Health

Children in Disasters

Hospital Guidelines for
Pediatric Preparedness

NYC
Health

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INTRODUCTION

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Centers for Bioterrorism Preparedness Planning Pediatric Task Force Initiative

Hospital Pediatric Guidelines for Disasters

During a mass casualty or terrorist event, all hospitals, even those that are not pediatric trauma centers or specialized pediatric hospitals, may receive critically ill or injured children. The health care community of New York City (NYC) is aware that limited attention has been given to the specific needs of the pediatric population and their families in disaster response preparation. New York City Department of Health and Mental Hygiene (DOHMH) has recognized this planning gap and tasked the Centers for Bioterrorism Preparedness Planning (CBPP) to assist the DOHMH in preparing NYC hospitals for the needs of this special population.

Two CBPPs (the Central Brooklyn Center for Bioterrorism Preparedness Planning and the New York Center for Terrorism/Casualty Preparedness) have been the institutional leaders in this initiative. Additionally, staff from the Center for Pediatric Emergency Medicine contributed significantly to the project. The goal is to provide hospitals (especially those that do not normally admit children and/or have no pediatric intensive or obstetrical/newborn services) with useful, proactive strategies and tools for providing protection, treatment and acute care for children during a disaster.

STRUCTURE OF THE TASK FORCE

The CBPP Pediatric Task Force is comprised of pediatric emergency medicine and critical care physicians, pediatric surgeons, social workers, emergency managers and others with specific training, interest and experience in pediatric specialty care.

The task force met bimonthly from 2005 through July of 2007 to discuss hospital mass casualty preparedness planning and pediatric-specific care considerations. The role of the group has been to provide a pediatric disaster preparedness focus and expert multi-disciplinary advice to hospitals to prepare for pediatric care considerations in the event of a disaster.

This group met and developed their mission statement at the beginning of 2005:

> **Centers for Bioterrorism Preparedness Planning**
> **Pediatric Task Force Mission Statement**
>
> **We, the CBPP Pediatric Task Force, under the guidance/auspices of the New York City Department of Health and Mental Hygiene Pediatric Disaster Advisory Group, in an effort to safe-guard the pediatric population, will advise the health care community and NYC agencies on the appropriate planning necessary to ensure the proper care of children and their families in the event of a disaster.**

FOCUS OF THE GUIDELINES

At the first meeting of the CBPP Task Force, three groups of "hospitals of concern" were identified—hospitals with no pediatric services, hospitals with no pediatric intensive care services and hospitals without pediatric trauma services. In addition, 13 topics related to pediatric disaster preparedness were selected:

- Decontamination of children
- Dietary considerations
- Equipment
- Family information and support center
- Infection control
- Pharmaceutical planning
- Psychosocial considerations
- Security
- Surge considerations
- Staffing recommendations
- Training
- Transportation
- Triage

Although these 13 topics are not comprehensive for all aspects of planning for the special needs of the pediatric population, creating some useful expert-reviewed guidance documents and planning tools in these areas would greatly reduce the amount of development and preparation time needed for each individual hospital.

Individual task members contributed draft documents in their areas of expertise, including literature searches for each topic, and reported back to the group. A search on the topic of pediatric disaster preparedness revealed that though literature existed, the majority gave only generalized recommendations. Contributors have attempted to develop user-friendly "how to" documents with clear and specific suggestions. Many of the documents were created based on the group members' own hospital-based experience; others were adapted from available resources. All drafts underwent several iterations and have been initially reviewed by task force members.

THE REVIEW PROCESS

All documents created by the task force received additional review by the NYC DOHMH Pediatric Disaster Advisory Group (PDAG). This group was established to support the efforts of the NYC DOHMH pediatric preparedness and response planning efforts for NYC. PDAG members include pediatric experts from multiple academic and community hospitals in the NYC metropolitan region, as well as representatives from city and state agencies. The almost 50 members of PDAG reviewed and contributed comments on the Toolkit, and made suggestions for topics to be addressed by the CBPP Pediatric Task Force and the NYC DOHMH in the future.

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Section 1 PEDIATRIC DECONTAMINATION

PEDIATRIC DECONTAMINATION

PURPOSE

These recommendations are intended to facilitate decontamination of all children presenting to any hospital during a disaster or terrorist attack in a timely manner. Children require special considerations that may not be addressed in a general Hospital Decontamination Plan.

GENERAL GUIDELINES

Infants and children have unique needs that require special consideration during the process of hospital-based decontamination, such as:

- Avoiding separation of families during decontamination, especially under conditions that involve large numbers of patients in a chaotic situation; however, medical issues take priority.

- Older children may resist or be difficult to handle due to fear, peer pressure and modesty issues (even in front of their parents or caregivers).

- Since parents or caregivers may not be able to decontaminate both themselves and their children at the same time, decontamination ("hot zone") personnel may be needed to assist them.

- Incorporating high-volume, low-pressure water delivery systems (e.g., handheld hose sprayers) that are "child-friendly" into the hospital decontamination showers.

- Risk of hypothermia increases proportionally in smaller, younger children when the water temperature in the decontamination shower is below 98°F.

- Attention to airway management, a priority in decontamination showers.

- **The smaller the child, the bigger the problem** regarding any of the above considerations (hypothermia, airway management, separation of families and the ability to effectively decontaminate the child).

DECONTAMINATION RECOMMENDATIONS BASED ON CHILD'S ESTIMATED AGE GROUP

The following recommendations are based on the **child's estimated age based on appearance**, since asking may be impractical due to the limitations of personal protective equipment (PPE) worn by decontamination team members and/or due to a large influx of patients. In these recommendations, children are divided into three groups by ages—infants and toddlers (typically 0 to up to 2 years of age), preschool children (children approximately older than two to six to eight years of age) and school aged children (approximately 8 to 18 years of age).

Infants and Toddlers (Children Typically Younger than Two Years of Age)

Infants and toddlers are the most challenging group to treat; special needs considerations are of the utmost importance in this group. Follow the guidelines below during treatment.

1. All infants and toddlers should be placed on a stretcher and undressed by either the child's caregiver or hot zone personnel. All clothes and items that cannot be decontaminated should be placed in appropriate containers or bags provided by the hospital and labeled.

2. Each child should then be accompanied through the decontamination shower by either the child's caregiver or hot zone personnel to ensure the patient is properly and thoroughly decontaminated. It is not recommended that the child be separated from family members or adult caregivers. **Caregivers should not carry the child because of the possibility of injury from a fall, or from dropping a slippery and squirming child.** Special attention must be given to the child's airway while in the shower.

3. Non-ambulatory children should be placed on a stretcher by hot zone personnel and undressed (using trauma shears if necessary). All clothes and items that cannot be decontaminated should be placed in appropriate containers or bags as provided by the hospital and labeled.

4. All non-ambulatory children should then be escorted through the decontamination shower by either the child's caregiver or decontamination personnel to ensure the patient is properly and thoroughly decontaminated. Special attention must be paid to the child's airway while in the shower.

5. Once through the shower, the child's caregiver or post-decontamination ("cold zone") personnel will be given a towel and sheets to dry off the child, and a hospital gown. The child should immediately be given a unique identification number on a wristband and then triaged to an appropriate area for medical evaluation.

6. Children and their parents or caregivers should not be separated unless critical medical issues take priority.

Preschool-Aged Children (Typically Two to Eight Years of Age)

Children ages two to eight years are able to walk and speak, yet (with considerable variations in physical characteristics), are clearly children.

1. Ambulatory children should be assisted in undressing with help from either the child's caregiver or "hot zone" personnel. All clothes and items that cannot be decontaminated should be placed in appropriate containers or bags as provided by the hospital and labeled.

2. Each child should be directly accompanied through the shower by either the child's caregiver or hot zone personnel to ensure the entire patient is properly and thoroughly decontaminated. The child should not be separated from family members or the adult caregiver.

3. Non-ambulatory children should be placed on a stretcher by hot zone personnel and undressed (using trauma shears if necessary). All clothes and items that cannot be decontaminated should be placed in appropriate containers or bags as provided by the hospital and labeled.

PEDIATRIC DECONTAMINATION

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4. Each non-ambulatory child on a stretcher should be escorted through the decontamination shower and assisted with decontamination to ensure the patient is thoroughly and properly decontaminated.

5. Once through the shower, each child should be given a towel and sheets to dry themselves, and a hospital gown. The child should immediately be given a unique identification number on a wristband and then triaged to an appropriate area for medical evaluation.

6. Children and their parents or caregivers should not be separated unless critical medical issues take priority.

School-Aged Children (Typically 8 to 18 years of age)

At the age of eight years and older, children's airway anatomy approximates that of an adult. Although it is tempting to regard this age group as "small adults" there are special needs unique to this age group.

1. Ambulatory children should undress as instructed by hot zone personnel. All clothes and items that cannot be decontaminated should be placed in appropriate containers or bags as provided by the hospital and labeled.

2. Each child should then walk through the decontamination shower, preferably in succession with their parent or caregiver, and essentially decontaminate him or herself.

3. Non-ambulatory children should be placed on a stretcher by hot zone personnel and undressed (using trauma shears if necessary). All clothes and items that cannot be decontaminated should be placed in appropriate containers or bags as provided by the hospital and labeled.

4. Each non-ambulatory child should be escorted through the decontamination shower and assisted with decontamination to ensure the entire patient is properly and thoroughly decontaminated.

5. Once through the shower, each child should be given a towel and sheets to dry themselves, and a hospital gown. The child should then immediately be given a unique identification number on a wristband and triaged to an appropriate area for medical evaluation.

6. Children and their parents or caregivers should not be separated unless critical medical issues take priority.

See Figure 1-1 for an algorithm for hospital decontamination of children.

Figure 1-1. Algorithm for hospital decontamination of pediatric patients.

Note: Children and their families (parents or caregivers) should not be separated unless critical medical issues take priority

Victims arrive at the hospital requiring decontamination. **Children are among the victims.**
Decontaminate first those with critical injuries.
Do not separate children and their parents or caregivers unless medical issues take priority.

NON-AMBULATORY	AMBULATORY		
	Estimate child's age by visual inspection		
	School-Aged (8–18 years of age)	**Preschool (2–8 years of age)**	**Infants and Toddlers (less than 2 years of age)**

• Undress child (by caregiver and hot zone personnel)
 	
• Place child on stretcher or a restraining device
 	
• Escort child through the decontamination shower (by hot zone staff and caregiver)
 	
• Directly supervise caregiver and child decontamination
 	
• Monitor airway
	• Child undresses without assistance
	
	  • Respect modesty
	
	  • Respect privacy
	
	• Child decontaminates him/herself, but goes through decontamination shower in succession with caregiver, or parent or classmates
		• Help child to undress (child's caregiver or hot zone personnel)
		
		• Escort child through the decontamination shower (by either caregiver or hot zone personnel)
		
		• Directly supervise decontamination
		
		• Monitor airway
			• Undress child (by caregiver and hot zone personnel)
			
			• Place child on stretcher or restraining device
			
			• Escort child through the decontamination shower (by hot zone staff and caregiver)
			
			• Directly supervise caregiver and child decontamination
			
			• Monitor airway
			
			(Caregiver should not carry the child due to risk of injury from a fall or from dropping the child while in the shower.)

• Treat or prevent hypothermia (towels, gowns, warming blankets)

• Immediately give a unique identification number on a wristband (or equivalent)

• Triage to an appropriate area for further medical evaluation

PEDIATRIC DECONTAMINATION

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Section 2

DIETARY
CONSIDERATIONS

2 DIETARY CONSIDERATIONS

PURPOSE

To adequately prepare for an influx of pediatric patients from a disaster involving children, hospitals must consider the requirements for providing edible food and potable water to this population while they are patients or visitors in the facility. This section provides nutritional guidelines for hospitals that do not typically provide pediatric inpatient services.

These recommendations include pediatric dietary recommendations and sample disaster menus for healthy children and children with special needs. The menus focus on foods that require little to no preparation, and are both easy and inexpensive to store.

GENERAL GUIDELINES

Hospitals should maintain a five-day food and drinking water supply for use during an emergency. Each facility should also obtain Memorandums of Understanding (MOUs) from nearby stores (for example, local groceries, pharmacies and medical supply stores) to provide the hospital with immediate delivery of additional supplies.

The nutritional supplies recommended for both healthy children and those with special dietary needs are in Table 2-1. See Table 2-1 for pediatric dietary recommendations by age and health status of the child; see also Table 2-2, Sample Pediatric Menus for Disasters on .

Table 2-1. Pediatric dietary recommendations by child's age and health status.

HEALTHY CHILDREN			
0 TO 6 MONTHS	**6 MONTHS TO 1 YEAR**	**1 TO 2 YEARS**	**2 YEARS AND OLDER**
These children should be breast-fed or formula-fed by bottle only. **Comments:** Some breast-fed children may not immediately take bottle-feeding. **Continue to feed; eventually the child will feed from the bottle.** **Recommendation:** Ready-to-feed formula is preferred since it is immediately ready for use and requires no refrigeration or preparation. However, powdered baby formula may be used as well. Powdered formula will have a longer shelf life.	**6–9 months** Baby cereal, jarred baby food or mashed table food is appropriate – along with formula or breast milk. **9–12 months** Soft, bite-sized pieces of foods (i.e., vegetables, mashed potatoes and meats) along with formula or breast milk.	Table food is appropriate; young children will need soft bite-sized foods. Avoid foods that can cause choking such as hot dogs, grapes and chunks of meat unless cut in pea-sized pieces. **Hydration:** Water, Pedialyte	Table food is appropriate; young children will need finger foods. Avoid foods for youngest children that can cause choking, such as hot dogs, grapes and chunks of meat unless cut in pea-sized pieces. **Hydration:** Water, sports drinks such as Gatorade®

CHILDREN WITH SPECIAL NEEDS		
	0 TO 12 MONTHS (INFANTS)	**1 YEAR TO 18 YEARS**
PATIENTS WITH FEEDING TUBES*	Provide infant formula through the tube. **Hydration:** Tap or bottled water. **Comments:** The same feeding pump used for adults can also be used to feed children. Use saline water to clean the area where the feeding tube is inserted into the patient. Change feeding bags every 8 hours and clean prior to adding more formula.	Pediatric formulas should be used, (e.g., Resource Just for Kids, PediaSure or Nutren Jr.) For adolescents, based on clinical judgment, adult enteral products may be appropriate. **Hydration:** Tap or bottled water. **Comments:** The same feeding pump used for adults can also be used to feed children. Use saline water to clean the area where the feeding tube is inserted into the patient. Change feeding bags every 8 hours and clean prior to adding more formula.
CHILDREN WITH DIABETES	The nutritional needs of this group will be determined by the patient's body weight and medicine requirements. **Recommendation:** Patients may require between-meal snacks to control blood glucose.	

*There are three types of tube feeding—nasogastric and orogastric (used for acutely ill patients), and gastrostomy, used for chronically ill patients.

Nasogastric and orogastric tubes are used for both nasal and orogastric feedings; these tubes are temporary measures, mostly used in pediatric emergency rooms or pediatric inpatient areas for acute feeding issues, gastric decompression and/or delivery of oral medications such as activated charcoal.

The gastrostomy tube is used with a 60cc syringe, catheter tip and a bolus continuous feed or pump.

The sample menus in Table 2-2 list foods that require a minimal amount of preparation or power supply to maintain temperatures. If an incident should last longer than three days, repeat the menu starting with day 1 and moving to the next consecutive day.

Table 2-2. **Sample pediatric menus for use during disasters.**

Child's Age	Day 1	Day 2	Day 3
BREAKFAST			
0–6 months	Regular or Soy Formula	Regular or Soy Formula	Regular or Soy Formula
6 months–1 year	Baby Cereal Jarred Baby Fruit Regular or Soy Formula	Baby Cereal Jarred Baby Fruit Regular or Soy Formula	Baby Cereal Jarred Baby Fruit Regular or Soy Formula
1 year and older	Cheerios (or Substitute) Parmalat (1–2 years) Powdered Milk (> 2 years) Diced Canned Fruit	Cheerios (or Substitute) Parmalat (1–2 years) Powdered Milk (> 2 years) Diced Canned Fruit	Cheerios (or Substitute) Parmalat (1–2 years) Powdered Milk (> 2 years) Diced Canned Fruit
LUNCH			
0–6 months	Regular or Soy Formula	Regular or Soy Formula	Regular or Soy Formula
6 months–1 year	Jarred Baby Meat Jarred Baby Vegetable Jarred Baby Fruit Regular or Soy Formula	Jarred Baby Meat Jarred Baby Vegetable Jarred Baby Fruit Regular or Soy Formula	Jarred Baby Meat Jarred Baby Vegetable Jarred Baby Fruit Regular or Soy Formula
1–2 years	Cream Cheese/Jelly Sandwich Jarred Baby Vegetable Diced Peaches Bread/Crackers Parmalat	Macaroni and Cheese Jarred Baby Vegetable Diced Pears Bread/Crackers Parmalat	Cheese Wiz© Jarred Baby Vegetable Diced Fruit Cocktail Bread/Crackers Parmalat
2 years and older	Cream Cheese/Jelly Sandwich Diced Peaches Graham Crackers Powdered Milk	Macaroni and Cheese Diced Pears Graham Crackers Powdered Milk	Peanut Butter/Jelly Sandwich Diced Fruit Cocktail Graham Crackers Powdered Milk
DINNER			
0–6 months	Regular or Soy Formula	Regular or Soy Formula	Regular or Soy Formula
6 months–1 year	Jarred Baby Meat Jarred Baby Vegetable Jarred Baby Fruit Regular or Soy Formula	Jarred Baby Meat Jarred Baby Vegetable Jarred Baby Fruit Regular or Soy Formula	Jarred Baby Meat Jarred Baby Vegetable Jarred Baby Fruit Regular or Soy Formula
1–2 years	Cheese slices - chopped Jarred Baby Vegetable Applesauce Bread/Crackers Parmalat	Canned Chicken - Chopped Jarred Baby Vegetable Bananas Bread/Crackers Parmalat	Cheese Ravioli Jarred Baby Vegetable Baby Fruit Bread/Crackers Parmalat
2 years and older	Cheese Sandwich Diced Fruit Cocktail Graham Crackers Powered Milk	Canned Chicken Sandwich Diced Peaches Graham Crackers Powered Milk	Cheese Ravioli Diced Pears Graham Crackers Powered Milk

Source: American Dietetic Association and Dietitians of Canada. Manual of Clinical Dietetics. 6th ed. Chicago, IL: American Dietetic Association; 2000.

Section 3

MINIMAL PEDIATRIC EQUIPMENT

RECOMMENDATIONS FOR EMERGENCY DEPARTMENTS

MINIMAL PEDIATRIC EQUIPMENT RECOMMENDATIONS FOR EMERGENCY DEPARTMENTS

3

PURPOSE

These recommendations suggest specific equipment emergency departments should keep on hand for management of pediatric emergencies in disasters. Table 3-1 has been modified from the New York State 911 Hospital Receiving Guidelines.

GENERAL GUIDELINES

When planning and purchasing pediatric equipment, hospitals should prepare for the number of patients expected based on its anticipated surge in pediatric patients.

Hospitals must also take into account the expected distribution of pediatric patients among its various units. For example, the pediatric emergency department must be prepared to manage the entire expected surge in pediatric patients, while the Pediatric Intensive Care Unit (PICU) or Pediatric Critical Care Area, and Post Anesthesia Care Unit (PACU), must be prepared to manage only the most critical pediatric patients, for whom fewer items may be needed, since critical pediatric patients will likely constitute a minority of the total expected surge in pediatric patients. On the other hand, such patients will require specialized devices and equipment, large numbers of which may not be routinely maintained in the normal hospital inventory.

The amounts for equipment in Table 3-1 are the minimal recommended number of items <u>per one expected critical patient</u> in an emergency department. Each institution must determine what its expected surge capacity for pediatric critical patients is, and should adjust inventory according to the number of patients for which it will plan. For example, if Hospital A decides to prepare for an influx of four critical pediatric patients, then the numbers in the amounts column should be multiplied by four.

Additionally, many hospitals are creating and stocking disaster carts to be used in designated areas. Hospitals should also consider stocking a cart specifically for the emergency department for a Pediatric Critical Care Area. This should be done in consultation with key clinical leaders, both medical and nursing, from key clinical areas, including the emergency department, pediatric critical care and pediatric inpatient units.

> **NOTE: In the following chart, the recommended amounts of equipment are based on needs expected per <u>one</u> critical pediatric patient of unknown age or size. These amounts should be multiplied by the number of critical pediatric patients expected during a pediatric disaster.**

Table 3-1. Minimal pediatric equipment recommendations for emergency departments.

Equipment Type	Type	Number	Importance E = Essential D = Desirable
Ambu bags	Infant	2	E
	Child	2	E
Arm boards		2	D
Blood pressure cuffs	Infant/Small Child	1	E
Chest tubes	Sizes 12F, 16F, 20F, 24F, 28F	2 each size	E
Dosing chart, pediatric		1	E
ETCO$_2$ detectors (pediatric, disposable)		2	E
ET tubes	Sizes 2.5 mm - 6.5 mm	6 each size	D
Foley catheters	Sizes 8F, 10F, 12F	6 each size	D
Gastrostomy tubes	Sizes 12F, 14F, 16F	2 each size	D
Infant scale		1 for several patients	D
Intraosseous needles		8	E
Intravenous infusion pumps		1	D
Laryngoscope blades	Macintosh 0,1,2	2 each size	E
	Miller 001,2	2 each size	E
Laryngoscope handles (pediatric)		2	E
Masks: Face masks, clear self-inflating bag (500cc)	Infant	10	E
	Child	10	E
Non-Rebreather	Infant	10	E
	Child	2	E
Nasal cannula	Infant	2	E
	Child	2	E
Nasogastric tubes	Sizes 6F, 8F, 10F, 12F, 14F, 16F	10 each size	E
Nasopharyngeal airways	(All pediatric sizes)	1 each size	D
Newborn kit /obstetric/delivery kit		1	E
Oral airways	(All pediatric sizes 00, 01)	2 each size	E
Over-the-needle intravenous catheters	Angiocatheter		D
	Sizes 20, 22, 24		E
Restraining board (pediatric)		1	D
Broselow resuscitation tape, length-based		2	E
Seldinger Technique vascular access kit	Sizes 4F, 5F	3 each size	D
	Catheters, 15 cm length	3 each size	D
Semi-rigid cervical spine collars	Infant	2	E
	Small Child	2	E
	Child	2	E
Suction catheters	5F, 8F	5 each size	E
Syringes	60cc, catheter tip (for use with gastrostomy tube)	2	E
Warming device (overhead warmer for newborns)		1	D
Tracheostomy tubes	Sizes 00 to 6	2 each size (per emergency department, not per patient)	E

Source: 1. Fire Department, City of New York. *Emergency Department Standards.* 6th ed. New York, NY, 1997.

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Section **4**

FAMILY INFORMATION
AND SUPPORT CENTER

FAMILY INFORMATION
AND SUPPORT CENTER

4

PURPOSE

It is recommended that hospitals establish a Family Information and Support Center (FISC) as part of their Disaster Preparedness Plan to assist families of victims from a psychosocial perspective during a mass casualty event.

INTRODUCTION

Disasters, whether natural or man-made, produce effects that have psychological repercussions beyond individuals and families, extending to broader sections of the affected community. Health care facilities should be prepared to handle these disasters and acute medical management of victims from a family-centered, psychosocial perspective.

During the 9/11 attacks in New York City and Washington D.C., many family members and friends went from one hospital to another looking for their loved ones. Each time families arrived at a different hospital and found that their loved ones were not there, their confusion, fears and anxiety levels increased. During the Hurricane Katrina disaster, many families were evacuated to locations outside their own state of Louisiana, causing delayed and difficult family reunifications that added emotional distress to an already bewildering situation.

Children injured or involved in a disaster will have additional emotional distress. The Centers for Bioterrorism (CBPP) task force has estimated that for every child arriving at the emergency department, the hospital can expect an average of four to five family members or caregivers to accompany them. Emergency department staff will be faced with the medical management of multiple victims and will not have the time, space and training that this population of concerned family members requires.

As a result, it is recommended that hospitals establish an FISC as part of their disaster preparedness plan.

The Role of Information during Disasters

Information has a dual role in enabling effective coping mechanisms. First, actively seeing information can help people regain a sense of control. Second, the availability of information reduces a sense of uncertainty inherent in traumatic events and hastens the interpretation of a situation. When people turn to an information center, they are inevitably distraught. Providing essential information about a missing person is the first step in enabling the coping process.

