

Access the recorded webinar here:

[https://register.gotowebinar.com/
recording/8946165753032602114?assets=true](https://register.gotowebinar.com/recording/8946165753032602114?assets=true)

Speaker Bios: [https://asprtracie.s3.amazonaws.com/
documents/aspr-tracie-pediatric-issues-in-disasters-
webinar-speaker-bios.pdf](https://asprtracie.s3.amazonaws.com/documents/aspr-tracie-pediatric-issues-in-disasters-webinar-speaker-bios.pdf)

Q and A: [https://asprtracie.s3.amazonaws.com/
documents/aspr-tracie-ta-pediatric-webinar-qa.pdf](https://asprtracie.s3.amazonaws.com/documents/aspr-tracie-ta-pediatric-webinar-qa.pdf)

T R A C I E

HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

Pediatric Issues in Disasters

February 13, 2018



ASPR TRACIE: Three Domains



- Self-service collection of audience-tailored materials
- Subject-specific, SME-reviewed “Topic Collections”
- Unpublished and SME peer-reviewed materials highlighting real-life tools and experiences



- Personalized support and responses to requests for information and technical assistance
- Accessible by toll-free number (1844-5-TRACIE), email (askasprtracie@hhs.gov), or web form (ASPRtracie.hhs.gov)



- Area for password-protected discussion among vetted users in near real-time
- Ability to support chats and the peer-to-peer exchange of user-developed templates, plans, and other materials



ASPRtracie.hhs.gov



1-844-5-TRACIE



askasprtracie@hhs.gov





TRACIE

HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

Meghan Treber, MS
Moderator
ASPR TRACIE

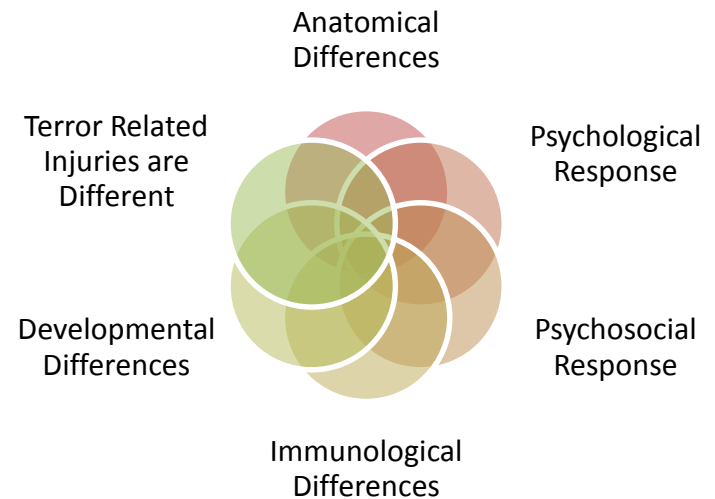
Children Today in the US

- Estimated 74 million children under 18 years of age
- Roughly 25% of the population
- Largest vulnerable population
- 30% living at or near the poverty level



Children Have Unique Needs

- Children have unique needs and require special planning.
 - Their bodies are different from adults
 - More likely to be sick or injured than adults
 - They can be more easily adversely affected by changes in environment
- Mental stress from a disaster can be harder on children.
- Children and places where children congregate can be terrorist targets.



Children in Disasters

- Children are frequently victims of disasters; they have age-specific vulnerabilities that heighten their risks and magnify their unique needs.
- This can become more difficult when planning for the special needs of pediatric patients with access and functional needs who may have pre-existing conditions and physical, developmental and psychosocial disabilities.
- Critical gaps in pediatric disaster planning include the provision of increased staffing, specialized equipment, training and matching resources to needs.

Webinar Purpose

- Learn how to identify and incorporate pediatric special considerations into preparedness, mitigation, response, recovery, and resilience-building plans and actions.
- Focus:
 - Be prepared everyday for an emergency.
 - Integrate pediatric issues into healthcare preparedness plans, trainings, and exercises.
 - Provide lessons learned and examples that are easily implementable for facilities and jurisdictions immediately.
 - What are the tools you need to fill gaps in pediatric emergency planning.

Emergency Medical Services for Children



**Diane Pilkey RN MPH
Senior Nurse Consultant**

**Emergency Medical Services for Children (EMSC)
U.S. Department of Health and Human Services (HHS)
Health Resources and Services Administration (HRSA)
Maternal and Child Health Bureau (MCHB)**



Emergency Medical Services for Children (EMSC) Program

EMSC Legislation

Expand and improve emergency medical services for children and youth who need treatment for trauma or critical care by improving the quality and delivery of EMS systems

Ultimate Goal

Reduce pediatric morbidity and mortality related to medical or traumatic emergencies



EMSC State Partnership Grants

- 58 State Partnership Grants, include States, territories and DC
- Goal: Expand and improve state's pediatric emergency care capabilities in order to reduce pediatric morbidity and mortality related to trauma and critical illness.
- Each funded at \$130K per year
- State Performance Measures for both ED and prehospital EMS settings
- https://emscimprovement.center/documents/238/2018_PM_FactSheet20180110.pdf



One Common Performance Measure- EMSC State Partnership and Hospital Preparedness Program

The percent of hospitals with an Emergency Department (ED) recognized through a statewide, territorial or regional standardized system that are able to stabilize and/or manage pediatric trauma.

-HPP Performance Measure 22 & EMSC Performance Measure 04

National Pediatric Readiness Project

Joint Policy Statement—Guidelines for Care of Children in the Emergency Department

American Academy of Pediatrics, Committee on Pediatric Emergency
Medicine, American College of Emergency Physicians, Pediatric
Committee, Emergency Nurses Association Pediatric Committee

1. Administration and Coordination
2. Physicians, Nurses, and Other Healthcare Providers
3. Quality Improvement
4. Patient Safety
5. Policies, Procedures, and Protocols
6. Support Services
7. Equipment, Supplies, and Medications





Guidelines for Care of Children in the Emergency Department

This checklist is based on the American Academy of Pediatrics (AAP), American College of Emergency Physicians (ACEP), and Emergency Nurses Association (ENA) 2009 joint policy statement "Guidelines for Care of Children in the Emergency Department," which can be found online at <http://aappolicy.aappublications.org/cgi/reprint/pediatrics;124/4/1233.pdf>. Use the checklist to determine if your emergency department (ED) is prepared to care for children.

- 189 Items on the assessment
- 82 Items Scored for "Pediatric Readiness"
- Perfect Score = 100



■ 6 Major Sections*

- Coordination (19 pts)
- Staffing (10 pts)
- QI/PI (7 pts)
- Safety (14 pts)
- Policies (17 pts)
- Equipment (33 points)

Benchmarking: "QI Approach"

Average Pediatric Readiness Scores

Low Volume (<1800 patients)	Medium Volume (1800-4999 patients)	Medium to High Volume (5000-9999)	High Volume (>=10000)	All Participating Hospitals
62	70	74	84	69
n = 1629	n = 1248	n = 708	n = 561	n = 4146

Champions Assessment Incentives

- EMSC- SP
- ACEP
- ENA
- AAP

- Delphi Process
- ED Guidelines
- Weighted Pediatric Readiness Score WPRS

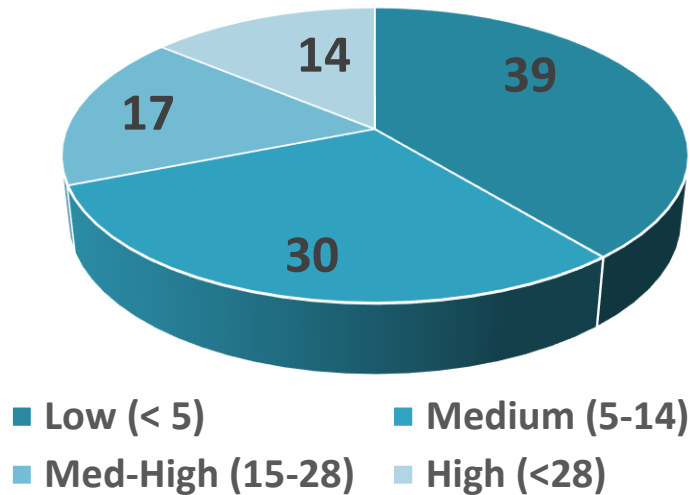
- Pediatric Ready Score
- Benchmarking
- Gap Analysis
- Clinical Tools
- Web-based toolkit

83%
4146 EDs

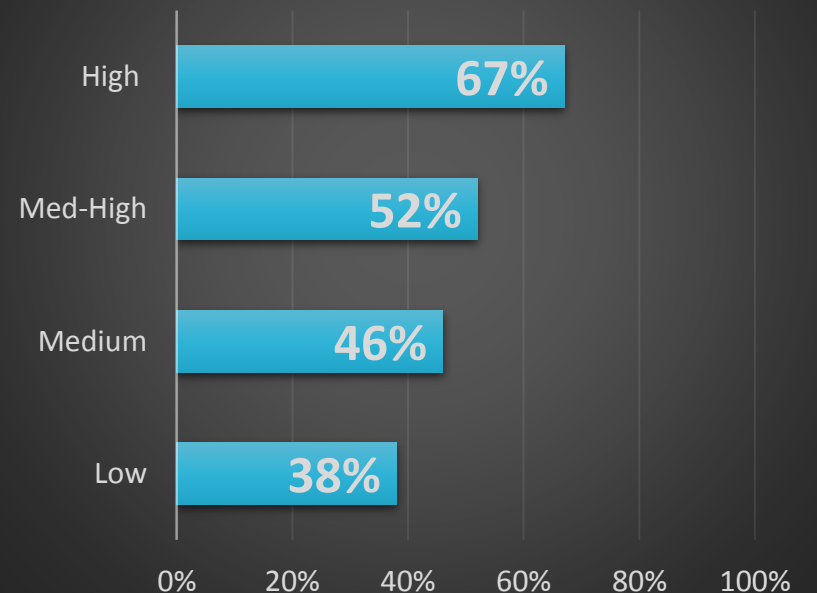


EDs with Disaster Plan that has Pediatric Specific Components: 47%

Percent EDs by Daily Pediatric Patient Volume



% Disaster Plan Incorporates Children



Pediatric Hospital Disaster Checklist

◀ Previous Page

Next Page ▶



Interactive and non-interactive versions available at:

<https://emscimprovement.center/resources/toolboxes/pediatric-disaster-preparedness-toolbox/>



Disaster Checklist Domains

- Pediatric physician/staff disaster coordinator / champion
- Partnership-building to facilitate surge capacity
- Essential resources necessary for building pediatric surge capacity
- Triage, infection control, and decontamination
- Family tracking, security, support, and reunification
- Legal/ethical issues
- Behavioral health
- Children with special health care needs
- Staffing, exercises, drills, and training
- Recovery and resiliency



What You Can Do

- **Liaison with EMSC State Partnership Program Manager in your state.**
 - Contact List: <https://emscimprovement.center/categories/state-partnerships/>
- **Promote National Pediatric Readiness Project and Assessment**
 - URL: <http://www.pediatricreadiness.org>
- **Access EMSC Innovation and Improvement Center Pediatric Disaster Resources**
 - URL: <https://emscimprovement.center/resources/toolboxes/pediatric-disaster-preparedness-toolbox/>

Contact Information

Diane Pilkey RN MPH

Senior Nurse Consultant EMSC
Division of Child, Adolescent, and Family Health
Maternal Child Health Bureau/Health Resources and Services
Administration/U.S. Department of Health and Human Services
5600 Fishers Lane 18N-54, Rockville, MD 20857

