

Pediatric Disaster Planning Guideline

How to Plan & Prepare for Pediatric Patients

Every hospital is required by regulatory standards to test their emergency preparedness plan by conducting annual disaster exercises. These exercises should take into consideration the current clinical condition and immediate medical and social needs of the patients at or coming to the facility during time of crisis. Pediatric patients will make up at least 25% of the patient population after most disasters. Therefore, it is imperative that your hospital include pediatrics in all disaster planning and preparation activities. Below are 5 How-To points that will increase the capacity and capability of your hospital to care for pediatric patients during and after a disaster.

1. How to Include Pediatrics in your Drills and Exercises

- Ensure that at least 25% of simulated patients are below the age of 18 in every exercise.
- Inflatable pediatrics manikins can be purchased and used, if there is budget available.
- There may be high school science, vocational, or drama students eager to simulate real patients during exercises.
- For younger-aged children, reach out to your local home school association or recreational centers. These children usually come with parents or chaperones, who could also be used in the exercise.
- Exercises should include an expecting mother or a family with young children. The parent-child dynamic is important to include.
- As a final resort, hospital caregivers with younger children may be willing to volunteer themselves and their children as participants.

2. How to Create a Pediatric Safe Area

- A child will have an average of 3-5 adults/relatives coming to the hospital to look for or inquire about them after a disaster.
- Because children require supervision and are at higher risk for abduction and abuse during and after disasters, there is a large security responsibility to having unattended minors in your hospital.
- Security, Safety, Social Work and other teams should be included in the planning and implementation of the Pediatric Safe Area.
- You should create a Safe Zone for unhurt, but unattended kids at your facility to keep them away from members of the public and media until they can be reunited with their legal guardian(s).
 - Pick a room away from main entrances, and on a higher floor-level, if possible.
 - The room should be close to a restroom.
 - The room should be staffed only with hospital caregivers or vetted volunteers.
 - The room should have the space to store or house a cart or cabinet of supplies to keep children busy (i.e. puzzles, crafts, books, toys, etc.).
 - The staff should have access to provide age-appropriate snacks and water to children

3. How to Plan for Family Receiving and Reunification

- Every hospital needs to have a written plan to receive families/guardians of patients after a mass casualty event or disaster.
 - The receiving center should provide them with pertinent, real-time information and compassionate amenities.
 - It is also where hospital caregivers can track who the incoming people are and who they are looking for.
- Every hospital should have a *separate* plan to reunify patients with their families, specifically pediatric patients.
 - A reunification plan is important because the patients are minors.
 - Reunification is the process of documenting and verifying the identity of the patient, identity of the legal guardian(s), and bringing them back together.
- The American Academy of Pediatrics has a Reunification Toolkit that is extremely helpful for creating your own Reunification Plan.
 - <https://www.aap.org/en-us/Documents/AAP-Reunification-Toolkit.pdf>

4. How to Decontaminate a Pediatric Patient

- There are physiologic differences in children such as thinner skin, faster breathing, and a higher sensitivity to certain agents that can lead to more severe symptoms when exposed to chemical, biological, or radiological agents.
 - Higher respiratory rates put children at risk for greater exposure to aerosolized agents.
 - Skin is more permeable because larger skin surface to mass ratio increases the exposure risk in children to some agents.
- Children should be triaged and decontaminated before adults.
- Use low-pressure, tepid water.
- Young children cannot decontaminate themselves.
 - They should be never be separated from a guardian, if possible.
 - A single caregiver should be with them through the process, if a parent cannot.
 - Infants should never be carried through decontamination.
 - Use a laundry basket, bassinet, or bucket to ensure they are not dropped.
- Children of certain ages may have higher privacy or safety concerns.
 - Ensure privacy, when possible behind curtains or away from others of the opposite sex.
 - They can be decontaminated in their own lane, tent or shower stall.
 - Have a blanket or robe available immediately after decontamination.

5. How to Evacuate a Pediatric Patient

- Understand that children may lack cognitive decision-making skills to determine how to flee from danger, how to self-extricate or call for help.
 - Some may be too young to follow directions from caregivers.
- Have pediatric-specific evacuation equipment on floors where children are most likely to be located.
 - Medsleds with the foam inserts
 - Baby-baskets for infants.
- Practice evacuating children during any fire or emergency drills using the correct equipment.
- Use parents/guardians as an extra resource during evacuation of pediatric patients

Pediatric Equipment

1. Medication
2. Airway (at least one, but 2 or more would be best)
 - a. Peds BVM – 500 cc (or 250 cc)
 - b. Peds nasal airways
 - c. Newborn through adult size masks
 - d. Size 2.5 through 7 - ET tubes (preferred cuff tubes for size 3.5 and above)
 - e. Size 1 through 3 - Laryngoscope blades
 - f. Stylets for pediatric tubes (blue, flexible)
 - g. Child-size non-rebreathers
 - h. Small Nasal canula
 - i. Small flexible suction tube
 - j. Peds McGill forceps
 - k. A way to measure End tidal CO₂
3. General
 - a. Blood pressure cuff – neonatal, infant, and child sizes
 - b. Pulse ox (peds transducer for Heel or ear adhesive one)
 - c. Pediatric IO needle
 - d. 24-gauge IV needle
 - e. Stretch Wrap Tuck tourniquet
 - f. Pediatric c-spine immobilization (neonate through adult)
 - g. Peds sizes of foley catheters and NG/OGs
 - h. Pediatric AED pads
 - i. Feeding tubes – 5 French and an 8 French
 - j. Chest tube – 10-12 French
 - k. Child – 16-24 French
4. Pediatric Safe Room
 - a. Snacks and water
 - b. Child Games
 - c. Child books
 - d. Puzzles
 - e. Coloring books/crayons
 - f. Playdough
 - g. Child movies / DVD or blue ray player and screen
 - h. Pack n play (infants/smaller kids) – have more than one
 - i. Some extra clothes/pajamas (if they have blood or dirt on clothes)