In addition to receiving emotional support, families in the FISC are informed of the following:

- The circumstances of the event (where, when, how and what happened)
- The evacuation of casualties (whether or not more injured are still arriving at the hospital)
- Other hospitals where victims are being taken and when the evacuation is complete
- Victim identification stages and psychological reactions to trauma and related symptoms

FAMILY INFORMATION AND SUPPORT CENTER MAIN OBJECTIVES

- Provide the necessary reliable information via a systematic organizational framework and assistance in the identification process
- Assist relatives coping with uncertainty, stress and stages of adaptation
- Enable the medical staff to concentrate freely on treatment of casualties, especially in the acute stage of the disaster, while providing a formal support system for the bewildered and anxious relatives and friends

FAMILY INFORMATION AND SUPPORT CENTER MAIN FUNCTIONS

- Provide accurate information
- Provide psychological first aid to distraught families
- Provide crisis counseling or referral for immediate mental health services
- Provide escort and "comfort" services to families
- Provide temporary child care for well children of injured people, or family members who need to assist the injured
- Assist with patient location and reunification of families within the hospital
- Assist in contacting family members to arrange care of children present at the hospital
- Assist in making in-place shelter arrangements or community placement of children who do not have a safe place to be or a family member who can care for them
- Provide communications needs for families (phones, e-mail)
- Protect families from intrusion by media or curious bystanders

STRUCTURE OF THE FAMILY INFORMATION AND SUPPORT CENTER

The FISC structure is divided into two main areas—the Main Unit, which is the physical location of the FISC, and the Hospital Peripheral Units, which are the hospital units that staff will need to communicate with constantly during the immediate phase of a disaster.

THE MAIN UNIT

Recommendation

Identify physical space for the FISC, wired with telephone and computer/internet connections.

This unit should be capable of contact with the general public, via phone or in person; deals with the widest range of activities and is allocated the largest number of professional personnel. The main unit should be divided into the following areas:

Reception Area

At any given time, there may be hundreds of families and friends in contact with the FISC at varying stages of the disaster. The simultaneous presence of all these people, especially in the earlier stages, requires expertise in crisis intervention management. Here, social workers or assigned staff may be allocated to the families and friends as they arrive, securing information from them and assigning them a social worker.

Coordination among staff members prevents unnecessary doubling up and allows optimal use of resources. A central waiting area should be large enough to accommodate family members seeking information. This area should be away from the emergency department area but ideally in close proximity or easily accessible to facilitate communication. There should be conveniently located bathroom facilities.

Suggestions: Consider using the chapel, auditorium/conference room, clinic waiting room or cafeteria/dining room for the reception area. A nearby community center, school or church can be considered.

Information Desk

Social workers or assigned staff, operating the information desk in person and via telephone, provide information based on constantly updated data retrieved from the hospital computer system, social workers in the field and the Incident Command Center.

Suggestions: Consider providing a message center/area for families to communicate with each other; a computer with e-mail availability, and a bulletin board or log book.

Photograph/Identification Room

This room is used for people lacking confirmed information on a missing relative when it is highly probable that the person is among the casualties. At this stage, the need for support is at its greatest and requires sensitive and careful intervention. Only the closest relatives should be brought to this room, which will also serve as the center for family reunification through photograph identification.

Consultation Areas

Side rooms should be used for those members of the public that manifest extreme reactions to stress (i.e., shock or pain). When a social worker or assigned staff identifies a family reacting in an extremely volatile and agitated manner, and feels that they would benefit from personal, supportive attention in a quiet atmosphere, they should encourage withdrawing to a side room provided for this purpose.

This area separates the family from the rest of the public in order to prevent a panic chain reaction, and should be furnished at least minimally with chairs, a desk or table, tissues, a trash can and a telephone.

Pediatric Safe Area

As discussed in Section 8, Security Issues, the Pediatric Safe Area may be located within the FISC. This area is a designated place for unaccompanied children who have been discharged from the emergency department or have been separated from their caregivers and are awaiting reunification with appropriate family members or others.

If the Pediatric Safe Area is located within the FISC, set aside a portion of the room to accommodate child-sized furniture with a selection of toys, games, art materials and books. This area should be supervised by the Pediatric Safe Area Coordinator and appropriate security personnel (either staff or volunteers) to supervise the children. If the hospital has a Child Life Program, the staff are the most experienced to set up and monitor the Pediatric Safe Area.

HOSPITAL PERIPHERAL UNITS AND THE FAMILY INFORMATION AND SUPPORT CENTER

Emergency Department

The emergency department (ED) is the first venue for the injured and the care provided therein is extremely intensive and short term. The intervention principles used by social workers in the ED are taken from debriefing and immediate intervention techniques. All information obtained during the interviews must be communicated to the main information center.

Incident Command Center

Most of the information related to the disaster will come to the Incident Command Center. Any information related to patients' families is passed on to the Director of Human Services, who will in turn contact the main unit head appointee to relay the information and brief the staff on changes relevant to the incident.

Intensive Care Unit

Social workers or designated staff assigned to this area will collect patient information such as physical characteristics (i.e., tattoos, scars and other distinguishing features) that can be used to further identify individuals and communicate this information the FISC.

FAMILY INFORMATION AND SUPPORT CENTER INFORMATION FLOW

Information is vital during any disaster and especially within the FISC. For more information on optimizing the flow of information, **see Figure 4-1**.

Information on patient status and identification will likely come to the FISC from ED, ICU, other hospitals, EMS, the morgue, the Medical Examiner's Office and the Incident Command Center via fax, telephone, electronically or by runners.

The FISC acts as a liaison between families and the peripheral units.

The FISC should be in constant communication with the Incident Command Center.

Any media seeking information about patients, families or the nature/status of the event are directed to the Hospital's Public Relations Department.

We recommend that hospitals continue to develop communication systems and protocols to facilitate the flow of information within their facility, and with the community and other city and state agencies.

Figure 4-1. Optimal information flow within the Family Information and Support Center.

Family Information and Support Center (FISC) Flow of Information
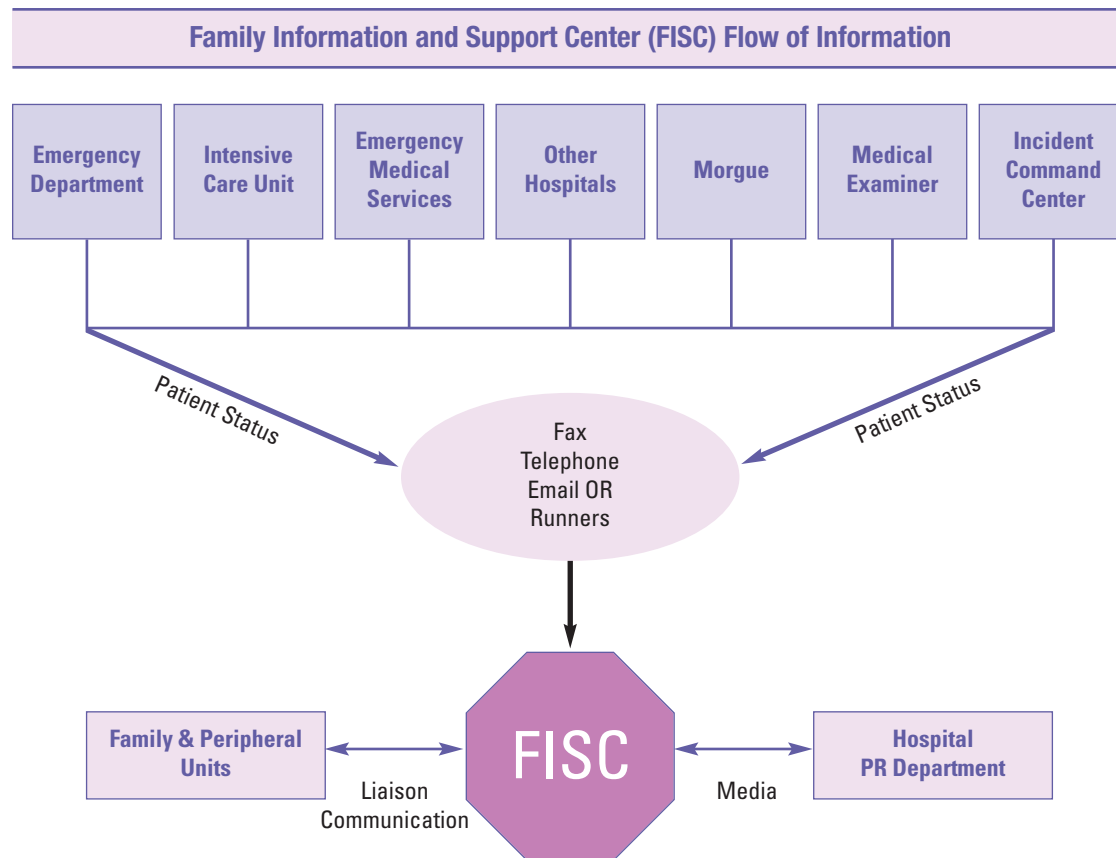
FAMILY INFORMATION AND SUPPORT CENTER STAFFING

The FISC staff should include the following positions:

- **A Director/Coordinator** who is a Human Services or Social Work administrator or manager
- **Assigned Professional Staff** which may include social workers, caseworkers, mental health practitioners, child life specialists, chaplaincy, human resources personnel and pre-screened volunteers
- **Volunteers** who are pre-screened individuals already trained as hospital volunteers, fieldwork students assigned to ancillary services, clergy from nearby religious institutions and personnel from community organizations
- **A Red Cross Liaison** for potential onsite support
- **A Patient Information Officer** assigned to the Information Desk
- **Security** from the hospital security staff
- **Translators/Interpreters** if needed
- **Runners** who deliver and pick up information/hard data to and from the FICS and all other areas of the hospital

4 FAMILY INFORMATION AND SUPPORT CENTER

FAMILY INFORMATION AND SUPPORT CENTER EQUIPMENT, MATERIALS AND SUPPLIES

Be sure the various areas of the FISC are stocked appropriately; some necessary supplies include:

- **Information Desk:** Provide a computer(s) with Internet capability, a fax machine and a digital camera with related software. Set up multiple phone lines to facilitate in-house communication. Also have at hand basic office supplies such as pens, paper, tape and staplers, and stock quarters for pay phone calls; provide tissues, a message board and dry erase boards as well.

- **Reception Area:** Stock this area with refreshments.

- **Pediatric Safe Area:** Provide diapers, baby wipes, formula, toys, infant seats and age-appropriate toys. For more information, **see Section 8**.

TRAINING STAFF FOR THE FAMILY INFORMATION AND SUPPORT CENTER

Make sure staff that might be assigned to FISC are trained adequately in advance by providing the following:

- Just-in-time training along with a job action sheet if needed.

- Protocols and check lists on how to screen, support and triage families who need psychological first aid

- Training on interacting with families, typical reactions to disaster and signs of trauma. **See the Psychosocial section on page 38 and the FISC Educational Tools II and III on page 39-40 for more information**.

- Off- or onsite training, or briefing sessions, with pre-screened volunteers from the community that includes how to facilitate communication for mobilization

- A departmental plan for each discipline or service assigned to the Center detailing staffing for all shifts and on-call response

- Continuous training for mental health providers on mass casualty events

ACTIVATING THE FAMILY INFORMATION AND SUPPORT CENTER

After notification of a disaster and under the direction of the Incident Command Center, the designated Coordinator of the FISC mobilizes with other directors and managers in the human services and human resources units, medical information systems (MIS), telecommunications and housekeeping to set up the physical space for the Center. Follow the steps below to trigger FISC activities:

- Schedule previously identified in-house hospital personnel for shifts in the Center as needed.

- Assess the need to call in additional staff and outside volunteers or agencies such as the Red Cross (the coordinator or other supervisory staff should make this assessment).

- Be sure information systems are tested and ready to go.

- Provide shift coverage—supervisors of participating departments should determine coverage within their own disciplines. The Center Coordinator should manage shift coverage directly from a pool of hospital personnel previously identified and assigned.

INTERACTING WITH FAMILIES

Make sure families are provided with the most up-to-date information available in a supportive and safe environment by following the guidelines below:

- Upon arrival at the FISC, log families in either via an electronic database or a sign-in book. Review database of registered families to link them with pertinent new information as it arrives to the FISC. Assign a social worker or other support staff to families who are exhibiting overt psychological distress or need to be given bad news.

- Assign professional staff or trained volunteers to circulate through the Center to answer general questions, offer comfort and provide directions. For age-specific communications guidelines, **see FISC Educational Tool IV on page 41**.

- Provide a dedicated person in the children's area if possible.

DETERMINING IDENTIFIED OR UNIDENTIFIED VICTIMS AND FAMILY MEMBERS

Gather information from various sources (such as the hospital's emergency medical services, intensive care unit, ED and families) in the following manner:

- Collect data (i.e., age, gender) on unidentified, injured victims on admission to the ED. Transfer all personal details and pictures to the FISC via fax, electronically or by runners.

- Remember that under intense stress, family members often fail to remember essential identifying details—to minimize critical errors, be very careful during the intake process and use structured forms for data collection. **(See Section 8, Security, on page 87 for sample intake form.)**

- Photograph and provide an identification band with personal information (and that of their family members if possible) to unaccompanied children who are either brought to the facility unharmed, treated medically but with no adult readily available to care for them or who have an adult being treated urgently. **(See Section 8, Security, on page 84)**. Forward the information to the FISC.

- Have adults coming to the hospital to claim children show I.D.; if possible, the adult should bring a picture of themselves and the child before the child is released to them.
- Bring individuals who must identify a deceased family member to the **Photo Identification Room** to view photos with an assigned social worker who can also accompany them to the morgue. Pictures of victims who are beyond recognition should not be shown to family members.

DEPENDENT DAY CARE FOR HOSPITAL STAFF MEMBERS

In addition to caring for families of victims, create an extension to the FISC that is a holding space for the dependents of working hospital staff during a disaster that do not have a secure place for their children.

FISC EDUCATIONAL TOOLS

I. PSYCHOLOGICAL FIRST AID FOR DISASTER SURVIVORS

Re-create a sense of safety

- Provide basic needs (food, clothing, medical care)
- Ensure that survivors are safe and protected from reminders of the event
- Protect them from on-lookers and the media
- Help them establish a "personal space," and preserve privacy and modesty

Encourage social support

- Help survivors connect with family and friends (most urgently, children with parents)
- Educate family and friends about survivors' normal reactions and how they can help

Re-establish a sense of efficacy

- Provide survivors with accurate, simple information about plans and events
- Allow survivors to discuss events and feelings, but do not probe
- Encourage survivors to re-establish normal routines and roles when possible
- Help resolve practical problems, such as getting transportation or relief vouchers
- Discuss self-care and strategies to reduce anxiety, such as grounding and relaxation techniques
- Encourage survivors to support and assist others

FISC EDUCATIONAL TOOLS

II. NORMAL REACTIONS TO DISASTERS
(ADULTS AND CHILDREN)

Responses, all ages	
Emotional	• Shock, fear, grief, anger, guilt, shame, helplessness, hopelessness, numbness, emptiness • Decreased ability to feel interest, pleasure, love
Cognitive	• Confusion, disorientation, indecisiveness, worry, shortened attention span, poor concentration, memory difficulties, unwanted memories, self-blame
Physical	• Tension, fatigue, edginess, insomnia, generalized aches and pains, startling easily, rapid heartbeat, nausea, decreased appetite and sex drive
Interpersonal	• Difficulties being intimate, being over-controlling, feeling rejected or abandoned

Children's age-specific disaster response – responses in children, by age	
Preschool (ages 0–4 years)	• Separation fears, regression, fussiness, temper tantrums, somatization • Sleep disturbances including nightmares, somnambulism and night terrors
School-aged (ages > 4 years to 12 years)	• May have any of the above responses, as well as excessive guilt and worries about others' safety, poor concentration and school performance, and repetitious re-telling or play related to trauma
Adolescents (ages > 12 to 18 years)	• Depression, acting out, wish for revenge, sleeping and eating disturbances, altered view of the future

FAMILY INFORMATION
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III. MENTAL HEALTH CONSEQUENCES OF DISASTERS: OVERVIEW FOR EMERGENCY DEPARTMENT STAFF

The following table includes developmental considerations to be aware of in children and adolescents, and their comprehension of death

	Infants	**Preschool children**	**School-aged children**	**Adolescents**
Developmental considerations	Object permanence, establishing trust, dependency for basic needs	Magical thinking, egocentric, no concept of time	Logical thinking, conception of time, differentiation of self from others	Establishing independence, abstract thinking, feelings of omnipotence, identity formation
Effect of disaster	Destroys routine, loss of loved ones	Destroys routine, loss of loved ones	Destroys routine, loss of loved ones	Loss of lifestyle, loss of loved ones
Result of disaster	Regression, detachment	Post-traumatic play, withdrawal, apathy	School problems, anxiety, somatic complaints, anger, post-traumatic play	Risk-taking, somatization, depression, anger, hostility to others, doubts about oneself, shame, guilt
View of disaster	No comprehension	Reversible	Understand loss as a consequence of injury and illness	Full understanding

Source: US Department of Health and Human Services/American Academy of Pediatrics Workgroup on Disasters. *Psychological Issues for Children and Families in Disasters: A Guide for the Primary Care Physician*. http://mentalhealth.samhsa.gov/publications/allpubs/SMA95-3022/default.asp

FISC EDUCATIONAL TOOLS

IV. HELPING CHILDREN DEAL WITH DISASTERS

Listen to them

- Ask the children what they know, what they heard or what their friends are saying.

- Ask children how they are feeling; they may feel angry, scared, sad or anxious.

- Let children know that you understand their feelings.

- It is important not to laugh at children's fears, even if they seem silly to you.

- Let them ask questions.

- When they ask questions, answer briefly and honestly.

- Remember: it's okay to answer, "I don't know."

Try to make them feel safe

- Let children know that many people (police, teachers, doctors and the President) are working hard to:
  - Take care of the hurt people
  - Help keep us safe

- If they are worried that their home is not safe, explain the nature of the event as simply as possible.

- Try to keep their regular routines as much as possible.

Source: Child Life Department, (2001) Bellevue Hospital Center Pediatric Resource Center

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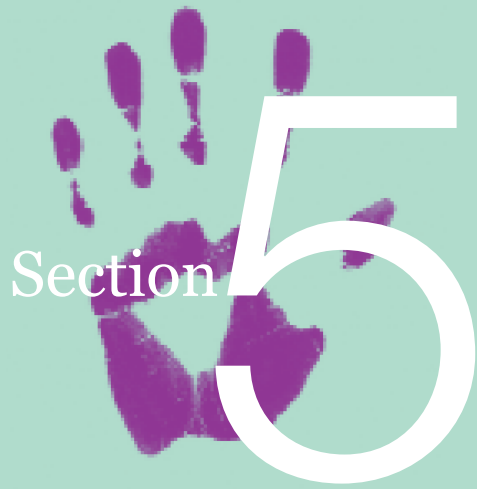
INFECTION CONTROL IN A LARGE SCALE

COMMUNICABLE DISEASE EMERGENCY

PURPOSE

The purpose of this Section is to guide hospitals involved with a major communicable disease emergency in managing exposure risks between and among differentially affected children (contacts, suspected cases) and their adult caregivers.

This Section is not an infection control handbook; rather than reiterate information available in existing infection control sources (see pages 64-65 and 80-81), the section presents basic infection control measures and concepts as they would relate to, and be applied during, a large scale communicable disease event.

BACKGROUND

In a major emergency, hospitals are a likely destination for those directly affected by the emergency and for others who, though neither injured nor ill, will seek shelter there. Children (accompanied by parents, teachers and other adult caregivers) will be among those seeking care and refuge.

Caregivers may be accompanied by a single child or many children. Individuals within these child care units may be differentially affected by the emergency—some may require admission and others temporary shelter.

Adults and children will become separated, either because the adults require care or they are caring for an ill or injured child. Hospitals may become responsible for sheltering unaccompanied minors until parents or alternate caregivers can arrive, which may take a relatively long time under emergency conditions.

In an emergency caused by communicable disease, the management of children and their caregivers will be complicated by variables such as exposure and infectious status. In addition to the basic challenges of providing emergency shelter for a sudden influx of dependent children, hospitals will need to:

- Prevent exposure and contamination
- Manage contacts of cases
- Separate, isolate and care for persons who are ill and/or possibly infectious

BASIC INFECTION CONTROL

Standard Precautions

These are the basic infection control measures that must be used when caring for young children (i.e., infants, toddlers and those requiring diapering, feeding, toileting and assistance with hand hygiene). Specific information about standard precautions in child care settings may be found in:

- **U.S. Department of Health and Human Services**
  13 Indicators of Quality Child Care: Research Update, 2002
  http://aspe.hhs.gov/hsp/ccquality-ind02/

- **American Academy of Pediatrics, American Public Health Association
  and National Resource Center for Health and Safety in Child Care**
  Caring for Our Children (CFOC): National Health and Safety Performance
  Standards: Guidelines for Out-of-Home Child Care Programs, 2nd edition
  http://nrc.uchsc.edu/CFOC/index.html

Transmission-based Precautions

Transmission-based precautions are designed to supplement standard precautions in treating patients with documented or suspected to be infected with highly transmissible pathogens.

Both Standard Precautions **and** Transmission-based Precautions should be applied when managing adults and children who are ill with a communicable disease. Specific information on transmission-based precautions may be found in:

- **Agency for Healthcare Research and Quality/National Guideline Clearinghouse**
  Center for Disease Control and Infection Hospital Infection Control Practices
  Advisory Committee (HICPAC) Guideline for Isolation Precautions: Preventing
  Transmission of Infectious Agents in Healthcare Settings, 2007
  www.guideline.gov/summary/summary.aspx?doc_id=10985

ASSUMPTIONS ABOUT LARGE-SCALE COMMUNICABLE DISEASE EMERGENCIES

In the event of a large scale communicable disease emergency:

- Children and caregivers will arrive at hospitals in large numbers.
- Some will be symptomatic (cases) and some will have no symptoms but will have been exposed to their symptomatic charges or caregivers (contacts).
- Cases and contacts will be separated because:
  - Ill caregivers accompanying asymptomatic children will require admission.
  - Asymptomatic caregivers may need to accompany an ill child into the clinical setting, leaving other children who are in their care in hospital custody.
- Emergency conditions will delay the arrival of parents or alternate caregivers.
- Hospitals will be required to provide temporary ad hoc shelter for exposed/asymptomatic child contacts to cases.
- Hospital staffing will be reduced owing to the emergency, necessitating parent/caregiver assistance on the clinical pediatric units.

EXPOSURE AND INFECTION CONTROL MEASURES IN COMMUNICABLE DISEASE EMERGENCIES

Point-of-Entry Infection Control Measures

Once a hospital is alerted to the potential for severe communicable disease conditions, exposure control measures should be instituted at or before the point of entry to the facility. Rapid identification of symptomatic individuals will permit actions to protect the facility, its patients, visitors and the physical environment from exposure and contamination.

- **Obtain case definition** from the local health authority in order to instruct screening, triage and reception staff in procedures related to:
  - Symptom recognition
  - Mode of transmission
  - Specific infection and exposure control measures

- **Screen** to identify symptomatic individuals at or before the point of entry in order to implement exposure control measures.

- **Instruct** patients and/or caregivers about respiratory etiquette, hand hygiene and other relevant infection and exposure control measures **and** observe and supervise them to ensure compliance.

- **Mask symptomatic** adults and, as feasible, mask symptomatic children who are old enough to tolerate a surgical mask (generally, three years of age and older) to prevent the release of organisms into the environment. In addition:
  - Instruct accompanying adult caregivers to use Standard Precautions to manage the secretions of ill children who cannot be masked.
  - Ensure that respiratory etiquette signs are prominently placed in the entry and waiting areas.
  - Provide adequate supplies of tissues.
  - Provide an easy, sanitary, way of disposing of used tissues.

- **Separate** persons with symptoms from persons who are asymptomatic; **except** exposed adult caregivers, who may need to remain with ill children to provide care and comfort. These adults will require instruction and supervision.

- **Separate** contacts to ill individuals from persons who have not been exposed.

- **Manage Separation** as follows:
  - **Ideally**: Place symptomatic individuals in single rooms either alone (if adults) or with prepared and instructed parent/caregivers if children, and if necessary and feasible.
  - **Minimally**: Separate symptomatic, masked individuals by at least three feet.

- **If masking is not possible:** Instruct and supervise parents/caregivers in Standard Precautions and emphasize the importance of respiratory etiquette and hand hygiene.

- **Cohort masked symptomatic individuals** in an area that is separate from asymptomatic individuals, preferably in a room that is large enough to permit social distancing and that has a door that can be closed.

- **Symptomatic children who cannot be masked** may be included in this cohort if Standard Precautions are employed, as advised by the hospital's infectious disease department and/or the local health authority.

- **Ideally:** Cohort non-masked symptomatic individuals only when the diagnosis is confirmed and only if diagnoses are the same.

- **Emergency cohorting decisions:** In the absence of confirmatory diagnostic information, make decisions according to symptoms and epidemiology, as advised by the local health authority and/or the hospital's infectious disease department.

- **Conduct contact identification procedures** among persons accompanying an ill child or adult to the facility:

  - As requested by the local health authority, obtain identification and locating information for contacts.

  - Ensure that children's identification bands include information about contact status.

- **Instruct, observe and supervise** to ensure that appropriate infection and exposure control measures are being followed by contacts, cases, personnel and adult caregivers providing care to ill children.