TEL: 301-443-8927

Email: dpilkey@hrsa.gov





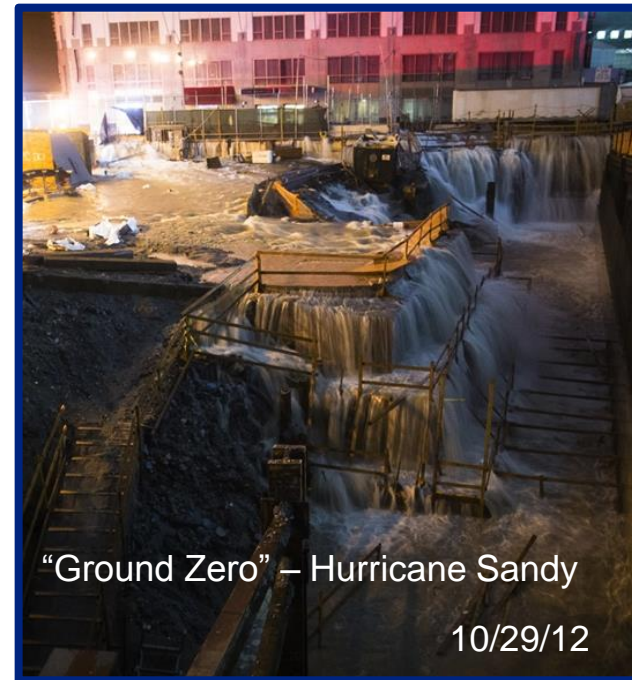
TRACIE

HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

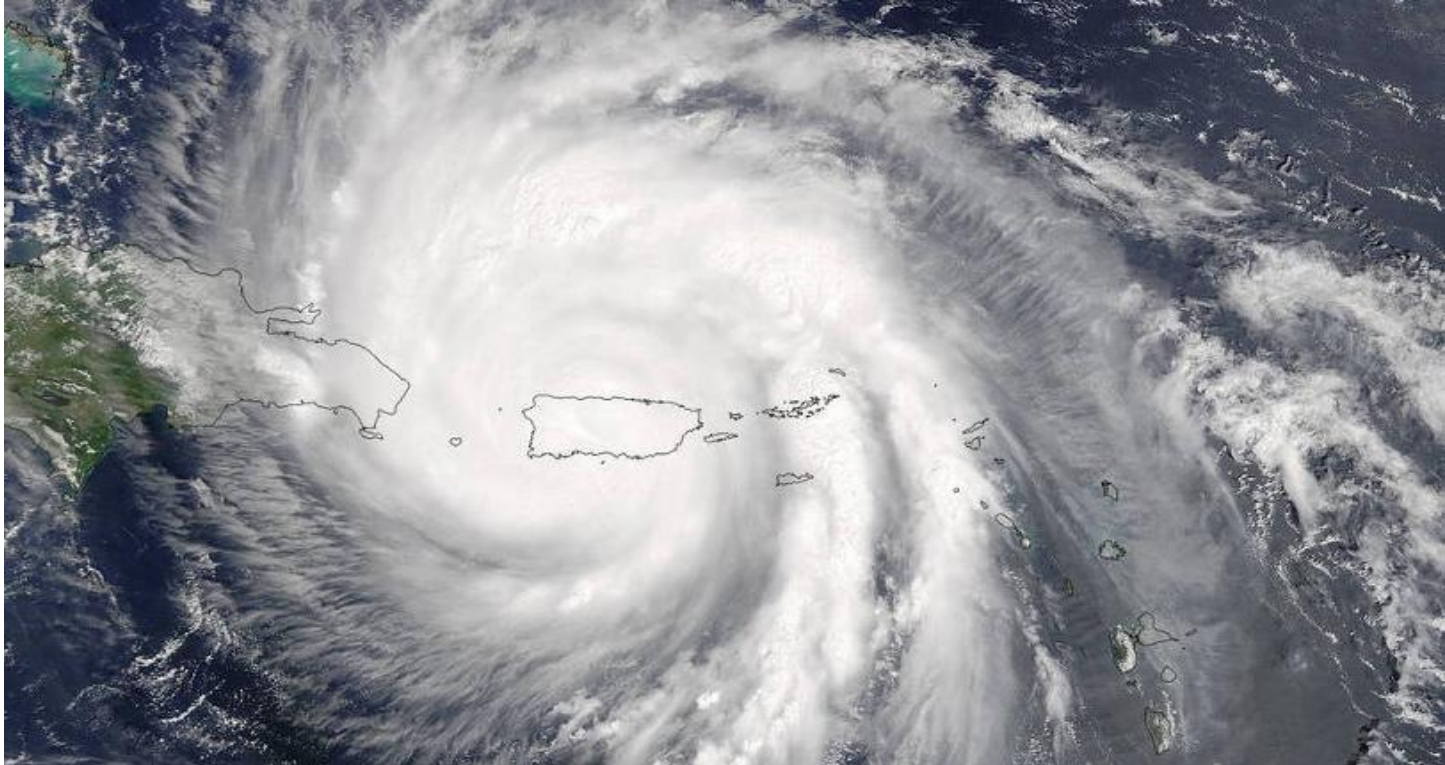
Steven E. Krug, MD — Head, Division of Emergency Medicine,
Lurie Children's Hospital of Chicago; Professor of Pediatrics,
Northwestern University Feinberg School of Medicine; Chair, American
Academy of Pediatrics Disaster Preparedness Advisory Council

To Remind You, A Disaster Is...

- An event of sufficient scale, asset depletion, or numbers of victims to overwhelm health care, other resources
 - Little to no warning
 - Results in uncertainty with lasting impact
- When children are involved, the situation is beyond the capacity of most systems and communities



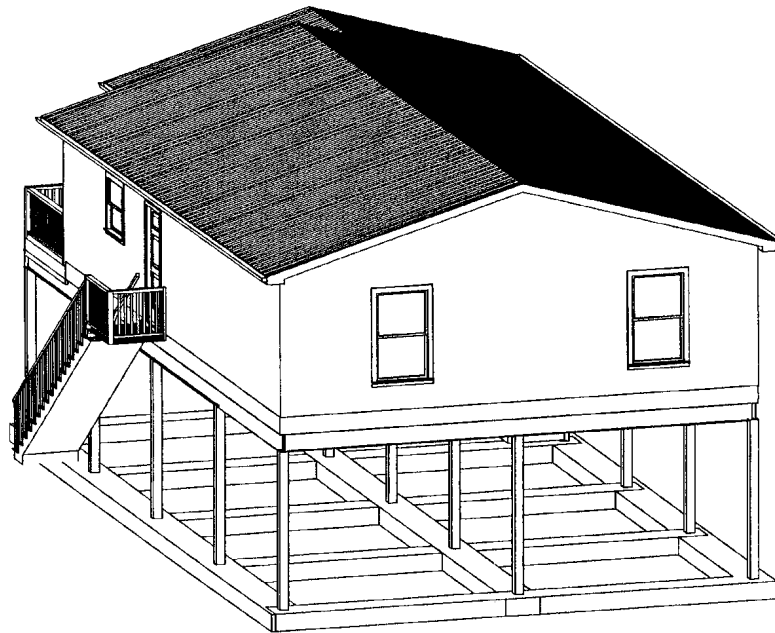
Harvey → Irma → Maria



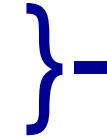
DISASTER PHASES



DISASTER READINESS BLUEPRINT



All-hazard
mass casualty
event readiness



Day-to-day
emergency
readiness

“The Bedrock” – The Medical Home and Community Resiliency

DESIRED END-STATE: RESILIENCY



- *“The sustained ability of communities to withstand and recover (short and long term) from adversity”*
 - HHS National Health Security Strategy (2009)
- Community resiliency is reliant upon health system resiliency
 - Including primary care and mental health services
- Growing focus at federal level on the development of private/public sector coalitions



Community resilience is the ability of communities to withstand and recover from disasters and to learn from past disasters to strengthen future response and recovery efforts.

JAMA Pediatrics

A NATIONAL ASSESSMENT OF PEDIATRIC READINESS OF EMERGENCY DEPARTMENTS

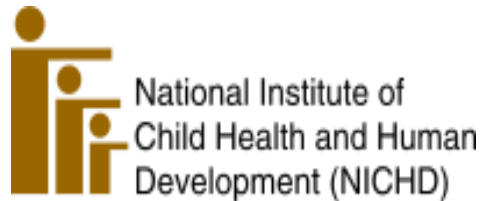
GAUSCHE-HILL M, ELY M, SCHMUHL P, TELFORD R, REMICK K, EDGERTON EA, OLSON LM

JAMA PEDIATRICS 2015;169(6):527-34. DOI:10.1001/JAMAPEDIATRICS.2015.138

- Survey of hospital/ED readiness for pediatric care, based on 2009 AAP/ACEP/ENA guidelines
 - Survey conducted 2012-13
 - **82.7%** response rate (4143 of 5017 US EDs)
 - Average score improved from 2003 (55 → 69)
 - Hospitals with larger volume EDs were better prepared
 - Hospitals with a pediatric coordinator did better
 - Only 47% had a disaster plan addressing specific pediatric needs



DISASTER PREPAREDNESS ADVISORY COUNCIL (DPAC)



- 6 members plus internal AAP liaisons
- Intersections with liaisons at key federal agencies & NGOs
 - Guide and oversee AAP efforts



FEMA



American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



FEDERAL LEVEL PROGRESS

- CDC: Pediatric Desk in Emergency Operations Center
- ASPR: Pediatrician-led Advisory Councils
- FEMA: National Children's Advisor Position
- PAHPRA – Formation of NACCD
- HRSA EMSC: Longstanding partnership – including EIIIC
- Pediatric Representation “at the table” is critical!



STATE & LOCAL PREPAREDNESS

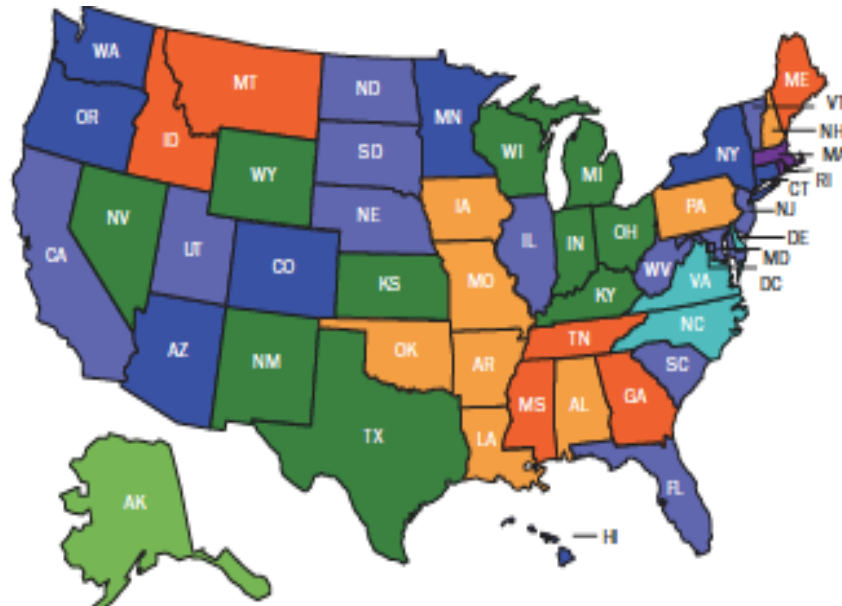


STATE PREPAREDNESS

STATE-BY-STATE INFECTIOUS
DISEASE PREVENTION AND
CONTROL INDICATORS AND
KEY FINDINGS



Scores	Color
2	Light Green
3	Green
4	Yellow
5	Orange
6	Dark Orange
7	Dark Blue
8	Light Blue



