensure the safety of the children.

- There should be a sign-in and sign-out sheet to help with tracking, which includes times, the name of the adult picking up the child, and his/her contact information.

Safety and Security Checklist Item	Yes	No	In Process
1. Staff trained in supervising uninjured pediatric victims (providing daycare for children) have been identified.			
2. A pediatric tracking system that addresses both the accompanied and unaccompanied child has been developed.			
3. A protocol to identify displaced, “unaccompanied” children is included in disaster plan.			
4. A document to identify (ID) children, which may help reunify them when their family is available.			
5. A Pediatric Safe Area for displaced, unaccompanied, and released children awaiting their caregivers has been identified.			
Pediatric Safe Area Checklist Item	**Yes**	**No**	**In Progress**
1. The Pediatric Safe Area has secure windows.			
2. Children can be contained in your Pediatric Safe Area (consider stairwells, elevators, doors).			
3. The need for barriers, barricades, baby gates, etc. has been considered and planned for.			
4. The Pediatric Safe Area is free or secure from hazardous materials, needle boxes, choking hazards, electrical cords, supply carts, electrical outlets, etc.			
5. Fans and heaters in use in your Pediatric Safe Area have been identified and made safe.			
6. The Pediatric Safe Area has space for children to safely nap without risk of falling. Cribs, cots, or mattresses on the floor are available.			
7. The Pediatric Safe Area has age and gender appropriate books, videos, games, toys, etc. available for children.			
8. The Pediatric Safe Area has age appropriate and nutritious snacks available for children.			
9. The Pediatric Safe Area has high chairs available for infants.			
10. The Pediatric Safe Area has Mental Health Liaisons and Support Services for children with disabilities.			

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1. American Academy of Pediatrics. Pediatric Terrorism and Disaster Preparedness: A Resource for Pediatricians. Foltin GL, Schonfeld DJ, Shannon MW, editors. AHRQ Publication No. 06(07)0056. Rockville, MD: Agency for Healthcare Research and Quality. October, 2006.
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3. Illinois EMSC Project. Pediatric Disaster Preparedness Guidelines. Illinois Department of Public Health. August, 2005.
4. Centers for Disease Control and Prevention. Public Health's Role in Terrorism Preparedness and Response for Children. Centers for Disease Control and Prevention. August, 2003.
5. Los Angeles County Local EMS Agency Information Center document

DECONTAMINATION

Introduction

Infants and children have unique needs that require special consideration during the process of hospital decontamination.

- Decontamination of young children must be done with high-volume, low-pressure, heated water systems (e.g. handheld hose sprayers) that are “child friendly.”
- Systems must be designed for decontamination of all ages and types of children
- All protocols and guidance must address:
  - Water temperature and pressure
  - Nonambulatory child
  - Child with special health care needs
  - Clothing for after decontamination

Specific Considerations

- **Removal of clothing alone accounts for removal of most contaminants.**
- Attention to airway management is a priority throughout decontamination.
- Soap and water should be used to decontaminate skin, as bleach and other chemicals may be toxic to the sensitive skin of children.
- Separation of families during decontamination should be avoided, but medical issues take priority.
- If the water temperature is below 98°F, the risk of hypothermia increases in the smaller, younger child.
- Decontaminating children takes longer, due to the additional time required to assist them. Expect up to as much as fifteen minutes per child.
- Older children may resist decontamination out of fear, peer pressure, and modesty issues (even in front of their parents or caregivers).
- Parents or caregivers may not be able to decontaminate both themselves and their children at the same time (“hot zone” personnel should recognize the need to assist them).
- ***The smaller the child, the bigger the problem*** regarding any of these considerations such as hypothermia, airway management, separation of families, and ability to effectively decontaminate the child.
- Extreme caution should be exercised when children who are being carried are wet as they may be very slippery.

Decontamination Planning Checklist

(Note: This table follows decontamination procedures for adults, dividing decontamination into the standard Hot, Warm, and Cold Zones. Shown here are the added considerations for infants and children during the decontamination process.)

Item	Yes	No	In Process
HOT ZONE (Outer area where initial decontamination triage occurs)			
1. A system exists for triage of children and families that includes waterproof identification tags or markers.			
2. Signage or means of making signage exists to identify areas and explain process to parents and children.			
3. Plans exist for parents to accompany children under 8 years of age during the decontamination process.			
WARM ZONE (Area where active decontamination occurs)			
1. Supplies exist to aid in decontamination of children (soft brushes, soft cloths, mild soap, etc.).			
2. Warmed water for decontamination is available.			
3. High volume, low pressure spray is available.			
4. Elevated surface available for decontamination of infants (e.g., a gurney or other flat surface) is available.			
5. Additional attendant(s) to assist children are available.			
6. If no caregiver available, infants and toddlers (less than 2 years old) may be placed on a stretcher.			
COLD ZONE (Post decontamination)			
1. Supplies exist to prevent hypothermia, such as towels and warming blankets.			
2. Diapers, gowns and hats for infants and children are available.			
3. Designated waiting area exists for children unaccompanied by parents.			
4. Staffing to assist children and assure reunification of children with their caregivers is available.			

Decontamination Personnel Roles and Supplies	Yes	No	In Process
Hot Zone Personnel Roles and Supplies			
1. Hospital has a decontamination protocol that addresses children			
2. Pediatric decontamination signage should be available to explain the decontamination process to parents and children in multiple languages.			
3. An instructional recording in multiple languages should be available and provided to reassure the patients.			
4. Decontamination Job Action Sheets delineating roles and responsibilities of personnel should be available. 5. **Pre-Decon Reception Area Coordinator*** – Role is to receive adults and children and to triage and organize the patients for rapid decontamination. Role is to communicate with parents and children and to direct them to predesignated waiting areas 6. **Decon Reception Area Attendant***(3) – Role is to assist in undressing and collecting contaminated children. Children accompanied by parents should be kept together in a designated area and parents should be asked to assist the attendant. Unaccompanied children should be separated into children over 8 years and those under 8 years. Older unaccompanied children should be used to assist attendants in undressing infants when possible and segregated by gender, if possible.			
7. Decontamination system with minimum of 3 shower heads with estimated decontamination time of 5 minutes per patient			
8. Pre-decontamination supplies including: • Clothing bags for contaminated clothing • Labels for bags and secure ties • Waterproof ink pen • Booties • Patient tracking system or I.D. bracelets • Changing table for infants			

Decontamination Personnel Roles and Supplies	Yes	No	In Process
Warm Zone Personnel and Supplies			
1. Decontamination Job Action Sheets delineating roles and responsibilities for personnel 2. Decontamination attendants*(3) – Role is to decontaminate children less than 8 years of age. Two attendants will accompany each child less than 2 years of age. One will hold the child while the other will remove contaminants. The third attendant will assist children between the ages of 2 and 8 years of age. It is anticipated that parents will be able to assist in decontamination of their own children over 2 years of age, and children over 8 years will be able to decontaminate themselves			
3. Decontamination supplies including: • Scrub brushes • Shower heads with hand held devices			
Cold Zone Personnel and Supplies			
1. Decontamination Job Action Sheets delineating roles and Decontamination Job Action Sheets delineating roles and responsibilities of personnel 2. Post Decon staff - Role is to receive patients following decontamination and before ED triage. Unaccompanied children will be designated to a separate area once warmed and dressed. Accompanied children will be designated to a separate area with their parents/guardians, who can assist their children in getting warmed and dressed. Unaccompanied children regardless of age will likely need adult supervision or sitter.			
3. Pediatric post decontamination supplies including: • Diapers • Towels and warming blankets • Gowns (paper or cloth) • Infant warmers • Changing table or gurney for infants.			

<table>
<tr><td rowspan="3">HOT ZONE</td><td colspan="4">Children are present among the victims.
Intake by Pre-Decon Coordinator
Victims arrive at the hospital requiring decontamination and are evaluated by the Pre-Decon Reception Area Coordinator
Critical injuries are decontaminated first.
Children and their families (parents or caregivers) should not be separated unless critical medical issues take priority.</td></tr>
<tr><td>Non Ambulatory and Special Needs Patients</td><td colspan="3">Ambulatory Patients
Estimate child’s age by visual inspection by the Decon Reception Area Attendant</td></tr>
<tr><td>Any Age