COHORTING PROCEDURES FOR ASYMPTOMATIC, EXPOSED CHILDREN

- **Cohort** asymptomatic children and asymptomatic caregivers who have sustained the same exposure (the same apparent disease within roughly the same time period) as advised by the local health authority or the hospital infectious disease department.

  - Certain diseases are infectious prior to symptom onset—seek guidance from the local health authority and/or the hospital infectious disease department about specific cohorting restrictions.

- **Ensure** that spaces used are child safe, and that facilities and supplies are adequate to permit sanitary toileting, hand hygiene, diaper changes, disposal of soiled diapers and other items, and frequent cleaning and disinfection.

- **Consult** with the local health authority or with hospital infectious disease department for specific recommendations about cohorting pediatric contacts to cases.

5 INFECTION CONTROL IN A LARGE SCALE COMMUNICABLE DISEASE EMERGENCY

- **Maintain appropriate group size and staff-to-child ratio** by keeping groups as small as possible (smaller group size is associated with a lower risk of infection in child care settings). **Table 5-1** on **page 48** shows both group size and staff-to-child ratios for child care centers (see **www.ocfs.state.ny.us/main/becs/regs/ 418-1_CDCC_regs.asp#s7**), and should guide hospital cohorting practices for grouping asymptomatic children.

Table 5-1. Minimum staff-to-child ratios for child day care centers and large family child care homes based on group size (infants, toddlers and preschoolers).

Child's Age	Staff:Child Ratio*	Maximum Group Size**
Less than 6 weeks	1:3	6
6 weeks–18 months	1:4	8
18 months–36 months	1:5	12
3 years	1:7	18
4 years	1:8	21
5 years	1:9	24
6 years–9 years	1:10	20
10–12 years	1:15	30

* Staff- to-child ratio refers to the maximum number of children per staff person.

**Group size refers to the number of children cared for together as a unit. Group size is used to determine the minimum staff-to-child ratio based upon the age of the children in the group.

Source: New York State Office of Children and Family Services; visit: www.ocfs.state.ny.us/main/becs/policy/97-10%20%20Supervision%20Issues%20as%20they%20relate%20to%20Day%20Care%20Center%20Programs.pdf)

- **Screen** children and accompanying adults (again) for symptoms at the point of entry into the shelter/cohort area; exclude, mask and redirect symptomatic individuals.

- **Ensure** that all children have been issued hospital identification bands that include parent/caregiver information and contact status.

- **Create a Log** that lists all persons, including staff, who enter the cohort setting and include the following information:
  - Date
  - Name and brief identifying information (child, caregiver, staff)
  - Time in/time out
  - Information about any subsequent exposure within cohort including date, time, duration of exposure and name of symptomatic individual

- **Establish a basic record** for each cohorted individual that includes:
  - Assigned record number

- Identifying and locating information
- Responsible adult(s) name and details
- Initial exposure information (date of exposure, name of person to whom exposed)
- Symptom monitoring information
- Subsequent exposure information

- **Monitor** cohorted children, adult caregivers and hospital personnel for symptom onset at intervals and using methods advised by the local health authority or by the hospital infectious disease department; document the results.

- **Promote social distancing** as much as possible; maintain a space of three feet between cohorted asymptomatic children (consult pediatric activities therapist to identify games and other activities that might be used to maintain distancing).

- **Use Standard Precautions and the Day Care Protocol** for routine care of the cohorted asymptomatic/exposed children, ensuring that staff understand and can implement Standard Precautions.

- **Ensure scrupulous and frequent hand washing with soap and water** among staff, adult caregivers, and children. Be sure to:
    - Provide instruction about hand hygiene.
    - Ensure that caregivers wash the hands of young children before and after meals, after toileting, and frequently in between.
    - Supervise children who are able to wash their own hands—encourage them to wash their hands for at least 15 seconds (the duration of the Happy Birthday song).
    - Consider that anxious children may regress to earlier behaviors – provide comfort and non-judgmental assistance with toileting and hygiene.
    - Ensure that caregivers wash their hands before feeding children (and prior to preparing formula) and after diapering, toileting, cleaning, or any contact with moist body substances or with items soiled with moist body substances even if gloves are used.

- **Establish** diapering protocols and ensure that caregivers follow them—hospitals without pediatric services should adapt adult diapering protocols for infants and children.

- **Set up** sanitary changing stations for infants and young children.

- **Ensure** that waste and soiled linen collection units are child safe, plentiful and designed to be hands-free.

- **Toys** should not be shared among children unless washed and disinfected first. In addition:
    - Toys should be made of hard plastic
    - Disinfectants must be safe for mouthed toys.

- **Provide** an adequate supply of clean gowns, disposable diapers and, if possible, clothing for infants and young children.

- **Establish** policies for routine and targeted cleaning of environmental surfaces according to the nature and degree of contamination or soiling. Be sure to:
  - Use an EPA-registered disinfectant that has microbicidal properties effective against organisms most likely to be present in the environment (consult with local health authority or hospital infectious disease department) or use a chlorine bleach solution (1/4 cup of bleach per gallon of cool water).
  - In addition to existing cleaning/disinfection procedures, establish schedules for cleaning and disinfecting changing stations, sleeping mats, toys (disinfectants used on toys that may be mouthed by children must be non-toxic).
  - **All sanitizers, disinfectants and other potentially toxic materials must be kept out of the reach of children.**

INFECTION CONTROL SCENARIOS

I. A Child or Adult Becomes Symptomatic in the Cohorted Setting

- **Rapidly identify symptomatic individuals** using routine, scrupulous, symptom-monitoring and close, ongoing, observation.
- **Immediately separate, mask, counsel and comfort** children and adults at the first sign that they have become symptomatic; remove them from the cohorted setting.
- **Arrange transport** for symptomatic children or adults to a clinical care unit where they can be isolated.
- **During transport** place a surgical mask on children older than three years of age and supervise them closely to ensure that the mask remains in place; for younger children or infants, use respiratory hygiene and cough etiquette as alternatives to masks.
- **Transporters** escorting **masked**, symptomatic, individuals do not require respiratory protection themselves, but may need to wear disposable gowns and gloves in case physical contact with the symptomatic individual is required. (See *CDC Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings* available at: **www.cdc.gov/ncidod/dhqp/pdf/guidelines/Isolation2007.pdf**
- **Clean and disinfect transport equipment** such as wheelchairs or stretchers with Environmental Protection Agency (EPA)-registered disinfectants after use.
- **Identify contacts to a person who becomes symptomatic** as advised by the local health department or the facility's infectious disease department, including children, caregivers and staff in the space shared with the symptomatic individual. Be sure to:
  - Document the exposure in individual records and in a log.
  - Include the name of the individual to whom exposed.

- Document the names of those exposed (in the log only).
- Note the duration of exposure and other information requested by the local health authority or by the hospital's infectious disease department.

- **Counsel, comfort and reassure** cohorted adults and children following separation from the symptomatic individual.
- **Clean and disinfect** surface areas in the cohort area using a child-safe EPA-registered disinfectant.

II. Infectious or Potentially Infectious Parent/Caregiver Must Have Contact with an Asymptomatic/Exposed Child

- **Arrange** that the visit takes place in a single room and avoid exposing other children.
- **Ensure** that parents/caregivers are masked and that they understand that both physical contact and the amount of time spent with the child must be limited.
- **Prepare** the child, according to age and comprehension level, for the masked appearance of parents/caregivers and for restrictions on contact with, or proximity to, the caregiver.
- **Supervise** the visit to ensure that Standard and Transmission-based Precautions are used and followed.
- **Firmly limit** the amount of time parents/caregivers spend with child.

III. Asymptomatic Caregivers/Parents Must Provide Nursing Care for an Ill Child

- **Ensure** that parents/caregivers are instructed in procedures for complying with Standard Precautions and relevant Transmission-based Precautions including hand hygiene and the correct use and disposal of personal protective equipment (PPE).
- **Observe/supervise** parents/caregivers by providing guidance, answering questions and ensuring compliance.

IV. Parents/Alternate Caregivers Arrive at Hospital to Assume Care of Their Asymptomatic/Exposed Children

- **Consult** with the local health authority or the hospital's infectious disease department for recommendations for managing the exposed children in the home setting.
- **Inform** and counsel parents/caregivers about the nature of the exposure.
- **Tell** parents to inform the child's pediatrician of the exposure.
- **Provide** information necessary for parents to comply with instructions for contact management in accordance with the local health authority and/or the hospital's department of infectious disease.
- **Give** parents a contact number they may call for information related to the event and the child's exposure (such as an appropriate contact at the local health department).

INFECTION CONTROL PROCEDURES FOR PEDIATRIC INPATIENT UNITS

- **Use Standard and Transmission-based precautions** according to recommendations of the local health authority, the hospital's infectious disease department and facility guidelines for pediatric infectious disease.

  Hospitals with no pediatric units that are caring for pediatric patients as an emergency measure should apply established infection control guidelines and should adopt the relevant day care protocols in:

  - **U.S. Department of Health and Human Services**
    13 Indicators of Quality Child Care: Research Update, 2002
    http://aspe.hhs.gov/hsp/ccquality-ind02/

  - **American Academy of Pediatrics, American Public Health Association and National Resource Center for Health and Safety in Child Care**
    Caring for Our Children (CFOC): National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs, 2nd edition **http://nrc.uchsc.edu/CFOC/index.html**

- **Maintain a log** of personnel assigned to patients who are ill with the disease causing the emergency, including:

  - Names, dates, shifts worked, patient names

  - Consider including non-personnel adult caregivers/parents in the log if they are significant care providers to their children on the pediatric unit

- **Monitor personnel** for symptom onset.

- **Instruct** nursing, medical and other personnel in infection and exposure control measures, emphasizing any enhanced or additional measures (needed due to the nature or severity of the disease). Be sure to:

  - Observe, monitor and supervise personnel in order to ensure competence and compliance.

  - Ensure that there is a mechanism for updating personnel about changed directives and new information about the outbreak.

- **Increase the frequency** of surface cleaning throughout the unit.

- **The use of parents and other adult caregivers** to provide routine care to pediatric patients during the emergency will require the oversight of facility staff, who will provide instruction and supervision to ensure compliance with infection control guidelines.

- **Develop** a visiting protocol that includes decisions about:

  - Limiting the number of visitors and the duration of the visits

  - Instruction and supplies (including PPE) necessary for the safety of visitors, personnel and the environment

INFECTION CONTROL DEFINITIONS

A Communicable Disease Emergency is an infectious disease event that is severe, moves quickly from person-to-person, to which there is little or no immunity and for which countermeasures may be non-existent or not widely or immediately available.

Agents that could cause a communicable disease emergency may occur naturally or may be deliberately induced. Such agents are characterized by:

- Person-to-person transmission
- High attack rates
- High morbidity
- High mortality

Note: Certain organisms cause disease that is transmissible prior to the onset of symptoms (e.g., influenza virus).

Person-to-Person Transmission occurs only in one or more of the following **three** ways:

1. **Droplet transmission** – the organism is sneezed or coughed into the environment within large, wet, respiratory droplets; organisms land on the mucosal surfaces of the nose, mouth or eyes, are absorbed and enter the body.

2. **Contact transmission** – the organism enters the body through the mucosa of the mouth, eyes, or nose either **directly** (skin-to-skin contact with an infectious individual or with infectious secretions) or **indirectly** when a contaminated intermediate object (unwashed hands or equipment) transfers organisms to mucosal surfaces and is absorbed.

3. **Airborne transmission** – the organism enters the body when tiny droplet nuclei are coughed or sneezed into the environment and are inhaled into the lungs.

Standard Precautions are the basis for infection control in all health care and group child care settings. Standard Precautions:

- **Must** be used whether or not other "transmission-based" precautions are in place.
- Are based on the principle that any moist body substance (blood, secretions, excretions, non-intact skin) may contain infectious organisms regardless of the patient's diagnosis or assumed state of health.
- **Must** be used in health and child care settings whenever contact with moist body substances is anticipated.
- **Must** be implemented in managing children in group settings. (For more information, refer to the Centers for Disease Control and Prevention, *Standard Precautions*, at: www.cdc.gov/ncidod/dhqp/gl_isolation_standard.html)

Transmission-based Precautions

Each communicable disease can be defined in terms of the way(s) in which it spreads. Transmission-based Precautions are named for the modes of transmission they target and interrupt. See the Centers for Disease Control and Prevention Web site for more information:

- Droplet Precautions, visit www.cdc.gov/ncidod/dhqp/gl_isolation_droplet.html
- Contact Precautions, visit www.cdc.gov/ncidod/dhqp/gl_isolation_contact.html

Airborne Transmission, visit www.cdc.gov/ncidod/dhqp/gl_isolation_airborne.html

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Section **6** PHARMACEUTICAL NEEDS

PHARMACEUTICAL NEEDS

6

PURPOSE

The recommendations in this section focus on pediatric pharmaceutical inventory and which drugs are likely to be used during a pediatric emergency. The list of medications and the daily pediatric dosages for specific indications are provided to help pharmacists plan an inventory, but are not meant to replace comprehensive treatment and prophylaxis guidelines. **See Table 6-1** for treatment recommendations.

The content is based on reference material from the Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics, the U.S. Food and Drug Administration (FDA), the National Center for Disaster Preparedness and the Center for Drugs, Evaluation and Research at the National Institutes of Health. Hospitals should consult with the CDC and regional health departments for the most up-to-date treatment guidelines. Consultation with local subject matter experts (e.g. an infectious diseases consultant) may be required. A reference section is included with links to clinical information about biological, chemical and radiologic exposures.

GENERAL GUIDELINES

To maintain inventories of drugs most likely to be needed for children during disasters, be sure to:

1. Establish procedures for maintaining pharmacy disaster carts (kits/bags) for pediatric patients.

2. Maintain an inventory of essential drugs (72-hour supply).

3. Estimate supply for treatment or exposure prophylaxis of biologic agents at the facility according to the following formula:

> **Number of courses of treatment (daily pediatric patients) + potential pediatric disaster victims + children of hospital staff = total supply needed**

4. Provide an appropriate facility for storing the inventory.

5. Inspect bags/cart monthly for integrity and quantities of drugs; record date of inspection on a maintenance record.

6. Plan for re-supply from local and state stockpiles; collaborate with regional emergency management planners.

7. Evaluate existing Memoranda of Understanding, network affiliations, local pharmacies and drug companies; maintain a list of these sources of additional drugs on the cart.

8. Identify unit leader/director responsible for distribution of medications in case of disaster.

9. Develop criteria to prevent nonessential use of antibiotics until stockpile arrives and is distributed.

10. Regularly test pharmacy during drills.

Table 6-1. Pharmaceutical inventory for pediatric disaster preparedness by exposure and agent.

Exposure	Pediatric Dose	Importance E = Essential D = Desirable
ANTHRAX, PULMONARY		
Ciprofloxacin[1] or	10-15 mg/kg IV q 12h (max 1g/day)	E
Doxycycline[2]	2.2 mg/kg IV q 12h (max 100mg/day)	E
plus 1 or 2 additional antimicrobials: Clindamycin and/or	10-15 mg/kg IV q 12h	E
Penicillin G	250,000 – 600,000 units/kg/day div q 4h	E
ANTHRAX, CUTANEOUS		
Ciprofloxacin[1] or	10-15 mg/kg IV q12h (max 1g/day)	E
Doxycycline[2] or	2.2 mg/kg IV q12h (max 100mg/day)	E
Penicillin V 250mg/5ml oral solution or	25-50 mg/kg/day PO div q 6h	D
Amoxicillin 250mg/5ml suspension	40-80 mg/kg/day PO div q 8h	D
ANTHRAX, POST-EXPOSURE PROPHYLAXIS		
Ciprofloxacin 250 mg/5 ml oral suspension[3] or	10-15 mg/kg PO q 12h (max 1g/day)	E
Doxycycline[2]	2.2 mg/kg PO q 12h (max 200mg/day)	E
BRUCELLOSIS		
Trimethoprim-Sulfamethoxazole 40mgTMP-200mgSMX /5 ml suspension and	5 mg/kg TMP component q12h PO	E
Rifampin or	20 mg/kg/day PO/IV div q 12/24h (max 600-900mg/day)	E
Ciprofloxacin	15 mg/kg IV q 12h	E
and <u>one</u> of the following: Streptomycin or	15 mg/kg IM q 12h (max 2g/day)	D
Rifampin or	20 mg/kg/day PO/IV div q 12/24h (max 600-900mg/day)	D
Gentamicin	2.5 mg/kg IV/IM q 8hr (term neonates 1 week of age, infants/children less than 5 years of age) 2-2.5 mg/kg IV/IM q 8 hrs (children 5 years and older)	E
CYANIDE		
Sodium nitrite 3%[3] and	See Table 6-3 Sodium nitrite dosing	E
Sodium thiosulfate 25%	1.65 ml/kg (max 50ml)	E
INFLUENZA/PANDEMIC INFLUENZA, PROPHYLAXIS[4]		
Oseltamivir, 12mg/ml oral suspension[4] or	See Table 6-4 Influenza treatment and prophylaxis with oseltamivir in children 1 year and older for dosing	D
Zanamavir[4] or	2 inhalations (5mg/inhalation) orally q 12h	D
Amantadine 50mg/ml syrup[4]	5 to 8 mg/kg/day PO daily (max 150 mg/day children 1–9 years of age) 100 mg PO BID children 10 years of age or older (max 200 mg/day) or 5 mg/kg/day PO daily if weight less than 40kg	D

Table 6-1. *Continued*

Exposure	Pediatric Dose	Importance E = Essential D = Desirable
INFLUENZA/PANDEMIC INFLUENZA THERAPY[4]		
Oseltamivir 12mg/ml oral suspension[8] **or**	See Table 6-4 Influenza treatment and prophylaxis with oseltamivir in children 1 year and older for dosing	D
Zanamivir[4] **or**	2 inhalations (5mg/inhalation) orally q 12h	D
Amantadine 50mg/ml syrup[4]	See above; same as prophylaxis	D
IODINE RADIONUCLIDE EXPOSURE		
Potassium iodide (KI) **or**	See Table 6-5 Recommended doses for potassium iodide (65 mg tablets) for preparation[5] and dosing	E
ThyroShield™	See Table 6-6 Thyroshield™ dosing recommendations for dosing[6]	D
MUSTARD		
Sodium thiosulfate 25%	1.65 ml/kg (max 50ml/day)	E
NERVE AGENTS[7]		
Pralidoxime 1g/20ml **and**	25-50mg/kg IV/IM (max 1g IV, 2g IM/day), repeat within 30-60 min, then q1h x 1-2 doses PRN	E
Atropine sulfate Inj. 1 mg/10 ml **or**	0.05-0.1mg/kg IV/IM (min 0.1mg, max 5mg/day) (max 600-900mg/day)	E
Atropine/Pralidoxime Autoinjector (Mark-I)[6]	See Table 6-7 New York City treatment protocol for infants and children in nerve gas release for dosing	D
PLAGUE		
Gentamicin **or**	2.5 mg/kg IV q 8h	E
Streptomycin **or**	15 mg/kg IM q 12h	D
Doxycycline **or**	2.2 mg/kg IV q 12h (max 200mg/day)	D
Ciprofloxacin	5 mg/kg IV q 12h	D
PLAGUE MENINGITIS		
Chloramphenicol	25 mg/kg IV q 6h (max 4g/day)[8]	D
PLAGUE, POST-EXPOSURE PROPHYLAXIS		
Doxycycline[2] **or**	2.2 mg/kg PO q 12h (max 100mg/day)	E
Ciprofloxacin 250mg/5ml oral suspension	20 mg/kg PO q 12h (max 1g/day)	E
PNEUMONIA PLAGUE		
Doxycycline[2] **or**	2.2 mg/kg PO q 12h (max 200mg/day)	E
Ciprofloxacin 250mg/5ml oral suspension	20mg/kg PO q 12h	E
PNEUMONIC TULAREMIA		
Gentamicin[9] **or**	2.5 mg/kg IV q 8h	E
Streptomycin[9] **or**	15 mg/kg IM q 12h	D
Doxycycline **or**	2.2 mg/kg IV q 12h (max 200mg/day)	D
Ciprofloxacin **or**	15 mg/kg IV q 12h (max 1g/day)	D
Chloramphenicol	15 mg/kg IV q 6h (max 4g/day)[10]	D
VIRAL HEMORRHAGIC FEVER		
Ribavirin[10]	See footnote 10 for dosing information	D

Table 6-1. *Continued*

Agents (non exposure-specific)* **Analgesics**	Pediatric Dose	Importance E = Essential D = Desirable
Acetaminophen, 80 and160mg/0.8ml	10-15 mg/kg q 4h	E
Ibuprofen, 100mg/5ml oral solution	5-10 mg/kg q 6h	E
Morphine, Injection 1mg/ml	0.1-0.2 mg/kg IM/IV/SC q 2-4hrs (max 15 mg/dose) PRN	E
Morphine, 10mg/ml oral solution	0.2-0.5mg/kg q 4-6h PRN	E

Emergency Drugs	Pediatric Dose	Importance
Albuterol, 2.5mg/3ml nebulizer solution	Less than 1 year: 0.05-0.15 mg/kg q 4h PRN 1-5 years: 1.25-2.5 mg/kg q 4h PRN 5-12 years: 2.5 mg/dose q 4h PRN Older than 12 years: 2.5-5 mg/dose q 4h PRN	E
Artificial Tears (eye drops)	Topical symptomatic care	D
Atropine sulfate Inj, 1mg/10 ml	0.02 mg/kg IV/IO/IM (min 0.1mg, max 0.5mg [child], max 1mg [adolescent]	E
Bacitracin ointment	Topical wound/burn care	D
Calcium Chloride, 10% Inj. 1g/10ml	20 mg/kg (0.2ml/kg) slow IV/IO	E
Dexamethasone Inj, 4mg/ml	0.5-2mg/kg/day IV/IM div q 6h	E
Dextrose 50% Inj, 25g/50ml	0.25-1g/kg (0.5-2ml/kg) IV/IO (neonates: do not exceed 12.5%, dilute 1:3 with sterile water)	E
Diazepam Inj, 10mg/2 ml	0.05-0.3mg/kg (max 10mg) IV	E
Diphenhydramine Inj, 50mg/ml	1.25mg/kg IV q 6h	E
Dopamine Inj, 200mg/5ml	2-20 microgram/kg/minute IV	E
Epinephrine, (1/10,000) Inj, 0.1 mg/ml for cardiac arrest	0.01mg/kg IV/IO	E
Furosemide Inj, 10mg/10ml	0.5-2mg/kg IV	E
Ketamine Inj, 10mg/ml	2-3mg/kg IM	E
Lidocaine 2% Inj, 5ml	loading dose: 1mg/kg IV/IO	E
Mannitol 25% Inj, 12.5g, 50ml	0.25g/kg/dose IV over 30 minutes	E
Midazolam Inj, 1mg/ml	0.1-0.2mg/kg (max 10mg) IV/IM	E
Phenytoin Inj, 250mg/5ml	15-20mg/kg IV loading dose	E
Prednisone: 5mg/5ml syrup	2mg/kg/day PO div BID	D
Silver Sulfadiazine cream	topical burn care	E

Abbreviations: BID, twice daily; div, divided (for dosages based on a daily dose, which needs to be then divided into intervals); g, gram; h, hours; IM, intramuscular; IO, intraosseous (note: as an alternative to the IV route in patients with vascular access problems, most parenteral medications can be given via an intraosseous needle); IV, intravenous; kg, kilogram; max, maximum dose; mg, milligram; ml, milliliter; PO = by mouth; PRN, as needed; q, every; SC, subcutaneous

*Many of these medications may already be in the hospital's pharmaceutical inventory

[1] Ciprofloxacin is the preferred agent. Safety and effectiveness for this indication have been established in children;[4] it is also recommended for use in pregnant women. Amoxicillin may be considered as an alternative in children and pregnant women under certain circumstances[9]; consult with health authorities and an infectious disease specialist about optimal treatment regimen.

[2] See Table 6-2 for doxycycline suspension recipe; consult with health authorities and an infectious disease specialist about optimal treatment regimen.

[3] See Table 6-3 for sodium nitrite dosing.

[4] See Table 6-4, Oseltamivir dosing, for details; oseltamivir is FDA approved for children ≥1 year of age; zanamivir approved ≥5 years of age for prophylaxis and ≥7 years of age for treatment. Antiviral resistance may limit the usefulness of adamantanes; choice of antivirals and initiation of prophylaxis or therapy should be based on current susceptibility data and guided by health authorities.[5]

[5] See Table 6-5 for KI suspension preparation and dosing.

[6] See Table 6-6 for dosing of ThyroShield™.

[7] See Table 6-7 for Mark-1 Kit Autoinjector usage.[3]

[8] Serum concentrations should be maintained between 5-20 microgram/ml; concentrations over 25 microgram/ml can cause reversible bone marrow suppression.

[9] Streptomycin or gentamicin is the preferred choice.

[10] Ribavirin IV: loading dose 30 mg/kg IV once (max. dose 2g), then 16 mg/kg IV (max. dose 500 mg) q 6h for 4 days, then 8 mg/kg (max. dose 500 mg) for 6 days.
Ribavirin PO: loading dose of 30 mg/kg PO once, then 15 mg/kg/day PO div q 12h for 10 days.