5. Miscellaneous

- a. Diapers
- b. Formula
- c. Bottles and nipples
- d. blankets
- e. Flashlights
- f. Pack n Play (x2)
- g. Broselow tape
- h. Laundry basket or bassinet or baby bath support
- i. Hypothermic thermometer?
- j. Evac equipment – baby baskets or medsleds with peds foam inserts

If you run short – look to your local EMS crews or your L&D/maternity departments who deal with infants. They may have some of this equipment in pediatric sizes.

Pediatric Medication

Pediatric Emergency Room Pocket Drug Reference

Version 2

Poison Control 1-800-222-1222

Common Medications			
Medication	Route	Dose	Max
Acetaminophen	PO	15 mg/kg	650 mg
Fentanyl	IV	1 mcg/kg	50 mcg
	Nasal	2 mcg/kg	100 mcg
Ibuprofen	PO	10 mg/kg	600 mg
Ketamine	IV	1mg/kg	
-Alternative	IV	1.5 mg/kgx1 then 0.75mg/kg	
Midazolam	IV	0.05 mg/kg	5 mg
-Min sedation	Nasal	0.4 mg/kg	10 mg
Morphine	IV	0.05-0.1mg/kg	4 mg
Ondansetron	IV	0.1mg/kg	4 mg
Propofol*	IV	1 mg/kg	40 mg
*may repeat up to 5 total doses			

Written medication order correct format:

Medication--Dose (mg/kg)--Total Dose--Route--Frequency

Do not use these abbreviations:

U, IU, QD, QOD, MS, MSO4, MGSO4

No leading decimal, use 0.1 mg, NOT .1 mg

No trailing zero, use 1 mg, NOT 1.0 mg

Pediatric Advanced Life Support			
Medication	Route	Dose	Max
Adenosine	IV	0.1 mg/kg	First-6 mg
-Second Dose	IV	0.2 mg/kg	Second-12mg
Amiodarone	IV	5 mg/kg	300 mg
Atropine	IV	0.02 mg/kg	Max 0.5 mg
Calcium GLUC	IV	100 mg/kg	2000 mg
Epinephrine	IV	0.01 mg/kg	1mg(or>50kg)
--0.1mg/mL		(0.1 mL/kg)	(10 mL)

Rapid Sequence Intubation			
Medication	Route	Dose	Max
Atropine	IV	0.02 mg/kg	Max 0.5 mg
Etomidate	IV	0.3 mg/kg	20mg
Lidocaine (↑ICP)	IV	1 mg/kg	100 mg
Rocuronium	IV	1 mg/kg	--
Succinylcholine	IV	2 mg/kg	150 mg
Vecuronium	IV	0.1 mg/kg	--

Anaphylaxis			
Medication	Route	Dose	Max
Epinephrine 1mg/mL	IM	0.01 mg/kg	0.3 mg
Dexamethasone	PO	0.6 mg/kg	16 mg
Diphenhydramine	IV/PO	1 mg/kg	50 mg
Ranitidine	IV	1 mg/kg	50mg
	PO	2 mg/kg	150mg
Famotidine	IV/PO	0.5 mg/kg	20mg
Methylprednisolone	IV	1 mg/kg	

Other			
Medication	Route	Dose	Max
Dextrose 10%	IV	5 mL/kg	250 mL
NACL 3%	IV	5 mL/kg	500 mL
Mannitol	IV	0.5-1 gm/kg	50 gm
Sodium Bicarb	IV	1 mEq/kg	50 mEq
		<5kg use 4.2%	

Cardiovascular Drips		
Medication	Route	Starting Range
Dopamine	IV	5-20 mcg/kg/min
Epinephrine	IV	0.05-1 mcg/kg/min
Milrinone	IV	0.25-0.75 mcg/kg/min
Norepinephrine	IV	0.1-1 mcg/kg/min
Alprostadil	IV	0.05-0.1 mcg/kg/min

Reversal Agents			
Medication	Route	Dose	Max
Naloxone-Partial	IV	0.01 mg/kg	0.2 mg
Naloxone-Full	IV/IM	0.1 mg/kg	2 mg
Flumazenil	IV	0.01 mg/kg	0.2 mg

Respiratory			
Medication	Route	Dose	Max
Albuterol	Neb	2.5mg/3mL	10 mg
Ipratropium	Neb	0.5 mg	1 mg
Magnesium	IV	50 mg/kg	2000 mg
-Give over 20 min			
Albuterol	Neb	<20 kg- 10 mg/hr	
-Continuous		≥20 kg- 20 mg/hr	
Racemic Epi	Neb	0.5 mL	In 3 mL NS
Dexamethasone	PO	0.6mg/kg	16 mg

Seizures			
Medication	Route	Dose	Max
Fosphenytoin	IV	20 mg/kg	1500 mg
Levetiracetam	IV	20 mg/kg	2000 mg
Lorazepam	IV	0.1 mg/kg	4 mg
Phenobarbital	IV	20 mg/kg	1000 mg
Valproic Acid	IV	20-40 mg/kg	
Midazolam	IN	0.2 mg/kg	10mg

This document presents an evidenced-based approach that is appropriate for most patients. It should be adapted to meet the needs of individual patients and situations, and should not replace clinical judgement.

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