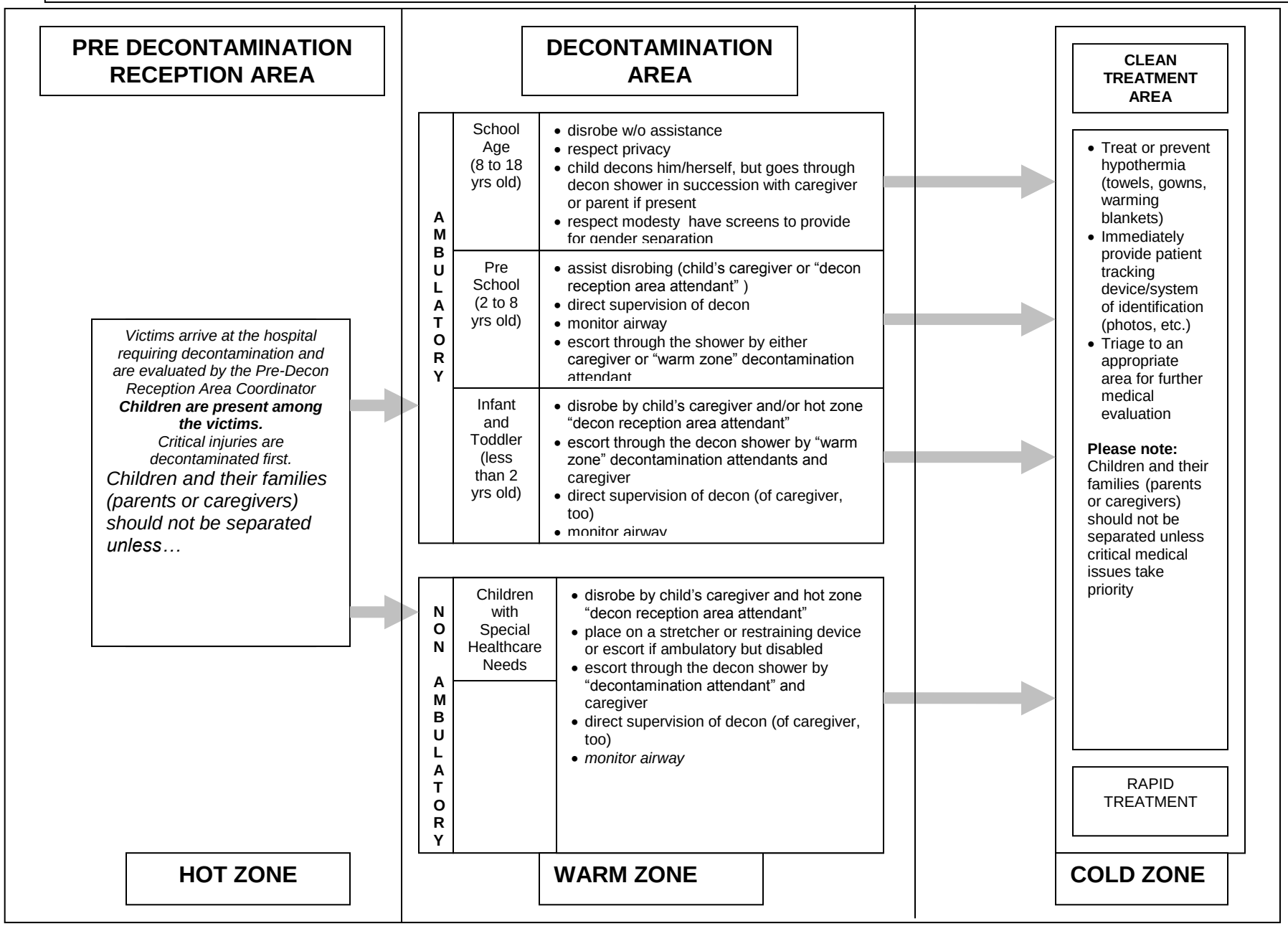
• disrobe by child’s caregiver and hot zone “decon reception area attendant”
• place on a stretcher or restraining device</td><td>School Age
(8 to 18 yrs old)
• disrobe w/o assistance
• respect privacy</td><td>Preschool
(2 to 8 yrs old)
• assist disrobing (child’s caregiver or “decon reception area attendant”)</td><td>Infants and Toddlers
(less than 2 yrs old)
• disrobe by child’s caregiver and/or hot zone “decon reception area attendant”</td></tr>
<tr><td>WARM ZONE</td><td>• escort through the decon shower by “decontamination attendant” and caregiver
• direct supervision of decon (of caregiver, too)
• monitor airway</td><td>• child decons him/herself, but goes through decon shower in succession with caregiver or parent if present
• respect modesty have screens to provide for gender separation</td><td>• direct supervision of decon
• monitor airway
• escort through the shower by either caregiver or “warm zone” decontamination attendant</td><td>• escort through the decon shower by “warm zone” decontamination attendants and caregiver
• direct supervision of decon (of caregiver, too)
• monitor airway

(Caregiver should not carry the child due to the risk of accidental trauma resulting from a fall or from dropping the child while in the shower.)</td></tr>
<tr><td>COLD ZONE</td><td colspan="4">▪ Treat or prevent hypothermia (towels, gowns, warming blankets)
▪ Immediately provide patient tracking device/system of identification (photos, etc.)
▪ Triage to an appropriate area for further medical evaluation

Please note: Children and their families (parents or caregivers) should not be separated unless critical medical issues take priority</td></tr>
</table>

Hospital Decontamination and the Pediatric Patient

MODEL PROTOCOL ALGORITHM



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PATIENT MANAGEMENT

TRIAGE
Introduction

- There is no triage tool that has been validated for use in the triage of pediatric patients. A variety of methods are used by hospitals for triaging pediatric patients in California, including JumpSTART, the Pediatric Assessment Triangle, and others. Whatever method is chosen for pediatric triage, hospital providers should be well trained, and should participate in drills/exercises that include pediatric patients to become familiar with whatever tool is used.

- A Centers for Disease Control (CDC) expert panel developed and recommends a national all-hazards mass casualty initial triage standard for all patients (e.g., adults, children, special populations)—**S**ort – **A**ssess – **L**ife Saving Interventions – **T**reatment and/or Transport (SALT).

- SALT may be used along with the Pediatric Assessment Triangle (PAT) or JumpSTART, if these instruments are being used by your hospital.

SALT Triage with the Pediatric Assessment Triangle

Step 1: Sort
SALT begins with a global sorting of patients, prioritizing them for individual assessment. Patients who are able to walk to a designated area should be assigned last priority for individual assessment. Those who are unable to walk should be asked to wave (i.e., follow a command) or be observed for purposeful movement. Those who do not move (i.e., are still) and those with obvious life or limb-threatening injuries should be assessed first since they are the most likely to need life saving interventions.

Group Sorting
- Priority 1: Still/Obvious life threat
- Priority 2: Wave/Purposeful movement
- Priority 3: Walk

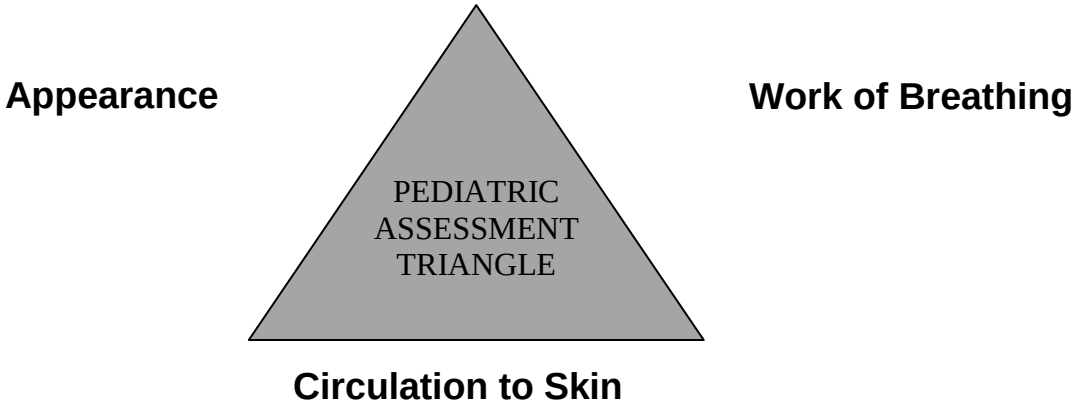
Step 2: Assess
Use the PAT to help assess children in disasters or MCIs. The PAT is an easy tool for the rapid, initial assessment of any child, but is especially important in Priority 1 patients who cannot walk or show purposeful movement. The PAT is the general assessment approach to children, which is taught by the PEPP Course (Pediatric Education for Prehospital Professionals), and by all American pediatric life support courses. It allows the prehospital professional engaged in field triage during a disaster or MCI to develop a general impression of patient's status with only visual and auditory clues. By using the PAT at the point of first contact with the patient, the prehospital professional can immediately establish a level of severity, determine urgency for life support, and identify the general type of physiologic problem. Continued use of the PAT gives the prehospital

professional a way to track response to therapy and reassess triage priority and also to determine timing of transport. Furthermore, it allows for communication among medical professionals about the child's physiologic status and for accurate radio reporting.

There are three components of the PAT that together reflect the child's overall physiologic status: (1) appearance; (2) work of breathing; and (3) circulation to skin. The PAT is based on listening and seeing, and does not require a stethoscope, blood pressure cuff, cardiac monitor, or pulse oximeter. The PAT can be completed in less than 30 seconds and is designed to systematize a time-honored process of "across the room assessment"—an intuitive process that experienced pediatric providers do instinctively.

The PAT

The three components of the PAT provide an accurate initial picture of the child's underlying cardiopulmonary status and cerebral function. While the PAT may not lead to a diagnosis, it will help identify the general category of the physiologic problem and establish triage status and urgency for treatment and/or transport. The PAT does not replace vital signs and the ABCDEs, which are part of the hands-on triage assessment.



Appearance

Characteristics of Appearance

The child's general appearance is the most important factor in determining the severity of the illness or injury, the need for treatment, and the response to therapy. Appearance reflects the adequacy of ventilation, oxygenation, brain perfusion, body homeostasis, and central nervous system (CNS) function. There are many characteristics of appearance; the most important are summarized in the "tickles" (TICLS) mnemonic: tone, interactiveness, consolability, look/gaze, and speech/cry

Techniques to Assess Appearance

Assess the child's appearance from a few steps away. This is the first part in the PAT. Techniques for assessment of a conscious child's appearance include observing from a distance, allowing the child to remain in the caregiver's lap or arms, using distractions

such as bright lights or toys to measure the child's ability to interact, and kneeling down to be at eye level with the child. An immediate "hands-on" approach may cause agitation and crying, and may complicate the assessment. Unless a child is unconscious or obviously critically ill, get as much information as possible by observing the child before touching or taking vital signs.

Characteristics of Work of Breathing

In children, work of breathing is a more accurate indicator of oxygenation and ventilation than respiratory rate or chest sounds on auscultation: the standard measures of breathing effectiveness in adults. Work of breathing reflects the child's attempt to compensate for abnormalities in oxygenation and ventilation and therefore it is a proxy for the effectiveness of gas exchange. This component of the PAT requires listening carefully for abnormal airway sounds and looking for signs of increased breathing effort. It is another "hands-off" evaluation method that does not require a stethoscope or pulse oximeter.

Techniques to Assess Work of Breathing

The second part of the PAT is assessing work of breathing. Begin by listening carefully from a distance for abnormal airway sounds. Next, look for key physical signs. Note if the child has abnormal positioning, especially the sniffing posture or tripoding. Next, have the caregiver uncover the chest of the child for direct inspection or have the child undress on the caregiver's lap. Look for intercostal, supraclavicular, and substernal retractions, and note if there is head bobbing in infants. After examining for retractions, inspect for nasal flaring. This stepwise process is critical for gathering accurate information. Once an infant or child begins to cry, assessment of work of breathing may be impossible.

Children may have increased work of breathing because of abnormalities anywhere in their airways, alveoli (air sacs), pleura (membrane surrounding the lungs and lining the walls of the pleural cavity), or chest wall. The type of abnormal airway sounds gives an important clue to the anatomic location of the illness or injury process, whereas the number and type of physical signs of increased work of breathing helps in determining the degree of physiologic stress.