DRUG PREPARATIONS AND DOSING TABLES

DOXYCYCLINE

Doxycycline is a tetracycline antibiotic, which is the preferred drug for certain severe infections. Because of possible tooth discoloration, it is approved for children older than eight years of age, but it can be used in young children (less than eight years of age) for severe infections and for which tetracyclines are the drug of choice. The FDA has provided a guide (See Table 6-2) for the preparation of doxycycline suspension for children unable to swallow tablets.

Table 6-2. Doxycycline suspension preparation.*

Dosage (milligrams)	Tablet Portion[1]	Doxycycline[2] (mean and standard deviation, in milligrams)	Doxycycline Range[2] (milligrams)
100	1	96.1+/-0.6	95.6–96.7
75	¾	67.8+/-3.1	64.4–70.5
50	½	47.0+/-2.4	42.9–49.5
25	¼	23.8+/-3.5	18.3–32.1

[1] Portion of a tablet that needs to be crushed and suspended to achieve the desired milligram concentration.

[2] Dosage uniformity determination: analysis of crushed tablets mixed with low-fat milk.

Average dosages are found to be good for administration of ¼, ½, ¾ or one tablet (93%-99% of desired amount). The range of dosages is most variable for the ¼ tablet (75%-132% of desired amount). Analysis of five aliquots of a doxycycline tablet dissolved in low-fat chocolate milk gave assays with a RSD % of 0.93% (n=5), which demonstrates a high degree of homogeneity of the doxycycline within the milk; therefore, variability in the desired dosage is a result of the accuracy of visibly dividing the powder into two or four fractions.

*Adapted from: US Food and Drug Administration, Center for Drug Evaluation and Research. Drug Preparedness and Response to Bioterrorism. 2005. Available at: **www.fda.gov/cder/drugprepare/default.htm**

SODIUM NITRITE

Sodium nitrite, the antidote for cyanide poisoning, induces methemoglobinemia, which has a high affinity for cyanide. In a second step, the cyanide bound to methemoglobin is converted to thiocyanate by a sulfur donor, sodium thiosulfate. To avoid symptomatic or possibly lethal high levels of methemoglobinemia, sodium nitrite must be dosed according to weight and hemoglobin in children.

Table 6-3. Sodium nitrite dosing.*

Estimated Hemoglobin (g/dl) for Average Child	Sodium Nitrite 3% Dosage (ml/kg) Maximum Dosage: 10 ml
7	0.19
8	0.22
9	0.25
10	0.27
11	0.30
12	0.33
13	0.36
14	0.39

*Source: Berlin CM. The treatment of cyanide poisoning in children. *Pediatrics*.1970;46:793-796.

PHARMACEUTICAL NEEDS

OSELTAMIVIR

Oseltamivir is approved for both the **prophylaxis** and **treatment** of influenza in children at least one year of age. (Amantadine is approved for use in children younger than one year, but is only active against influenza A.) See Table 6-4 oseltamivir dosing for therapy and prophylaxis of influenza.

Table 6-4. Influenza treatment and prophylaxis with oseltamivir in children 1 year of age and older.*

Weight	Treatment Dose	Prophylaxis Dose
≤ 15 kg	30 mg twice daily	30 mg daily
> 15 kg - 23 kg	45 mg twice daily	45 mg daily
> 23 kg - 40 kg	60 mg twice daily	60 mg daily
> 40 kg	75 mg twice daily	75 mg daily

*Source: Committee on Infectious Diseases. Antiviral therapy and prophylaxis for influenza in children. *Pediatrics.* 2007;119:852-860.

POTASSIUM IODIDE TABLETS (65 milligrams)

In the event of exposure to radioactive iodine, administration of potassium iodide is vital. The recommendations below are based on FDA guidelines, available at: www.fda.gov/cder/drugprepare/default.htm

HOW TO USE 65 MG POTASSIUM IODIDE TABLETS (SEE ALSO TABLE 6.5)

1. **Grind the potassium iodide 65 mg tablet into a powder**
   Put **one** 65 mg potassium iodide tablet into a small bowl and grind it into a fine powder using the back of a metal teaspoon against the inside of the bowl. The powder should not contain any large pieces.

2. **Add water**
   Add four teaspoonfuls of water to the potassium iodide powder in the small bowl. Use a spoon to mix the water and powder until the potassium iodide powder is dissolved in the water.

3. **Add a drink of choice to the potassium iodide powder and water solution**
   Add four teaspoonfuls of a beverage to the mixture. (The actual number of teaspoonfuls of the beverage added depends on the child's age [see Table 6-5] and should be given **once a day** until the risk of significant exposure to radioiodines [radioactive iodine] no longer exists.)

NOTE: The recommended number of teaspoonfuls when using a potassium iodide 65 mg tablet is different from the recommended number of teaspoonfuls when using a potassium iodide 130 mg tablet.

Potassium iodide mixed as recommended above will keep for up to seven days if refrigerated. The FDA recommends that potassium iodide drink mixtures be prepared fresh weekly; unused portions should be discarded.

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Table 6-5. Recommended doses of potassium iodide (65 milligram tablets) for children and infants with predicted thyroid radiation exposure greater than or equal to 5 cG.*

Age of Child	Recommended Dosage KI, 65 mg**
Birth–1 month	2 teaspoonfuls
> 1 month–3 years	4 teaspoonfuls
4–12 years	8 teaspoonfuls
12–18 years §	8 teaspoons or **1** 65 mg tablet

Abbreviations: KI, potassium iodide; mg,milligrams

Source: U.S. Department of Health and Human Services Food and Drug Administration Center for Drug Evaluation and Research Guidance: Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies, December 2001. Available at: http://www.fda.gov/cder/guidance/4825fnl.htm

** Amounts equal **one** dose which should be given once daily

§ Teenagers whose weight is ≥ 154 pounds should receive a full adult dose (two 65 mg tablets or 16 teaspoonfuls of KI mixture)

THYROSHIELD

Another medication to consider in the event of a radioactive incident is ThyroShield™, an alternative to tablets and a ready-to-use liquid preparation of potassium iodide for radiation exposure suitable for both children and adults. See Table 6-6 for dosing recommendations.

Table 6-6. ThyroShield™ dosing recommendations, all ages.*

Age	Dose (in milliliters)	Dropperfuls
Birth–1 month	0.25 ml daily (16.25mg)	¼
> 1 month–3 years	0.5 ml daily (32.5mg)	½
> 3 years–12 years	1 ml daily (65mg)	1
12 years–18 years		
Weight < 150 lbs	1 ml daily (65mg)	1
Weight ≥ 150 lbs	2 ml daily (130mg)	2
Adults older than 18 years	2 ml daily (130mg)	2

Abbreviations: lbs, pounds; mg, milligrams; mL, milliliters

* Source: ThyroShield™ [Package insert]. St. Louis, MO: Fleming & Company, Pharmaceuticals; 2005, and manufacturer's dosing recommendation for ThyroShield™ (table modified from Consumer Package Insert); available from Fleming & Company, Pharmaceuticals, Fenton, St. Louis Co., MO 63026, Tel.(800) 343-0164. For insert, visit: **www.thyroshield.com/Literature/ThyroShieldinsert.pdf**

MARK-1 KIT FOR NERVE AGENTS

Most recommendations for treating pediatric nerve agent poisoning are based on standard resuscitation doses for these agents. Medical and operational considerations, however, may require emergency medical personnel to use an alternative approach for treating children after mass chemical events. The City of New York emergency medical services agencies recommend the following alternatives based on the following:

- There is evidence that supra-pharmacologic doses may be warranted and that side effects from antidote overdose can be tolerated.

- Emergency medical personnel may have difficulty determining both the age of the child and the severity of the symptoms. Therefore, the Regional Emergency Medical Advisory Committee of New York City; the Fire Department, City of New York; and the Bureau of Emergency Medical Services (in collaboration with the Center for Pediatric Emergency Medicine [CPEM]) of the New York University School of Medicine and the Bellevue Hospital Center) have developed a pediatric nerve agent antidote dosing schedule for children aged eight years and younger in accordance with the above considerations (see Table 6-7).

Table 6-7. New York City treatment protocol for nerve gas for infants and children (< 8 years of age only) in a nerve gas release.*

Triage Tag Color*	Symptoms	Atropine and 2-PAM Doses with Monitoring Intervals*	Atropine Repeat Dosing[§]
RED** (Pediatric)	Evidence of exposure, respiratory distress, agitation or SLUDGEM	Age <1 Year: 1 Pediatric Atropine Auto-injector (0.5 mg) **Do not administer 2-PAM** Monitor every 3 minutes Age 1–7 Years: 1 Atropine Auto-injector (2mg) 1 2-PAM Auto-injector (600 mg) Monitor every 3 minutes	Atropine every 3 minutes as needed
GREEN[§] (Pediatric)	No	None – monitor every 10 minutes for evidence of exposure	N/A

Abbreviations: 2-PAM, pralidoxime; SLUDGEM- salivation, lacrimation (tearing), urination, defecation, gastrointestinal upset, emesis and muscle twitching/miosis (pupillary constriction)

*Source: Foltin G, Tunik M, Curran J, et al. Pediatric Nerve Agent Poisoning: Medical and Operational Considerations for Emergency Medical Services in a Large American City. *Pediatr Emerg Care*. 2006;22:239-244.:

 **RED TAG – Children with life threatening symptoms requiring immediate, life saving care

[§]GREEN TAG – Children with minor or no symptoms

The Atropine and 2-PAM doses above are comparable to those administered to adults with severe symptoms and to treatments that have been given in accidental nerve agent overdoses in children. The approach is likely a safe and effective alternative to weight-based dosing of children, which is nearly impossible to achieve under field conditions.

Sources

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   Prevention and Control of Influenza Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2007. *MMWR Morb Mortal Wkly Rep.* 2007;13:1-54.

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10. **National Emergency Medical Services for Children Resource Alliance**
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    Update: Interim Recommendations for Antimicrobial Prophylaxis for Children and Breastfeeding Mothers and Treatment of Children with Anthrax. *MMWR Morb Mortal Wkly Rep.* 2001;50:1014-1016.

12. **Patt HA and Feigin RD.**
    Diagnosis and management of suspected cases of bioterrorism: A pediatric perspective. **Pediatrics. 2002;109:685-692.**

13. **Terriff CM, Schwartz MD, Lomaestro BM.**
    Bioterrorism: Pivotal clinical issues. *Pharmacotherapy* 2003;23:274-290.

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Resources

American College of Emergency Physicians
www.acep.org/

Center for Infectious Disease Research and Policy
Clinical Pathway: Anthrax
www.cidrap.umn.edu/cidrap/files/17/anthrax-clinical-pathway.pdf

Clinical Pathway: Botulism
www.cidrap.umn.edu/cidrap/files/19/botulism_clinical_pathway.pdf

Clinical Pathway: Pneumonic Tularemia
www.cidrap.umn.edu/cidrap/files/28/tularemia-clin-path.pdf

Clinical Pathway: Vesicular or Pustular Rash Illness
www.cidrap.umn.edu/cidrap/files/18/smallpox_clinical_pathway.pdf

Clinical Pathway: Viral Hemorrhagic Fever
www.cidrap.umn.edu/cidrap/files/25/vhf_clinical_pathway.pdf

Clinical Pathway: Pneumonic Plague
www.cidrap.umn.edu/cidrap/files/22/plague_clinical_pathway.pdf

U.S. Department of Health and Human Services
National Vaccine Program Office: Pandemic Influenza
Available at: www.dhhs.gov/nvpo/pandemics/

Agency for Toxic Substances and Disease Registry (ATSDR) Medical Management Guidelines
www.atsdr.cdc.gov/MHMI/mmg166.html#bookmark04

U.S. Department of Health and Human Services/Centers for Disease Control and Prevention
National Advisory Committee on Children and Terrorism (NACCT)
www.bt.cdc.gov/children/

Strategic National Stockpile
www.bt.cdc.gov/stockpile/

U.S. Food and Drug Administration
Center for Drug Evaluation and Research
Drug Preparedness and Response to Bioterrorism
www.fda.gov/cder/drugprepare/default.htm

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FDA-Approved Antiviral Drugs for Influenza Treatment and Prophylaxis

Association for Professionals in Infection Control and Epidemiology, Inc.
Mass Casualty Disaster Plan Checklist: A Template for Healthcare Facilities
www.gnyha.org/eprc/general/templates/APIC_MassCasualtyChecklist.pdf

Centers for Disease Control and Prevention
Antiviral Agents for Seasonal Influenza: Dosage
www.cdc.gov/flu/professionals/antivirals/dosage.htm

U.S. Food and Drug Administration, Center for Drug Evaluation and Research
Influenza (Flu) Antiviral Drugs and Related Information
www.fda.gov/cder/drug/antivirals/influenza/default.htm

Section 7

PSYCHOSOCIAL CONSIDERATIONS

PSYCHOSOCIAL CONSIDERATIONS

7

PURPOSE

To provide proper care, hospitals must consider both the physical and mental health needs of children and involve the child's family or caregiver(s) in their treatment. This section will help hospital staffs prepare to meet the psychosocial needs of children during a disaster.

GENERAL GUIDELINES

Children may respond to disaster and hospitalization in similar ways to adults, but will also experience, mediate and communicate trauma in unique ways characteristic of their developmental levels. Hospital staff should consider this when helping children cope with their hospital stay after a disaster. Staff can help children feel safer in the unfamiliar environment of a hospital by including familiar people, things and routines. Hospitals should also prepare staff for the different ways particular cultures respond to trauma. See the information below for suggestions on both preparing to deal with children before a disaster and after a disaster.

DEVELOPMENTAL LEVEL-SPECIFIC GUIDELINES FOR TREATING CHILDREN IN THE HOSPITAL

Infants

- Let a parent or caregiver stay with and, when possible, hold the infant during medical procedures.
- Use familiar objects from the baby's home such as a stuffed animal, blanket, music box or toy for comfort before, during and/or after a procedure.

Toddlers and Preschool-aged Children

- Avoid discussing toddler or preschoolers' care in their presence unless you include them in the conversation. Children overhear much more than adults realize and, without any explanation, information may seem terribly frightening.
- Let a parent or caregiver stay overnight with the child if possible and let other family members, including brothers and sisters, visit (if appropriate).
- Reassure the child that the hospitalization is not a punishment. Avoid applying good or bad labels to the child, particularly during a procedure. For example, instead of saying "See, you were so good, the doctor only had to do this once," you can say, "You did such a good job of sitting still, I know that was hard."
- Allow children to handle medical equipment such as stethoscopes, blood pressure cuffs, etc. and to practice procedures on a doll. Children learn best through play—"medical play" can be particularly useful.

- Allow the child to make choices whenever possible, but don't offer a choice when none exist. For example, do not say, "Would you like to come into the treatment room now so the doctor can look at you?" Instead say, "Do you want to bring your bear or blanket with you to the treatment room?"

School-Aged Children

- You can give school-aged children more specific information about what they will experience; however, many medical terms can be confusing. For example, the term "I.V." could be confused with the word "ivy," or "dye" with "die." Give simple, specific explanations for procedures and use non-technical language.

- This is a great age for medical play (communicating understanding, fears, etc. through play with medical equipment). Let the child reenact events through play with different kinds of toys or art materials. This will help school-aged children express their feelings and gain a sense of control over what is happening to them.

- Encourage all staff to respect the child's privacy by knocking before entering his or her room and by being sensitive to who is around when examinations are in progress.

- Children this age may regress or revert to behaviors that they had outgrown (thumb sucking, bed wetting, etc.) during stressful situations such as hospitalization. Do not berate (e.g., say, "come on, you're a big girl now…") or punish children for such behavior; instead encourage them to express their feelings and discharge emotions through play.

Adolescents

- Avoid discussing teenagers' care in their presence unless they are included in the conversation. Adolescents can understand much more about their bodies and what is happening to them than younger children and may resent being excluded from discussions.

- Do not assume that teens manage their emotions the same way as adults. Give teens opportunities to talk to staff about what is happening and to ask questions, both with and without parents or caregivers present.

- Encourage all staff to respect teens' privacy by knocking before entering exam rooms and by being sensitive to who is around during examinations.

- Adolescents are particularly concerned about body image and do not want to be perceived as "different" than peers because of an illness or injury. Be especially sensitive to the physical changes adolescents may experience when explaining any procedures, injuries or treatments.

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DEALING WITH CHILDREN BEFORE AND AFTER A DISASTER

Before having to deal with children in a disaster:

- Gather information about varying cultural responses to trauma and death.

- Gather a list of community resources (i.e., counseling services, etc.) to distribute to parents or other caregivers upon discharge of children.

- Identify hospital staff capable of addressing children's emotional and psychological issues (i.e., social workers, psychologists, psychiatrists, chaplains, psychiatric nurses or child-life specialists). Make an on-call list of these specialists available to hospital and unit staff.

- Identify resources to help staff cope with seeing injured or dying children.

- Identify community resources able to donate services, supplies, etc., specifically for children.

After a disaster occurs:

- Give an honest description of the hospital experience to children of any age and answer any questions they may have. However, avoid preconceived notions about what a child may feel. For example, caregivers should not use the words "pain" or "scary" to describe experiences the child may have since everyone feels pain and emotions differently.

- Provide as much information possible in an interactive way to help the child learn about what to expect during their hospital experience since young children (preschool through school age) learn best by experience. Describe what the child may smell, hear, touch and feel using as many tangible items as possible, such as dolls and books.

- Recognize that actions may result from an attempt to reassert a sense of control—children express their reactions and symptoms through behavior, thoughts, emotions and physical reactions. Their fears about their own safety can contribute to symptoms of anxiety and depression, and may also lead to oppositional and aggressive behavior

- Answer questions reassuringly but honestly. Take the child's age and developmental level into consideration (by saying, for example, "There was a big explosion and many people were badly hurt. What else would you like to know?").

- Reassure children and teens that hospital staff and professionals in the field are working to keep them safe, protect everyone, assist those who are hurt and look for missing people—including the patient's family and friends.

- Give children and teens opportunities to tell stories of their experience with the disaster. Show acceptance and patience if they cannot do so at the time. Provide them with a variety of mediums, including a tape or video recorder, art materials and journals to express themselves. On the other hand, restrict the amount of "storytelling" by others that children or teens hear in the disaster's initial aftermath.

- Develop agreed-upon language for describing the disaster that all staff will learn and communicate consistently to avoid adding to the children's confusion.

- Have age-appropriate toys and diversionary activities on hand including puzzles, books, simple art supplies, and video and audio tapes. Opportunities for play are important for learning, expressing feelings, regaining a sense of normalcy, achieving escape and developing competency. If possible, allow children to interact in groups and monitor them for misconceptions about the disaster.

- Avoid separating children from their primary caregivers for very long and let caregivers accompany children to medical procedures as much as possible. To encourage feelings of safety and familiarity, limit the number of different staff caregivers who interact with the child (i.e., assign the same nurse at all times).

- Parents can better support their children and help providers if

    - informed about and included in the medical treatment.

- Check for any mental health disorders (such as trouble sleeping, lack of appetite or physical complaints with no medical explanation) that may require immediate psychiatric consultation.

HOW CHILDREN MAY REACT TO A DISASTER

Children react differently to stressful events than do adults and often have delayed responses that may be hard to detect. They may also find it hard to talk about how they have been affected.

- Parents, teachers and other caring adults who know the child are best positioned to notice changes in children's behavior, such as extra clinging or changes in appetite; staff should look for and inquire about such changes.
- Don't wait for children to talk about difficulties; instead, ask questions like: "Are you having trouble sleeping? Are you feeling less safe than before?"
- Certain children are more likely to have emotional reactions to disasters, including:
  - Children who witnessed the event firsthand or whose parents, relatives or friends were killed or injured
  - Children displaced from their homes or schools
  - Children with a history of emotional problems
  - Children with a history of trauma, either as victims of or witnesses to violence or abuse
  - Children with an adult in their life who has difficulty with his or her emotions, witnessed violence or suffered domestic violence

Emotional responses also vary by developmental stage; **see Table 7-1**.

HOW TO HELP CHILDREN DURING AND AFTER A DISASTER

There are many ways to help children both before and during a disaster, especially if their age is taken into account.

Children Younger than Five Years of Age

- Maintain their normal routines and favorite rituals as much as possible.
- Limit exposure to TV programs and adult conversations about the events.
- Ask what makes them feel better.
- Give plenty of hugs and physical reassurance.
- Provide opportunities for them to be creative and find other ways to express themselves.

Children Older than Five Years of Age

- Don't be afraid to ask them directly what is on their minds and answer their questions honestly.
- Talk to them about the news and any adult conversations they have heard.
- Make sure they have opportunities to talk with peers, if possible.
- Set gentle but firm limits for "acting out" behavior.
- Encourage expression, verbally and through play, of thoughts and feelings.
- Listen to their repeated retellings of the event.

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Table 7-1. Possible emotional responses according to age group.

Age	Behavior*
5 years and younger	• Fear of being separated from a parent • Unusually fearful, "fussy" or clingy; crying bouts • Regression to behavior they have outgrown, such as bed-wetting or baby talk • Nightmares or problems sleeping • Stomachaches, headaches or other physical complaints that do not have a medical explanation • Easily startled • Decreased or increased appetite
6 to 11 years	• Repeated play depicting the disturbing events • Nightmares or problems sleeping • Unusual outbursts of anger • Withdrawal from friends and family • Being fearful, anxious or preoccupied with safety and danger • Regression to behavior they have outgrown • Expression of feelings of guilt • Frequent stomachaches, headaches or other physical complaints without a medical explanation • Problems concentrating • Persistent, disturbing feelings and memories when reminded of the event
12 to 18 years	• Appetite changes • Headaches or gastrointestinal problems • Loss of interest in social activities • Sadness or depression • Feelings of inadequacy and helplessness • Feelings of anger and aggression • Isolation from others; less interest in friendships • Repetitive behaviors such as hand-washing • High risk behaviors such as unprotected sex, drug or alcohol use

*Not all children exhibit all symptoms and their reactions may change over the first days or weeks following a crisis.

WHEN TO CONSULT A MENTAL HEALTH PROFESSIONAL

Seek psychiatric consultation if children exhibit any of the following behaviors:

- Excessive fear of something terrible happening to their parents or loved ones
- Excessive and uncontrollable worry about unfamiliar people, places or activities
- Fear of not being able to escape if something goes wrong
- Suicidal thoughts or the desire to hurt others
- Hallucinations
- Feelings of being helpless, hopeless or worthless

For more information, in this section.

UNDERSTANDING DEATH: DEVELOPMENTAL CONSIDERATIONS

Children and teens need to understand the cause of a particular death and the meaning of death itself, including understanding non-functionality, irreversibility and universality. An explanation of non-functionality helpful for young children is to say, "When someone dies, we mean their body totally stops working and it cannot be fixed."

DEVELOPMENTAL STAGES OF CHILDREN

Pre-verbal

Children younger than two years of age cannot articulate their own feelings verbally or easily understand even a simple explanation of death; they do, however, respond to the emotional states of those around them, especially their caregivers. Physical connections, labeling behaviors and feelings (crying, sadness, etc.) are important. When a pre-verbal child has lost a parent or family member, provide as much familiarity and consistency as possible.

Preschool

Preschool-aged children (two to five years) cannot grasp irreversibility and need very concrete explanations with continual review and reinforcement, and have limited understanding of universality.

School-aged

School-aged children (five to nine years) have begun to understand irreversibility and non-functionality; however, they struggle to understand universality and personify death.

Latency

Children in the latency period (nine to thirteen years) understand irreversibility, non-functionality and universality.

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Teens

Teenagers (thirteen to eighteen years) have a major struggle with universality, which produces a lot of anxiety, and are very reliant on support from their peer group.

HOW TO GIVE BAD NEWS

Consider the child or teen's developmental and cognitive levels when telling them about the death of a parent or family member. When dealing with younger children or in the case of a violent, unexpected death, distill the information into small pieces to make it more understandable and psychologically manageable.

CULTURAL DIFFERENCES AND DEATH AND DYING

Every culture has its own way of mourning. Due to immigration and contact between different groups, mourning patterns of ethnic groups in the United States have changed and continue to change. Clinicians should take this into consideration and be careful about defining "normal" family responses to death and avoid assuming a particular cultural group fit a particular mourning pattern. As they do with individuals, providers should treat and assess each family unit on a case-by-case basis.

- Staff members need to appreciate each ethnic group's particular attitudes about mourning and ask families what its members believe about death, the rituals that should surround it and the afterlife.

- Often, failing to carry out death rituals makes a family experience unresolved loss.

- Helping family members deal with a loss often means showing respect for their cultural heritage and encouraging them actively to decide how they will commemorate the death of a loved one.

- While it is generally better to encourage families to be open about death, hospital staff should also respect patients' cultural values and preferred timing in dealing with the emotional aftermath of a loss.

- Staff should ask:
  - What are the prescribed rituals for dealing with dying, disposition of the body and rituals to commemorate the loss?
  - What does the group believe happens after death?
  - What are appropriate emotional expressions?
  - What are the gender rules for handling the death?