December 2017

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



STATE & LOCAL READINESS LANDSCAPE

- Level of readiness varies significantly by state
- AAP Chapter Contacts – every state has one or more
- **Our Goal:** pre-event relationships between local/state public health and emergency management with pediatricians + state EMS for Children grantees
 - Pediatrician involvement in all levels of planning
 - Local/State/Regional drills – leverage CDC pilot*
- AAP state preparedness funding – 7 grants
- Chapter survey results: education program needs

*Chung S, Gardner AH, Schonfeld DJ, et al. Addressing children's needs in disasters: a regional Pediatric tabletop exercise. Disaster Med Publ Health Prep 2018; doi 10.1017/dmp.2017.137

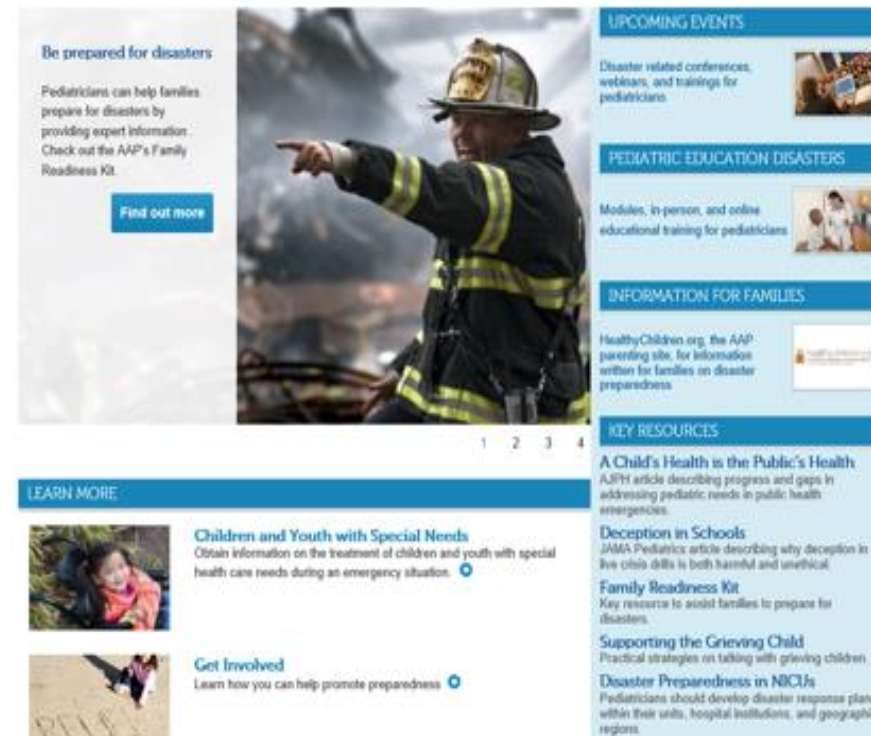
AAP Children & Disasters Website

Children & Disasters

Disaster preparedness to meet children's needs

Welcome

Pediatricians can serve as expert advisors to local, state, and federal agencies and committees and play a key role in disaster and terrorism preparedness with families, children, and their communities.



Be prepared for disasters

Pediatricians can help families prepare for disasters by providing expert information. Check out the AAP's Family Readiness Kit.

[Find out more](#)

UPCOMING EVENTS

Disaster related conferences, webinars, and trainings for pediatricians

PEDIATRIC EDUCATION: DISASTERS

Modules, in person, and online educational training for pediatricians

INFORMATION FOR FAMILIES

HealthyChildren.org, the AAP parenting site, for information written for families on disaster preparedness

KEY RESOURCES

A Child's Health is the Public's Health
APPH article describing progress and gaps in addressing pediatric needs in public health emergencies.

Deception in Schools
JAMA Pediatrics article describing why deception in live crisis drills is both harmful and unethical

Family Readiness Kit
Key resource to assist families to prepare for disasters.

Supporting the Grieving Child
Practical strategies on talking with grieving children

Disaster Preparedness in NICUs
Pediatricians should develop disaster response plans within their units, hospital institutions, and geographic regions.

LEARN MORE

Children and Youth with Special Needs
Obtain information on the treatment of children and youth with special health care needs during an emergency situation.

Get Involved
Learn how you can help promote preparedness.

- Joint clinical care guidelines
- Readiness resources for practices
- Resources for hospitals
- Educational resources for providers
- Resources for families & kids, schools and child care
 - Coping & mental/behavioral health
- Resources for chapters/communities
- AAP policy & technical reports
- Links to federal and NGO sites
 - CDC, ASPR, FEMA, EMSC, TRACIE, NACCD, NPDC
- Link to AAP Chapters

www.aap.org/disasters

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



ARE YOU PERSONALLY PREPARED?

- *“By failing to prepare you are preparing to fail”*

Benjamin Franklin





TRACIE

HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

Scott Needle, MD

Primary care pediatrician and Medical Director for the Healthcare Network of Southwest Florida; Disaster Coordinator for the Florida Chapter American Academy of Pediatrics

Primary care pediatrics: the pediatric medical home

- Introduced by AAP in 1967
- Longitudinal, comprehensive
- Care coordination
- Patient-centered
- Wrap-around
- Accessible
- Quality



Role of pediatric medical home

- Primary source of access and care
- Acute and chronic conditions
- Immunizations
- Well-child check-ups/anticipatory counseling
- Mental health
- Telephone care and triage



Pediatric mental health



- *Primary care pediatrics is the default mental health system for children in the US!*
- First point of contact
- Common in everyday practice
- Integrated behavioral health on the rise

Children and youth with special health care needs (CYSHCN)



Texas CSHCN Services Program

- Collaboration between medical home and specialty care
- Care oversight
- Knowledge of needs
- Unique access
- Quasi-POD

What pediatricians can bring



- Expertise on children's health, development, and well-being
- Long-term continuous care
- Ability to reach thousands of families
- Trusted communication hubs for the community
- Surge capacity
- Immunization infrastructure
- Public health surveillance

Disaster, communications, and the medical home

- “60% [of patients] preferred their family doctor as the major source of information regarding the prevention and care of anthrax or other biological hazards”

(Kahan E, et al. Family Practice, 2003; 20(4))

- “Most Americans would be persuaded to prepare for a public health emergency if instructed to do so by the CDC (86%) or their regular doctor (87%).”

(Redlener, et al, 2007)

Primary care and recovery

- Monitoring for signs and symptoms
- Emotional support
- Family care
- Coordination and community resources
- Front-line feedback

Challenges to partnering

- Independent practices
- Fragmented system
- Not mandated or accountable to participate
- Little incentive to participate (time = money)
- Busy seeing patients
- Other regulatory demands
- Historic disconnect between practicing physicians and public health

How to reach pediatricians

- Find who's in your community
- Reach out
- Build on existing connections
- Use your local hospital, state AAP Chapter

Being prepared for an emergency begins with "Hello."

Know your neighbors.

Plan together.

Be ready.

Learn more at bereadyla.org

Close

Illustration by [unreadable] for the Department of Health and Human Services, Office of the Assistant Secretary for Preparedness and Response. All rights reserved. © 2014. All other trademarks are the property of their respective owners.

U.S. Department of Health and Human Services
Office of the Assistant Secretary for Preparedness and Response

What pediatricians want

- Respect time
- What can you offer?
 - Resources
 - Expertise
 - Information
 - Access
 - The chance to make a difference
- How can you help each other?





TRACIE

HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

Patricia Frost, RN, MS, PNP

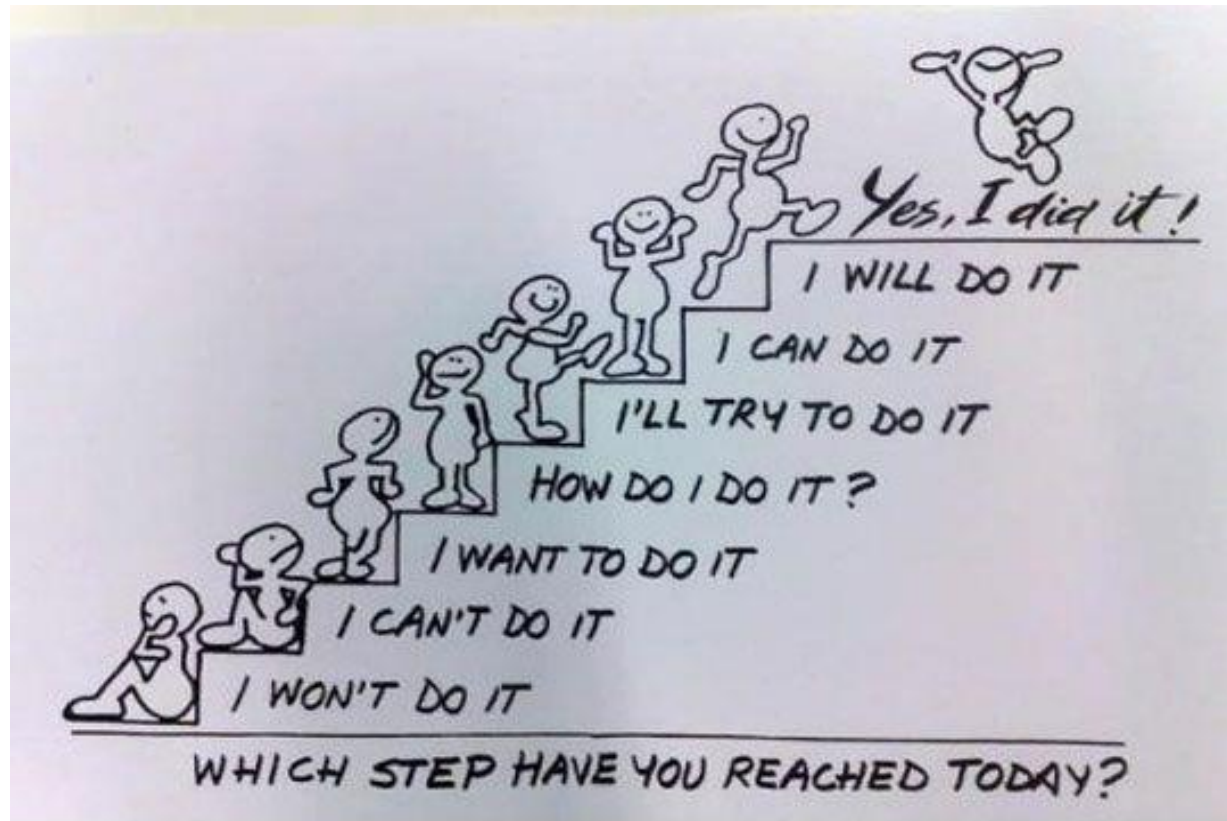
Director Emergency Medical Services, Contra Costa County Health Services;
Vice Chair, National Pediatric Disaster Coalition; TEEX Adjunct Faculty;
California EMSC Technical Advisory Committee

Getting to Yes

Grass Roots Pediatric Disaster Preparedness



Take It One Step at A Time



more awesome pictures at THEMETAPICTURE.COM

Anticipate the Barriers

They are predictable and can be overcome!