Combining assessment of appearance and work of breathing can also help establish the severity of the child's illness or injury. A child with a normal appearance and increased work of breathing is in respiratory distress. An abnormal appearance and increased work of breathing suggests respiratory failure. An abnormal appearance and abnormally decreased work of breathing implies impending respiratory arrest.

Circulation to Skin

Characteristics of Circulation to Skin

The goal of rapid circulatory assessment is to determine the adequacy of cardiac output and core perfusion, or perfusion of vital organs. The child's appearance is one indicator of brain perfusion, but abnormal appearance may be caused by other conditions unrelated to circulation, such as brain injury or intoxication. For this reason, other signs

of adequacy of perfusion must be added to the evaluation of appearance to assess the child's true circulatory status.

An important sign of core perfusion is circulation to skin. When cardiac output is inadequate, the body shuts down circulation to nonessential anatomic areas such as skin and mucous membranes in order to preserve blood supply to the most vital organs (brain, heart, and kidneys). Therefore, circulation to skin reflects the overall status of core circulation. Pallor, mottling, and cyanosis are key visual indicators of reduced circulation to skin and mucous membranes.

Techniques to Assess Circulation to Skin

The third part of the PAT is evaluating circulation to skin. Be sure the child is exposed long enough for visual inspection, but not long enough to become cold. A cold child may have normal core perfusion, but abnormal circulation to skin. Cold circulating air temperature is the most common reason for misinterpretation of skin signs, and a young infant if undressed may become hypothermic quickly, even at normal ambient temperatures.

Inspect the skin and mucous membranes for pallor, mottling, and cyanosis. Look at the face, chest, abdomen, and extremities, and then inspect the lips for cyanosis. In dark skinned children, circulation to skin is sometimes more difficult to assess, and the lips, mucous membranes, and nail beds may be the best places to look for pallor or cyanosis.

Using the PAT to evaluate severity

The PAT provides a general impression of the pediatric patient. The intent is to provide an instant picture of the child's physiologic status. By combining the three components of the PAT, the prehospital professional can recognize serious illness or injury and select the most important actions: how fast to intervene, what type of general and specific treatment to give, and how to triage and transport.

The PAT has two important advantages. First, it allows the examiner to quickly obtain critical information about the child's physiologic status before touching or agitating the child. This allows a triage prioritization in disaster or MCI situations. Second, the PAT helps set priorities for the rest of the hands-on initial assessment, when possible. The PAT takes only seconds, and it helps to identify the need for life-saving interventions, and blends into the next phases of triage or of hands-on physical assessment. The three components of PAT—appearance, work of breathing, and circulation to skin can be assessed in any order, unlike the ordered ABCDEs of resuscitation.

Step 3: Perform lifesaving interventions

After quickly using the PAT to form a general impression, do a primary assessment and follow the ABCDEs as they apply to infants and children. Perform limited rapid lifesaving interventions (LSI) with the primary assessment:

- Open the airway through positioning or basic airway adjuncts (no advanced airway devices should be used)
- If the patient is a child, consider giving 2 rescue breaths
- Chest decompression
- Control major hemorrhage through the use of tourniquets or direct pressure
- Use auto injector antidotes

  Note: LSI should only be performed within the responder's scope of practice and only if the equipment is immediately available.

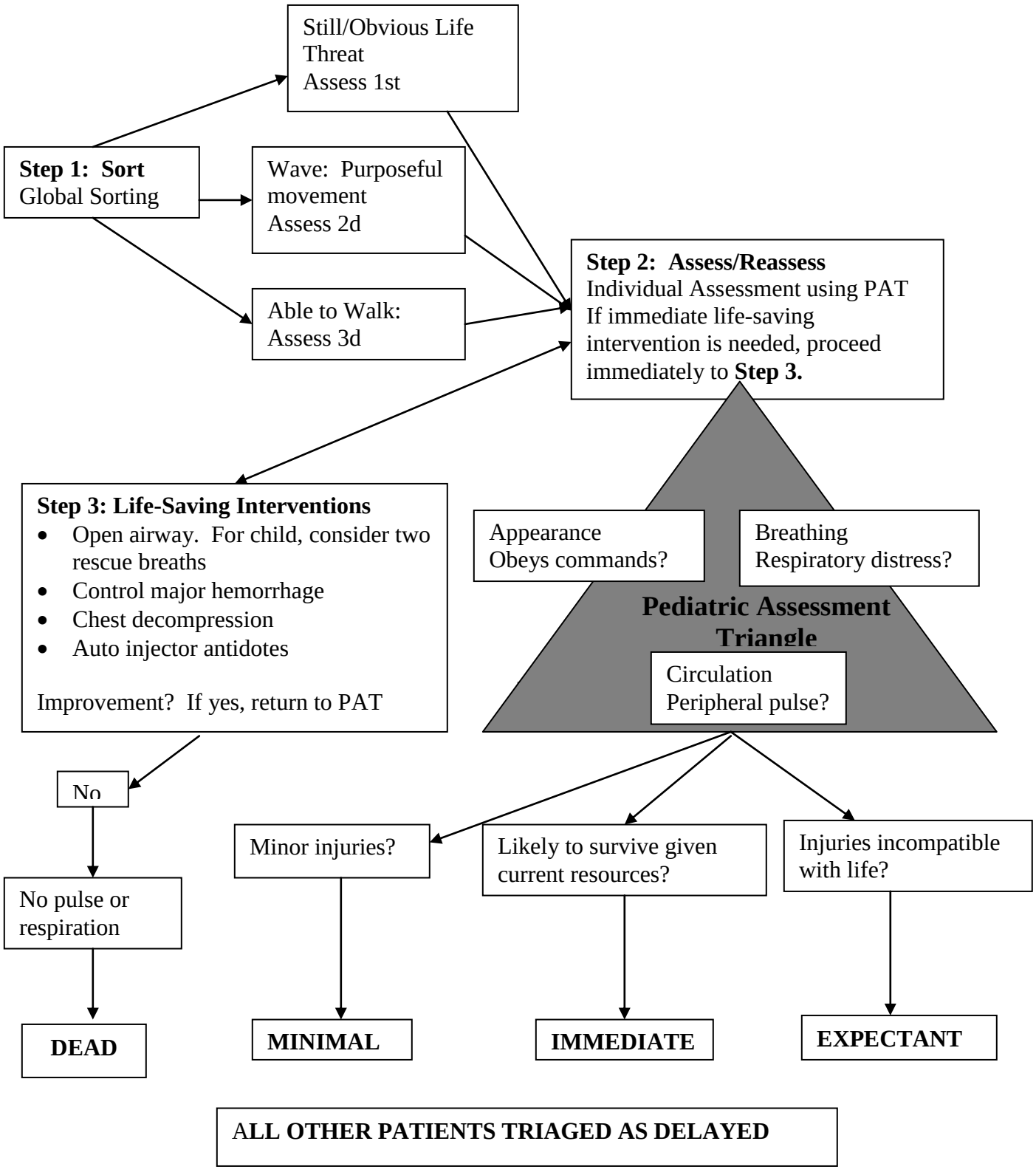
Prioritize treatment and/or transport by assigning patients to one of five categories:

- **Minimal:** Patients with mild injuries that are self-limited and can tolerate a delay in care without increasing mortality risk. Designate as "minimal" with the color **green**.
- **Immediate**: Patients who do not obey commands, **or** do not have a peripheral pulse, **or** are in respiratory distress, **or** have uncontrolled major hemorrhage. Designate as "immediate" with the color **red.**
- **Expectant**: Patients who have injuries incompatible with life given the currently available resources. Designate as "expectant" with the color **gray**.
- **Dead**: Patients who are not breathing after life-saving interventions are attempted. Designate as "dead" with the color **black**.
- **Delayed:** Remaining patients who do not fit the above categories. Designate as "delayed" with the color **yellow.**

This prioritization process is dynamic and may be altered by changing patient conditions, resources, and scene safety. Continued reassessment of all patients is critical.

In general, treatment and/or transport should be provided for immediate patients first, then delayed, and then minimal. Expectant patients should be provided with treatment and/or transport when resources permit. Efficient use of transport assets may include mixing categories of patients and using alternate forms of transport. Some patients may only require treatment at the scene and not need transport.

SALT Triage Combined With Pediatric Assessment Triangle



JumpSTART Pediatric Triage System

Pediatric Multiple Casualty Incident Triage

Using a standardized triage system for pediatric patients helps emergency personnel to make life and death decisions that otherwise could be influenced by emotional issues when triaging children.

JumpSTART *Pediatric Multiple Casualty Incident Triage* is an alternative objective triage system that addresses the needs of children. The **JumpSTART** system parallels the **START** system, but also takes into consideration the developmental and physiological differences of children by emphasizing breathing during triage decisions. Adding a respiratory component to triage may increase triage time by 15-25 seconds.