- Identify personnel (such as members of pastoral care, social work or even particular cultural groups) who could provide more details about specific cultural groups.

OBTAINING MENTAL HEALTH SERVICES IN THE COMMUNITY

Every child experiences emotional difficulties from time to time, but at some point, especially during hospitalization following a disaster, a child's problems may warrant professional attention.

LIFENET Services

Counseling professionals at LIFENET provide free, confidential information and referral services, 24 hours a day, seven days a week. Anyone can call. The staff has the latest resource information and can tell patients where to go for help, and help is available in several languages. Patients can also find out about resources outside of New York State. (The child's pediatrician can also provide a referral for a mental health professional or clinic.)

> **In English: 1-800-LIFENET (1-800-543-3638)**
> **In Spanish: 1-877-AYUDESE (1-877-298-3373)**
> **In Mandarin, Cantonese and Korean: ASIAN LIFENET (1-877-990-8585)**
> Find additional LIFENET Information at the NYC DOHMH web site:
> www.nyc.gov/html/doh/html/cis/cis_lifenet.shtml

POST-DISASTER FACT SHEET: A GUIDE FOR PARENTS AND CAREGIVERS
(from the National Institute of Mental Health)

Natural disasters (such as tornadoes), or man-made tragedies (such as bombings) can leave children feeling frightened, confused and insecure. Parents, caregivers and teachers need to be informed and ready to help if children experience reactions to traumatic events like these—whether the child personally experienced trauma, merely saw the event on television or heard it discussed by adults.

Children respond to trauma in many different ways. Some may have reactions very soon after the event; others may seem fine for weeks or months before showing worrisome behavior. Knowing the signs typical in different age groups (below) can help parents and teachers recognize problems and respond appropriately.

Preschool

Children from one to five years of age find it particularly hard to adjust to change and loss. In addition, these youngsters have not yet developed their own coping skills, so they must depend on parents, family members and teachers to help them through difficult times.

Very young children may regress to an earlier behavioral stage after a traumatic event. For example, preschoolers may resume thumb-sucking or bed-wetting, or may become afraid of strangers, animals, darkness or "monsters." They may cling to a parent or teacher or become very attached to a place where they feel safe.

Changes in eating and sleeping habits are common, as are unexplainable aches and pains. Other symptoms to watch for are disobedience, hyperactivity, speech difficulties and aggressive or withdrawn behavior. Preschoolers may tell exaggerated stories about the traumatic event or may speak of it over and over.

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Early Childhood

Children aged 5 to 11 years of age may have some of the same reactions as younger boys and girls. In addition, they may withdraw from play groups and friends, compete more for the attention of parents, fear going to school, allow school performance to drop, become aggressive or find it hard to concentrate. They may also return to age-inappropriate behaviors such as asking to be fed or dressed.

Adolescence

Children aged 12 to 14 years are likely to have vague physical complaints when under stress and may abandon chores, school work and other responsibilities they previously handled.

While on the one hand they may compete vigorously for attention from parents and teachers, they may also withdraw, resist authority, become disruptive at home or in the classroom, or even begin to experiment with high-risk behaviors such as drinking or drug use.

These young people are at a developmental stage in which the opinions of others are very important. They need to be thought of as "normal" by their friends and are less concerned about relating well to adults or participating in recreation or family activities they once enjoyed.

In later adolescence, teens may have feelings of helplessness and guilt because they are unable to assume full adult responsibilities as the community responds to the disaster. Older teens may deny the extent of their emotional reactions to the traumatic event.

How to Help

Reassurance is the key to helping children through a traumatic time. Very young children need a lot of cuddling, as well as verbal support. Answer questions about the disaster honestly, but don't dwell on frightening details or allow the subject to dominate family or classroom time indefinitely. Encourage children of all ages to express emotions through conversation, drawing or playing, and to find a way to help others who were affected by the disaster.

Try to maintain normal routines and encourage children to participate in enjoyable activities. Reduce expectations temporarily about performance in school or at home, perhaps by substituting less demanding responsibilities for normal chores.

Finally, acknowledge that you, too, may have reactions associated with the traumatic event; take steps to promote your own physical and emotional healing.

See Table 7-2 for an overview and suggestions on dealing with potential disaster-related behaviors.

Table 7-2. Responses to disaster-related behavior in children, by age group.

Age	Developmental Overview	Possible Behavior after Disaster	Signs	How to Respond	Signs that Indicate the Need for Professional Psychiatric Care
Preschool (1–5 years)	• Difficulty adjusting to change and loss • Have not yet developed their own coping skills and depend on parents, family members, and teachers to help them through difficult times	• Very young children may regress to behaviors characteristic of an earlier stage, such as thumb-sucking, bed-wetting, fear of strangers, animals, darkness or monsters • May cling to a parent or teacher, or become very attached to a place where they feel safe	• Changes in eating and sleeping habits • Unexplainable aches and pains • Disobedience, hyperactivity or speech difficulties • Aggressive or withdrawn behavior • Preschoolers may tell exaggerated stories about the traumatic event or may speak of it over and over	• **Reassurance** is vital • Cuddle very young children, and talk to them frequently. • **Answer questions** about the disaster honestly, but without dwelling on frightening details or allowing the subject to dominate family or classroom time indefinitely. • **Encourage children of all ages to express emotions** through conversation, drawing or playing, and to find a way to help others who were affected by the disaster. • **Try to maintain normal routines** and encourage children to participate in enjoyable activities. • **Reduce expectations** temporarily about school and home performance (e.g., substituting less demanding responsibilities for normal chores). • **Acknowledge that you also may have reactions** associated with the traumatic event. Take steps to promote your physical and emotional healing.	• Excessive fear of something terrible happening to their parents or loved ones • Excessive and uncontrollable worry about things, such as unfamiliar people, places or activities • Fear of not being able to escape if something goes wrong • Suicidal thoughts or the desire to hurt others • Hallucinations • Expressing feelings of being helpless, hopeless and worthless
Early Childhood (5–11 years)	• May have some of the same reactions as younger children	• May withdraw from playgroups or friends • May compete for parental attention • May fear going to school • May allow grades to drop	• Aggression • Difficulty concentrating • May regress to age-inappropriate behavior, such as asking to be fed or dressed		
Adolescence (12–14 years)	• Opinions of others are very important • Need to be thought of as "normal" by their friends • Less concerned about relating well to adults • Less interested in participating in recreation or family activities they previously enjoyed	• May have vague physical complaints • May stop doing chores • May compete vigorously for attention of parents and teachers • May experiment with high-risk behavior such as drinking or drugs • May withdraw • May resist authority or become disruptive at home or school	• Feelings of helplessness, guilt • Denial of their emotions about the disaster		

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1. Fox SS. *Good Grief: Helping Groups of Children When a Friend Dies.* Boston, MA: The New England Association for the Education of Young Children; 1985.

2. Rzucidlo S, Petersen C. Helping Children Cope after a Disaster. Department of Psychiatry: Penn State Children's Hospital Pediatric Trauma Program and Department of Psychiatry; 2001.

3. Thompson RH, Stanford G. *Child Life in Hospitals: Theory and Practice.* Springfield, IL: Charles C. Thomas; 1981.

4. Zucker R. Helping Grieving Children and Teens. American Academy of Bereavement Seminar; February 27, 2007.

PSYCHOSOCIAL CONSIDERATIONS

When to Seek More Help

Consultation with a mental health professional may be useful at any time; however, psychiatric consultation should be sought if any of the following behaviors occur:

- Excessive fear of something terrible happening to parents or loved ones
- Excessive and uncontrollable worry about things such as unfamiliar people, places or activities
- Fear of not being able to escape if something goes wrong
- Suicidal thoughts or the desire to hurt others
- Hallucinations
- Expressing feelings of being helpless, hopeless, and worthless

Sources

1. **Fox SS.**
   Good Grief: Helping Groups of Children When a Friend Dies. Boston, MA:
   The New England Association for the Education of Young Children; 1985.

2. **Rzucidlo S, Petersen C.**
   Helping Children Cope after a Disaster. Department of Psychiatry: Penn State
   Children's Hospital Pediatric Trauma Program and Department of Psychiatry; 2001.

3. **Thompson RH, Stanford G.**
   Child Life in Hospitals: Theory and Practice. Springfield, IL: Charles C. Thomas; 1981.

4. **Zucker R.**
   Helping Grieving Children and Teens. American Academy of Bereavement Seminar;
   February 27, 2007.

PSYCHOSOCIAL CONSIDERATIONS

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Resources

American Academy of Child and Adolescent Psychiatry
Family Readiness Kit: Preparing to Handle Disaster
www.aacap.org/publications/factsfam/disaster.htm

American Academy of Pediatrics
Children & Disasters
http://www.aap.org/disasters/

Pediatrician's Role in Disaster Preparedness (AAP policy statement)
http://aappolicy.aappublications.org/cgi/content/full/pediatrics;117/2/560

How Pediatricians Can Respond to the Psychosocial Implications of Disasters
http://pediatrics.aappublications.org/cgi/content/abstract/103/2/521

Psychosocial Issues for Children and Families in Disasters:
A Guide for the Primary Care Physician (with the U.S. Center for Mental Health Services)
http://mentalhealth.samhsa.gov/publications/allpubs/SMA95-3022/default.asp

American Psychological Association
Disasters and Terrorism
www.apahelpcenter.org/articles/topic.php?id=4

Disasters and Terrorism
www.apahelpcenter.org/articles/topic.php?id=4

Child Deaths Hit Communities Hard: Disasters Demand Psychological Triage
www.aap.org/advocacy/disarticle.htm

Centers for Disease Control and Prevention
Disaster Mental Health Resources
www.bt.cdc.gov/mentalhealth

National Advisory Committee on Children and Terrorism
www.bt.cdc.gov/children/

Child Trauma Academy
The Child's Loss: Death, Grief and Mourning:
How Caregivers Can Help Children Exposed to Traumatic Death
www.childtrauma.org/ctamaterials/Loss2.asp

Helping Traumatized Children: A Brief Overview for Caregivers
http://www.childtrauma.org/ctamaterials/Principles2.asp

Department of Health and Human Services
National Mental Health Information Center
Tips for Talking About Disasters
http://mentalhealth.samhsa.gov/cmhs/EmergencyServices/after.asp

Federal Emergency Management Agency (FEMA) for Kids
Games, coloring books and other materials aimed at younger, computer-savvy children
www.fema.gov/kids/

Fordham University Graduate School of Social Service
Clinical Work with Culturally Diverse Dying Patients
www.angelfire.com/on/NYCLTCethicsnetwork/econgress.html

National Cancer Institute
Loss, Grief and Bereavement
www.cancer.gov/cancertopics/pdq/supportivecare/bereavement/healthprofessional

National Center for Post Traumatic Stress Disorder
Terrorist Attacks and Children
www.ncptsd.va.gov/ncmain/ncdocs/fact_shts/fs_children_disaster.html?opm=1&rr=rr54
&srt=d&echorr=true

National Child Traumatic Stress Network
www.nctsnet.org/nccts/nav.do?pid=hom_main

National Mental Health Information Center
Publications on Disaster and Trauma
http://mentalhealth.samhsa.gov/publications/browse.asp

New York State Office of Mental Health
www.omh.state.ny.us/

New York University Child Study Center
www.aboutourkids.org/

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Section 8

SECURITY AND
TRACKING OF
PEDIATRIC PATIENTS

8 SECURITY AND TRACKING OF PEDIATRIC PATIENTS

PURPOSE

The literature on child security has primarily addressed preventing child abductions. The fallout from Hurricane Katrina in 2005, however, highlighted the critical need to care for children during disasters; the safety recommendations in this section will help hospitals plan for children's safety during such events. The information focuses on tracking pediatric patients and visitors, and creating pediatric safe areas.

GENERAL GUIDELINES

Hospitals responding to a disaster should:

- Develop a Pediatric Tracking System to track both accompanied and unaccompanied children.
- Develop a protocol to rapidly identify and protect displaced children.
- Record key identifying information in a Child ID Document for use in later tracking and reunification with caregivers.
- Create Pediatric Safe Areas (PSAs) to hold uninjured, displaced or released children awaiting adult caregivers. A checklist is included at the end of this section.
- Identify a Pediatric Safe Area Coordinator who will set up and supervise the PSA. A sample Job Action Sheet, which outlines the PSA Coordinator position, is included at the end of this section.
- Create and use a PSA registry sheet to document activities such as transfer status, location and final disposition of children.

PEDIATRIC PATIENT TRACKING

Hospitals normally only track pediatric patients in maternity and pediatric wards, and literature about tracking has only focused on children abducted from hospital wards. These studies describe measures to prevent child abductions (such as the use of identification bands), but do not discuss identification of children **visiting** a hospital.

Hospitals have historically served as safe havens for people displaced during disasters. In the August 2003 blackout in New York City, hundreds of people came to hospitals, seeking secure places with functioning generators, light, safety and nourishment. In these situations, individuals often bring lost children directly to hospital emergency departments for evaluation before they are taken to other locations.

Such experience shows that hospitals are likely to serve as safe havens for displaced and unaccompanied children during disasters. Displaced children, if unaccompanied, are at special risk for maltreatment, neglect, exploitation and subsequent psychological trauma. Hurricane Katrina and the ensuing floods and chaos displaced over 3,000 children throughout the United States.

Tracking Accompanied Children

There are two categories of accompanied children who require tracking during a disaster:

1. Those who become patients as a result of the disaster and are separated from their caregiver (i.e., if the caregiver is also a patient)

2. Those who are not patients but whose caregivers have been admitted (i.e., a critically injured adult who was caring for the child at the time of the disaster)

One tracking method is to issue identification (ID) bands for children and corresponding adults. Hospital staff distributes the bands when these individuals come into the emergency department. To reduce errors in matching children to adults, each person must wear an ID band as soon as possible after entering the emergency department or other areas of the hospital.

Identification bands should include the following information to keep a tight link between the child and adult:

- Name of child and birth date and name of adult and birth date

- Date adult is admitted

- Date child is admitted

- Date child has any visitors

If possible, bar-coded bracelets on which children and adults receive the same code is ideal, especially if the adult is unconscious and the child is too young for proper identification to be made.

Hospitals should review their facility's infant abduction protocols and the National Center for Missing and Exploited Children's publication, *For Healthcare Professionals: Guidelines on Prevention and Response to Infant Abductions."* To access the article, visit **www.missingkids.com/missingkids/servlet/ResourceServlet?LanguageCountry= en_US&PageId=468**

Tracking Displaced or Unaccompanied Children

Displaced children must be identified and quickly protected to reduce their risk of maltreatment, neglect, exploitation and emotional trauma. Hospitals, clinics and shelters receiving child survivors of disasters should immediately respond with appropriate child-safety measures.

"Operation Child ID," implemented in Camp Gruber, Oklahoma, after Hurricane Katrina, provided a rapid, systematic protocol for identifying and protecting displaced children. The Centers for Disease Control and Prevention considers this protocol useful in promoting a safe and healthy environment for displaced children in shelters. The protocol on the next page has been adapted to specifically address children displaced during disasters in New York City.

PROTOCOL TO RAPIDLY IDENTIFY
AND PROTECT DISPLACED CHILDREN

- Survey all children in the hospital, clinic or shelter. Identify those unaccompanied by adults and ask where they are sleeping or being held, and the names and ages of those supervising them. A sample survey form for identifying a displaced child is available on page 87.

- Place a hospital-style identification bracelet (or, ideally, a picture ID card) on the child and place matching identification on the supervisory adult, if there is one. Check frequently to ensure that the child's wristband matches that of the accompanying adult. If there is no supervisory adult, place the child in the hospital's pre-determined Pediatric Safe Area (see page 89) for appropriate care and possible reunification.

- Consider all children separated from their legal guardians or unaccompanied by an adult as "high risk." Immediately report them to the hospital's emergency operations center and the National Center for Missing and Exploited Children (NCMEC) at their toll-free Hotline at 1-800-THE-LOST® (1-800-843-5678) 24-hours a day/seven days a week.

- After reporting all "high risk" children, send a complete list of all children in the hospital, clinic or shelter to the New York State Hospital Emergency Resource Database System (HERDS) (if the system is activated and the information is requested). Also send the list to the NCMEC in case adults or children have provided incorrect information about their relationship and status.

- Provide unaccompanied children and those separated from their legal guardians with social and health screenings. The screenings should ideally be completed by a physician with pediatric experience and should include an assessment of the child and accompanying adult's relationship.

- If the New York State Department of Health, another city agency or NCMEC reports back that the child is reported missing, locate the child and facilitate reunification with a legal guardian.

CHILD IDENTIFICATION SURVEY

Name: _____ Hospital # _____

Age: _____ Months/Years   Date of birth _____   Gender: ☐ Male   ☐ Female

Is the child currently accompanied by a supervising adult? ☐ Yes   ☐ No

Name of currently supervising adult:

_____ Age _____

Is this person a parent? ☐ Yes ☐ No   A grandparent? ☐ Yes   ☐ No

Is this parent the usual guardian? ☐ Yes ☐ No

Did the child live with this person before the disaster? ☐ Yes   ☐ No

Does the supervising adult have proof of legal guardianship or relationship to the child? ☐ Yes ☐ No

If Yes, please describe or attach a copy:

_____

If the adult(s) is not a parent or grandparent, what is the relationship to this child?

Aunt/Uncle _____ Age _____

Sibling_____ Age _____

Friend _____ Age _____

Other (next-of-kin, teacher) _____ Age _____

Was the child treated for illness or injury? ☐ Yes   ☐ No

If Yes, please describe: _____

_____

Was the child admitted to the hospital? ☐ Yes   ☐ No

If Yes, give room or location _____

If No, give location or address where child is currently located (lobby, Pediatric Safe Area, shelter, etc.)

_____

Does this child have a history of medical problems? ☐ Yes   ☐ No

If Yes, please list _____

Does this child or do family members have special needs? ☐ Yes   ☐ No

If Yes, please list _____

SECURITY AND TRACKING
OF PEDIATRIC PATIENTS

8

PEDIATRIC SAFE AREAS

Create centralized, safe, supervised areas for all unaccompanied children (visiting or released). Be sure they cannot leave this area without appropriate escort. Train security personnel or other responsible staff to help children who may be frightened or have other psychological reactions stemming from disaster and separation.

Use the following three forms to help plan a Pediatric Safe Area:

1. **Pediatric Safe Area Checklist.** Experiences at Camp Gruber showed that a checklist for setting up the Pediatric Safe Area will help eliminate safety hazards and unintended injuries to children. See the checklist on the next page for further information about issues identified at Camp Gruber.

2. **Pediatric Safe Area Coordinator Job Action Sheet (JAS).** Created for the staff coordinating pediatric safe areas, the JAS helps staff readily review the steps needed to prepare for a possible influx of children. **See page 90 in this section**.

3. **Pediatric Safe Area Registry Sheet.** This form can be used to monitor the arrival and departure of children in the Pediatric Safe Area **(see page 91 in this section)**. Make copies and circulate via the hospital Emergency Operations Center (EOC).

PEDIATRIC SAFE AREA CHECKLIST*

ITEM	NO	YES
Are needle boxes at least 48 inches off the floor?		
Do the windows open?		
Are the windows locked?		
Are there window guards?		
Do the windows have blinds or drapes that might pose a strangulation hazard?		
Are there any water basins, buckets or sinks that might pose a drowning hazard?		
Can children be safely contained in this area (consider stairwells, elevators, doors)?		
Do you have distractions for the children (age- and gender-appropriate videos, games, toys)?		
Is the area poison proof? (Check for cleaning supplies, Hemoccult developer, choking hazards or cords that should be removed or locked away.)		
Are the electrical outlets child safe and covered?		
Does the area have smoke and fire alarms?		
Are med carts and supply carts locked?		
Should separate areas for various age groups be created?		
Have drills for managing this area been conducted with all relevant departments?		
Is there a security plan for the unit?		
Is there a plan to identify the children?		
Is there a plan for assessing the mental health needs of children?		
Are there any fans or heaters in use? Are they safe?		
Is there an onsite or nearby daycare center? Could they be of help?		
Is there enough staff to supervise the number of children? (Younger children will require more staff.)		
Are there a sign-in and sign-out sheet for all children and adults who enter the area?		
Will children need to be escorted away from the safe area to bathrooms?		
Are age-appropriate snacks available for children?		
Are there sleeping accommodations available (i.e., foam mats on the floor)? Are there enough to avoid co-sleeping (to reduce the risk of Sudden Infant Death Syndrome)?		

*Adapted from the Chicago Department of Health

SECURITY AND TRACKING OF PEDIATRIC PATIENTS

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PEDIATRIC SAFE AREA COORDINATOR JOB ACTION SHEET

Mission: To ensure that the pediatric safe area is properly staffed and stocked for an emergency, and to ensure the safety of children requiring the PSA and awaiting appropriate disposition.

Date:_____ Start:_____ End: _____ Position Assigned to: _____

Signature: _____ Initials: _____

Position Reports to: **Pediatric Services Unit Leader**

Hospital Command Center Location: _____ Telephone: _____

Fax: _____ Other Contact Info: _____ Radio Title: _____

IMMEDIATE RESPONSE ACTIVITIES	TIME	INITIAL
Receive appointment from Pediatric Services Unit Leader (PSUL)		
Read this entire Job Action Sheet (JAS)		
Obtain briefing from Pediatric Services Unit Leader		
Ascertain that the pre-designated pediatric safe area is available (If not immediately available, take appropriate measures to make the area available as soon as possible)		
Ensure that enough staff is available for PSA		
Ensure that enough security staff is available for PSA		
Ensure that there is adequate communication in PSA		
Ensure that there is a sign in/out log for PSA		
Ascertain that all items in PSA checklist have been met; if there are any deficiencies, address them as soon as possible and report them to the Pediatric Services Unit Leader		

EXTENDED RESPONSE ACTIVITIES	TIME	INITIAL
Determine the need for ongoing staff at PSA		
Maintain registry of children in PSA as they arrive or are released to appropriate adults		
Determine estimated length of time for the operational period of PSA		
Maintain communication with Pediatric Services Unit Leader for planning needs		
Determine if children in PSA have any additional medical or non-medical needs		
Prepare an informational session for children in the PSA		
Prepare to make sleeping arrangements if needed		
Determine any additional needs (volunteers, staff, security, or equipment)		
Ensure that children have the appropriate resources and entertainment for their stay (food, water, medications, age-appropriate reading materials)		
Report frequently to Pediatric Services Unit Leader concerning status of PSA		
Ensure that PSA staff have enough breaks, water and food during their shifts		
Coordinate with Psychological Support Unit for ongoing evaluations of the mental health of volunteers and children; evaluate the need for additional psychosocial resources		
Document all action and decisions and send a copy to the Pediatric Services Unit Leader		

PEDIATRIC SAFE AREA REGISTRY SHEET

	Name of Child	Age	Arrival Time	Discharge Time	*Disposition	**Responsible Adult Name	Responsible Adult Signature	Contact Phone Number
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								

* Disposition: Admit to Hospital (A); Discharged to Parent (D-P); Discharged to relative (D-R); Discharged to Other (D-O); Social Services Placement (SS); Police (NYPD)
** Responsible Adult: Adult responsible for child at time of discharge. PSA Coordinator should determine if child can be discharged to this adult based on hospital policy.

SECURITY AND TRACKING
OF PEDIATRIC PATIENTS

8

Sources

1. Centers for Disease Control and Prevention
Health Advisory: Instructions for Identifying and Protecting Displaced Children.
September 28, 2005.

2. Rabun, JB.
For Healthcare Professionals: Guidelines on Prevention of and Response to Infant Abductions, 8th edition. National Center for Missing & Exploited Children (2005).
www.missingkids.com/en_US/publications/NC05.pdf

3. Brandenburg MA, Ogle MB, Washington BA, et al.
"Operation Child-Safe": a strategy for preventing unintentional pediatric injuries at a Hurricane Katrina evacuee shelter. *Prehosp Disaster Med.* 2006;21(5):359-365.

Resources

Integrated Patient Tracking Initiative (IPTI)
This Web site brings together experts to develop a national framework that communities and regions can use when beginning their own patient tracking programs.
www.comcare.org/Patient_Tracking/IPTI_Index.html

STAFFING

9 STAFFING

PURPOSE

These recommendations address hospital pediatrics staffing during a disaster. To lessen the confusion and chaos created by disasters, hospitals must appropriately assign responsibilities and personnel. By following the recommendations, hospitals with pediatric disaster plans and pediatric representatives on their Disaster Committees will be able to care for children much more effectively during disasters. The recommendations apply primarily to hospitals without significant pediatric services or staff. However, hospitals that do have pediatric services should attempt to follow these recommendations and incorporate them into the Hospital Incident Command System (HICS) when applicable.

GENERAL GUIDELINES

- Identify hospital staff with specialty skills or experience in treating children.
- Develop a plan to use these staff members' skills, including calling and notification procedures.
- Create key pediatric positions staff will occupy in a disaster.
- Include the pediatric staffing plan in your hospital's general Disaster/Emergency Response Plan.

