

Pediatric Emergency Preparedness Disasters, Terrorism and Public Health Emergencies

Are We Prepared?

David Markenson, MD
Chief, Pediatric Emergency Medicine
Maria Fareri Children's Hospital
Director, Center for Disaster Medicine
New York Medical College School of Public Health



Children **do** require...

UNIQUE AND DIFFERENT
RESOURCES



Where are we today?



Federal Resources?

Are they adequate for children?



Strategic National Stockpile

- SNS: organized for flexible response
- Push Packs – Goal: delivery in 12 h
 - Caches of pharmaceuticals, antidotes, and medical supplies designed to provide rapid delivery of a broad spectrum of assets for an ill defined threat in the early hours of an event.
- Vendor Managed Inventory – Goal: delivery in 24-36 hours
 - VMI can be tailored to provide pharmaceuticals, supplies and/or products specific to the suspected or confirmed agent(s).



2/3 of a push pack may not be
appropriate or usable for children



Federal and State Resources Pediatric Issues

- SNS (Strategic National Stockpile)
 - Improved, but limited pediatric content
 - Restricted to FDA indicated usages
- State Stockpiles
 - Based on SNS
- Federal Funding
 - HRSA – Pediatric Requirements
 - CDC – Some Pediatric Attention



Federal and State Resources Pediatric Issues

- DMAT (Disaster Medical Assistance Teams)
 - No pediatric requirements
 - Staff, pharmaceuticals, equipment
 - 2 self-certified pediatric teams
- MRC (Medical Reserve Corp)
 - No defined pediatric capability



Medications?

Do we have what children need?



Differences

- Antibiotic contraindications
 - Fluoroquinolones (Drug of Choice for:)
 - Anthrax
 - Plague
 - Tetracyclines (Drug of Choice for:)
 - Anthrax
 - Plague
 - Tularemia
 - Brucellosis
 - Q Fever



Fluoroquinolones

- Levofloxacin was licensed by the FDA for the post-exposure treatment/prophylaxis of inhalational anthrax on 24 November 2004.
 - An oral solution (25 mg/ml) was licensed at that time, along with tablets and an injectable form,
 - Drug was not specifically given a Pediatric indication and no dosing recommendations have been put forth.
 - One can extrapolate the dosage 10-15 mg/kg q 24 h.



Potassium Iodide

- On 12 January 2005, the FDA approved a liquid Pediatric preparation of KI (ThyroShield TM), containing 65 mg of KI per ml.
- *The liquid preparation should be made widely available and should become the preferred dosing form for young children.*



Prussian Blue

- Prussian Blue (Radiogardase®) was approved by the FDA in 2003 (as 500 mg capsules) for the treatment of internal 137Cs contamination.
- Treatment is not 'time-critical', and as the 'dirty bomb' which might be expected to provide the exposure to 137Cs would likely affect only modest numbers of people
- Stockpiling of large amounts of Prussian Blue in forward locations is not key
- Dosing recommendations:
 - Adults and Adolescents: 3 g (6 capsules) PO tid.
 - Children 2-12 years of age: 1 g (2 capsules) PO tid.
 - *Capsules may be opened and the contents mixed with food or beverages*



Differences

- Other considerations
 - Drugs & Antidotes
 - not available in pediatric dosing regimens
 - Equipment
 - not available in pediatric sizes
 - Hospitalization
 - lack of pediatric beds in disaster plans



Hospital Issues



Preparation

Are your Hospitals PEDIATRIC ready?

- Does the disaster plan address children?
- Are pediatricians involved in planning?
- Are there pediatric-specific pharmaceuticals, equipment, supplies (e.g., decontamination units, Mark I kits, etc.)
- Are pediatric drills and exercises conducted?



What is Pediatric Surge?

- Secondary Victims
 - Proportion of normal census
- Uniquely Pediatric Event
 - Out of proportion to normal census
 - School, day care, school bus, camp
- Family Unit
 - Ability to care for family without separating children and adults



Pediatric Surge Planning

- Address pediatrics out of proportion to normal numbers
 - Emergency Operations Plans
 - Providers
 - Equipment, pharmaceuticals
 - Drills and exercises
- Plans for care of children
 - Adult Providers
 - Adult Units
 - Adult Equipment
- Plans for care of adults in pediatric units



Decontamination



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What about pediatric decontamination?
Where does an infant go?



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Decontamination Pediatric Considerations

- Water pressure
 - Will it injure a child?
- Water temperature
 - If water is not warm: may cause hypothermia
- Non-ambulatory child
 - Infants, toddlers
 - Children with special healthcare needs
- Mental health concerns
 - Will children follow instructions
 - Long term effects



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WMD Antidotes



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Mark-1 Auto-Injector

- Standard antidote for nerve agent exposure
 - Deployed in most hospitals and EMS systems
- What about children?
 - Manufacturer makes pediatric model for Israel and other countries
 - Not FDA approved
 - Dosage is safe for most children based on data from organophosphate poisoning



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Children may require...

DIFFERENT SYSTEMS



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Identification and Reunification of Children After a Mass Casualty Incident

- Requires means of rapidly collecting information on arriving casualties (e.g., digital photos)
- Photo indexing
- Site where arriving parents can review photos
- System for presenting select photos



School Planning



Preparedness & The Schools

- Preparedness planning
- Coping and resiliency issues for teachers and students
- Special issues: KI, what to stockpile, syndromic surveillance
- Communications with parents



Questions?



Key Reference Web Sites

- Know your resources:
 - Center for Disaster Medicine
 - www.nymc.edu/cdm
 - AAP
 - www.aap.org/terrorism
 - CDC
 - www.bt.cdc.gov
 - ARC
 - www.redcross.org