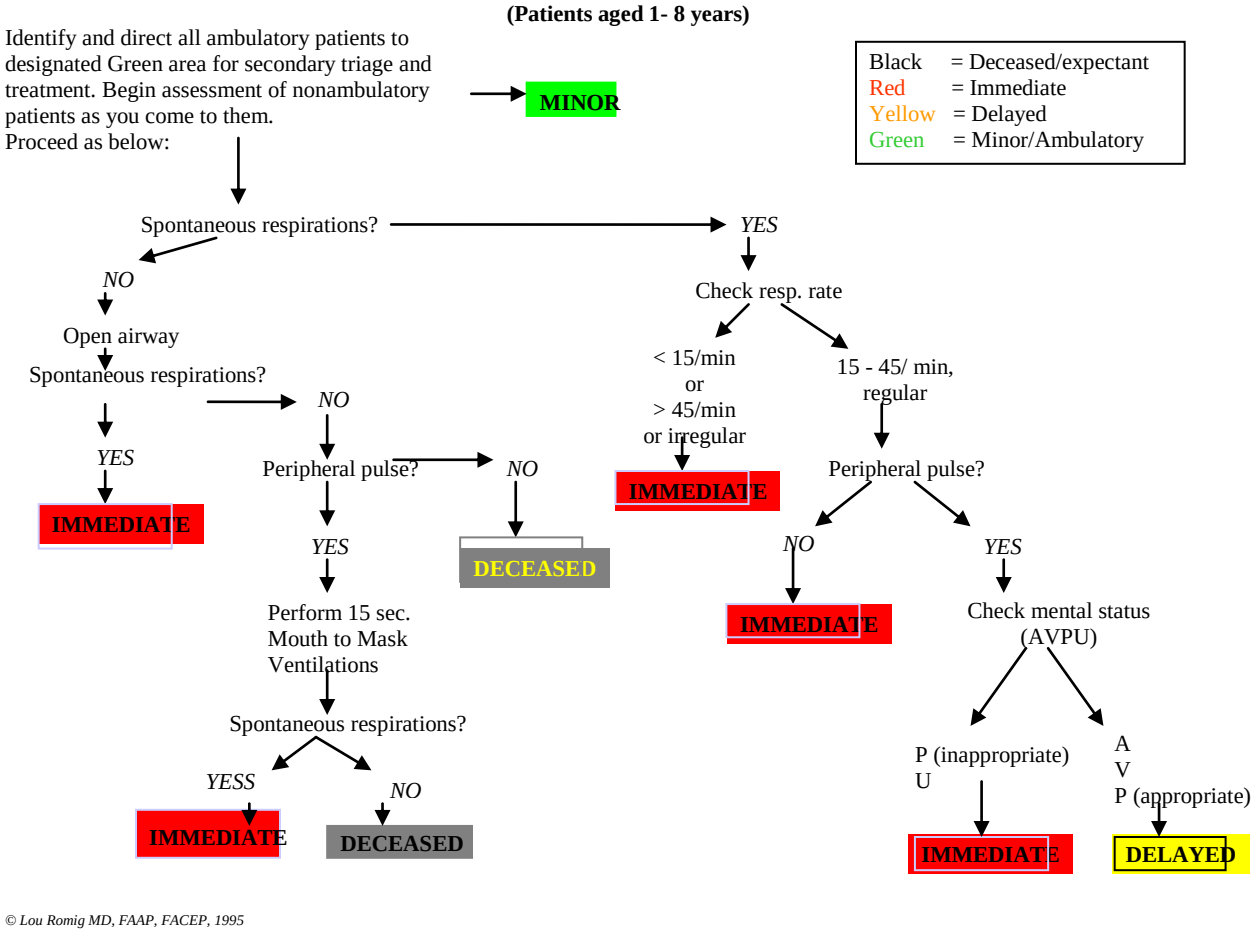
Additionally, physiologic indicators specified for START may not apply to the pediatric victim. For example, neurological status under START depends on the patient's ability to obey commands. This index is clearly not applicable to young children who lack the developmental ability to respond appropriately to commands.

Determining which triage tool to use in the pre-adolescent and young teen can be challenging. The current recommendation is to use **JumpSTART** if a victim appears to be a child; and to use **START** if a victim appears to be a young adult.

In children, because of mechanical reasons such as weak intercostal muscles, apnea may occur rapidly. **Thus, circulatory failure usually *follows* respiratory failure**. There may be a period of time when the child is apneic but continues to maintain a pulse. It is during this time that airway clearance and a ventilatory trial may stimulate spontaneous breathing. If spontaneous breathing begins, the child is categorized as **RED** for further treatment. If spontaneous breathing does not follow the initial ventilatory trial, the child is categorized as **BLACK** or non-salvageable.

JumpSTART uses the same color-coding as **START**: **RED** (Immediate); **YELLOW** (Delayed); **GREEN** (Minor/Ambulatory); **BLACK** (Deceased/non-salvageable).

The JumpSTART Field Pediatric Multicasualty Triage System ©



The triage steps of the JumpSTART Pediatric MCI triage system are as follows:

- **Step 1**:
 All children who are able to walk are directed to an area designated for minor (**GREEN**) injuries where they will undergo a secondary and more involved triage. Infants carried to this area or other nonambulatory children taken to this area must undergo a complete medical and primary evaluation using modifications for non-ambulatory children to ascertain triage status. (Please refer to the Modifications for Non-Ambulatory Children* section on the following page).

- **Step 2:**
a) All remaining non-ambulatory children are assessed for the presence/absence of spontaneous breathing. If spontaneous breathing is present, the rate is assessed and the triage officer moves on to step three.

b) If spontaneous breathing is not present and is not triggered by conventional positional techniques to open the airway, palpate for a pulse (peripheral preferred). If no pulse is present, patient is tagged **BLACK** and the triage officer moves on.

c) If there is a palpable pulse, the rescuer gives five breaths (approximately 15 sec.) using mouth to mask barrier technique. If the ventilatory trial fails to trigger spontaneous respirations, the patient is tagged **BLACK** and the triage officer moves on. If respirations resume, the patient is tagged **RED** and the triage officer moves on **without** providing any further ventilations.

• **Step 3**:
If the respiratory rate is 15-45/minute, proceed to check perfusion. If the respiratory rate is less than 15 (less than 1/every 4 seconds) or faster than 45/minute or irregular, tag as **RED** and move on.

• **Step 4:**
Assess perfusion by palpating pulses on a (seemingly) uninjured limb. If pulses are palpable, proceed to Step 5. If there are no palpable pulses, the patient is tagged **RED** and the triage officer moves on.

• **Step 5:**
At this point all patients have "adequate" ABCs. The triage officer performs a rapid APVU assessment of mental status. If the patient is; **A**lert, responds to **V**oice, or responds appropriately to **P**ain (withdraws from stimulus or pushes away), the patient is tagged **YELLOW** and the triage officer moves on. If the patient does not respond to voice and responds inappropriately to pain (moans or moves in a non-localizing fashion) or is Unresponsive, a **RED** tag is applied and the triage officer moves on to the next patient.

NOTE: All patients tagged **BLACK**, unless clearly suffering from injuries incompatible with life, should be reassessed once critical interventions for **RED** and **YELLOW** victims are completed.

***Modifications for Non-Ambulatory Children**
Children in which this modification would be used include:

- Infants who normally can't walk yet
- Children with developmental delay
- Children with acute injuries which prevented them from walking ***before*** the incident occurred
- Children with chronic disabilities

Non-ambulatory children who meet the above criteria are evaluated using the **JumpSTART** algorithm beginning with Step 2. If the child meets any **RED** criteria, the child is tagged **RED**. A quick survey is then conducted to determine whether there are any significant external signs of injury (i.e. deep penetrating wounds, severe bleeding, severe burns, amputations, distended tender abdomen or multiple bruises). If any

significant external signs of injury are present, the child is tagged **YELLOW**. Non-ambulatory children without any significant external injury, with all other aspects of the **JumpSTART** algorithm normal, are tagged **GREEN**.

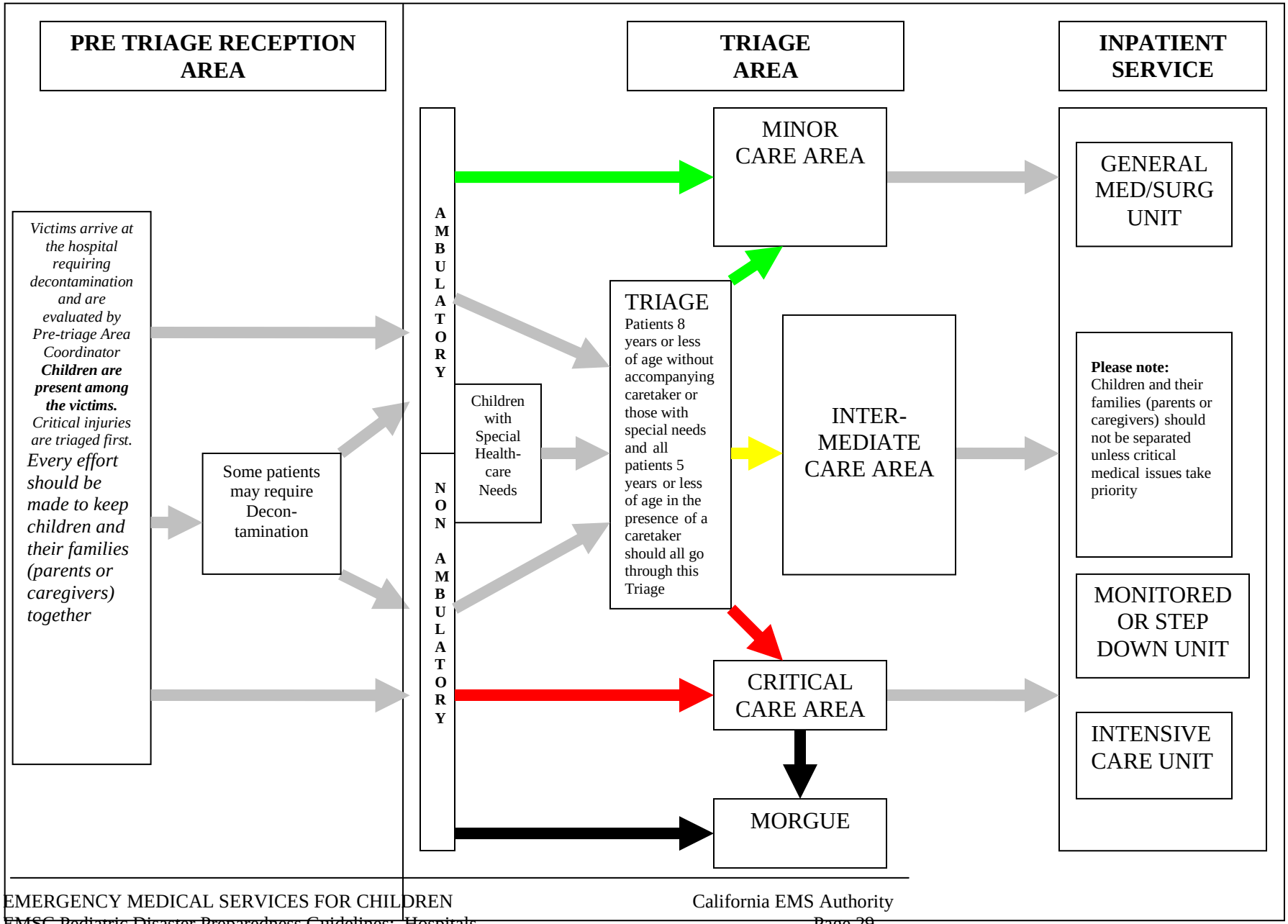
NOTE: Final disposition (transport destination) depends on local and regional resources. Drills and table top exercises should include discussion about transport based on the actual resources available to the participants.