PLANNING: SURVEY STAFF FOR PEDIATRIC EXPERIENCE

Identify members of the staff with skills or training in treating children—they will be the primary caregivers for children during a disaster. Ideally, staff should be selected from pediatric emergency medicine, emergency medicine, pediatrics or family medicine.

Other staff members with some experience treating children may serve as additional personnel. They may include those trained in anesthesia, otolaryngology, pediatric surgery, trauma surgery, general surgery, orthopedics, urology, neurosurgery, thoracic surgery or other specialties.

Look particularly for staff with airway management, resuscitation and critical care skills, especially in hospitals with few pediatric specialists. For example, anesthesiologists or otolaryngologists could perform airway management for children, while anesthesiologists and general surgeons could perform pediatric resuscitation and critical care medicine.

Other potential staff members include nurses, physician assistants and nursing assistants working in the hospital's emergency departments (EDs), operating rooms (ORs), post anesthesia care units (PACUs), intensive care units (ICUs), inpatient units and outpatient clinics.

Staff members responsible for resuscitation in the EDs, ORs, PACUs and ICUs should have appropriate life support training certifications and hospital credentials. **(See Section 11, Training)**.

Identify these pediatric disaster team members **before** a disaster. Forward their names and contact information to the Disaster Committee and Command Center, and maintain this information on a pediatric disaster call down sheet. Perform regular staff survey updates, identifying those staff members with each skill and update their contact information annually.

MITIGATION: CREATE PEDIATRIC LEADERSHIP POSITIONS FOR KEY PERSONNEL AND QUALIFIED STAFF

These key personnel will coordinate pediatric disaster care and planning, serving as regular members of the Disaster Committee. Assign qualified clinical personnel to these two key positions:

I. Physician Coordinator for Pediatric Emergency Care in a Disaster

Nominated by the ED Medical Director and approved by the Disaster Preparedness Committee, this individual should be responsible for:

- Ensuring staff physicians have necessary skills and knowledge for emergency care and resuscitation of infants and children
- Helping develop and periodically review ED medications, equipment, supplies, policies and procedures as a member of the general disaster committee
- Helping develop and update the hospital emergency response plan, focusing on children's needs
- Serving as liaison to in-hospital and out-of-hospital pediatric care committees in the community (if they exist)
- Serving as liaison to a definitive care hospital (a regional pediatric referral hospital with a pediatric-capable trauma center) and facilitating patient transfers
- Organizing emergency pediatric education for ED health care providers
- Identifying staff qualified to provide immediate or extended care of pediatric patients during a disaster
- Providing emergency care and resuscitation to children during a disaster

II. Nursing Coordinator for Pediatric Emergency Care in a Disaster

This individual should be responsible for:

- Serving as liaison to in-hospital pediatric care committees
- Serving as liaison to inpatient nursing and a definitive care hospital (a regional pediatric referral hospital with a pediatric-capable trauma center), integrating services and facilitating patient transfers
- Organizing ED nursing continuing education in emergency pediatric care and providing pediatric orientation for new staff members

- Helping develop, and periodically reviewing, policies and procedures for emergency pediatric care
- Monitoring pediatric medical equipment and medication availability
- Providing emergency evaluation and care to children during a disaster

RESPONSE: STAFFING FOR A COORDINATED AND COMPREHENSIVE DISASTER PLAN

A hospital's pediatric disaster team should be as broad as possible, accounting for the many levels of staffing needed to care for children during a disaster. The team should include clinical staff such as physicians, nurses, ancillary ED and inpatient personnel who will provide emergency evaluation and medical care for children. Additional staff may be needed to respond to children's non-clinical needs.

Sample Job Action Sheets at the end of this chapter will help in assigning staff tasks and supporting leadership positions. While the Physician and Nursing Coordinators will oversee clinical care in the ED, a general Pediatric Logistics Unit Leader and a Pediatric Services Unit Leader should monitor non-clinical areas. (See the Job Action Sheets at the end of this Section for more information.) These unit leader positions will facilitate communication between non-clinical areas while overseeing disaster response in Procurement, Materials/Supplies, Transportation and Nutrition, which may include delegating the following pediatric-specific response activities and modifying Job Action Sheets as follows:

Procurement Unit Leader

- Receive briefing from Logistics Section Chief and Pediatric Logistics Unit Leader
- Contact personnel on Procurement Disaster call list, if warranted
- Work with vendors for pediatric supplies, including hospital vendors and community resources (local pharmacies and grocery stores) for back-up resources

Materials/Supplies Unit Leader

- Receive briefing from Logistics Section Chief and Pediatric Logistics Unit Leader
- Contact personnel on Materials/Supplies Disaster Call list, if warranted
- Collect and coordinate distribution of essential children's medical equipment and supplies
- Help Pediatric Services Unit Leader prepare pre-designated Pediatric Disaster Care Areas (See Section 3, Equipment) and Pediatric Safe Area (See Section 8, Security)

Transportation Unit Leader

- Receive briefing from Logistics Section Chief and Pediatric Logistics Unit Leader.
- Contact personnel on Transportation Disaster Call List, if warranted.
- Count open stretchers, carts, cribs and wheelchairs available for transporting children.
- Ensure safety for transporting children and proper modification, especially if using adult transport equipment.
- Report transportation resources to Logistics Section Chief.
- Coordinate delivery of transportation resources to designated pediatric area or ED, depending on scenario.
- Designate transporters from Incident Command System staff or labor pool as needed.
- Make all transporters aware of child safety issues, including never leaving children unattended **(See Section 12, Transportation)**.

Nutrition Unit Leader

- Receive briefing from Logistics Chief and Pediatric Logistics Unit Leader.
- Contact personnel on Nutritional Call list, if warranted.
- Estimate number of children's meals needed for 48 hours **(See Section 2, Dietary Considerations)**.
- Estimate Pediatric Safe Area's food, snacks and water needs.

In addition to caring for children's physical needs during a disaster, hospitals should prepare to address children's mental health needs. Among children, possible psychological reactions to disaster include acute stress disorder, grief and anger. Hospitals should therefore include psychiatrists, psychiatric nurses, social workers and the hospital chaplain in disaster response plans. **(See Section 7, Psychosocial Considerations)**.

9 STAFFING

PEDIATRIC SERVICES UNIT LEADER JOB ACTION SHEET

Mission: To ensure that the pediatric treatment and holding areas are properly assigned, equipped and staffed during an emergency.

Date:_____ Start:_____ End: _____ Position Assigned to: _____

Signature: _____ Initials: _____

Position Reports to: **Operations Section Chief**

Hospital Command Center Location: _____ Telephone: _____

Fax: _____ Other Contact Info: _____ Radio Title: _____

IMMEDIATE RESPONSE ACTIVITIES	TIME	INITIAL
Received appointment from Operations Section Chief		
Read this entire job action sheet		
Received briefing from Operations Section Chief		
Gathered external information from Treatment Area Supervisor/ED Charge Nurse about:		
• Number of expected children and their conditions		
• Current total number of ED patients		
• Expected time of patient arrival		
Determined number of available pediatric inpatient beds and cribs and report to Operations Section Chief		
Identified staff members qualified to treat children		
Determined additional staffing needs based on expected patient numbers		
Informed Discharge Unit Leader (via Operations Section Chief) to institute early discharge or transfer of admitted children		
Assembled Pediatric Response Team as predetermined:		
• Physicians for pediatric response (pediatrics/family practice/house staff/community physicians		
• Nurses (with pediatric experience and/or PALS/ENPC certification)		
• Support technicians with experience treating children		
• Other staff		
Determined if Pediatric Safe Area should be opened (depends on the expected number of unaccompanied children during the disaster)		
Assigned Pediatric Safe Area Coordinator		
Communicated with Operations Section Chief to ensure coordination of non-pediatric support personnel as planned		
Ensured preparation of pre-designated Pediatric Disaster Care Areas:		
• Clear areas		
• Designate each area as planned and based on expected casualties		
• Assign support staff to each area		
• Ensure delivery of medical and non-medical pediatric equipment		
• Ensure that clinical staff set up pediatric equipment		

Pediatric Services Unit Leader Job Action Sheet *Continued*

IMMEDIATE RESPONSE ACTIVITIES	TIME	INITIAL
Received children		
Determined children's medical status		
Communicated findings to Treatment Area Supervisor for dissemination as planned		
Following triage of all children, moved uninjured and unaffected unaccompanied children to the pre-designated Pediatric Safe Area		

INTERMEDIATE RESPONSE ACTIVITIES	TIME	INITIAL
Assessed ongoing staffing needs based on patient status reports from:		
• Pediatric health care personnel (ED, inpatient and OR)		
• Non-pediatric ancillary and support personnel		
• Pediatric Safe Area Coordinator		
Assessed additional medical and non-medical equipment and supply needs		
Communicated with Pediatric Logistics Unit Leader Job Action Sheet (via Operations Section Chief, via Logistics Section Chief)		
Ensured delivery of needed supplies to areas designated for children		
Assessed Pediatric Response Team's basic needs:		
• Food		
• Rest		
• Psychological support		
Reported status of pediatric casualties, discharges, admissions, transfers and Pediatric Safe Area residents to Operations Section Chief		
Held information sessions with Public Information Officer as needed		
Obtained Child Survey Forms from all areas treating children		
Reported any unidentified or unaccompanied children to Operations Section Chief		

EXTENDED RESPONSE ACTIVITIES	TIME	INITIAL
Debriefed Pediatric Response Team and Pediatric Safe Area Coordinator with:		
• An incident summary		
• Areas of success		
• Opportunities for improvement		
Thanked and congratulated the team		

STAFFING

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PEDIATRIC LOGISTICS UNIT LEADER JOB ACTION SHEET

Mission: To ensure that children's needs are addressed by Procurement, Transportation, Materials Supply and Nutritional Supply during an emergency.

Date: _____ Start: _____ End: _____ Position Assigned to: _____

Signature: _____ Initials: _____

Position Reports to: **Logistics Section Chief**

Hospital Command Center Location: _____ Telephone: _____

Fax: _____ Other Contact Info: _____ Radio Title: _____

IMMEDIATE RESPONSE ACTIVITIES	TIME	INITIAL
Received appointment from Logistics Section Chief		
Read this entire Job Action Sheet		
Obtained briefing from Logistics Section Chief		
Estimated number of expected children and their conditions		
Prepared timeline for supply needs		
Meet with Logistics Section Chief and delegated tasks related to pediatrics to Unit Leaders (determined by the extent of HICS activation) which may include:		
• Procurement Unit Leader		
• Transportation Unit Leader		
• Materials/Supplies Unit Leader		
• Nutritional Supply Unit Leader		

INTERMEDIATE RESPONSE ACTIVITIES	TIME	INITIAL
Received regular updates from Logistics Section Chief		
Assessed additional medical equipment and supply needs for children		
Addressed additional pediatric concerns, questions and issues as needed		

EXTENDED RESPONSE ACTIVITIES	TIME	INITIAL
Documented actions and decisions, and submit reports to Logistics Section Chief		
Participated in debriefing		
Reviewed areas of success		
Identified opportunities for improvement		
Thanked and congratulated team		

Section **10**

SURGE

CONSIDERATIONS

10 SURGE CONSIDERATIONS

PURPOSE

These recommendations will help hospitals meet bed capacity needs during a disaster involving children, including inpatient beds and emergency department space. This section presents a disaster planning scenario that individual hospitals can scale according to their predicted response. The section also includes general guidelines for all hospital disaster plans.

GENERAL GUIDELINES

To prepare for the reception and care of children during a disaster, follow the recommended steps below:

1. Activate the hospital external disaster plan.

2. Notify providers with expertise in treating children who were identified before the disaster, such as physicians and nurses from pediatrics, family medicine, emergency medicine and surgery; if there is no one with pediatric expertise, notify adult providers from all departments.

3. Identify pediatric equipment, drug-dosing guidelines, ventilators, operating rooms and ICU beds.

4. If hospital receives or expects to receive more children than it can handle, stabilize and transfer injured patients to local pediatric facilities according to prior agreements (have available in advance a phone list of area pediatric intensive care units and pediatric emergency departments, ideally including directors' names). Refer to the New York City Hospital Pediatric Resource Directory for more information on surrounding hospitals and Pediatric Intensive Care Resources by visiting **www.nyc.gov/html/doh/html/bhpp/bhpp-focus-ped.shtml**

5. Set up a family information center area for victims' relatives and a separate area for communication with the media. **See Section 4, Family Information and Support Center**.

6. Know the hospital's pediatric surge capacity (i.e., at what point an institution will run out of clinicians, equipment, medications, operating rooms and/or ICU beds) for the expected number and injury severity of affected children.

7. Request or create transport teams, and request more physician and nursing staff, as needed.

8. When children arrive, decontaminate children before they enter the hospital if you suspect chemical or radioactive contamination. **See Section 1, Decontamination of the Pediatric Patient**.

9. Store at least five cribs, port-a-cribs or playpens for a disaster involving children. Hospitals without cribs (i.e., those lacking pediatric wards) may use adult beds if the beds:

    - Have side rails

    - Are set at the lowest possible height

    - Are unplugged so the buttons to adjust the beds do not work

10. If boarding children in an adult ward, ensure there are enough appropriate-sized airway supplies (Ambu bags, face masks, endotracheal tubes, stylets, oral airways); chest tubes; Foley catheters and over-the-needle IV catheters/IO needles for each patient.

11. Hospital administration and social work staff must plan for news media and a rush of anxious parents and family members. **See Section 4, Family Information and Support Center**.

12. Prepare security to handle large numbers of family members and other non-patients. Expect approximately four to five visitors or family members per child.

13. Consider opening a Pediatric Safe Area to temporarily care for unaccompanied, non-injured or discharged children. **See Section 8, Security**.

PLANNING SCENARIO

This disaster scenario, created by the Centers for Bioterrorism Preparedness Planning Task Force, will help hospitals predict the number of beds needed for children during a disaster.

These planning recommendations address ED surge capacity space and inpatient bed assignments for the three types of hospitals: (1) non-trauma hospitals with a pediatric intensive care unit; (2) hospitals with a general pediatric inpatient service but no PICU; and (3) hospitals with no pediatric service.

Assume 40 children arrive at Hospital A following an explosive disaster:

- Expect five critically ill or injured children (**Red-tagged children**)

- Expect 10 moderately ill or injured children (**Yellow-tagged children**)

- Expect 25 minimally injured or uninjured children (**Green-tagged children**)

SURGE CONSIDERATIONS 10

I. Non-Trauma Hospitals with a Pediatric Intensive Care Unit

Non-trauma hospitals with PICUs should consider the following plan for placement of children during a disaster. Hospitals, however, should consider their own resources and personnel appropriate to their capabilities when creating a pediatric disaster plan.

Assigning Emergency Department Beds

Red-tagged children (critically injured or ill)

- Place patients in the pediatric emergency area's highest level acute care beds.
- After filling this area, transfer remaining critical children to adult critical care areas in the ED.
- If there is no trauma team, the ED attending physician should assume overall responsibility for making appropriate transfers to PICU or pediatric ward attending physician.
- **If there is no trauma team, immediately consult Pediatric Surgery Department for patients with penetrating injuries to the abdomen or thorax.** Place all other surgical specialties (neurosurgery, orthopedics, ENT, ophthalmology, etc.) on standby.

Yellow-tagged children (moderately injured or ill)

- Place in the pediatric ED's non-acute area. Send overflow patients to the adult ED's non-acute areas.
- Treat yellow-tagged patients and assign disposition quickly.
- Re-evaluate yellow-tagged children frequently to ensure their condition does not deteriorate, warranting immediate medical intervention.

Green-tagged children (minor or no injuries)

- Triage to the waiting room, pediatric clinic area or another large room capable of accommodating many children. The decision will depend on the day of week and time of the disaster.
- Re-evaluate green-tagged patients frequently to ensure their condition does not deteriorate, warranting immediate medical intervention.
- Discharge green-tagged patients to an appropriately identified adult caregiver as soon as medically reasonable and according to hospital policy.

Assigning Inpatient Beds

Red-tagged children (critically injured or ill)

Give priority PICU beds to the most critical cases and youngest victims. Once the PICU is full, Pediatric Specialists in the Post Anesthesia Care Unit (PACU) can manage overflow children requiring surgery. Transfer other overflow children to monitored beds on the pediatric ward or in adult medical or surgical ICUs.

<mark>Yellow-tagged children</mark> (moderately injured or ill)

Admit until all pediatric beds are occupied. At that point, the hospital must decide to increase the pediatric capacity (add one more bed per room if space allows) or board the oldest children on adult wards. If possible, all children should board on the same adult ward to facilitate nursing care and improve the children's psychological well-being.

II. Hospitals with a General Pediatric Service but no Pediatric Intensive Care Unit

Hospitals with a general pediatric service but no PICU should consider the following plan for assigning pediatric beds during a disaster. Hospitals, however, should consider their own resources and personnel plan appropriate to their capabilities when creating a pediatric disaster.

Most hospitals lacking a PICU also lack a pediatric ED. If your hospital has a pediatric ED, follow the guidelines above for Non-Trauma Hospitals with a Pediatric Intensive Care Unit. The hospital likely has a general emergency department.

Assigning Emergency Department Beds

<mark>Red-tagged children</mark> (critically injured or ill)

- Place in the ED's most acute care area.
- After filling that area, transfer remaining critically ill children to a monitored observation area in the ED.
- ED attending physician will assume overall responsibility, making appropriate transfers to pediatric ward attending physician.
- If the hospital has a trauma team, consult them immediately and give them responsibility for all children requiring trauma surgery.
- **If there is no trauma team, immediately consult Pediatric Surgery Department for children with penetrating injuries to the abdomen or thorax.** Place all other surgical specialties (neurosurgery, orthopedics, ear/nose/throat, ophthalmology, etc.) on standby.

<mark>Yellow-tagged children</mark> (moderately injured or ill)

- Place in the ED's non-acute care areas. Transfer yellow-tag overflow to the waiting room or other places serving as patient care areas for the duration of the disaster.
- Treat and decide disposition of yellow-tagged patients in a timely manner.
- Re-evaluate them frequently to ensure their condition does not deteriorate, warranting immediate medical intervention.
- Transfer admitted children to the pediatric ward as soon as possible.

<mark>Green-tagged children</mark> (minor or no injuries)

- Triage to the waiting room, lobby or pediatric clinic. The decision depends on the day of the week and time of disaster.

- Re-evaluate green-tagged patients frequently to ensure their condition does not deteriorate, warranting immediate medical intervention.
- Discharge green-tagged patients to an appropriately identified adult caregiver as soon as medically reasonable and according to hospital policy.

Assigning Inpatient Beds

Red-tagged children (critically injured or ill)

Transfer critical children to a hospital capable of a higher level of care as soon as possible. Until then, pediatric staff in the post-operative recovery room can treat children requiring surgery. Transfer all others to monitored beds on the pediatric ward or in adult medical or surgical ICUs. **See Section 9, Staffing**.

Yellow-tagged children (moderately injured or ill)

Admit to the pediatrics ward until all beds are filled. At that point, the hospital must decide to increase the pediatric ward capacity (add one more bed per room if space allows) or board the oldest children on adult wards. If possible, all children should board on the same adult ward to facilitate nursing care and improve the children's psychological well-being.

III. Hospitals with No Pediatric Service

Hospitals with no PICUs or pediatric inpatient services should consider the following plan for assigning pediatric beds during a disaster. Hospitals, however, should consider their own resources and personnel appropriate to their capabilities when creating a pediatric disaster plan.

Store at least five cribs, port-a-cribs or playpens for use in disasters involving children. Hospitals with no cribs (i.e., those lacking a pediatric ward) may use adult beds if they:

- Have side rails
- Are set at the lowest possible height
- Are unplugged so the buttons do not function

Transfer all children to a hospital capable of a higher level of care as soon as possible. Provide unstable patients with initial treatment before transferring.

Assigning Emergency Department Beds

Red-tagged children (critically injured or ill)

- Place in the ED's most acute care area.
- After filling that area, transfer remaining critical patients to a monitored observation area in the ED.
- ED personnel should take overall responsibility. Immediately consult the trauma team, if the hospital has one, and give them responsibility for all children requiring trauma surgery.

- **If there is no trauma team or pediatric surgery, immediately consult adult surgery for patients with penetrating injuries to the abdomen or thorax**. Call other surgical specialties (neurosurgery, orthopedics, ear/nose/throat, ophthalmology, etc.) to the hospital or place them on standby.

Yellow-tagged children (moderately injured or ill)

- Place in the ED's non-acute care areas.
- Re-evaluate yellow-tagged patients frequently to ensure their condition does not deteriorate, warranting immediate medical intervention.
- Transfer yellow-tag overflow to the waiting room or another area converted to patient care for the duration of the disaster.
- Transfer admitted children to adult inpatient wards as soon as possible. Set beds at the lowest possible height, ensure they have side rails and disable the electronic bed functions so the buttons will not work.

Green-tagged children (minor or no injuries)

- Triage to the waiting room, lobby or adult clinic area. The decision should depend on the day of the week and time of the disaster.
- Re-evaluate green-tagged patients frequently to ensure their condition does not deteriorate and require immediate medical intervention.
- Discharge green-tagged patients to an appropriately identified adult caregiver as soon as medically reasonable and according to hospital policy.

Assigning Inpatient Beds

Red-tagged children (critically injured or ill)

Transfer critical children to a hospital capable of a higher level of care as soon as possible. Until then, the staff from anesthesia or general surgery can manage critical children requiring surgery. Transfer all other overflow to adult medical ICUs, surgical ICUs or monitored beds on adult inpatient wards.

Yellow-tagged children (moderately injured or ill)

Admit non-critically ill children to an adult ward if appropriate transfer is delayed or unavailable. If possible, board all children on the same adult ward to facilitate nursing care and improve the children's psychological well-being.

TRANSFERRING CHILDREN IN HOSPITALS WITH NO PEDIATRIC INTENSIVE CARE UNITS

Hospitals with no pediatric emergency departments (EDs) or pediatric intensive care units (PICUs) must prepare transfer criteria for critically injured or ill children in advance of a disaster.

Hospitals with no pediatric EDs or PICUs may need to stabilize and transfer pre-adolescent children in need of surgery or PICU care. Identify these children by predetermined criteria such as:

- A Pediatric Trauma Score or Revised Trauma Score (visit **www.sfar.org/scores2/triss2.html** for a Pediatric Trauma Score Calculator)

- The need for significant intensive care

- The presence of critical medical problems including respiratory distress or failure, coma, increased intracranial pressure, shock, ongoing seizures or other major organ failure

Make pre-arranged agreements with ambulance companies and receiving hospitals. Include traditional referral hospitals, but also hospitals that are close by or with the shortest transport routes. During a disaster, traffic closures or other obstructions may make transportation difficult.

To find a sample inter-facility transfer agreement, such as the one on the Washington Health Care Association Web site: **www.whca.org/docs/interfacility_transfer_agreement.pdf**

Section **11** TRAINING

11 TRAINING

PURPOSE

This section recommends training courses for health care providers who will treat children during a disaster. Individual hospitals can scale the courses according to their predicted patient numbers. The guidelines include general medical and disaster training, as well as educational programs specific to children.

GENERAL GUIDELINES

Hospital emergency preparedness training should cover both disaster management and the emergency treatment of adults and children who require basic, advanced and trauma life support.

All hospitals should address pediatric patients in training courses for staff likely to respond during a disaster. Also, the hospital's disaster committee should survey their staff's pediatric surge capacity, whether the facility has pediatric services or not.

To develop a reasonable comfort level in caring for children, hospital staff should take pediatric training courses beyond those required for basic proficiency.

TRAINING RECOMMENDATIONS

I. Non-Trauma Hospitals with Pediatric Intensive Care Units

Hospitals with pediatric intensive care units (PICUs) should include, in their disaster plans, procedures for "surging" their pediatric inpatient capacity.

This can be achieved by:

- Early discharge of stable children from existing pediatric units
- Early transfer of hemodynamically stable children from PICUs to existing pediatric units
- Admission of additional children to existing pediatric units
- Use of Post Anesthesia Care Units (PACUs) if PICU beds are still full
- Use of non-clinical space for less intensive care of children
- Conversion of adult inpatient spaces (such as surgical units) to temporary pediatric units

Staff assigned to these pediatric inpatient surge capacity areas, including pediatric ICU nurses, physicians and others, should complete basic pediatric disaster training.

II. Hospitals with Pediatric Services, but No Pediatric Intensive Care Unit

Hospitals with general pediatric inpatient services should prepare for the same possibilities listed for hospitals with a PICU. **In addition, facilities might need to provide intensive care and subsequent monitoring to critically injured or ill children when transfer is not immediately possible.**

Potential locations for temporary placement of critically injured or ill children:

- Adult medical intensive care units
- Adult cardiac care units
- Surgical care units
- Post anesthesia care units
- Other appropriate inpatient intensive care units

Staff responsible for pediatric care should complete basic pediatric disaster training. Since pediatric specialists may not be available, medical and surgical ICU nurses and physicians should complete the applicable pediatric training.