The rules
won't let
me

It costs too much

Too Busy

It's too
difficult

Going to
be too
risky

It will take
a long
time

No one
will help



Contra Costa County, California

Region II Med/Health Mutual Aid Area



- 1.1 million people
- 110,095 responses
- 85,705 transports
- 8 Community Hospitals
- 110,095 EMS responses/yr
- 85,705 EMS transports/yr



Contra Costa County 2017

Pediatric Risk and Capability Profile

- 1.1 million people (25% children)
- EMS: 110,095 responses, 85,705 transports (<8% Pedi)
- Ages
 - 0-2: 37K
 - 3-5: 38K
 - 6-10: 70K
 - 11-13 45K
 - 14-17: 62K
- 8 Community Hospitals
 - ED/Hospital Pediatric Readiness scores >80%
 - Pediatric ED volume 10%
 - 3 Pediatric Units (1 with PICU)
 - 2 Community Hospital NICU's
- 1 Pedi Level 1 Trauma Center
 - Out of County
- Countywide EMS for Children Program



H1N1 Pandemic

Contra Costa County



June 2009

- First H1N1 death in Bay Area
- Age : 9 years old girl
- No co-morbidities

Jan 2010

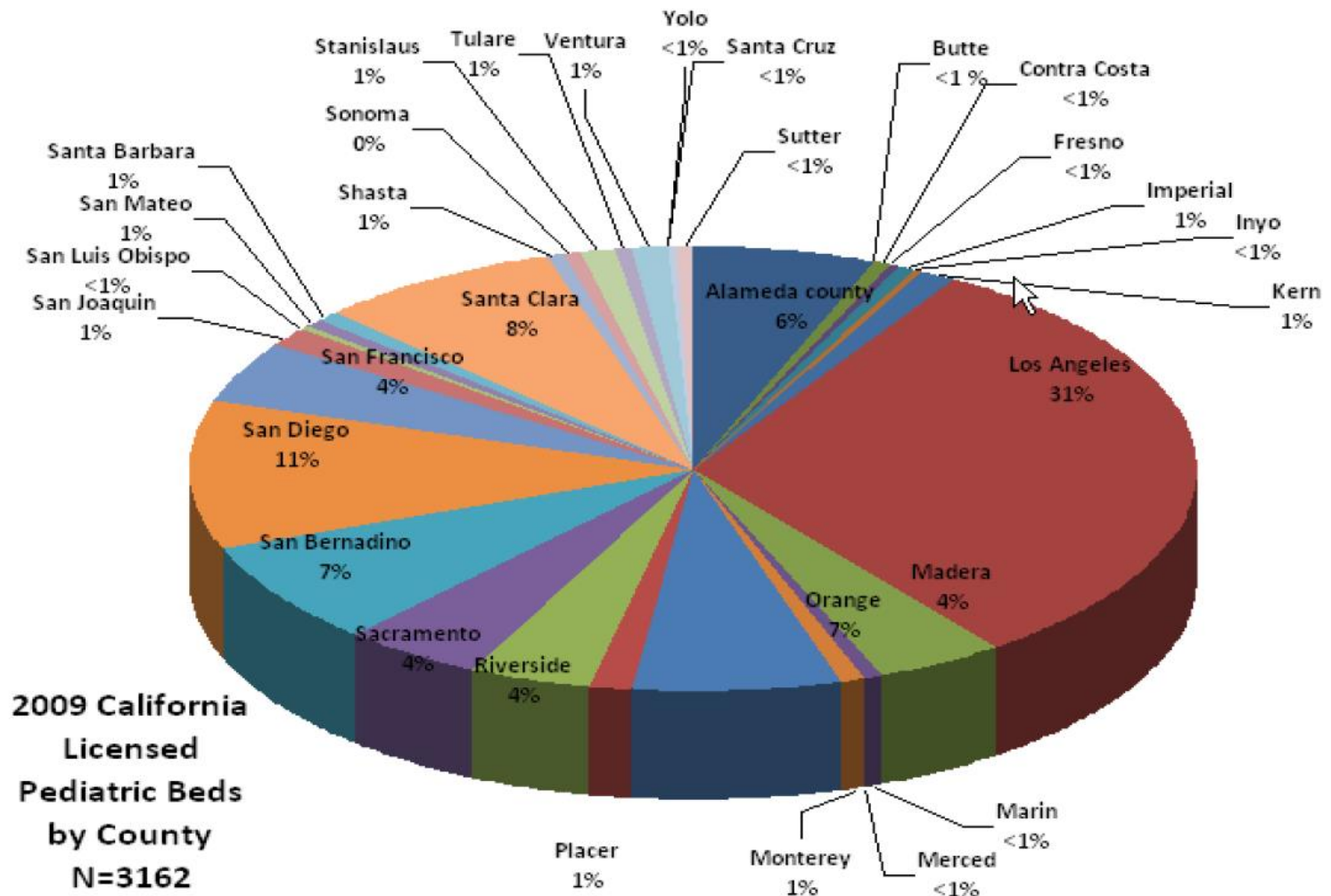
- 339 hospitalized
- 14 H1N1 deaths

Doing the Math Matters!

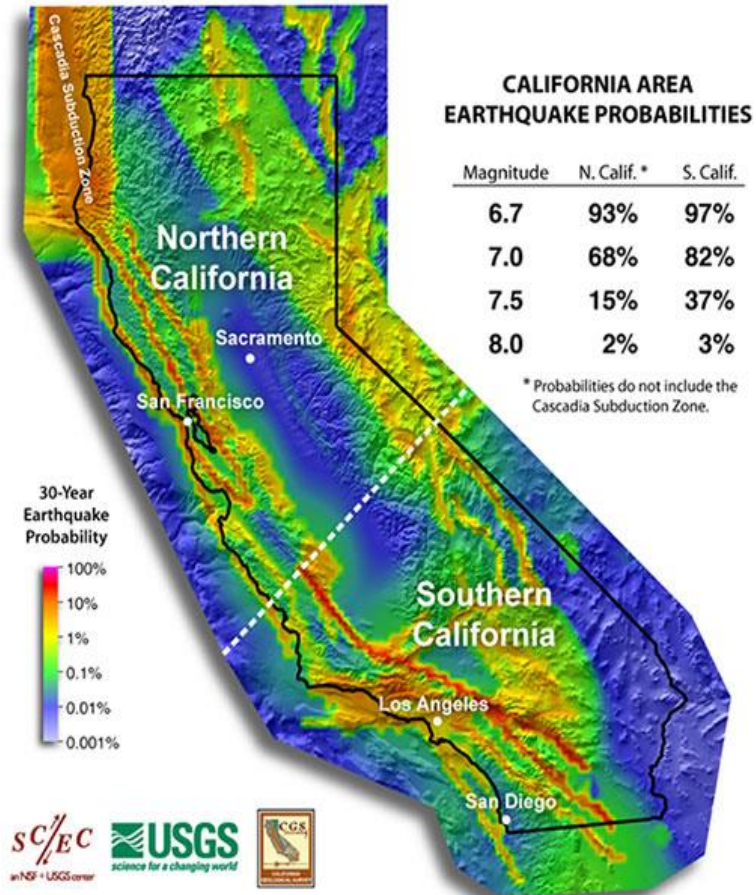
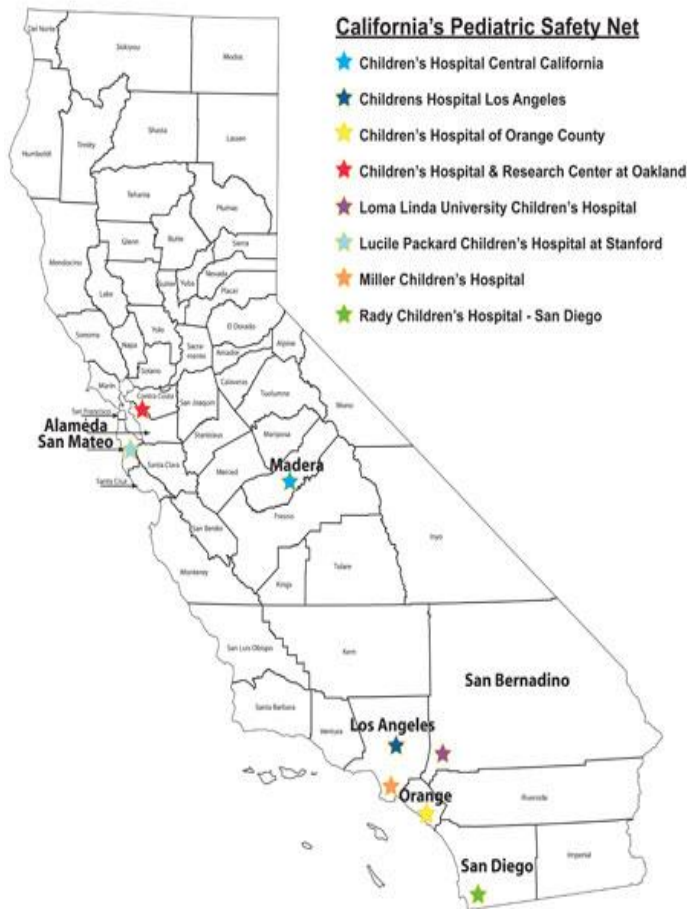
Mobilizes Engagement



California Licensed Pediatric Beds



Pediatric Assets and Earthquake Risk



Robust but incredibly fragile!

EMS, Children & Hospitals

Frequency Normal Conditions

Low Volume, High Risk... Really “sick” kids rare

US Hospitals	Pediatric Contact
Non-children's hospitals ED	See 89% of all children
75% Hospital see	< 20 children/day
50% Hospitals see	< 10 children/day
Remote Hospitals see	< 2 children/day
Percent of total ED volume	18-27%
Pedi ED volume admitted	<10% (90% treat and release)
Average Length of Stay	3.5 days (children's hospital)
911 Calls and Transports	< 5-10% of all calls

Pediatric Disaster Planning

Special Population = Scary

It's *Normal* to feel like this



I could never...

I would never...

I couldn't handle...

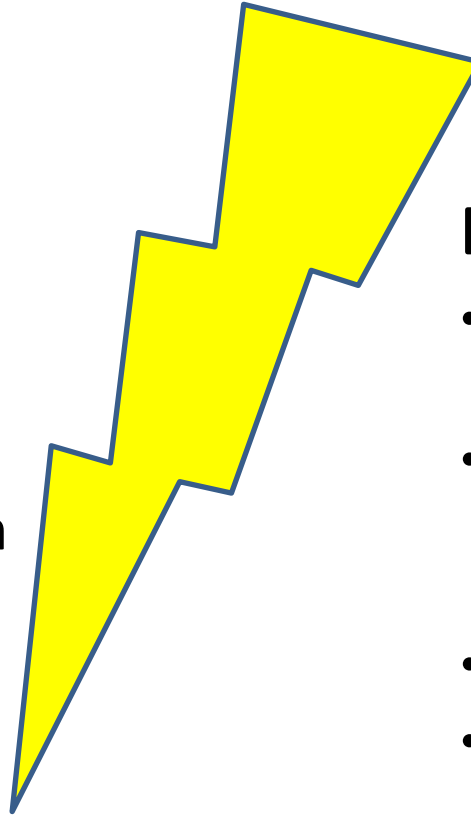
I can't imagine...

Plan for the “In-Between”

An incremental approach to all hazards preparedness

Daily Triage

- When abundant resources are available relative to patient demand
- Do the best for each individual
- Normal Standards of Care



Disaster Triage

- When patient needs outstrip resources
- Greatest good for greatest number of people
- Altered Care Standards
- Recognizes that resuscitation attempts may be futile



Ask the Questions!