*This information was obtained from the JumpSTART Pediatric MCI Triage Tool website. The **JumpSTART** pediatric MCI field triage tool was developed by Lou Romig, M.D. Pediatric Emergency Medicine at Miami Children's Hospital in Miami, FL in 1995 and modified in 2002. For additional information, go to www.jumpstarttriage.com.*

Multi-Casualty Triage Checklist

Item	Yes	No	In Progress
1. There is a multi-casualty triage plan that addresses children in your facility.			
2. A pediatric triage protocol has been developed for use in disasters.			
3. There is a pediatric hospital categorization system in your area.			
4. Hospital personnel have had mass casualty training.			
5. Pediatric triage tool is included in hospital triage assessment.			
6. Training is provided for hospital personnel in use of triage tool for pediatric patients.			
7. There is a standard method of tagging pediatric patients to assist in reunification with parents.			
8. The hospital has a plan for contacting and activating pediatric disaster team members, including mental health professionals and/or social workers.			
9. A patient tracking system that has been developed that addresses pediatric patients			
10. There is a readily available cache of pediatric supplies that is updated regularly.			
11. A CISM program has been developed for post-disaster assistance.			

MODEL HOSPITAL TRIAGE PROTOCOL



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MEDICATIONS

Introduction

- Due to anatomical and physiological differences, pediatric dosages differ from adult dosages. Medication dosages are weight-based, and thus, your facility should have a method in place to implement weight-based dosing. For example, the length-based emergency tape (e.g., Broselow Tape) is a color-coded tool to estimate a child's weight and appropriate medication dosages.
- Since access to medications and supplies may be challenging in the aftermath of a disaster, we recommend that you keep a 72 hour stockpile on hand of emergency medications. Please note, however, that this list is only a guide and is not intended to be an all-inclusive list of drugs used in pediatric emergencies. Moreover, indications and adverse effects are not detailed in the table below.
- Medications may need to be compounded or made into a solution for administration to children. Hospitals should ensure that sufficient pediatric pharmacy resources and safeguards are available.
- **Note that the Poison Control Center number is 1-800-222-1222.**
- Please refer to the recently published document, "Preparing for Pediatric Emergencies: Drugs to Consider," by Mary Hegenbarth, MD and the Committee on Drugs, in *Pediatrics* 2008; Vol. 121; No.2, for a more comprehensive description.

Drug	Route of Administration	Comments/Notes
Acetaminophen	PO, PR	Anti-pyretic and analgesic
Activated Charcoal	PO	If accidental ingestion or intentional terrorist poisoning; note that non-sorbitol containing products should be used in infants < 1 year of age. Also note that iron, lithium, alcohols, ethylene glycol, alkalis, fluoride, mineral acids, and potassium are not bound by charcoal.
Adenosine	IV	Supraventricular tachycardia
Albuterol inhalation solution	Nebulized	Bronchospasm due to asthma or may also be useful if disaster involves fumes, fires, inhalation injury, etc.
Albuterol metered dose inhaler	Inhaled	
Amiodarone	IV	Arrhythmia treatment: ventricular fibrillation, tachycardia.
Amoxicillin	PO	Useful for multiple types of bacterial infections
Atropine	IV, IO, ET	Code situations for symptomatic vagally mediated bradycardia or AV block and nerve agent (anticholinesterase) antidote
Azithromycin	PO, IV	Good, broad spectrum, oral antibiotic
Calcium Chloride 10%	IV, IO	Code situations for hypocalcemia, hyperkalemia, hypermagnesiumia
Cephazolin	IV	For pre-operative prophylaxis, skin infections, etc.
Ceftriaxone	IV	Useful for meningitis, pneumonia, UTI, etc.
Chloramphenicol	IV	For Plague

Drug	Route of Administration	Comments/Notes
Ciprofloxacin	IV, PO	Anthrax or Plague
Clindamycin	IV, PO	For PCN allergic patients and for anerobic infections
Cyanide antidote kit	IV	Hydroxycobalamin instead?
Dexamethasone IV, PO, IM	IV, IM, PO	Emergency treatment of elevated intracranial pressure, laryngotracheobronchitis (croup), asthma exacerbation
Dextrose 10% in water	IV	Hypoglycemia in neonate
Dextrose 25% in water	IV	Hypoglycemia in infant or child
Dextrose 50% in water	IV	Hypoglycemia in older child or adolescent
Digoxin injection	IV	For congenital heart disease kids
Diphenhydramine injection	IV	Allergic reaction treatment
Diazepam nerve agent antidote	IM	Regenerates acetylcholinesterase
Diazepam	IV, IM, PO	Status epilepticus
Dobutamine injection 200mg vial	IV	Cardiogenic shock treatment
Dopamine injection 200 mg vial	IV	Treatment for septic and cardiogenic shock
Doxycycline	IV, PO	Useful for multiple bioterrorist agents (anthrax, plague, etc.)
Epinephrine injection	IV, IM, ET	For code situations, cardiopulmonary resuscitation
Epinephrine – racemic	Nebulized	
Erythromycin eye ointment	Applied to the eyes as an ointment	Use for corneal abrasions after traumatic exposures
Etomidate	IV	For rapid sequence intubation and sedation
Fentanyl	IV	Analgesia
Flumazenil	IV	Antidote to benzodiazepine overdose
Fosphenytoin	IV, IM	Status epilepticus
Furosemide	IV	For the congenital heart disease patients with congestive heart failure
Glucagon	IV, IM	Use for when unable to obtain iv access in hypoglycemic patients
Heparin solution	IV	
Hydrocortisone injection	IV	Adrenal insufficiency
Ibuprofen	PO	Anti-pyretic and analgesic
Insulin – multiple preparations will be necessary	IV	For the insulin dependent diabetics
Ipratropium inhalation solution	Nebulized	Synergistic effect for asthmatics
Kayexelate	PO, PR	Hyperkalemia treatment
Ketamine	IV, IM	For sedation, contraindicated in infants <3 months of age
Ketorolac tromethamine injection	IV, IM	Non-narcotic analgesia
Lidocaine injection	ET, subcutaneous, IV, IO	Ventricular arrhythmias, anesthesia
Magnesium sulfate	IV	
Lorazepam	IV, IM, PO	Status epilepticus

Drug	Route of Administration	Comments/Notes
Magnesium sulfate	IV, PO	Treat hypomagnesiumia and hypokalemia, as well as Torsades de pointes VT
Mannitol injection	IV	For treating increased intracranial pressure
Methylprednisolone	IV, IM	Asthma, allergic reactions
Midazolam	IV, IM	For sedation, seizures
Milrinone	IV, IO	Myocardial dysfunction
Morphine	IV, IM, PO	Analgesia
Naloxone	IV, IM	Narcotic overdose
Nitroprusside	IV	Hypertensive crisis
Peds Mark1 Nerve agent antidote kits	IM	Nerve agent antidote
Penicillin G Benzathine	IV	
Phenobarbital	IV, PO	Seizures
Phenytoin injection	IV	Seizures
Polymixin Bacitracin ointment 0.9gm pack	Topical	For superficial wounds and burns
Potassium Chloride	IV	
Potassium Iodide	PO	Radioactive iodine exposure
Pralidoxime injection	IM	Nerve agent antidote
Prednisone and Prednisolone	PO	Asthma care
Procainamide	IV, IO	Arrhythmia
Prostaglandin E	IV, IO	Suspected or proven ductal-dependent cardiac malformation in the neonatal period
Rocuronium	IV	Neuromuscular blocking agent; paralysis to facilitate mechanical ventilation
Silver sulfadizine cream	Topical	For burn care
Sodium bicarbonate	IV, IO	Code situations, hyperkalemia, metabolic acidosis, sodium channel (e.g., tricyclic antidepressant) overdose
Sodium chloride injection	IV	
Succinylcholine	IV	Neuromuscular blocking agent for emergency intubation
Tetanus Immnoglobulin (TIG)	IM	For at-risk wounds and those without any vaccination history
Tetanus vaccinations	IM	Wound care
Tetracaine ophthalmic solution	Applied topically to the eye	To facilitate painful eye examinations
Vecuronium	IV	Neuromuscular blocking agent; paralysis to facilitate mechanical ventilation

Medications Checklist

Item	Yes	No	In Process
1. Adequate supply on hand or readily available medications for pediatric patients in disasters.			
2. Education/review provided for hospital providers in medications for use for pediatric patients in disasters.			
3. Length-based tape available for use in estimating weight of pediatric patients.			
4. Pediatric patients included in disaster drills/exercises.			

EQUIPMENT

Introduction

- Children require size-specific equipment. Thus, we recommend the use of a tool, similar to the length-based (e.g., Broselow) emergency tape.
- Redundant communication equipment should be available (such as walkie-talkies, HAM radio operators, cell phones, intercom, beepers, etc.).
- In addition to the listed medical and surgical equipment and supplies, we recommend that your facility keep stockpiles of diapers, diaper wipes, distraction devices, such as toys, bubbles, books, games, and art supplies.

Equipment Checklist

Item	Yes	No	In Process
1. Capabilities to maintain emergency medications and equipment recommended by the American College of Emergency Physicians and the American Academy of Pediatrics have been assessed.			
2. A method of weight-based medication dosing and equipment use, such as the length-based (e.g., Broselow) emergency tape is available for disaster use.			

References

Hegenbarth MA and the Committee on Drugs. Preparing for Pediatric Emergencies: Drugs to Consider. *Pediatrics* 2008; 121:2:433-443.

Administration, Personnel, and Policy Guidelines for the Care of Pediatric Patients in the Emergency Department (EMSA #182), March 26, 2008

Broselow Tape: www.ebroselow.com

FLUID MANAGEMENT

Introduction

Pediatric patients are vulnerable to dehydration, because 8-10% of their body water is turned over on a daily basis, whereas adults turn over less than 5% of body water daily. Thus, decreased intake through fasting (food and water may be less accessible), vomiting, and diarrhea, or increased insensible losses secondary to fever or respiratory distress may rapidly result in dehydration.