III. Hospitals with No Inpatient Pediatric Services

Hospitals with no inpatient pediatric services should develop disaster plans addressing all possibilities listed for the two types of hospital listed above. Since pediatric specialists may be unavailable, hospitals should identify and assign certain staff to pediatric surge capacity areas. These staff members should complete the appropriate training necessary to care for children during a disaster **(see Table 11-1)**.

11 TRAINING

Table 11-1. Training recommendations for staff in pediatric surge areas.

Provider Level	ACLS[1]	ATLS[2]	PALS[3]	Basic Disaster Training[4]	Disaster Drills that Include Pediatric Patients
Emergency department nurses and physicians	Yes	Yes	Yes	Yes	Yes
Pediatric inpatient unit nurses and physicians	Yes	No	Yes	Yes	Yes
Pediatric intensive care unit nurses and physicians	Yes	No	Yes	Yes	Yes
Pediatric surge capacity nurses and physicians[5]	Yes	No	Yes	Yes	Yes
Medical and surgical intensive care unit nurses and physicians[6]	Yes	No	Yes	Yes	Yes
Other surgical and medical physicians likely to respond to emergency departments during disasters	Yes	Yes	Yes	Yes	Yes

[1] Advanced Cardiac Life Support.

[2] Advanced Trauma Life Support.

[3] Pediatric Advanced Life Support.

[4] "Basic Disaster Training" indicates an introductory or awareness level course covering the basics of individual risk assessment and response to chemical, biological, radiological, nuclear and explosive agents.

[5] Pediatric surge capacity nurses and physicians indicates staff designated as part of the hospital disaster plan to care for pediatric patients and their families in the event the usual hospital inpatient pediatric capacity is exceeded and these patients can not be transferred.

[6] Medical and Surgical ICU Nurses and Physicians (or Recovery Room or other intensive care area) indicates staff that might be required to care for critical pediatric patients who can not be transferred.

Educational Resources

Primary Disaster and Emergency Courses

Alabama Noble Training Center

Hospital Emergency Response Training for Mass Casualty Incidents
(Train-the-Trainer Course) sponsored by the Department of Homeland Security at the
http://training.fema.gov/EMIWeb/grams/2005/657.asp

- Two- to three-day course for hospital administrators, doctors, nurses, physicians, security personnel and other hospital staff who would make up or manage their hospital's emergency response team.

American Heart Association

www.americanheart.org/downloadable/heart/1167856286911ECC%20Course%20
Matrix%202006%20Final.pdf

Basic Life Support (BLS) for Healthcare Providers

- One-day course for all BLS providers; focuses on cardiopulmonary resuscitation (CPR) and automatic external defibrillator (AED)

Advanced Cardiac Life Support (ACLS)

- Two-day course for all ACLS providers

Pediatric Basic Life Support (PBLS)

- One-day course for all PBLS providers; focuses on CPR and AED only

Pediatric Advanced Life Support (PALS)

- Two-day course for all PALS providers

American College of Surgeons

www.facs.org/trauma/atls/

Advanced Trauma Life Support

Two-day course for physicians and physician extenders only

American Medical Association/National Disaster Life Support Foundation

www.ama-assn.org/ama/pub/category/12606.html or www.bdls.com/

Core Disaster Life Support (CDLS)

- Half-day course for non-medical hospital staff

Core Disaster Life Support-Decontamination (CDLS-D)

- One-day course for hospital decontamination team personnel

Basic Disaster Life Support (BDLS)

- One-day course for all medical disaster providers; available soon in on-line version

Advanced Disaster Life Support (ADLS)

- Two-day course for all medical disaster providers

11 TRAINING

Medical Society of the State of New York (MSSNY)
Biological, Chemical and Nuclear Emergencies Course (BCNE)
www.bcnny.com/
- Half-day seminar, also available in an extended online version. Non-members are eligible to enroll.

Pediatric Emergency and Disaster Courses

American Academy of Pediatrics/American College of Emergency Physicians
Advanced Pediatric Life Support
www.aplsonline.com/
- Two-day course for physicians, nurses and paramedics that covers basics of pediatric emergency medicine

Emergency Nurses Association
Emergency Nursing Pediatric Course
Sponsored by **www.ena.org/catn_enpc_tncc/enpc/**
- Self-taught, modular course

University of Kentucky
Pediatric Terrorism Awareness Course
www.kiprc.uky.edu/trap/peds.html
- Basic awareness course, available free and on-line, for emergency medical service and emergency personnel

University of Massachusetts Medical School and U.S. Department of Health and Human Services' Emergency Medical Services for Children
Pediatric Disaster Life Support (PDLS)
http://bolivia.hrsa.gov/emsc/SearchpubID.aspx?id=R001970&from=results
- One- or two-day training course for medical, emergency medical service and disaster professionals

Trauma Courses

Emergency Nurses Association
Trauma Nursing Core Course
www.ena.org/catn_enpc_tncc/tncc/
- Two-day course for nurses only

Society of Trauma Nurses
Advanced Trauma Care for Nurses
www.traumanurses.org/education/atcn
- Two-day course for nurses only, given only in conjunction with an ATLS course at the same site

The National Association of Emergency Medical Technicians and the American College of Surgeons Committee on Trauma
Pre-Hospital Trauma Life Support Course
www.naemt.org/education/phtls_a.aspx
(Web site provides information and list of available courses by state)
- One-day course for emergency medical technicians; two-day course for paramedics

Critical Care and Disaster Courses

Society of Critical Care Medicine
Fundamentals of Critical Care Support
http://sccmwww.sccm.org/education/fccs_courses/index.asp
- Two-day course for all medical providers that includes pediatric considerations

Fundamentals of Disaster Medicine
Sponsored by the Society of Critical Care Management
www.sccm.org/FCCS_and_Training_Courses/FDM/Pages/default.aspx
- One-day course for all medical providers that includes pediatric considerations

Hospital Disaster Management
www.sccm.org/FCCS_and_Training_Courses/HDM/Pages/default.aspx
- One-day course for all medical providers that includes pediatric considerations

Resources for Disaster Preparedness

Agency for Healthcare Research and Quality
www.ahrq.gov/prep/
- Provides general preparedness information

American Academy of Family Physicians
www.aafp.org/online/en/home/clinical/disasterprep/prepare/mdresources.html
- Provides emergency/disaster preparedness information

Center for Trauma Response, Recovery and Preparedness for Health Care Communities
www.ctrp.org/resources_healthcare.htm
- Provides disaster and emergency preparedness information

Centers for Disaster Control and Prevention
www.bt.cdc.gov/
- Provides emergency preparedness and response information

Critical Illness and Trauma Foundation, Inc.
www.citmt.org/cdroms.htm
- Course on CD-ROM, Bioterrorism and Trauma Training, written by Foundation

Delaware Emergency Medical Services Training
www.dhss.delaware.gov/dph/ems/emsc.html

Illinois Emergency Medical Services for Children
www.luhs.org/depts/emsc/disaster.htm
- Contains links to additional disaster and emergency preparedness Web sites

JumpSTART Pediatric Mass Casualty Incident (MCI) Triage Tool
www.jumpstarttriage.com/JumpSTART_and_MCI_Triage.php
- Links to information about the JumpSTART pediatric triage system

National Center for Disaster Preparedness, Columbia University Mailman School of Public Health
www.ncdp.mailman.columbia.edu/files/pediatric_preparedness.pdf
- *Pediatric Preparedness for Disasters and Terrorism: A National Consensus Conference, Executive Summary 2003*

North Carolina Center for Public Health Preparedness
http://nccphp.sph.unc.edu/about/resources.htm
- Contains links to additional disaster preparedness resources

U.S. Department of Health and Human Services' Emergency Medicine Services for Children
http://bolivia.hrsa.gov/emsc/Toolboxes/0709PedDisasterPrepare/Toolbox.aspx
- Contains links to other pediatric disaster preparedness Web sites

TRANSPORTING CHILDREN DURING A DISASTER

TRANSPORTING CHILDREN DURING A DISASTER

12

PURPOSE

This section contains recommendations for transporting children after a disaster, including both inter- and intra-hospital transport of stable and unstable patients. Children may be unaccompanied by an adult during a disaster; these patients will require additional staff and supplies during transport.

GENERAL GUIDELINES

All hospitals should be prepared to provide extended care to children during a disaster. As part of this care, hospitals will need to transport children from one clinical area to another (including inpatient units) or to diagnostic testing locations (such as radiology, computed tomography and ultrasound areas).

Hospitals lacking specialized pediatric services may need to transfer children, after initial evaluation and stabilization, to centers with advanced pediatric capabilities. Keep in mind, however, that transfer (or evacuation, if necessary) might be impossible due to local conditions, safety concerns, lack of appropriate transport vehicles or personnel, or lack of capacity at specialty children's hospitals.

I. TRANSPORTING CHILDREN WITHIN THE HOSPITAL

General Guidelines for Transporting Children between Hospitals Units or Diagnostic Testing Areas

Transportation Personnel

Personnel who transport **stable** patients should:

- Know the special needs of children during transport
- Know **never** to leave children alone

Personnel who transport **unstable** patients should:

- Include usual transport personnel
- Include additional staff skilled in pediatric airway care and pediatric resuscitation
- Know **never** to leave children alone

Transportation Equipment

Be sure to have the following equipment on hand for transporting patients:

- Airway management and resuscitation supplies appropriate for all age groups **(see Pediatric Equipment Recommendations on page 27)**
- Appropriate vehicles, including:
    - Adult stretchers, which may be appropriate for children aged 8 to 10 years of age or older.
    - Cribs, additional transportation personnel or adult stretchers modified with extra safety padding inside the rails, which may be required for smaller children.

Transportation Precautions

Provide chaperones and safety personnel during transportation. Be sure that:

- Parents or other adult caregivers stay with their children
- If no adult care giver is available, appropriate personnel accompany and supervise children at all times

Children on stretchers require:

- Constant one-on-one supervision if the child is younger than six years of age and if there is no appropriate crib
- Evaluation of children six years and older for their ability to follow safety rules while on stretchers
- Constant one-on-one supervision if an individual patient is separated from other children

Stable ambulatory children require:

- If transported to a Pediatric Safe Area, staff experienced or trained in observing groups of children (school teachers, social workers, day care workers, etc.) **(See Section 8, pages 88-91.)**
- One-on-one supervision if ambulatory and transported individually out of the Emergency Department

II. TRANSPORTING CHILDREN TO OTHER FACILITIES

Disaster conditions might prevent safe or efficient travel on roadways, or may cause overflow at regular pediatric receiving centers; therefore, all hospitals must prepare to provide short- and long-term care to children during disasters.

Even when transfer to pediatric centers is possible, usual staff and equipment will be stretched thin by the disaster; therefore, hospitals should develop alternative mechanisms for safely transferring children based on the following guidelines:

TRANSPORTING CHILDREN DURING A DISASTER

12

Stable Children

Arrange for child car safety seats, including:

- Rear-facing seats for children younger than one year of age or who weigh less than 20 pounds
- Forward-facing seats for children one to four years of age or who weigh 20 to 40 pounds
- Booster seats for children four to eight years of age or taller than 4' 9"
- Rear seats with seat belts for children 8 to 12 years of age; children older than 12 years should not ride in the front seat
- To obtain appropriate car seats:
  - Purchase them
  - Request them through donations
  - Prepare a list of potential local sources to approach for car seats during a disaster
  - Survey employees to identify car seats available in personal vehicles

See Table 12-1 for specifics on car seat use.

If ambulances are not available, appropriate transport possibilities include:

- Cars, vans and city or private buses may be appropriate for children who can sit up (Car seats may be necessary)
- School buses may be used for children aged five years and older who can sit up
- Drivers must be able to communicate with hospital emergency command centers by cell phone or radio
- Appropriate medical personnel (emergency medical technicians, physician assistants, nurse practitioners, nurses or physicians) must accompany children during transport
- Ideally, mental health personnel or staff trained in children's psycho-social needs should accompany children

Table 12-1. Appropriate use and type of car seats for transporting children.*

	Infants	**Toddlers**	**Young Children**
Age/ Weight	Up to 1 year of age and 20 lbs or less	Between 1 and 4 years of age **and** more than 20 lbs	Aged 4 to 8 years, unless more than 4' 9" **and** more than 40 lbs
Seat Type	Infant-only or rear-facing convertible seats	Convertible/forward-facing seats	Belt-positioning booster seat
Seat Positioning	Rear-facing seats only	Forward-facing seats	Forward-facing seats

*All children aged 12 years and younger should ride in the back seat.

Unstable Children or Potentially Unstable Injured or Ill Children

Potential transport vehicles include ambulances staffed with emergency medical technicians or paramedics that also include:

- Hospital staff skilled in pediatric airway care and resuscitation
- Equipment appropriate for the child's age and acuity **(See Section 3, Equipment)**.
- Specialty pediatric transport vehicles and teams from referral pediatric institutions
- For less critical patients only, paramedic ambulances with no additional hospital staff

Consider obtaining Memoranda of Understanding with ambulance providers at distant locations since they are less likely to be involved with local disaster response and may be available.

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Section 13

TRIAGE

13 TRIAGE

PURPOSE

The recommendations in this Section will help hospitals both with and without pediatric services plan large-scale disaster triage procedures that specifically address children's needs. The recommendations are based on the premise that, due to the chaos and confusion likely during a catastrophic emergency, disaster triage should be as similar to routine emergency procedures as possible. This Section details how to organize disaster triage into multiple levels to ensure accurate sorting of patients and optimization of limited resources.

> **NOTE: This section assumes a hospital that has made plans, purchased equipment and mobilized the additional staff required to manage an expected surge in the pediatric population during a disaster.**
>
> **Both hospitals with and without specialty pediatric resources must identify in advance staff to serve as members and leaders of its pediatric disaster response team (see Section 9, Staffing on page 94). Hospitals should work with this team, and local pediatric emergency care and disaster experts, to develop the best triage system possible using available resources.**

BACKGROUND

Most disasters will affect children who, because of their physical make up, are at higher risk for injury and death. In addition to their vulnerability in disasters, recent history has shown that children may also be the targets of terrorism. As a result, every hospital should expect to have an influx of children during disasters and must be prepared to treat them.

Currently, the only pediatric triage tool being used in disaster medicine is the first responder system, JumpSTART (Simple Triage and Rapid Treatment), which is used primarily to determine transport priority before arrival at the hospital. Within a hospital, however, disaster triage is complex and must be based on resources, space allocation, the anticipated number of incoming victims, the need for repeated patient reassessments and the potential need for decontamination.

The recommendations in this Section encompass this broad focus while maintaining a simple algorithm that enables hospitals to rapidly perform triage and appropriately prioritize children for care in a hospital setting. The algorithm builds on clinical, historical and physical skills used daily in emergency department triage, restructuring them to provide the greatest good for the greatest number during a disaster.

GENERAL GUIDELINES

One priority of hospital-based triage is to prevent **over-triage**—the overflow of patients who (1) have already been treated, (2) who are minimally injured, or (3) are minimally sick into critical care areas or emergency departments (EDs). Hospitals should quickly establish treatment and evaluation areas that are separate from ED critical areas for these lower-priority patients.

Hospital-based triage must also emphasize accuracy, which depends largely on the clinical staff's experience. Clinicians not accustomed to acutely evaluating ill children generally over-triage, assigning patients to more severe categories than necessary.

The following guidelines represent the best case scenario, but will help hospitals with and without pediatric services plan triage for children during disasters. Each institution should modify the guidelines based on its own physical and staff resources.

PRE-HOSPITAL TRIAGE

Decontamination and emergency medical service (EMS) triage may or may not have been achieved in the field for the children arriving at a hospital; most will bypass EMS and go directly to the closest hospital or to the hospital of their choice. This Section, therefore, does not address pre-hospital triage.

HOSPITAL TRIAGE

Each hospital should determine criteria for switching to a two-tiered triage system (see Figure 13-1 on page 126) based on their capacity or the need for additional screening (see Figure 13-1, Table 13-1). This recommended process incorporates two forms of triage: (1) A rapid visual assessment to quickly identify the sickest patients; and (2) a more detailed triage assessment to refine and re-evaluate the initial assessment of the patient.

Because both over-triage and under-triage may occur, staff should reassess patients and up-grade or down-grade them throughout the multiple steps of triage to optimize ED resources.

COMMUNICATION AND DOCUMENTATION

Staff should develop triage forms and charts specifically for disaster scenarios; these forms should be modified to exclude time-consuming questions that are irrelevant to the disaster scenario and include relevant material such as chronic medical conditions, proximity to the disaster scene or exposure to harmful agents. Forms should also include identifiers, guardian names, instructions and procedures. Alternative methods of communication, such as tags or information written on the patients' skin or clothing, should also be developed.

Facilitate direct communication of new information (such as the need for decontamination) between triage and the Command Center or local authorities (see Decontamination, on page 127 and Section 1). Triage and treatment area Unit Leaders should communicate with each other directly.

13 TRIAGE

Figure 13-1. Overview of Tier 1 and Tier 2 triage for adults and children.
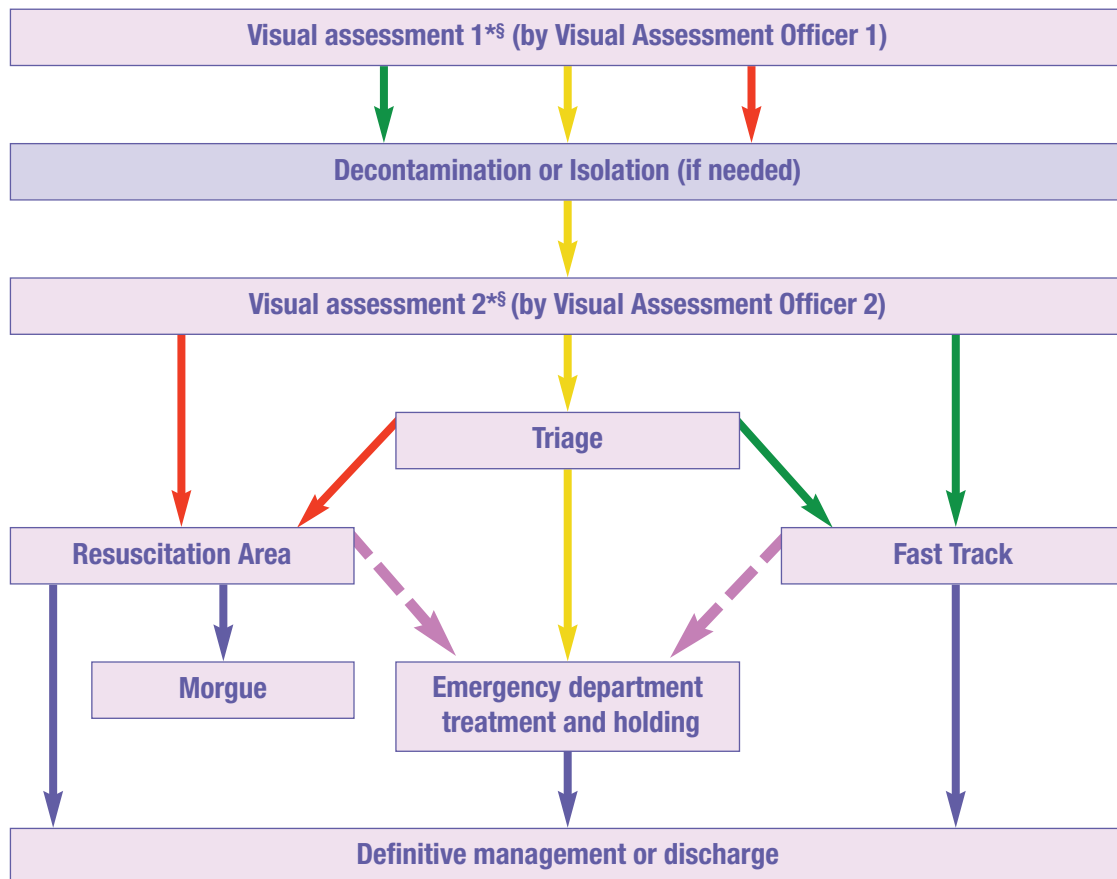
*See text in this section for details on pediatric assessment

§Visual assessment 2 is **only necessary** if used for reassessment inside the hospital (for example, post-decontamination)

KEY	Critical, unstable	Potentially unstable
	Stable	Interval change in patient status

HOSPITAL-BASED TRIAGE PROTOCOL

TIER 1. VISUAL ASSESSMENT

Emergency department nurses and physicians perform visual assessments daily, quickly deciding which patients need emergency treatment and which can go through longer registration processes and routine triage. During a disaster, these same skills can be used to move patients to appropriate triage areas.

This guide's protocol recognizes that visual assessment is the most likely first step during a disaster; it is also the most effective first step since heavy gear needed during decontamination makes physical assessment and communication difficult.

See **Appendices I and II** at the end of this section for more information on Visual Assessment Officers' responsibilities and useful tips and tools.

TRIAGE PROTOCOL IF DECONTAMINATION IS REQUIRED

Decontaminating children is a special challenge even before patients enter the emergency department. Any protocol for using Visual Assessment as described below must first take into account if: (1) Decontamination is needed before entering the hospital; or (2) It is not needed before entering the facility.

If the child requires decontamination due to chemical or radiological contamination based on the nature of the event and hospital administration policy, take the following steps:

- Visual Assessment Officer 1 prioritizes the decontamination process, moving critical patients through the decontamination line first and less critical patients afterwards.

- Visual Assessment Officer 2 conducts a second visual assessment immediately after the patient's entry into the hospital or after decontamination to confirm the first assessment, since decontamination may be an additional stress on patients and may cause patients to deteriorate. The Officer then direct patients to the appropriate triage and treatment areas for more detailed assessments and care.

- Children who do not require decontamination are sent to the appropriate clinical care area; both Visual Assessment Officers should constantly assess the flow of children, prioritize them for decontamination and assign them to the appropriate treatment areas.

TRIAGE PROTOCOL IF DECONTAMINATION IS NOT REQUIRED

If the child does not require decontamination, only one visual assessment is required upon entering the hospitals; the patient will then be sent to the appropriate clinical care area according to the principles outlined below.

The Visual Assessment Officer, an experienced clinician, should make a rapid visual assessment **(see the Visual Assessment Triangle on the following page and Appendix II at the end of this Section)** to identify patients in need of immediate care and ensure that critically ill children receive priority and are treated first by moving them quickly into ED resuscitation areas or designated critical care areas **(see Figure 13-1 and Table 13-1 on pages 126 and 129)**. (Infants and children who appear dead should be moved into the hospital for attempted resuscitation). Both visual assessment and assigning a clinical area are discussed in more detail later in this Section.

Special Triage Considerations for Unaccompanied Children

Quickly identify unaccompanied children—they require special attention and more resources since they must be accompanied by staff; they also require special discharge procedures.

Children eight years of age or younger who lack an accompanying caretaker, those with special needs, or those five years of age or younger in the presence of a care taker should not be considered stable solely on visual inspection. These children require more detailed histories and physical examinations for this determination.

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The **Pediatric Visual Assessment Triangle** below provides primary triage criteria—respiration, circulation and appearance—that will determine next steps in moving patients to Red, Yellow or Green color-coded triage areas (see Table 13-1).

Figure 13-2. **Pediatric Visual Assessment Triangle.***

Appearance
Mental status
Muscle tone
Body position

ASSESS

Breathing
Visible movement
Work of breathing
(normal or increased)

Circulation
Skin color

*Source: Foltin GL, Tunik MG, Cooper A. Markenson D, Treiber M, Skomorowsky A, eds. *Paramedic TRIPP; Teaching Resource for Instructors in Prehospital Pediatrics Version 1.0*: Center for Pediatric Emergency Medicine; 2002

Tables 13-2, 13-3 and 13-4 on pages 130, 131 and Appendices I and II at the end of the section provide more information on assessing each criterion.

Provide only one visual assessment using the Key Visual Assessment Points in Figure 13-2 and then triage patients to the appropriate area. Keep the influx of patients moving and expedite treatment by using the color-coded triage system and key assessment points in Table 13-1 to decide patients' condition and expeditiously assign them to the appropriate clinical area. Details on the visual assessment of breathing, circulation and appearance are given in Appendix I, Appendix II, and table 13-4.

Table 13-1. Overview of color-coded triage system and key visual assessment points.

Triage Color	Critical/Unstable Red	Potentially Unstable Yellow	Stable Green
Refer to Clinical Care Area	Resuscitation Area	Triage Area or other designated area	Fast-Track or other designated area

KEY VISUAL ASSESSMENT POINTS

If on assessment patients have abnormalities in **all three** of the Pediatric Assessment Triangle areas, send them immediately to the RED: Resuscitation Area for immediate care; conversely, fast-track patients to the Green area whose assessments are normal **in all three.**

If any evaluation elements from the Triangle indicate the patient is critically ill or unstable, **immediately** send the child to RED: Resuscitation area.

If any evaluation elements from the Triangle indicate Potentially Unstable status, immediately send the child to YELLOW: Triage area.

If all three evaluation elements from the Pediatric Assessment Triangle indicate Stable status, send the child to GREEN: Stable area.

