Kids in Disasters: 
*Facing Our Challenges* 
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• I have no relevant financial relationships with manufacturers or any commercial products and/or providers of commercial services discussed in this CME activity

• I do not intend to discuss any unapproved or investigative use of commercial products or devices in this presentation

Objectives

• Understand the rationale for children as “targets” of terrorism

• Describe unique vulnerabilities of children that place them at risk during disasters from an *All-hazards* perspective

• Identify real-world challenges posed by children in disasters
Objectives

• Enumerate common gaps/challenges in disaster preparedness/response for children

• Identify pragmatic approaches to address identified preparedness gaps as well as success stories

Background

• Children account for ~25% of the US population

• Children have been victims of various types of disasters including terrorist attacks

Background

• Disaster preparedness/emergency management previously focused mainly on adult needs

  – Federal partners are stepping up

  – States, Local govt. and municipalities need to embrace the same
Background

• Medical care for children in general, and during disasters differs from care for adults

• Institute of Medicine Report 2006: Care for children at best is uneven.

We have not reached parity with them. We have the right to kill four million Americans —two million of them children —and to exile twice as many and wound and cripple hundreds of thousands. Furthermore, it is our right to fight them with chemical and biological weapons, so as to afflict them with the fatal maladies that have afflicted [us] because of the [Americans’] chemical and biological weapons.”

--Al Qaeda

The Middle East Media Research Institute: Special Dispatch Series—No. 388.

If there is any lesson that we can draw from the last decade, it is that the use of child soldiers is far more than a humanitarian concern; that its impact last far beyond the time of actual fighting; and that the scope of the problem vastly exceeds the numbers of children directly involved.

--Kofi Anan (former UN Secretary)

International NGO Journal Vol. 3(6), pp. 108-114, June 2008
Unfortunate Examples

- Multi-year gas attacks of girl schools in Afghanistan
- 2004 school shooting/hostile takeover in Beslan, Russia
- Oklahoma City bombing involving daycare facility
- 2012 Newtown, Connecticut school shooting

Why children as targets?

- Our precious gems
- Most sacred thing to us
- Shock value
- Soft-targets
- Undermine our morale and security

Does size really matter?
Children at risk: Vulnerabilities

• Anatomical, Physiological, & Developmental
  • Unable to recognize or flee from danger
  • Increased baseline minute ventilation
  • Increased body surface area to mass ratio

Children at risk: Vulnerabilities

• Thin & less keratinized skin
  • Increased metabolic and growth rate
  • Increased mental health/behavioral impact
  • Immature immune systems
Real-World Challenges

- Hurricane Andrew
  - Cat 5 storm
  - 65 deaths
  - Delayed federal relief response
  - Staff & Supply shortage
  - 41% increase ED visits Miami Children’s Hospital
    - Trauma (minor)
    - GI (gastroenteritis)
    - Soft-tissue infections
    - Mental Health/Behavioral


Real-World Challenges

- 9/11
- Terrorism on US soil
- Public health emergency/disaster response overwhelmed, under-staffed, poorly coordinated?
- Federal focus on Terrorism/Bioterrorism
  - Substantial funding made available
  - Small amount directed towards EMS/Trauma systems

Real-World Challenges

- Hurricane Katrina
- Children & Families displaced
  - ~165,000 kids
  - ~5,200 kids reported missing
  - Time to reunification completion = 6 months
- School matriculation ‘05-’06 & ’06-’07
  - 50,000 & 15,000 kids did NOT, respectively
- 37% of children = Depression, Anxiety or Behavioral disorder

Report available @ http://www.savethechildren.org
**Real-World Challenges**

2009 H1N1 Outbreak*
- Occurred very late in the season
- Remarkable heterogeneity across US
- Affected young people disproportionately
- Caused widespread illness; some severe or fatal
- Socially disruptive, especially for schools
- Tens of thousands of health workers and others responded worldwide

*Adopted from CDC

**Real-World Challenges**
- Haiti Earthquake
- Limited search & rescue resources
- Limited acute care capabilities & supplies
- Younger population injured
- Mass amputation, crush injury victims
- Casualty evac & transport compromised
- Mass fatality management non-existent and morgues overwhelmed
Real-World Challenges

• Japan Earthquake (Fukushima)
• 9.0 magnitude, 15meter Tsunami, Nuclear Accident
• Natural disaster culminating in Man-made disaster
• >100,000 families evacuated
• Medical countermeasures for children????
• Long-term impact......????