The diagnosis of dehydration is based on clinical criteria, where the degree of dehydration is expressed as a percentage of pre-illness weight:

- mild dehydration approximates 5-8% loss
- moderate is 9-12% loss
- severe is >12% loss
- Less than 5% dehydration is usually clinically inapparent,

An infant that is more than 15% dehydrated will have tenting of the skin, sunken fontanels and eyes, a weak and rapid pulse, and may be anuric.

To calculate maintenance fluids:

> Free water needs are 100ml/kg/day for the first 10 kg of body weight or 4ml/kg/hr; 50ml/kg or the second 10 kg or 2ml/kg/hr; and 20ml/kg for more than 20kg of body weight, or 1ml/kg/hr. Note that sodium requirements are 2 to 3 meq/kg/day, and potassium requirements are 1 to 2 meq/kg/day.

The following chart categorizes the recommended treatment modalities for dehydration. This underscores the importance for hospitals to have stockpiles of formula, age-appropriate foods, and saline.

Treatment for Mild, Moderate, Severe Dehydration

	Mild	Moderate	Severe
Primary Phase	*PO	*PO	IV
Secondary Phase (If Primary Phase fails)	NG IV	NG IV	Central line Intraosseous (IO)
Tertiary Phase (Optional)	PO	PO	+ PO after initial
Lab Studies	None	**None	Electrolytes, BUN, Cr, calcium, glucose, urine
Fluid Amounts	< 50 ml/kg	50-100 ml/kg	> 100 ml/kg
Treatment Length	< 4 hours	1-4 hours	> 4 hours
Discharge Criteria	• Baseline or near baseline vital signs • Urine output during hydrating period • Moist oral mucosa • Streaming tears • No or minimal ongoing losses • Able to tolerate PO's (optional)		Not Applicable
Treatment Failure	Admit or Observation Unit		Admit

*PO 5cc (1 teaspoon) every 1-2 minutes. ↑ based on patient tolerance
NG 20 ml/kg/hr over 1- 4 hours (ORS)
IV (Moderate dehydration) 50-100 ml/kg over 1- 4 hours (NS or LR)
IV (Severe Dehydration) 20 ml/kg over 5-30 minutes (NS or LR)
Aim for 60 - 100 ml/kg within the first hour. Contraindications include some forms of cardiac disease, e.g. cardiomyopathy, or neurologic disease.
** May need to obtain labs based on dietary history or disease state

A safe alternative to the above methods of rehydration that may be useful in a mass casualty scenario in which it is impractical to attempt intravenous insertion or there are many patients unable to maintain adequate oral hydration is *Hypodermoclysis*, which is a method of infusing fluid into subcutaneous tissue. While the preferred solution is normal saline, other solutions such as glucose with saline, can also be used. The most common infusion sites are the chest, abdomen, thighs, and upper arms. Hyaluronidase can also be added to enhance fluid absorption, and there are commercial products, such as hylenex recombinant (hyaluronidase human injection) that are specifically marketed for this purpose. The most frequent adverse effect of hypodermoclysis is mild subcutaneous edema, which is easily treated with local massage or systemic diuretics. There are few absolute contraindications to hypodermoclysis, but relative contraindications include shock, congestive heart failure, and coagulopathy.

MENTAL HEALTH

Introduction

Children will respond to trauma and disasters differently than adults, and there will be large range in responses, depending upon the child's age, socio-cultural background, and personality. Some may have overt reactions in the acute phase, while others may not manifest symptoms for many weeks or months. It is helpful to know age-specific reactions, however, and to know what interventions may be beneficial.

Preschool age (1-5 years of age) and school age (6-12 years)

- Children may regress to an earlier behavioral stage: they may revert to thumb sucking and bedwetting, become afraid of strangers, and cling to parents.
- Children may become disobedient, hyperactive, aggressive, or they may withdraw.
- Changes in eating and sleeping habits are expected, and they may complain of multiple body aches and pains.

Interventions:

- If possible, attempt to avoid separation.
- Encourage expression through play, drawing, puppet shows, and storytelling.
- Limit media exposure.
- Set gentle but firm limits on acting out behavior.
- Provide structured activities and chores.

Preadolescents and adolescents (12-17 years)

- Preadolescents and adolescents may develop vague physical complaints and may abandon chores, schoolwork, and other responsibilities. They may also withdraw, resist authority, become disruptive in the classroom, and begin to experiment with high-risk behaviors, such as alcohol or drug abuse.

Interventions:

- Encourage discussion of experiences among peers, but do not force them to talk about their feelings. Listening to them is critical!
- Providing structured activities and involvement in community recovery work may be beneficial.

Psychological First Aid

Psychological First Aid (www.samhsa.gov) is an evidence-based approach to help victims cope in the aftermath of a disaster. The primary objective of Psychological First Aid is to create and sustain and environment of 1) safety, 2) calm, 3) connectedness to others, 4) self-efficacy or empowerment, and 5) hope.

In speaking to children and adolescents, the following steps are recommended (a script is provided, as well):

1) Contact and engagement – "*My name is _____ and I am here to try to help you and your family. I am a _____ worker here, and I am checking with people to see how they are feeling. May I ask your name?*"

2) Safety and comfort – "*Do you need anything to drink or eat? Is your family here with you? Do you have a place to stay? We are working hard to make you and your family safe. Do you have any questions about what we're doing to keep you safe?*"

3) Stabilization (if needed) – "*After bad things happen, your body may have strong feelings that come and go like waves in the ocean. Even grown-ups need help at times like this. Is there anyone who can help you feel better when you talk to them? Can I help you get in touch with them?"*

4) Information gathering – "May I ask some questions about what you have been through? Can you tell me where you were during the disaster? Did you get hurt? Is your family safe? How scared were you? Is there anything else that you are worried about?"

5) Practical Assistance – "*It seems like what you are most worried about right now is _____. Can I help you figure out how to deal with this?*"

6) Connection with Social Support – "*You are doing a great job letting grown-ups know what you need. It is important to keep letting people know how they can help you. That way, you can make things better.*"

7) Information on Coping – "*It's normal for kids to feel scared after bad things happen. You will probably start to feel better soon. If you like, I can tell you some ways to help you feel better. You can also call 800-854-7771(hotline staffed by mental health professionals trained in disaster response) any time to talk to people who can help you.*"

8) Other support - Provide direct referrals to a) county mental health services or those through private insurance, b) Red Cross and FEMA, as appropriate.

9) Continuity in Helping Relationships – Facilitate referrals: "*May I help make some calls to people who can help you?*" and if feasible, "*I'd like to check in with you again to see how you are doing. How may I contact your parents later?*"

It is advisable to refer to local psychiatric referral centers and other resources accessed during NON-disaster situations to identify pediatric mental health practitioners.

Additionally, prehospital personnel should have hotline numbers readily available:

- National Suicide Prevention Lifeline 1-800-273-TALK
- Substance Abuse and Mental Health Services Administration (SAMHSA) Helpline 1-800-662-HELP
- Workplace Helpline 1-800-WORKPLACE www.workplace.samhsa.gov/helpline

Finally, prehospital personnel should strongly consider utilizing the SAMHSA Mental Health Services Locator (www.mentalhealth.samhsa.gov/databases) for information related to mental health services and resources and to locate trained mental health providers.

Mental Health Checklist

Item	Yes	No	In Process
1. Pediatric local mental health practitioners have been identified, and a relationship has been established with them.			
2. Resources, hotlines, etc. for use in disasters have been identified, and the list is readily available.			
3. Training has been provided to hospital staff in Psychological First Aid.			

SPECIAL NEEDS POPULATION

Introduction

Children with special needs are those with chronic physical, developmental, behavioral, or emotional conditions. Such conditions may include those with physical problems, such as those who are immunosuppressed because of an underlying malignancy, diabetes mellitus, or end-stage renal disease on hemodialysis. Other pediatric special needs populations include children with mental retardation – cerebral palsy (MRCP) who may be wheelchair-bound, have indwelling tracheostomy tubes and enteral feeding tubes, ventilator-dependent children, as well as those with autism, learning disabilities, cognitive disabilities, and limitations in vision or hearing.

Formulation of an emergency care plan has been advocated by the Emergency Medical Services for Children (EMSC) program through its Children with Special Needs Task Force. Essential components of a program include the following: [1, 2]

1. A method for identifying at-risk children
2. Education of families and other caregivers
3. Use of a standardized Emergency Information Form for children with special needs (completion of a data set by the child's caregivers and/or physicians) - records of each child's special needs should be maintained in an accessible and usable format. This standard form is easily accessed through the American Academy of Pediatrics and is available in both Spanish and English: http://www.aap.org/advocacy/emergprep.htm. Vital information to be gathered on such a form includes:
    - Demographics – name of child, nickname, birth date, home address and phone, parent/guardian, emergency contacts, and primary language.
    - Physician Contact information – primary physician's name and contact information, as well as specialty physicians' names and contact information.
    - Anticipated primary ED, pharmacy, and tertiary care center.
    - A list of diagnoses, past procedures, and physical exam, including baseline physical findings, vital signs, and baseline neurologic status.
    - Medications and allergies, including dose and route of administration.
    - Significant baseline ancillary findings (labs, x-ray, EKG).
    - Medications, foods, and procedures to be avoided.
    - Immunization status, including dates of last immunization.
    - Common presenting problems with management strategies.