What Happens to Sick Kids In Your Community?

Under Normal Conditions

- How many and what type of sick kids?
- Who cares for them?
- Are staff trained?
- Is the right equipment there?
- Where are the children transferred?
- How does transfer happen?
- Are the ambulances equipped for children?
- Who makes the decision to transfer?
- How are those decisions made?
- How long does it take?

Work this &
everything
else will
follow!

Fire Fighters Approach To Training

“Train To Retain” with Muscle Memory



Psychomotor, Realistic, Hands On, Simulation, Clinical Decision-making

Include Pre-hospital Providers

Exercise: Evacuate 40 pediatric patients in the next 3 hours
Strike Team Logistics

Patient Transport Flow Rate

(X ambulances) (Y patient/ambulance)(60 minutes/hr)
divided by Z minutes/round trip

How would you do that?



Leadership: Set the Expectation...

Until It Just Seems Normal



It's Easy

Explore Innovative Solutions: TRAIN

What Patient Goes Where with Who and in What?

Lucile Packard Children's Hospital at Stanford

Triage by Resource Allocation for IN-patients [TRAIN]®

Transport	Car	BLS	ALS	CCT	Specialized
Life Support	Stable	Stable	Minimal	Moderate	Maximal
Mobility	Car/Carseat	Wheelchair or Stretcher	Wheelchair or Stretcher	Transport Rig	Immobile
Nutrition	All PO	Intermittent Enteral	Continuous Enteral or Partial Parenteral	TPN Dependent	TPN Dependent
Pharmacy	PO Meds	IV Lock	IV Fluids	IV Drip x1	IV Drip ≥2

Life Support	Minimal =	Hood or Low Flow Cannula O2, chest tube, etc.
	Moderate =	CPAP/BIPAP/Hi-Flow, Conventional Ventilator, Peritoneal Dialysis, Externally paced, continuous nebulizer treatments, etc.
	Maximal =	Highly specialized equipt., e.g., HFOV, ECMO, iNO, CVVH, Berlin Heart, wt ≤ 1.5 kg, etc.
Mobility	Car/Carseat =	Able to ride in automobile with age-appropriate restraints
	Transport rig =	Age-appropriate rig with equipment for connecting to ambulance
	Immobile =	Unsafe to move without special equipment e.g., neurosurgical/bariatric

<http://www.acphd.org/media/270195/hospital%20disaster%20triage%20pediatric%20planning%20train%20toolkit%20x.pdf>

Jumpstart Pediatric Disaster Planning

How to incorporate children in disaster planning

- Launched in May 2014
 - 48 states
 - 4,850 students
- Annually
 - 47 classes a year (2017)
 - 1,600/year
- Multi-disciplinary
 - Best Practices
 - Free 2-day training

To Learn More:

<https://teex.org/Pages/Class.aspx?course=MGT439&courseTitle=Pediatric%20Disaster%20Response%20and%20Emergency%20Preparedness>



PEDIATRIC DISASTER RESPONSE AND EMERGENCY PREPAREDNESS

MGT-439

DHS/FEMA-funded course



Pay Attention to Real World Events They Create Windows of Opportunity



Ask: What if that happened here?

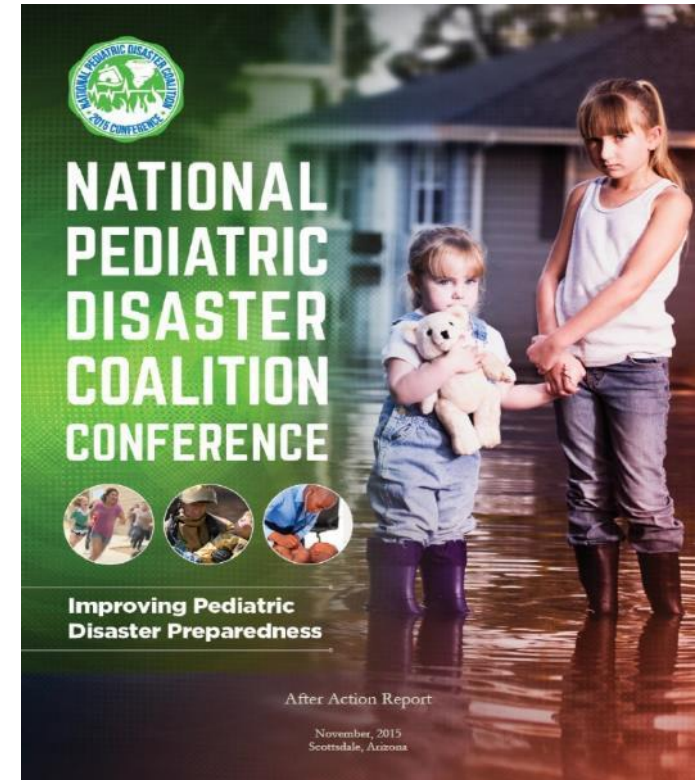
Plan: A brief training or exercise

They are Windows of Opportunity

National Pediatric Disaster Coalition

www.npdcoalition.org

- 2015 National Conference
 - Coyote Crisis Collaborative
- National Healthcare Coalition Conference (MESH)
 - Annual Pediatric Track
- ASPR TRACIE
 - Pediatric Subject Matter Experts
- AAP, NAEMSO, EMSC, NACCD, DPAC



400 Listserv Champions Strong

US National Pediatric Disaster Coalition

Goals:

- To advocate for and advance preparedness, mitigation, response and recovery for infants, children, and their families in disasters.
- To provide expert knowledge necessary to plan and allocate the appropriate and essential resources to address pediatric specific needs in disasters.

Activities

- Information sharing and web based forums on Pediatric Disaster Medicine
- Participation in local, national and international Emergency and Disaster Preparedness conferences and educational activities to promote the pediatric agenda
- Developing a pediatric disaster coalition model that will meet current ASPR requirements and work within the overall construct of Disaster Preparedness
- Working with Pediatric and overall EMS/first responder services to address gaps in equipment training and response
- Developing a pediatric regional model (17 US Western, Hawaii, Guam) for planning, mitigation, response recovery and resiliency building (Unified information Sharing, Situational awareness, Bed availability, Evacuation and Surge)

<http://www.npdcoalition.org>

Dr. Michael Frogel

MikeFrogel@gmail.com

Debra Roepke

Executive Director

Deb.Roepke@coyotecrisis.org

Disaster Coalitions + Pediatric Community



Collective Actions Matter!!!



T R A C I E

HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

Michael Frogel, MD, FAAP

Co-PI, NYC Pediatric Disaster Coalition; Chairman, National Pediatric
Disaster Coalition



Disclosure

*This presentation was supported by Cooperative Agreement Number **TP921922**, funded by the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the presenter and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services.*

Pediatric Emergency and Disaster Planning: Why?

Children Are Different and Have Special Needs
Children Are Often Overrepresented in Disasters
Children Are Targets of Terrorism

Therefore:

The pediatric plan and response to disasters should be tailored to the special needs of children

**WHAT COULD HAVE HAPPENED IF THAT
BOMB HAD GONE OFF IN TIMES
SQUARE NY????:**

**IMPLICATIONS FOR PEDIATRIC
DISASTER PLANNING**

MAY 1, 2010

SATURDAY EVENING IN MANHATTAN





Times Square Bomb

- Across the street from the Lion King Show at the Minskoff Theatre (Seats 1,600)
- Close Proximity to Toys”R”Us and the Disney Store
- Hundreds of Critically Injured children and adults
- Primary and secondary transport
- Immediate Pediatric Surge (at the time of the event ~35 PICU Beds available citywide)
- Are we ready ??????
- **The PDC utilized this real scenario to help develop the proposed NYC Pediatric Disaster Plan and related activities**



NYC PDC Objectives and Work

Established in 2008 in collaboration with NYC DOHMH to prepare NYC for a catastrophic pediatric mass casualty event

- Creating Guidelines and Template Plans for Pediatric Hospitals, PICUs, NICUs, Obstetric and Newborn Services, Pediatric Long Term Care Facilities and Outpatient/Urgent Care Sites in NYC for Surge and Evacuation
- Assist facilities in adapting and operationalizing these plans, thereby, increasing surge/evacuation capabilities
- Creating tools and conducting Tabletop, Functional and Full Scale Exercises to operationalize plans.
- Developing a Pediatric Disaster Triage Protocol for FDNY/EMS
- Developing a citywide Pediatric Disaster Response Plan
- Increasing pediatric critical care staffing resources through hosting Pediatric Fundamentals of Critical Care Support Courses
- Educating, local, national and international groups, on pediatric disaster preparedness
- Participating in the response to real disasters and creating lessons learned

In the beginning 2008



10-2017 28 Hospitals, OEM=NYCEM
New Names New Systems



Pediatric Fundamentals of Critical Care Support (PFCCS)

- Provides **force multiplication** for Pediatric Critical Care
- Prepares non-intensivist for the first 24 hrs of management of the critically ill pediatric patient until transfer or appropriate consultation
- Prepare non-intensivists, nurses, and critical care practitioners in dealing with acute deterioration of stable or critically ill pediatric patient. under the direction of a critical care specialist



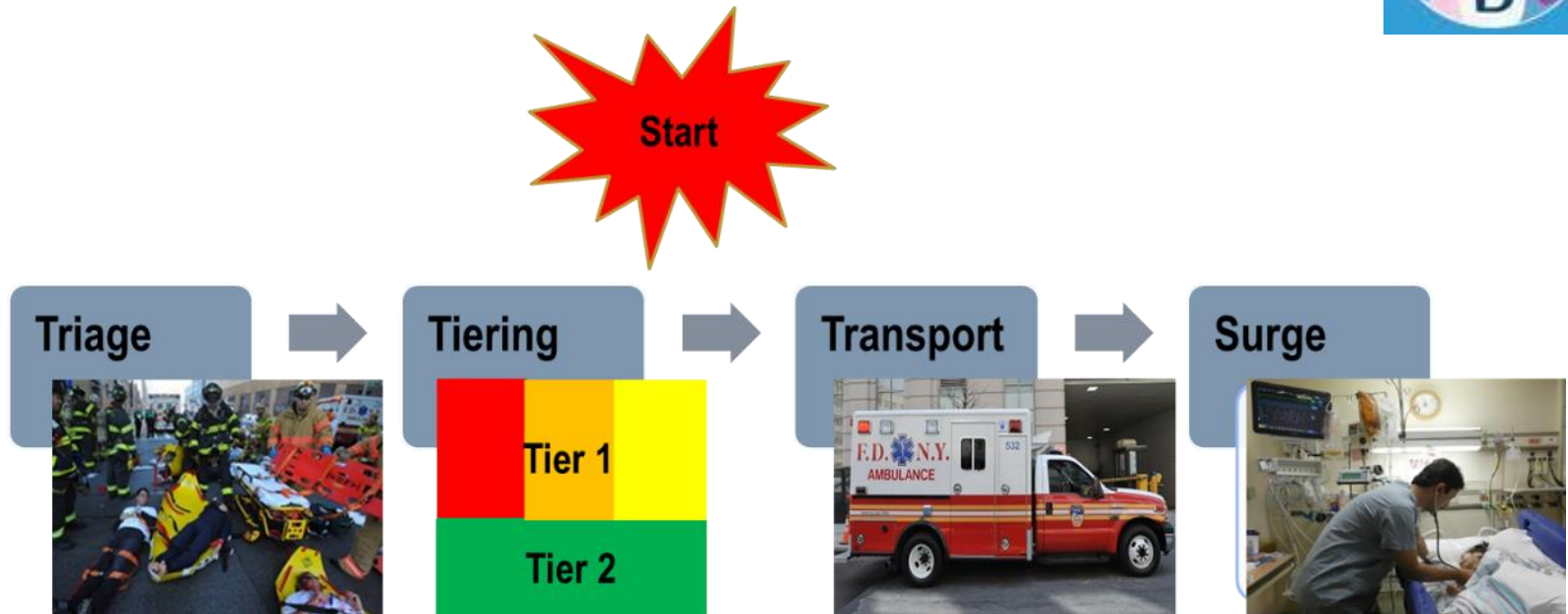
PDC Response to Real-Time Disasters

- H1N1
- Haiti earthquake
- Hurricane Sandy
- EVD pediatric preparedness (school health, city, and hospital planning)
- **Future Recommendation: Include PDC participation in ESF8 Functions during real time disasters.**

New York City Pediatric Disaster Plan

Quick Review

NYC Pediatric Disaster Plan



The PDC, NYC DOHMH, FDNY/EMS and their collaborative planning team created a comprehensive Pediatric Disaster Plan for NYC from the onset of the event and first response through pediatric intensive care surge.