Notes

Send children to YELLOW area by default when the criteria for Critical/Unstable and Stable are not clearly met.
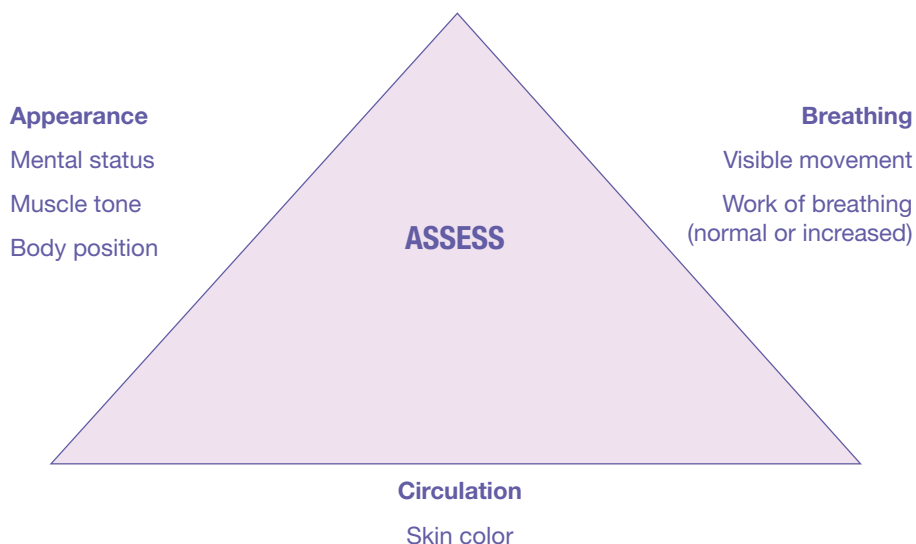
Send children eight years of age or younger who lack an accompanying caretaker, those with special needs and all patients five years old or younger who are with a caretaker to YELLOW: Triage. Do not classify them as stable by visual inspection alone; these children require more detailed histories and physical examinations.

TIER 2. FURTHER ASSESSMENT

Tier 2 triage involves providing more detailed assessments than occur in Tier 1; this tier comprises the areas of hospital treatment, triage, fast-track and (to some extent) resuscitation (see Figure 13-1 on page 126)

During Tier 2 triage, staff obtains a more-detailed, hands-on history (see Appendix III "Taking a Sample History" on page 141), and physical examination, and will either: (1) reconfirm patients' condition; (2) down-triage them to lower levels of care; or (3) up-triage them to higher levels of care. Since children can deteriorate abruptly, they must be reassessed repeatedly until transferred to the appropriate area. Unit leaders for each treatment area should supervise and ensure both initial and repeat assessments of all children in all areas (see Appendices I and II).

1. Assessing Breathing

The Officer forms a first impression of a patient's respiratory status (see Table 13-2):

- If breathing is critical or unstable, the patient is considered RED and sent to the front of the decontamination line or to the resuscitation area (as appropriate).

- If breathing is potentially unstable after decontamination, consider the patient YELLOW and send to triage or to the appropriate treatment area after decontamination.

- If breathing is stable, continue assessment for circulation and appearance based on Tables 13-3 and 13-4 on page 131.

Table 13-2. Assessing and triaging patients based on breathing.*

Assessment	Triage Color		
	Critical/Unstable Red	Potentially Unstable Yellow	Stable Green
Airway	Partial or completely obstructed **or** significant secretions or blood	Patient with minimal secretions	Patent
Work of breathing	Absent or increased effort (work) with periods of weakness	Normal	Normal
Breath sounds	Absent or decreased breath sounds; grunting, wheezing, stridor	Normal, or silent wheezing	Normal
Respiratory rate	Apnea, bradypnea, tachypnea, irregular breathing rate	Occasionally increased	Normal
Central skin color	Pallid, mottled or cyanotic	Pink	Pink
Inspection	Absent or decreased chest movements	Normal	Normal
Pulse oximetry	Less than 85%	85% or higher	95% or higher

*Modified from: CUPS Assessment Table © 1997 ND Sanddal, et al. *Critical Trauma Care by the Basic EMT, 4th ed.*

2. Assessing Circulation

The Officer forms a first impression of the patient's circulatory status (see Table 13-3):

- If circulation is critical or unstable, consider the patient RED and send to the resuscitation area.

- If circulation is potentially unstable, consider the patient YELLOW and send to the ED holding area YELLOW area .

- If circulation is stable, continue the assessment for appearance in Table 13-4.

Table 13-3. Assessing and triaging patients based on circulation.*

Assessment	Triage Category by Color and Condition		
	Critical/Unstable Red	**Potentially Unstable Yellow**	**Stable Green**
Heart rate	Tachycardia or bradycardia	Normal	Normal
Pulse strength	Weak central pulse, absent or weak peripheral pulse	Normal	Normal
Capillary refill	>3–5 seconds	<2–3 seconds	<2–3 seconds
Blood pressure	Hypotensive	Normal	Normal
Skin	Pallid, mottled or cyanotic; cool	Normal	Normal

*Modified from: CUPS Assessment Table © 1997 ND Sanddal, et al. *Critical Trauma Care by the Basic EMT, 4th ed.*

3. Assessing Appearance

The Officer forms a first impression about a patient's appearance, evaluating muscle tone and mental status **(see Tables 13- 4, 13-5 and Appendix IV.)**

- If visual appearance is critical or unstable, consider the patient RED and send to the resuscitation area

- If visual appearance is potentially unstable, send the patient to the ED holding area YELLOW area.

Table 13-4. Assessing and triaging patients based on appearance.*§

Variable	Assessment
Tone	Is there vigorous movement with good muscle tone or is the child limp?
Interactivity	Is the child alert and attentive to surroundings or apathetic?
	Will the child reach for a toy?
	Does the child respond to people, objects and sounds?
Consolability	Does comforting the child alleviate agitation and crying?
Look/Gaze	Do the child's eyes follow your movements, or is there a vacant gaze?
Speech/Cry	Are vocalizations strong, or are they weak, muffled or hoarse?

*Modified from: CUPS Assessment Table © 1997 ND Sanddal, et al. *Critical Trauma Care by the Basic EMT, 4th ed.*

§TICLS, also know as the "tickles" mnemonic. Adapted from *Textbook of Pediatric Education for Prehospital Professionals,* American Academy of Pediatrics. 2000:36. Used with permission.

4. Assessing Mental Status

The Officer forms a first impression about a patient's mental status.

- Assessment of mental status is age dependent
- If the child is unresponsive or responsive only to pain, consider the patient RED and send to the resuscitation area.
- If the child is responsive to verbal commands but it not acting appropriately, send to the ED holding area (YELLOW area).
- If the patient is alert, send to the GREEN area (fast-track).

See Appendix IV for more information on assessing mental status.

Table 13-5. Assessing and triaging patients based on mental status.*[§]

	Critical/Unstable Red	Potentially Unstable Yellow	Stable Green
Patient Response	Responsive only to Pain or Unresponsive	Responsive to Verbal commands	Alert

*Modified from: CUPS Assessment Table © 1997 ND Sanddal, et al. *Critical Trauma Care by the Basic EMT, 4th ed.*

[§] Source: Alert-Verbal-Pain-Unresponsive AVPU)

5. Heart Rate and Respiratory Rate

Heart rate and respiratory rate are also important assessment criteria; Tables 13-6 and 13-7 provide normal ranges; consider anything consistently above or below these levels as abnormal and consider the patient RED ; send to the resuscitation area.

Other factors, such as fever or anxiety, may cause transiently abnormal vital signs; exercise discretion in these cases. When in doubt, send the patient to the RED triage area.

Table 13-6. Average pediatric heart rates by age.*

Age (years)		Heart rate (per minute)
Infant	(0-1)	100–160
Toddler	(1-3)	90–150
Preschooler	(3-6)	80–140
School Aged	(6-12)	70–120
Adolescent	(12-18)	60–100

* Pulse rates for a child who is sleeping may be 10 percent less.

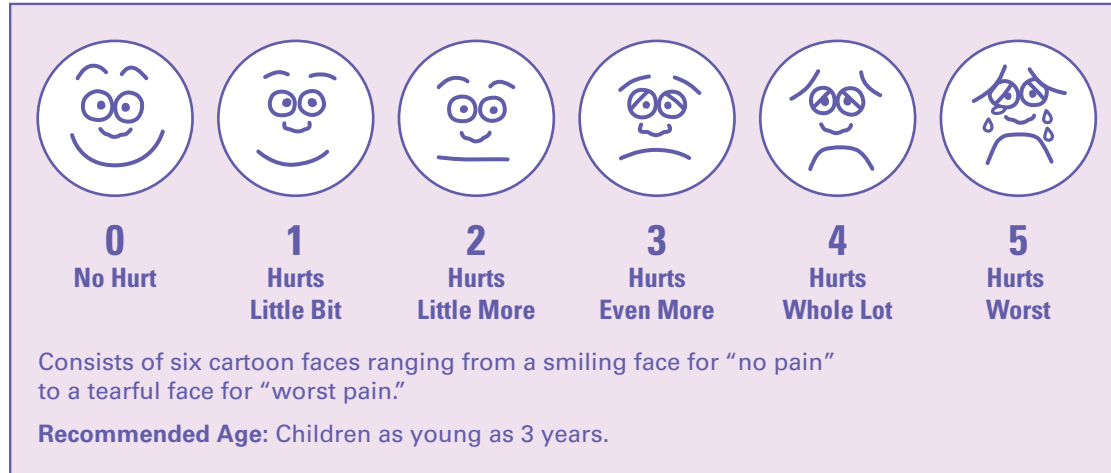**Table 13-7.** Average pediatric respiratory rates by age.

Age (years)		Respiratory rate (per minute)
Infant	(0-1)	30-40
Toddler	(1-3)	24-40
Preschooler	(3-6)	22-34
School Aged	(6-12)	18-30
Adolescent	(12-18)	12-16

6. Pain

Pain is another useful assessment tool, but measuring pain in infants and children is difficult. Pain ratings are usually calculated by evaluating changes in vital signs (heart rate, breathing rate and blood pressure); facial expression and behavior. Regular measurements of these signs should be taken and recorded.

There are different pain rating scales used for infants and children compared to the ones used for adults. For example, the Faces Pain Rating Scale (Figure 13-3) provides a graphic for children to point out for describing their pain.

Figure 13-3. Faces Pain Rating Scale

0	**1**	**2**	**3**	**4**	**5**
No Hurt	**Hurts Little Bit**	**Hurts Little More**	**Hurts Even More**	**Hurts Whole Lot**	**Hurts Worst**

Consists of six cartoon faces ranging from a smiling face for "no pain" to a tearful face for "worst pain."

Recommended Age: Children as young as 3 years.

Source: Hockenberry MJ, Wilson D, Winkelstein ML: *Wong's Essentials of Pediatric Nursing,* ed. 7, St. Louis, 2005, p. 1259.
Used with permission. Copyright, Mosby.
http://www.painknowledge.org/physiciantools/opioid_toolkit/components/Wong-Baker_Scale.pdf

MANAGING CLINICAL AREAS

Once the visual assessment is complete, patients should be assigned a triage/clinical area as quickly as possible. The RED, YELLOW and GREEN classifications in Table 13-1 on page 129 correspond to the color-coded triage and management areas in Tables 13-2, 13-3 and 13-5 on pages 130, 131 and 132. (Tables 13-4, 3-6 and 13-7 provide other critical criteria for triage without the color-coding).

Information on staffing the various areas, and how to move patients through these areas efficiently, is available in Table 13-8.

STAFFING

Identify and train additional triage personnel **before** disasters occur—staff with pediatric experience engages in more accurate triage of infants and children. Children may look deceptively healthy, but because of their unique physiology, disasters may make them sicker than adults are. Officers triaging children, therefore, should ideally have pediatric experience.

Each treatment area within the ED and hospital should have a Unit Leader who ensures that patients receive initial assessment and periodic reassessment, and that patient flow is maintained. Unit Leaders should communicate directly with each other and address the transfer of up- or down-graded patients among areas.

Additional personnel will be needed to guide unaccompanied children through triage. Recorders, who do not have to be medical professionals, should help collect personal information at all points during triage and initial treatment.

Table 13-8. **Staffing and patient management by color-coded triage area.**

RED (critical/unstable). Resuscitation Area	
Staff	• Assign a Unit leader to this area.
	• Resuscitation personnel should be trained in the evaluation and management of critical pediatric patients.
Triage	• If visual Inspection officers have classified patients as Critical/Unstable **(see Tables 13-2, 13-3, 13-4 and 13-5 on pages 130-132)** Obtain more detailed histories **(see page 141)** and physical examinations.
	• Once patients are stabilized, send them to the **YELLOW** Emergency Department Treatment and Holding Area for continued care. Base this decision on repeated assessments using the criteria in **Tables 13-2, 13-3,13-4, 13-5, 13-6, 13-7 (see pages 130-133)**. In general, stable patients do not require additional critical care or resuscitation.
	• In some cases, patients will be sent to other areas for definitive management, including the operating room, pediatric intensive care unit or other locations.
	• Send deceased patients to the area designated as the morgue.

YELLOW (potentially unstable). Triage

Staff
- Assign a Unit Leader to this area.
- Resuscitation personnel should be trained in the evaluation and management of pediatric patients.

Triage
- Triage Officers will obtain more detailed histories **(see page 141)** and physical examinations.
- The physical exam will include criteria from the Pediatric Assessment Triangle **(see page 128)** and a hands-on physical exam, focusing on signs specific to the suspected injury or illness and using criteria from **Figure 13-1 on page 126 and Tables 13-2, 13-3,13-4, 13-5, 13-6, 13-7 (see pages 130-133)**. This step should be repeated as necessary using the same criteria in the Tables above. This second assessment will help identify children who became critical or unstable after their initial evaluation.
- Based on the triage assessment send patients to the **RED: Resuscitation Area,** **Yellow: Emergency Department Treatment and Holding Area** or **Green: Fast-Track/ Minor Treatment Area** as appropriate.

YELLOW (potentially unstable). Emergency Department Treatment and Holding Area

- This area will include patients receiving definitive medical care in the Emergency Department.
- Send these patients to a definitive management area or home, when appropriate.
- Send patient's whose clinical status declines to **RED: Resuscitation Area** or to **Green: Fast-Track/ Minor Treatment Area** if they improve dramatically and ED Treatment and Holding Area resources are needed to provide care for potentially unstable patients.

GREEN (fast-track/minor treatment)

Staff
- Assign a Unit Leader to this area.
- Fast Track personnel should be trained in evaluation and management of pediatric patients.

Triage
- Visual Inspection or Triage Officers are responsible for classifying patients as stable.
- Obtain a more detailed history **(see page 141)** and physical examination.
- The physical exam will include criteria from the Pediatric Assessment Triangle **(see page 128)** and a hands-on physical exam, focusing on signs specific to the suspected injury or illness and using criteria from **Figure 13-1 on page 126 and Tables 13-2, 13-3,13-4, 13-5, 13-6, 13-7 (see pages 130-133)**. This step should be repeated as necessary using the same criteria in the Tables above. This second assessment will help identify children who became critical or unstable after their initial evaluation.
- Based on the Pediatric Assessment Triangle **(page 128)**, send patients to the **Yellow: Emergency Department Treatment and Holding Area,** or to a definitive management area or home, when appropriate.
- **Monitor children waiting for assessment or treatment at regular intervals using criteria from the Pediatric Assessment Triangle on page 128.**

Because both over-triage and under-triage may occur, staff should reassess patients and up-grade or down-grade them throughout the multiple steps of triage to optimize ED resources. Unit Leaders in each of the areas are responsible for assigning staff for this task.

13 TRIAGE

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APPENDIX I.
JOB RESPONSIBILITIES - VISUAL ASSESSMENT OFFICERS

- Evaluate patients with a "first impression" or visual assessment.

- Maintain a "hands-off" process.

- Assign patients to one of three triage priorities based on first impression: Red (Critical/Unstable), Yellow (Potentially Unstable) or Green (Stable). Color triage corresponds to injury acuity.

- Based on the child's acuity level, determine the appropriate clinical area and the order he or she will go through triage.

Special Situations

Patients younger than eight years of age.
Staff unfamiliar with this population should identify these patients as Yellow (Potentially Unstable) and send them to the Yellow Triage Area, where a more detailed history and physical examination can be obtained.

Patients with special needs.
Staff unfamiliar with this population should identify these patients as Yellow (Potentially Unstable) and send them to the Yellow Triage Area, where a more detailed history and physical examination can be obtained.

Patients with exposures requiring decontamination.
Two Visual Inspection Officers, one before and one after decontamination, should evaluate these children.

Before any medical intervention, the Visual Inspection Officer 1 decides the patient's priority to undergo decontamination.

After decontamination, the Visual Inspection Officer 2 completes a second visual assessment, assigning patients to one of three triage priorities: Red (Critical/Unstable), Yellow (Potentially Unstable) or Green (Stable).

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APPENDIX II.
ASSESSING INFANTS AND CHILDREN: TIPS AND TOOLS

- Form a visual impression before approaching for the hands-on assessment.

- Take age-related factors into account (muscle tone, coordination, heart rate and respiratory rate).

- Be aware that abruptly approaching young, already stressed children can increase agitation, potentially worsening their condition.

- Maintain a calm, reassuring manner when assessing very young patients.

- To assess younger children, have a parent hold the child or allow the child to sit on the parent's lap if possible.

- Encourage the parent to participate in the examination.

- Allow infants to suck on a pacifier or gloved finger.

- If at any point during the first impression you identify a significant clinical problem, **immediately** discontinue the visual assessment, approach the child and begin the hands-on initial assessment.

- Do not delay lifesaving interventions to initiate monitoring.

- When taking body temperatures, remember:
    - Fever may make infants and children irritable or somnolent, which can affect the results of the assessment.
    - In young children, high fever can cause tachypnea and tachycardia.
    - Using proper techniques, body temperature can be accurately measured at the axillary, oral, rectal, temporal or tympanic sites.

- Look for general signs of a healthy child (taking into account age-appropriate evaluation).

- This visual inspection focuses on three items (breathing, circulation and appearance). **See the Assessment tools 1, 2 and 3 in this Appendix** for more information.

ASSESSMENT TOOL 1: BREATHING

- **In children, respiratory arrest is the primary cause of cardiac arrest.**
- The critical window between the onset of apnea and the onset of cardiac arrest in children is very short—no more than one or two minutes.
- Children's airways are narrower at all levels than adults' are, resulting in higher airflow resistance.
- Edema or secretions can further narrow the airway, greatly increasing airflow resistance.
- Avoid actions that could agitate or frighten a child in respiratory distress.
- The Table below summarizes signs of respiratory distress, failure and arrest.

Table. Signs of respiratory distress, failure and arrest*

Assessment	Distress	Failure	Arrest
Mental Status	Alert, agitated or combative	Extreme agitation or reduced responsiveness	Unresponsive
Muscle tone/body position	Normal, may assume tripod position	Normal tone or hypotonia	Atony
Chest movement	Present	Present	Absent
Work of breathing	Increased	Greatly increased with periods of weakness	Absent
Skin color	Pink or pallid	Pallid, mottled or cyanotic	Cyanotic

Modified from: Paramedic TRIPP: Teaching Resources for Instructors in Prehospital Pediatrics. Visit: www.med.nyu.edu/pediatrics/emergency/cpem/html/trippals.html

- For a child able to breathe spontaneously, perform these detailed assessments:
  1. Evaluate work of breathing and breath sounds, looking for:
     - Inspiratory retractions in the suprasternal, supraclavicular, intercostal or subcostal areas
     - Inspiratory nasal flaring
     - Head bobbing
  2. Listen for stridor, grunting and gurgling.
  3. Count respiratory rate for 30 seconds.
  4. Assess respiratory depth and pattern.
  5. Evaluate central color at the lips, tongue and oral mucosa.
  6. Look for chest trauma.
  7. Auscultate the chest by placing stethoscope below each axilla in turn and comparing breath sounds of the right and left lung fields to see if they are equal. Listen for:
     - Decreased breath sounds
     - Wheezing
     - Crackles
  8. **Optional**: Initiate pulse oximetry. (This may be time-consuming and is not necessary in disaster triage.)

ASSESSMENT TOOL 2: CIRCULATION

- Note skin color at the lips, tongue, palms or soles of the feet; abnormal skin color (pallor, mottling or cyanosis) indicates an urgent condition.
- Feel for the central pulse. Recommended sites:
    - Newborns: base of umbilical cord
    - Infants and young children: brachial and femoral pulse
    - Older children: carotid artery
- If a central pulse is present, evaluate its strength; a weak pulse might indicate decompensated shock.
- Count pulse rate for 30 seconds. Double this figure to find the rate per minute.
- If the child is uncooperative, count the rate by auscultating with a stethoscope over the left side of the chest between the sternum and nipple.
- Compare peripheral and central pulses. They should be similar; weak or irregular peripheral pulses indicate shock or hemorrhage.
- Check skin temperature. Cold skin may indicate either poor peripheral perfusion or exposure to cold ambient temperatures. Hot skin may indicate fever, infection or hyperthermia caused by very warm ambient temperatures. Check body temperature.
- Check capillary refill time. Delayed capillary refill (more than 3 seconds) may indicate poor perfusion or exposure to cool ambient temperatures.

ASSESSMENT TOOL 3: APPEARANCE

- **Level of consciousness.** All healthy children will constantly interact with their environment. Proceed with initial assessment when the child is markedly irritable, agitated or shows reduced responsiveness.
- **Interaction with parent.** A healthy child will respond when his or her name is called. Proceed with initial assessment when the child is markedly slow, shows no response, cries inconsolably or fails to recognize a parent.
- **Response to others.** A healthy child will react to your presence. Proceed with initial assessment if the child does not respond to your presence.
- **Muscle tone and body position**. A healthy child will assume a comfortable position. Infants will place their extremities in a flexed position and move all four limbs at a similar rate. Proceed with initial assessment if there is hypotonia, rigidity or if the child cannot sit.

APPENDIX III. TAKING A SAMPLE HISTORY

A sample history is a **focused history** gathered from first responders, caregivers and the patient, taken in all three (Red, Yellow, and Green) triage areas **(see Table 13-1 on page 129)**, after a visual assessment **(see page 128)** has been completed. **See the Sample History acronym below.**

When taking a focused history, categorize patients by age range—infants, toddlers, preschoolers, children or adolescents.

SAMPLE HISTORY

Signs/symptoms—assessment findings and history

Allergies—particularly drug allergies

Medications the child is currently taking

Past medical problems (especially chronic medical conditions such as asthma, which may predispose child to greater morbidity/mortality)

Last food or liquid the child has taken

Events leading to the illness or injury (this will be of special relevance in a disaster—specific questions will depend on the type of event)

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APPENDIX IV.
MENTAL STATUS ASSESSMENT

- Staff evaluating the mental status of children should understand the unique developmental factors characteristic of this population. Some of these characteristics are outlined below, but staff should refer to other texts for a more comprehensive review of developmental stages. **(See Section 7. Psychosocial Considerations on page 68.)**

- Be prepared for psychological problems when the child's caretaker or parent is absent.

- A standard Glasgow Coma Scale is provided below along with a modified version adapted for assessing infants and young children who lack the developmental maturity to speak or respond to commands. This test can help evaluators detect changes in the child's condition over time, but will not help with decisions about immediate care or triage.

Standard Glasgow Coma Scale					
Eye Opening	**Points**	**Best Verbal Response**	**Points**	**Best Motor Response**	**Points**
Spontaneous	4	Oriented	5	Follows commands	6
To verbal stimuli	3	Confused	4	Localizes pain	5
To Pain	2	Inappropriate words	3	Withdraws from painful stimuli	4
None	1	Incomprehensible sounds	2	Abnormal flexion in response to painful stimuli	3
		None	1	Abnormal extension in response to painful stimuli	2
				No response	1

Pediatric Glasgow Coma Scale					
Eye Opening	**Points**	**Best Verbal Response**	**Points**	**Best Motor Response**	**Points**
Spontaneous	4	Coos, babbles	5	Normal spontaneous movement	6
To speech	3	Irritable, cries	4	Withdraws in response to touch	5
To pain	2	Cries in response to painful stimuli	3	Withdraws from painful stimuli	4
None	1	Moans in response to painful stimuli	2	Abnormal flexion in response to painful stimuli	3
		No response to painful stimuli	1	Abnormal extension in response to painful stimuli	2
				No response	1

Another way to evaluate children's mental status is to observe if behavior is age-appropriate. Below are some indicators to look for when evaluating infants and children.

Age (years)		Behavior
Infants	(0–18 months)	• Walking begins at approximately 1 year • Easily consolable by caregiver, e.g. smiles and coos with parent • Appropriate reactions to others include stranger anxiety, which is associated with crying
Toddler	(18 months to <3 Years)	• Normal: explores the environment (i.e., looks and walks around) • Talking is appropriate for developmental level: simple words and short sentences
Preschool	(3 years to <7 years)	• Talking: more prominent, longer and understandable sentences
School-Aged	(7 years to 12 years)	• Able to verbalize his or her needs: HOWEVER, the child may regress to an earlier stage of development.

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