Special Needs Population Checklist

Basic Hospitals Item	Yes	No	In process
1. An assessment has been made of the number of children with "special needs" that frequent your facility. For example, you know how many children undergo hemodialysis, have tracheostomy tubes, g-tubes, etc.			
2. There is a means of accessing a database/file (Emergency Information Form) of the names, baseline physical and mental status, etc. of children with special needs who frequent your facility.			
3. There has been an assessment, in conjunction with the local EMS Agency and area schools, of what the resource needs will be to care for the uninjured, unaccompanied population of children with special needs in the aftermath of a disaster.			
4. There is regular training in handling the child with special needs (e.g., the importance of maintaining familiarity for autistic children, how to explain events to children with learning disabilities, how to manage children with visual, hearing, or physical limitations, and those with emotional disorders).			
5. Staff personnel to care for uninjured, unaccompanied special needs children in a disaster have been identified.			
6. There is a stockpile of appropriate equipment and supplies (tracheostomy tubes, feeding tubes, pediatric formulas, wheelchairs, etc.) to care for the child with special needs after a disaster.			
7. There is a computerized means to update the Emergency Information Form (medication doses, formula changes, etc.) of children with special needs after every encounter.			
8. Personnel at your facility with proficiency in dealing with children with special needs (mental health, social workers, etc.) have been identified.			
9. A point-of-contact (telephone number) with the pediatric tertiary care center in your region in a disaster has been established.			
10. There is a memorandum of understanding with the pediatric tertiary care center in your region to accept transfers of injured			

Basic Hospitals Item	Yes	No	In process
children with special needs.			
11. Disaster drills, in which mock victims with special needs are included in the scenario, are scheduled on a regular basis.			
12. There is a protocol to evacuate children with special needs (wheelchair-bound, ventilated, etc.).			

Critical Care Hospitals Item	Yes	No	In process
1. An assessment has been made of the number of children with "special needs" that frequent your facility. For example, you know how many children undergo hemodialysis, have tracheostomy tubes, feeding tubes, etc.			
2. There is a means of accessing a database/file (Emergency Information Form) of the names, baseline physical and mental status, etc. of children with special needs who frequent your facility.			
3. In conjunction with the local EMS Agency and area schools, the resource needs for care for the uninjured, unaccompanied population of children with special needs in the aftermath of a disaster have been identified.			
4. Regular training is provided regarding handling the child with special needs (e.g., the importance of maintaining familiarity for autistic children, how to explain events to children with learning disabilities, how to manage children with visual, hearing, or physical limitations, and those with emotional disorders).			
5. Staff personnel have been identified to care for uninjured, unaccompanied special needs children in a disaster.			
6. There is a stockpile of the appropriate equipment and supplies (tracheostomy tubes, g-tubes, pediatric formulas, wheelchairs, etc.) to care for the child with special needs after a disaster.			
7. There is a computerized means to update the Emergency Information Form (medication doses, formula changes, etc.) of children with special needs after every encounter.			

Critical Care Hospitals Item	Yes	No	In process
8. There are identified personnel at your facility and other regional facilities with special proficiency in dealing with children with special needs (pediatric surgery, pediatric gastroenterologists, pediatric intensivists, mental health, social workers, etc.).			
9. As one of the pediatric critical care specialty hospitals in your region, there are regularly scheduled regional meetings with other basic hospitals to brainstorm how to manage children with special needs in the aftermath of a disaster.			
10. As one of the pediatric critical care specialty hospitals of your region, you maintain a database of all children with special needs in your region (how many children on hemodialysis, how many children with tracheostomy tubes and g-tubes), and make this available to all hospitals in the region.			
11. There is a memorandum of understanding with basic hospitals in your region to accept transfers of uninjured children with special needs who are unaccompanied by adults.			
12. There is a memorandum of understanding with the schools, the American Red Cross, and other volunteer organizations to help care for the uninjured, unaccompanied child with special needs.			
13. There is a memorandum of understanding with suppliers of tracheostomy tubes, feeding tubes, pediatric formulas, wheelchairs, etc. for re-stockpiling during the aftermath of a disaster.			
14. Disaster drills, in which mock victims with special needs are included in the scenario, are conducted on a regular basis.			
15. There is a protocol to evacuate children with special needs (wheelchair-bound, ventilated, etc.).			

References

1. Committee on Pediatric Emergency Medicine. Emergency Preparedness for Children with Special Health Care Needs. Pediatrics 1999;104;53- DOI:10.1542/peds.104.4e53
2. ACEP Policy Statement: Emergency Information Form for Children with Special Health Care Needs

Other Resources

1. American Red Cross at www.redcross.org designed a booklet for anyone who has a disability or who works with, lives with, or assists a person with a disability. The booklet has information on possible disaster effects, assessing personal needs and abilities, and suggestions about forming a personal support group.
2. Children with Special Health Care Needs: An EMS Challenge (CD-ROM) www.ems-c.org. This CD-ROM introduces health care providers to general respiratory, cardiovascular, and neuromuscular challenges of children with special health care needs. It reviews the normal differences between adult and pediatric anatomy and physiology, as well as case scenarios. The appendix contains helpful printable files on 13 different medical conditions that the provider may encounter.
3. Florida Institute for Family Involvement at http://www.fifionline.org/disaster_planning.htm has the following disaster links on their website:
    - Disaster Preparedness for Families with Special Needs
    - Disaster Information Form for Children with Special Needs
4. National Association of School Psychologists (NASP) at http://www.nasponline.org/NEAT/specpop_general.html provides information and resources on helping children with disabilities and special needs cope with a crisis.
5. National Organization on Disability at www.nod.org/emergency provides information, regarding planning, preparedness and specialized emergency equipment for individuals with disabilities.

DRILLS AND EXERCISES

Introduction

Education and training of hospital personnel in coping with pediatric patients in disasters is essential. California has 9,620,511 children under 18 years of age, comprising 26% of the state population. Thus, children will be well represented in any major disaster. The needs of children and their response to disasters may be very different from that of adults.

There are several ways to train personnel, including interactive presentations, lectures, table-top drills, and full-scale drills and exercises. Training should include pediatric patients, and involve pediatric triage, treatment and transport. Field decisions regarding pediatric patients are always somewhat more difficult due to differences in cognitive function and size.

We include one scenario here that can be included in a drill or exercise, and there are more scenarios available at the EMSA website: www.emsa.gov .

Disaster Scenario

This scenario can be used as part of a larger drill, or as a stand-alone drill. Note that:

1. The scenario can be adapted for any size of EMS and hospital configuration, using more or fewer victims.
2. Special consideration should be given to assessing local resources, and considering regional resources when needed.
3. With parental permission, volunteers can serve as simulated patients, and mannequins can also be used when volunteers are not available.
4. Pediatric patients can either be moulaged, or given a label describing their condition.

Scenario #1: School Explosion

At 9:30 a.m., a call to 911 is received. There has been an explosion in a local school. The cause of the explosion is unknown. The school has 200 students, elementary and middle school level. Law enforcement has been dispatched, and is on scene. As you arrive on scene, another explosion occurs. The school is being evacuated by school officials and law enforcement, and it is obvious that there are multiple casualties, including teachers, assistants and children. Both children and adults are exiting from the building coughing, eyes tearing, and collapsing onto the ground.

The school Principal tells Law Enforcement that the school has had problems with seepage of methane gas in the past, and although they thought the problem was eliminated, this is a possible source of the explosion. She tells you, however, that the explosion occurred near the science room, and there were some potentially dangerous chemicals such as formaldehyde in a closet in the room.
Neighbors and parents who can hear the sirens are showing up at the school and trying to find their loved ones.

There are three hospitals available within the area. Hospital A is a level III trauma center 20 miles away from the disaster; Hospital B has an Emergency Department with 24 hour service 4 miles away, and Hospital C is a small, rural hospital with a stand-by Emergency Department 2 miles away. Hospital B has a pediatric ward and an adult ICU. Hospital C has no pediatric ward or ICU. All hospitals have been recently surveyed, and all have been confirmed as EDAPs.

Scenario #1: School Explosion
Hospital Response

Hospital Response to this disaster should consider the following (this list is not necessarily complete, or in the appropriate order)

1. Communication from the prehospital setting.
2. Safety of the hospital.
3. Control of ingress and egress to your hospital.
4. Hospital Incident Command concerns.
5. Identification of possible chemical agents.
6. Additional personnel needed for this response.
7. Triage of patients.
8. Identification of patients.
9. Assessment of bed, staff, and system capability to care for patients.
10. Decontamination.
11. Transfer of pediatric patients to local/regional facilities, including destination plan.
12. Available resources, locally and regionally.
13. Family reunification.

Scenario #1: School Explosion - Casualty List

VICTIM	RESPIRATORY RATE	PERFUSION	MENTAL STATUS	OTHER
8 y.o. F	RR 32	Palpable pulse	Alert, crying hysterically	Multiple small lacerations with embedded wood and glass entire dorsal area of body, head to toe
9 y.o. M	RR 12	Weak, thready pulse	Disoriented to place and time	Hematoma forehead, facial lacerations
Adult M	RR 48	Capillary refill >2	Moaning, unable to follow commands	Large glass chard protruding from abdomen, wheezing
9 y.o. F	RR 8	Pulse absent	Unresponsive	Impaled onto shelving brackets on wall
6 y.o. M	RR 36	Pulse present	Won't speak but makes eye contact with touch	Bleeding from ears, bruise on neck
7 y.o. F	RR 0	Weak radial pulse	Unresponsive	Trapped under rubble; apneic after 5 rescue breaths
12 y.o. M	RR 34	Rapid pulse	Keeps asking same questions	Tearing, runny nose, complains of headache
10 y.o. F	RR 52	Thready pulse	Confused	Coughing, brisk bleeding from facial and hand lacerations
11 y.o. M	RR 40	Pulse present	Disoriented to place and time	Scalp lacerations, bleeding from multiple small wounds on upper extremities, coughing.
9 y.o. M	RR 10	Weak rapid pulse	Unresponsive	Glass cuts to leg, heavy bleeding
12 y.o. M	RR 44	Pulse weak, left arm	Hysterical, crying	Partial amputation, right forearm
6 y.o. M	RR 40	Pulse present	Responds to pain	Open femur fracture, lacerations to hands and face
7 y.o. F	RR 32	Pulse present	Crying but oriented x 3	Open fracture lower leg; contusions to arms and chest
8 y.o. M	RR 36	Bounding pulse	Alert but won't speak	Burns to neck and torso, lacerations to arms
Adult F	R 28	Capillary refill <2	Crying for help, able to recall events	Leg caught under lab desk and chairs - open fracture
9 y.o. M	RR 30	Rapid, thready pulse	Confused	Large contusion on forehead, diaphoretic
12 y.o. F	RR 0	Absent pulse	Unresponsive	Trapped under rubble
11 y.o. M	RR 32	Rapid pulse	Alert and anxious	Coughing, vomiting, blackened hairs in nostrils
6 y.o. F	RR28	Rapid pulse	Alert	Crying, no obvious injuries
10 y.o. F	RR 44	Radial pulse weak	Responds to verbal stimuli, disoriented	Large bruise forming on abdomen, contusions on legs

Drills and Exercises Checklist

Item	Yes	No	In Process
1. Hospital personnel have had training in triaging pediatric patients during a disaster.			
2. Children have been included in disaster drills or exercises at least once a year.			
3. Planning of disaster drills and exercises includes pediatric expertise such as pediatricians, pediatric nurse practitioners, pediatric intensivists, etc.			
4. Drills or exercises have included the need to access resources for pediatric patients if the local area is overwhelmed.			
5. Drills or exercises include children with special health care needs (CSHCN)			
6. Planning for drills includes representatives from community organizations concerned with children in disasters such as the American Red Cross and mental health associations, schools, day care facilities, etc.			
7. Drills or exercises include a variety of disasters, such as biological, chemical, radiological terrorism as well as natural disasters.			