Proposed FDNY EMS Primary and Secondary Pediatric Transport to Hospital

- FDNY/EMS developed a new pediatric Disaster Triage protocol
- FDNY will initially transport casualties to Tier I or Tier II Pediatric Disaster Ambulance Destinations (PDAD) to match resources to needs
- **The goal of primary and secondary transport:**
- Initially Transport the patient to a pediatric capable hospital with specialized resources. Thereby critical pediatric care is not delayed and best outcomes are achieved
- Prevent a surge into hospitals that do not routinely care for critically injured children
- Provide secondary (inter-facility) transfer to Tier 1 hospitals, when available and appropriate, in situations where primary transport was unavailable, or patients self-evacuated to facilities not capable of definitive pediatric **critical** care

Pediatric Disaster Ambulance Destination (PDAD) Criteria

Tier 1 PDAD (#17)

- Committed to pediatric subspecialty care
- Pediatric surgical service
- Pediatric emergency service
- Pediatric intensive care unit
- Pediatric inpatient unit
- Level III nursery
- Comprehensive pediatric subspecialty support
- Anesthesiology, neurosurgery, orthopedic surgery with experience in management of children
- Pediatric disaster plan

Tier 2 PDAD (#11)

- Committed to general pediatric care
- Pediatric surgical consultants
- Pediatric resuscitation capable ED
- Pediatric inpatient unit
- Level II nursery
- Pediatric transfer agreement
- Pediatric disaster plan
- Transfers children needing ICU care

Secondary Inter-facility Transfer

Inter-facility transfers may be needed for:

- Self referrals to neighboring facilities
- Pediatric patients taken to facilities that are unable to provide necessary pediatric critical care related to space, staffing, supplies, capabilities

Process:

- **Hospitals requesting secondary transport will relay information to FDNY/EMS.**
- **FDNY/EMS will send the information to the Pediatric Intensivist Response Team (PIRT) on call physician.**
- **PIRT will prioritize patients for transfer.**
- **FDNY/EMS will arrange transport**

What is the Pediatric Intensivist Response Team (PIRT)?

- Provides prioritization triage consultation service to FDNY EMS for inter-facility transfer of patients
- Volunteer Pediatric Intensivists
 - Serve under NYC Medical Reserve Corp umbrella
 - All currently practice at PICUs in NYC

Patient Information Shared between FDNY & PIRT

a. Patient identifier

b. Patient age or size
(infant, toddler, child,
adolescent)

c. Nature of injury/injuries

d. Respiratory Support

e. Medications

- Chronic
- Currently administered

f. Vital signs






- Blood Pressure ____/____
- Heart Rate _____
- Respiratory Rate _____
- O2 Saturation (if available)

- Glasgow Coma Scale _____
- Pupils: ☐ fixed and dilated ☐
unequal ☐ equal and reactive

g. Co-morbidities

Patient Information Shared between PIRT & FDNY

PIRT assigns priority and FDNY assigns destination

-  • RED – Immediate Transfer
-  • ORANGE – Urgent Transfer
-  • YELLOW – Delayed Transfer
-  • GREEN - Do not transfer; treat at current hospital unless there is a change in status
-  • BLACK – Expectant/Expired (PIRT physician may speak to sending hospital physician in these types of cases if necessary)
- DEFFERED until deactivation

NYC Department of Health and Mental Hygiene & NYC Pediatric Disaster Coalition

Surge/ Communications/ Secondary Transport Exercise



Exercise Description



- **Description:** The exercise was a (virtual-real time) functional exercise planned for a maximum of six hours for exercise play and Hot Wash activity.
- The exercise included 28 Hospitals that care for pediatric patients in New York City and Agencies including Fire/EMS, Department of Health, Emergency Management, Medical Reserve Core
- The exercise was designed to prepare New York City for a catastrophic pediatric event. The scope included hospital surge, communications, activation of the NYC Pediatric Disaster Plan and secondary transport.
- **Scenario:** It is a Thursday morning, approximately 8AM, with spring like weather conditions. An explosion of unknown origin occurs on a school bus at a nearby school. Patients begin to arrive to your hospital that have been self-evacuated. You learn from FDNY/EMS that several ambulances are headed your way with patients of various acuity levels. Similar incidents have taken place throughout New York City.
- Participating hospitals receive 70 patients, including critical, non-critical and mental health victims



Exercise Outcomes

- **Average Score on Scale 0-4. 3.57/4 for Capabilities**
- **100% of hospitals** participated in the exercise
- **100% of hospitals** participated in the exercise site-specific and group hot wash
- **100% of hospitals** responded fully to all the MSEL SurveyMonkey questions

Key findings from Questions Responses

Re: Surge Beds/ Capacity

- 1105 Surge Beds (baseline pediatric inpatient unit beds 1039) – double surge capacity
- 254 PICU Surge Beds were identified (baseline 224 beds) – more than double surge capacity
- 304 ED Critical Care Surge Beds
- 312 ED Non-Critical Care Surge Beds
- 203 OR Surge beds
- 268 Adult Medical ICU Surge Beds
- 120 Additional Adult Surgical ICU Surge Beds
- 342 Pediatric Ventilator capable surge beds
- 247 NICU total surge beds available after rapid patient discharge

Lessons Learned

- Working directly with individual hospitals to create and implement pediatric specific plans as part of overall disaster preparedness improved surge and secondary transport capabilities.
- Conducting multiple group and individual exercise planning meetings yielded many valuable changes in hospital plans even before the exercise took place.
- Assessing the availability of sufficient pediatric subspecialty and intensive care staff for a surge of critically ill pediatric patients is necessary for good outcomes.
- Adult staff and surge capabilities should be incorporated in to the pediatric surge response, especially at Tier-2 hospitals.
- Disaster mental health issues should be addressed for children families and hospital staff with adequate staff and appropriate space.
- A Family Reunification and Information Service Center (FISC) should be part of Surge planning.

Lessons Learned (Cont.)

- Preparing sufficient on site pediatric surge equipment and supplies is essential especially:
 - Ventilators
 - Blood/Blood Products
 - Burn Supplies
- There is a need for caretakers to supervise unaccompanied pediatric patients throughout the hospital process thereby freeing clinical staff to participate in patient care.
- Site specific areas should be pre-designated and staffed for various surge tasks.
- Begin triaging patients for secondary transport early during a surge event.
- Utilize Ambulatory Care Resources for space staff staff and integrate in to hospital plans.
- Situational awareness and communication with staff and agencies is essential.

Planning is a Continuous Process



Future Plans: utilize lessons learned to develop a comprehensive trauma, mass casualty, burn and community disaster plan that provides for the special needs of children within the overall response

Thank You for your Time!

Dr. George Foltin

P.I.

NYC Pediatric Disaster Coalition

gfoltin@maimonidesmed.org

Dr. Michael Frogel

Co-P.I.

NYC Pediatric Disaster Coalition

mikefrogel@gmail.com

Website:

www.pediatricdisastercoalition.org

Email:

info@pediatricdisastercoalition.org

NYC PEDIATRIC DISASTER COALITION





TRACIE

HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

Michael Wargo, RN, BSN, MBA, PHRN,
Assistant Vice President, Enterprise Preparedness & Emergency Operations,
HCA Healthcare (HCA)

Jake Marshall, MPS, CEM, FF-NRP, Senior Director of Enterprise
Preparedness & Emergency Operations, HCA



HCA Overview



Annual Pediatric Volumes

69,000	Pediatric Inpatients
38,000	NICU Patients
220,000	Newborns
71,000	Specialty Outpatient Visits

Department Mission



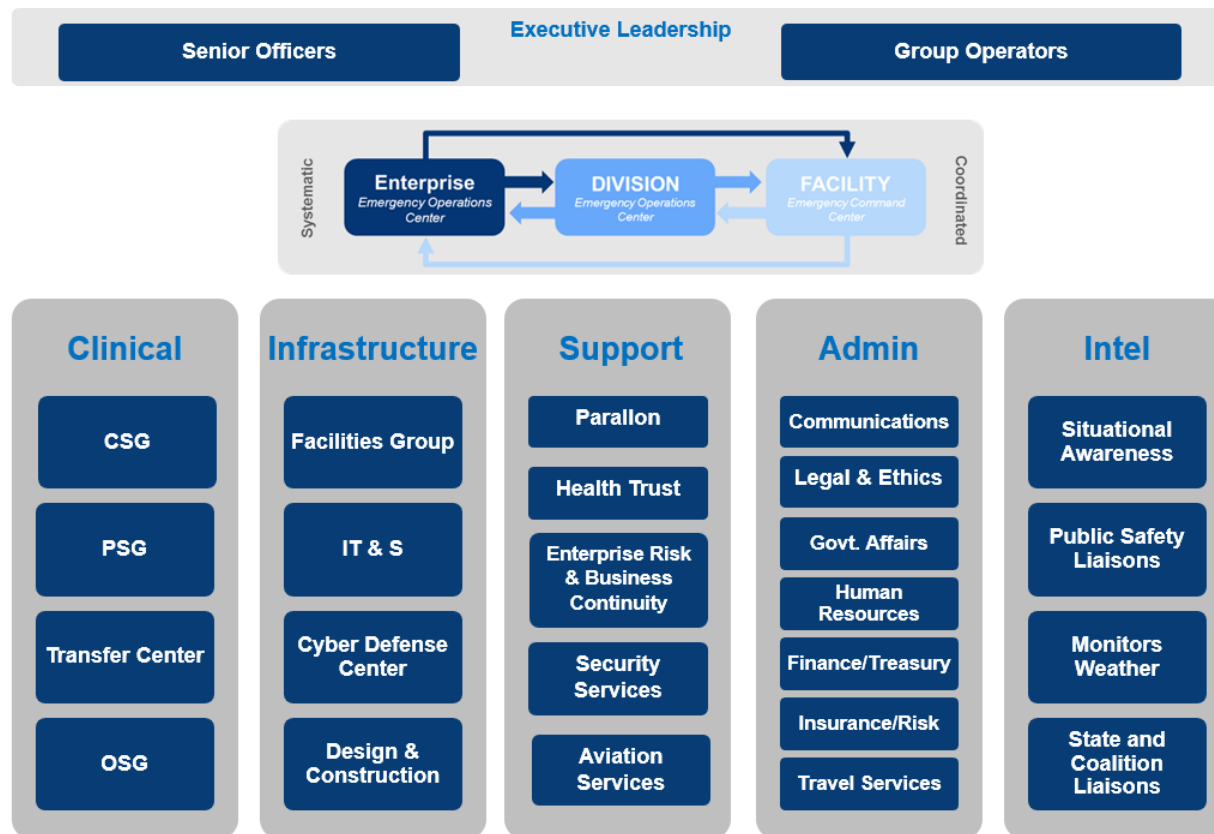
Enterprise preparedness & emergency operations is *patient, staff and community focused* to ensure the integrity and delivery of healthcare operations.