Real-World Challenges

• Tornadoes—Joplin; Hurricane Sandy
• Random path/target
  – Critical infrastructure like Hospital/School
• No time
  – Little or no warning
• Power outages
  – Impact on technology dependent /special needs children & families
• Patient transportation/evacuation complexities

Real-World Challenges

• School shootings: Newton, Connecticut
• 28 killed; 20 were children
• Single shooter
• Mental health system breakdown vs. Porous gun-control policies vs. Lack of school preparedness
• How do we prepare for this? How do we prevent this?
Lessons Learned vs. Lessons Re-experienced

- Inadequate pediatric familiar/trained rescue personnel and supplies for the initial response and first few days

- Inadequate pediatric medical equipment, personnel and hospital space

Lessons Learned vs. Lessons Re-experienced

- Inadequate food, clothing and shelter for victims and displaced populations

- Inadequate communications, assessment of victim’s needs and initial on-site coordination
Gaps/Challenges: Kids in disasters

- Triage & Assessment
- Surge capacity and capability
- Medical countermeasures
- Crisis standards
- Regionalization & Transport
- Re-unification
- Mental Health

Gaps/Challenges: Kids in disasters

- Performance Measures/Metrics
- Research/Data
- National Emergency Care System
  - Overburdened
  - Under funded
  - Fire, EMS spread thin
  - EDs overcrowded
  - Trauma Systems Pediatric capable?

Special Considerations

Gaps/Challenges: Kids in Disasters
### Children with Special Needs- Technology dependent children

- Defined as “those children who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally.”

### Most have unique healthcare needs that may consist of medications and supportive health care equipment (e.g. insulin, home ventilator)

- Extremely dependent on their parents, home health care providers, school teachers, school nurses, and primary care provider.

- Do not to separate the caregiver and child if possible, as the caregiver is very cognizant of what is normal for the child.

- Separating patient and caregiver may result in a high risk situation, converting a stable patient to unstable

### Decontamination

- Inability to follow decon instructions = more staff needed
- Unaccompanied children = personnel-intensive direct supervision
- Families may not cooperate with instructions if separated
- Risk of Hypothermia during and after decontamination
- Need for pediatric-appropriate post-decon garb
- Fear and Psychological consequences of the decon process.
Decontamination

• Communication
• Dexterity
• Prolonged life-saving intervention time
• Prolonged shower time
• Delayed throughput/pt flow

Success stories

• PAHPA-2006
  — HHS Secretary created ASPR and Office of at Risk Population
• BPCA/PREA—FDA
• AAP enhanced partnership with Fed. agencies
• HPP grant now tied to some pediatric specifics

Success stories

• Pandemic and All- Hazards Preparedness Reauthorization Act (PAHPA-R)
  — Passed by the Senate
  — Creation of National Advisory Committee on Children and Disasters
  — Increased labeling and development of pediatric medical countermeasures
Success stories

- Pediatrician appointments to the NBSB
- Congressional Pediatric Expert testimonies on the Hill regarding disasters
- AAP recognized by Federal agencies and Capitol Hill as a “go-to” for pediatric expertise

Pragmatic considerations--General

- Ensure that stockpiled MCMs, equipment and supplies are appropriate for children
- Improve and ensure pediatric education and training for first responders and others
- Ensure that EMS agencies and hospitals are prepared for ill and injured children


Pragmatic considerations--General

- Ensure that state and local planning, and disaster drills, include child and family needs
- Increase linkage between preparedness agencies and private sector pediatric care providers
- Improve individual preparedness, including that of families and children with special care needs
- Involve pediatric experts at all levels of planning

Pragmatic considerations—States & Locals

- Local and state authorities and planners
  - largest role and primary responsibility for preparedness and response
- ~3000 local Departments of Health
- Regional planning will likely be needed to address pediatric care gaps/needs
  - Coalition model with peds expertise may be a start
- Engage pediatric experts

Pragmatic considerations—States & Locals

- Partner with local children’s hospitals and community hospitals to improve emergency and disaster readiness
- Collaborate with the state department of education and local schools to ensure they have a functional, coordinated disaster plan
- Maintain proactive relationships with media

Bottomline

- Pediatric disaster preparedness and response is challenging
- Unique vulnerabilities and needs of the pediatric population remain unaddressed in disaster plans at various levels of organizational emergency management though we have made significant strides
Bottomline

• Disasters involve children and Terrorists have targeted areas with a large population of children in order to cause more harm and incite emotional upheaval

Bottomline

• Medical care for children in general, and during disasters differs from care for adults

• Paramount to understand the unique physiological, anatomical, psychological, and developmental characteristics of children

Bottomline

• Disaster medical care, including evacuation, MCM distribution, decontamination, tracking, family reunification, mass-fatality management and mental health assessment needs to be drilled regularly and included in all-hazards response plans at all levels
References

- 2010 Report of the National Commission on Children and Disasters
  http://archive.ahrq.gov/prep/nccdreport/
- Pediatric Preparedness for Disasters and Terrorism: A National Consensus Conference. National Center for Disaster Preparedness, Columbia University Mailman School of Public Health.
- Where are the countermeasures? Protecting America’s Health.
- Romig LE. Pediatric triage. A system to JumpSTART your triage of young patients at MCIs. JEMS. Jul 2002;27(7):52‐58, 60‐63.

Resources

- http://www.aap.org/disasters/index.cfm
- http://www.bt.cdc.gov/planning
- http://www.acf.hhs.gov/nccd/resources.html
- http://healthyamericans.org/policy/bioterrorism‐and‐public‐health‐preparedness/

Children & Disasters

http://www.aap.org/disasters/index.cfm
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