Resources

1. Agency for Healthcare Research and Quality's Bioterrorism and Public Health Emergency Response Tools. http://www.ahrq.gov/path/biotrspn.htm
2. American Academy of Pediatrics, Children –Children and Disasters. http://www.aap.org/terrorism/index.html
3. American College of Preventive Medicine. http://www.acpm.org/education/EHCMEOpportunities.htm
4. American Red Cross (Children and Disasters). http://www.redcross.org/services/disaster/0,1082,0_602_,00.html
5. Center for Trauma Response, Recovery and Preparedness for Health Care Communities. http://www.ctrp.org/resources_healthcare.htm
6. Fairfax County Public SchoolsEmergency Preparedness and Support. http://www.fcps.edu/emergencyplan/index.htm#mci

7. JumpSTART Pediatric Mass Casualty Incident (MCI) Triage Tool. http://www.jumpstarttriage.com/JumpSTART_and_MCI_Triage.php
8. National Advisory Committee on Children and Terrorism (NACCT): Recommendations to the Secretary, 2003. http://www.bt.cdc.gov/children/recommend.asp
9. National Association of School Nurses (NASN) Disaster and Preparedness: School Nurse Role. http://www.nasn.org/Portals/0/positions/2006psdisaster.pdf
10. National Center for Disaster Preparedness Pediatric Preparedness for Disasters and Terrorism A National Consensus Conference Executive Summary, 2003. http://www.ncdp.mailman.columbia.edu/files/pediatric_preparedness.pdf
11. Los Angeles County Department of Health Services; Emergency Medical Services Agency Family Information Center Planning Guide; Draft: ____ http://ems.dhs.lacounty.gov

FAMILY INFORMATION CENTER

Introduction

The purpose of a **Family Information Center (FIC)** in a hospital or clinic is to have a comfortable place to assist families who are seeking information about the location of their missing family member(s) following a mass-casualty event, terrorist attack, or large natural disaster. While this Planning Guide is designed for a hospital setting, its principles can be applied to other settings such as schools and day care settings where children may need to be held following disasters pending reunification with parents.

Planning for a hospital-based FIC involves the following considerations:

- Location and Layout
- Staffing
- Supplies and Equipment
- Planning and Activation
- Pediatric Safe Area Planning and Procedures; consider "Just in Time" training in a disaster response.
- Pediatric Safe Area Safety and Security
- Communications and Information Management

Additional information, including sample Job Action Sheets and further guidance, are provided on the EMS Authority website **www.website_address_goes_here.ca.gov**

Family Information Center Checklists

Planning Considerations	Yes	No	In Progress
1. The planned area for the FIC is located far enough from the emergency department to discourage congregation of family members, but close enough for treating physicians to access families for updates and information gathering.			
2. The FIC has controlled or limited access by unauthorized visitors and news media personnel.			
3. The FIC is accessible to elderly or disabled family members.			
4. The FIC has a place for children to play.			
5. The FIC has a place for television viewing.			
6. The FIC has a briefing area for medical representative or PIO to talk to families.			
7. The FIC has one or two side rooms or partitions that can be used by medical, mental health, and spiritual care to interview or counsel families in private.			

Planning Considerations	Yes	No	In Progress
8. The FIC has work and break areas for staff.			
9. The FIC has easy access to restrooms.			
10. The FIC has comfortable furniture and area for people to wait for news regarding loved ones.			
11. The FIC has a reception area for greeting arriving family members.			
12. The FIC has a designated area where arriving family members can be registered and receive hospital/clinic identification.			
13. There is a plan that defines the location of the FIC and includes a graphic representation of its floor plan.			
14. The Family Information Center has a Consultation and Photograph/Identification area.			

Staffing	Yes	No	In Progress
1. The FIC has a designated FIC Unit Leader			
2. The FIC includes security staff.			
3. The FIC includes mental health/spiritual care personnel who may include: social workers, other licensed mental health professionals, or chaplains.			
4. The FIC includes medical staff including: nurses, infection control staff, and subject matter experts who can give regular situational updates to families and answer difficult questions about chemical/biological agents, infectious diseases, contamination risks, morbidity rates, etc.)			
5. The FIC includes child care workers.			
6. The FIC includes clerical staff.			
7. The FIC includes a psychiatrist (onsite or on-call).			
8. If required, the FIC includes a Public Information Officer/Spokesperson to work with media when they are present.			
9. If required, the FIC includes information technology staff.			
10. The FIC has a staffing ratio of 1 Mental Health and 1 Spiritual Care staff for every 20 families.			
11. The FIC has a regular shift schedule (recommended: 2 12-hour shifts to ensure 24-hour coverage).			

Supplies and Equipment	Yes	No	In Progress
1. The area designated for the FIC has a printer, fax machine, copier and related supplies (paper, toner, ink cartridges, etc.)			
2. The FIC has an identification or badging system			
3. The FIC has tables and chairs.			
4. The FIC has comfortable seating.			
5. The FIC has tissues.			
6. The FIC has books and magazines.			
7. The FIC has toys and play supplies (paper, crayons, markers, etc.).			
8. The FIC has refreshments (snacks, water, etc.)			
9. The FIC has a first aid kit.			
10. The FIC has mental health information (brochures and fact sheets) for children and adults.			
11. There is an identified a storage site for required supplies and equipment.			
12. The FIC plan includes a list of required supplies and equipment, their location, and procedures for their access, deployment or procurement.			

FIC Planning and Activation	Yes	No	In Progress
1. The plan for the FIC has procedures for its activation and set-up. Recommend “Just in Time” training in a disaster response.			
2. There are FIC Fact Sheets for staff and families describing its basic purpose, available resources, information sharing restrictions, security, and contact information.			
3. The plan for the FIC has procedures for the following tasks: • Registration • Casework • What to do if patient cannot be located • What to do if hospital/clinic knows the sought family member is deceased			

FIC Planning and Activation	Yes	No	In Progress
4. The plan for the FIC includes Job Action Sheets for the following positions: • FIC Unit Leader • FIC Registration • FIC Medical/Nursing • FIC Mental Health and Spiritual Care • FIC Security • Director/Coordinator • Red Cross Liaison • Patient Information Center • Translators/Interpreters			
5. The FIC Plan is tested annually in a tabletop exercise.			
6. The FIC staff receive initial training and annual refresher training on FIC set-up and operations.			

Communications and Information Management	Yes	No	In Progress
1. The FIC has internet access (for ReddiNet or other hospital/EMS systems)			
2. The FIC has a minimum of two telephones for incoming and outgoing calls.			
3. The FIC has a connection for a large television.			
4. The FIC staff has access to handheld radios or an intercom system for rapid communication with security.			

ACRONYMS

AAP	American Academy of Pediatrics
AAR	After Action Report
ACEP	American College of Emergency Physicians
ACF	Alternate Care Facility
ALS	Advanced Life Support
ARC	American Red Cross
BLS	Basic Life Support
CAHAN	California Health Alert Network
CDC	Centers for Disease Control and Prevention
CDPH	California Department of Public Health
CISD	Critical Incident Stress Debriefing
CISM	Critical Incident Stress Management
CSHCN	Children with Special Health Care Needs
DHHS	Department of Health and Human Services
DHS	Department of Health Services
DMAT(s)	Disaster Medical Assistance Team(s)
DMH	Department of Mental Health
DOC	Department Operations Center
ED	Emergency Department
EMS	Emergency Medical Services
EMSA	California Emergency Medical Services Authority
EMSC	Emergency Medical Services for Children
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
EPI-INTEL	Epidemiological Intelligence
ET	Endotracheal
EWS	Early Warning System
FBI	Federal Bureau of Investigations
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FIC	Family Information Center
GIS	Geographic Information System
HICS	Hospital Incident Command System
HRSA	Health Resources Services Administration
HVA	Hazard Vulnerability Analysis
ICS	Incident Command System
IM	Intramuscular
IO	Intraosseous
IV	Intravenous
JIC	Joint Information Center
KI	Potassium Iodide
LEMSA	Local Emergency Medical Services Agency
MCHB	Maternal and Child Health Bureau
MCI	Mass Casualty Incident

MFI	Mass Fatality Incident
MMRS	Metropolitan Medical Response System
MOU	Memorandum of Understanding
MSDS	Material Safety Data Sheet
NDMS	National Disaster Medical System
NG	Nasogastric
NGO	Non-governmental Organization
NIMS	National Incident Management System
NIH	National Institutes of Health
NPS	National Pharmaceutical Stockpile
OA	Operational Area
OEM	Office of Emergency Management
OPS	Operations
OSHA	Occupational Safety and Health Administration
PHO	Public Health Officer
PIO	Public Information Officer
PO	Per Oral
PPE	Personal Protective Equipment
PTSD	Post-Traumatic Stress Disorder
RFA	Request for Assistance
SALT	Sort –Assess - Life Saving Interventions - Treatment and/or Transport
SAMHSA	Substance Abuse and Mental Health Services Administration
SEMS	Standardized Emergency Management System
SNS	Strategic National Stockpile
SOP	Standard Operating Procedure
START	Simple Treatment and Rapid Triage
US&R	Urban Search and Rescue
WHO	World Health Organization
WMD	Weapons of Mass Destruction