Our Mission:

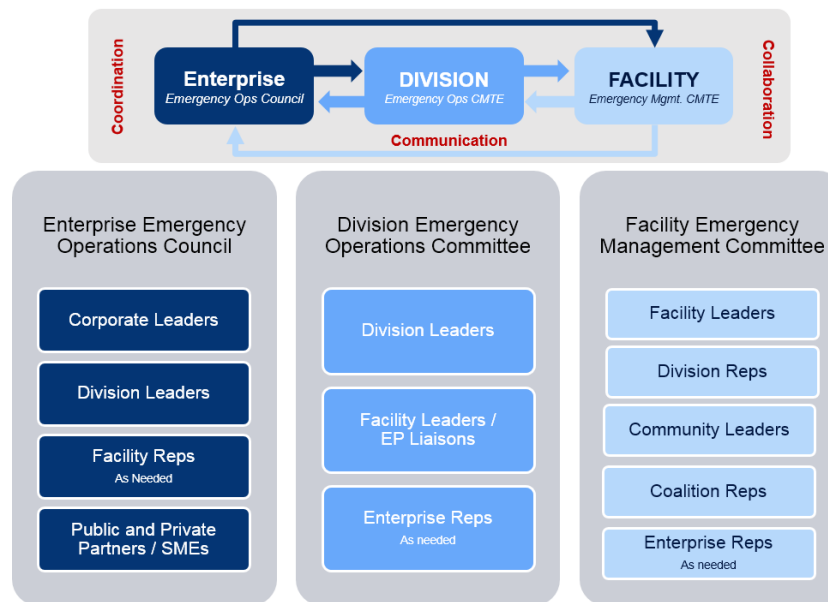
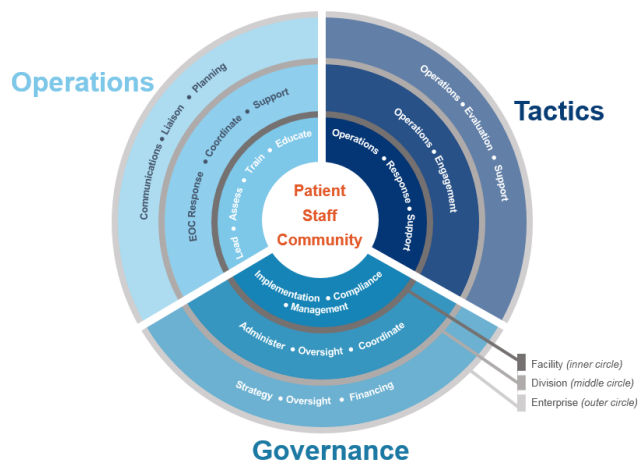
- **Ensure safe, uninterrupted quality patient care** within a safe working environment
- **Prevent damage and protect our staff, facilities and equipment** from both natural and man-made events
- **Maintain continuity** of healthcare and business operations
- **Uphold a positive HCA Mission**



Emergency Operations Center Coordination



Framework of Governance & Coordination



Response & Recovery



Pediatric Evacuation
Resources



Contracted Nursing
Support with PEDS and
NICU Specialization



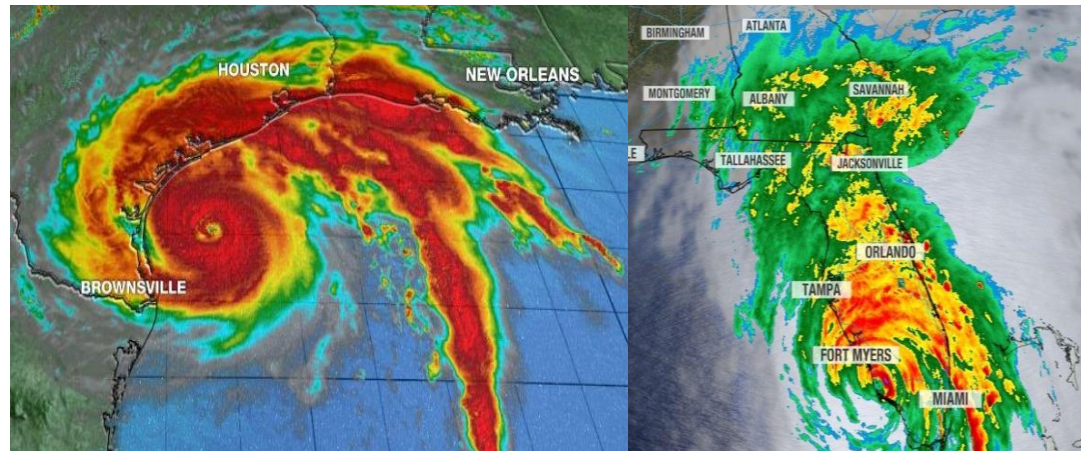
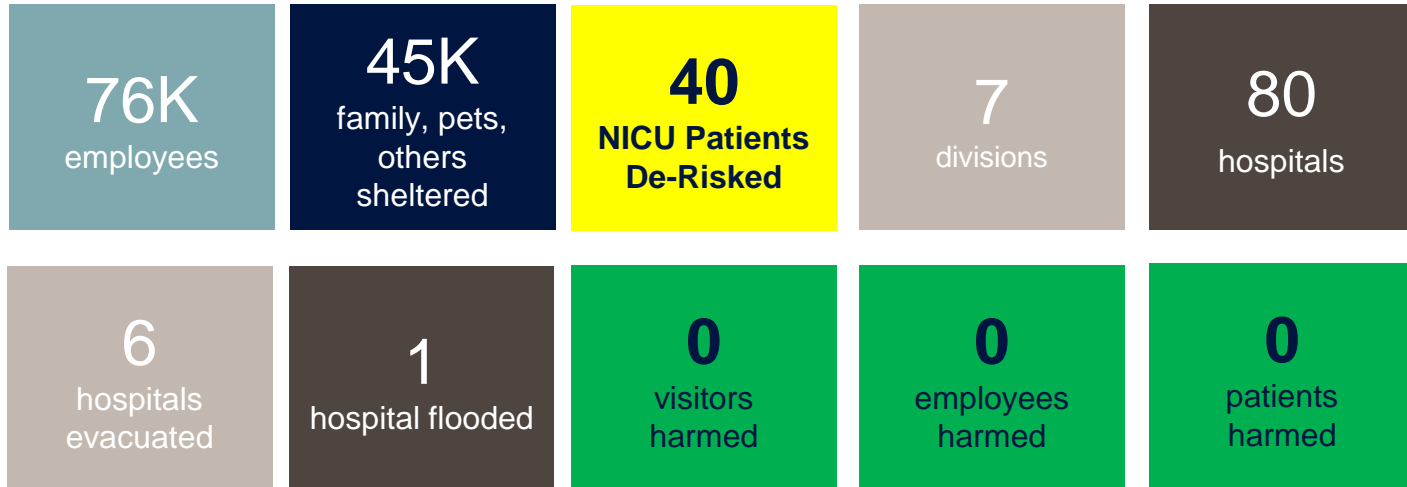
Medical Supply Cache
with Pediatric Push Packs



Pediatric Evaluation Resources



Recent Events



ASPR TRACIE Resources

- [Access and Functional Needs Topic Collection](#)
- [Family Reunification and Support Topic Collection](#)
- [Mental/Behavioral Health Topic Collection](#)
- [Pediatric Topic Collection](#)

Question & Answer



Contact Us



asprtracie.hhs.gov



1-844-5-TRACIE



askasprtracie@hhs.gov



TRACIE
HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

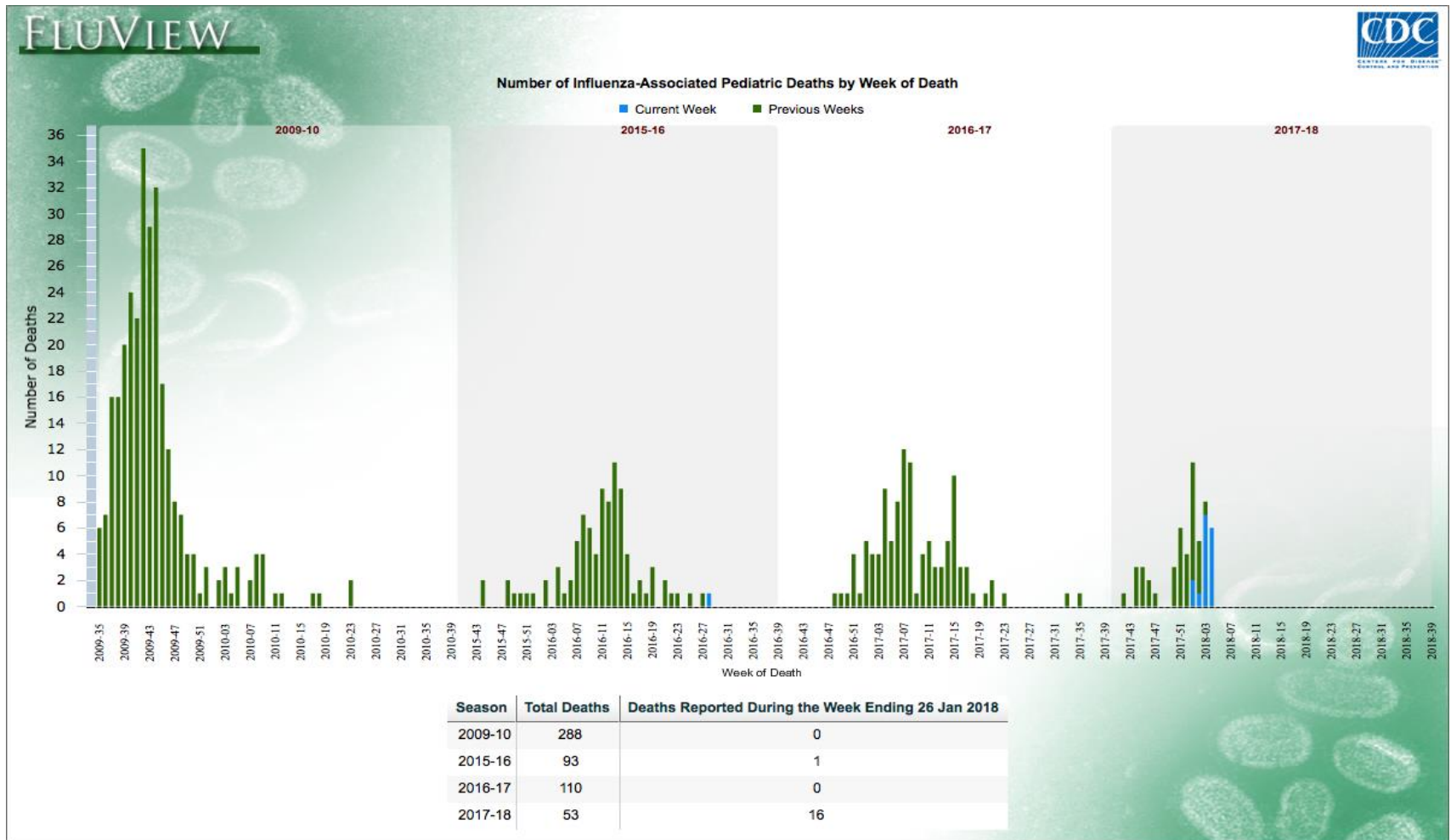
Reference Slides from Select Presenters



TRACIE
HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

Steven Krug – AAP Resource Slides

What About Influenza



Strained resources

Chaos in EDs and pediatric offices during early weeks of H1N1 outbreak provides lessons



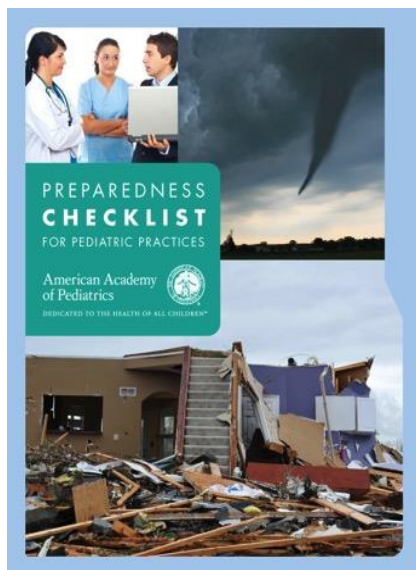
Emergency departments struggled to keep up with the influx of patients seeking H1N1 testing.



H1N1 PANDEMIC: LESSONS LEARNED

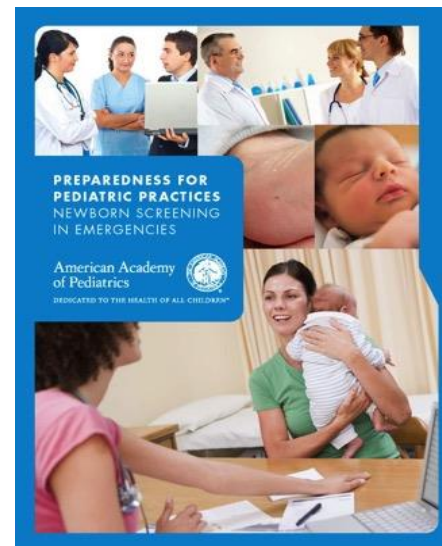
- Demand for clinical services by ill and ‘worried well’ patients exceeded capacity
- Disconnect between federal and local pandemic planning and management recommendations
- Availability of key medications & supplies limited service delivery and placed patients & staff at risk
- Variable screening and treatment practices across facilities/practices within local communities
- Impact on healthcare providers reduced service capacity
- Impact on safety net services threatened care quality & safety
- Preparedness & response enhanced by pediatric & public health partnerships



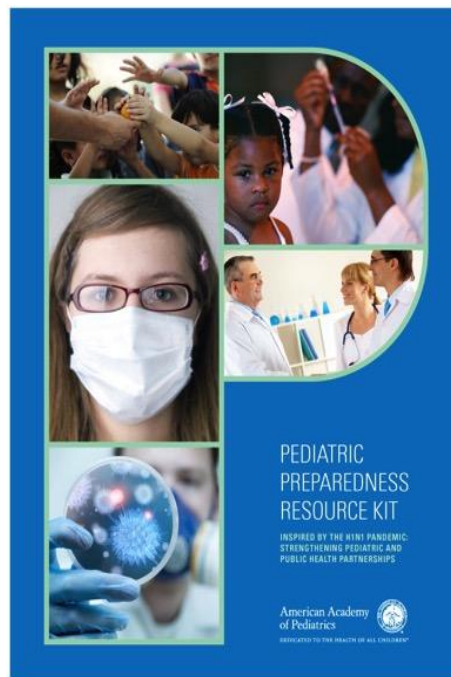


Zika Virus: Psychosocial Support Videos for Pediatricians and Families

These videos provide guidance for providers and parents for the psychosocial support that will be needed when facing a child born with congenital Zika virus syndrome.



Flu: A Guide for Parents of Children or Adolescents with Chronic Health Conditions



www.aap.org/disasters

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®





TRACIE

HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

Pat Frost

Frequency Affects Risk

So Know Your Mix!



- **Really Sick Kids Rare**
 - Prepare for day to day
- **Normal Conditions**
 - Vast Majority Low Acuity
 - Preventable Conditions
- **In Surge**
 - HIGHER Volumes of BOTH High & Low Acuity
 - More Complex Patient Movement
 - Lots of Worried Well

Mind the Gap(s)

Space, Staff, Stuff and Process

- **The Right Tools for the Job**

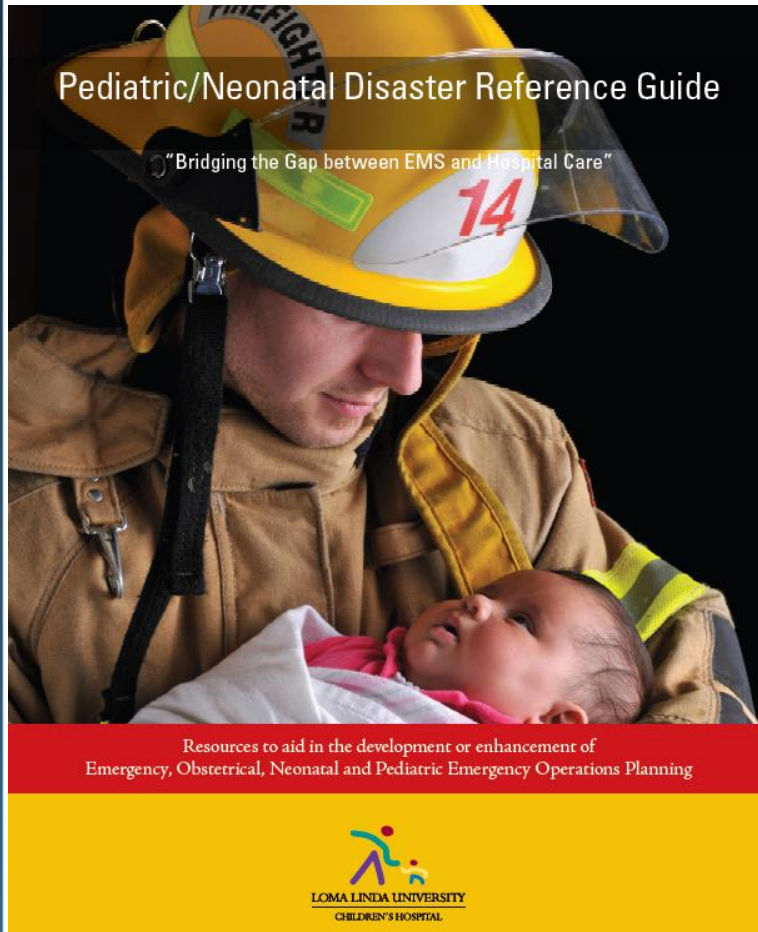
- Pharmaceuticals
- Respiratory Equipment
- Fluids and Nutrition
- Cribs/restraints/car seats

- **Safety and Supervision**

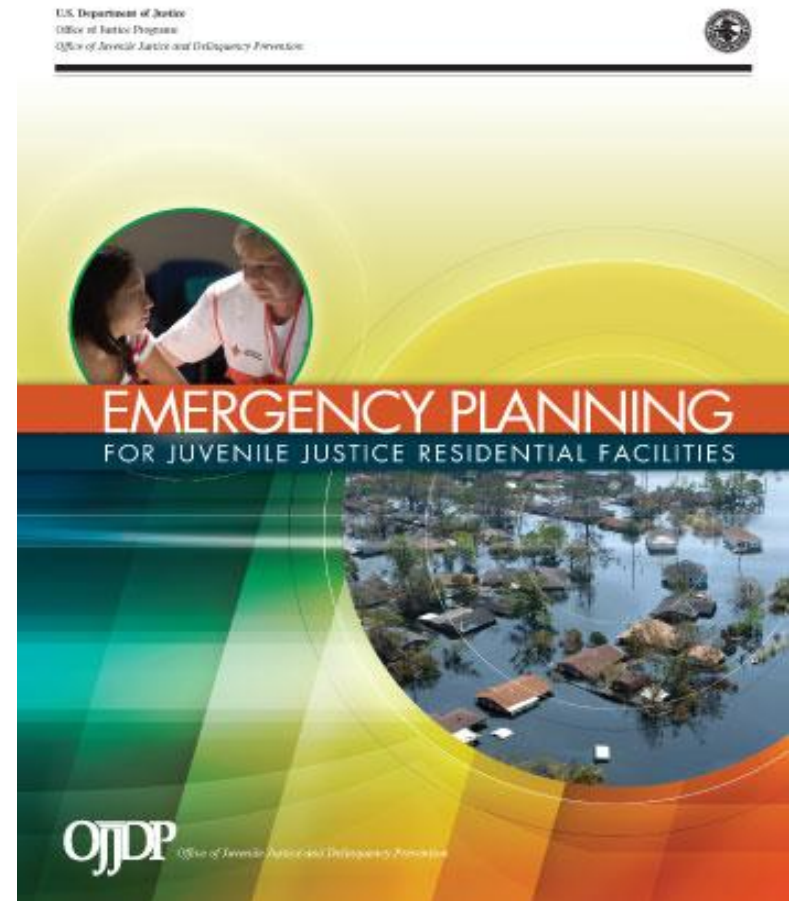
- Trained & Background Check
- Unaccompanied Minors
- Reunification



Key Resources



<https://www.calhospitalprepare.org/post/pediatricneonatal-disaster-planning-reference-guide>



https://www.rems.ed.gov/docs/DOJ_EP_JuvenileJusticeFacilities.pdf



Welcome To

The EIIC

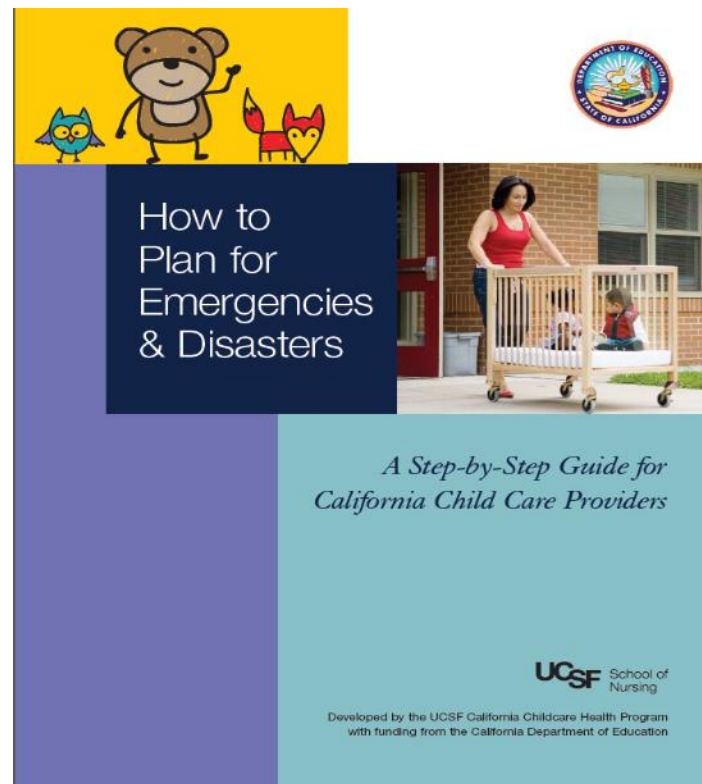
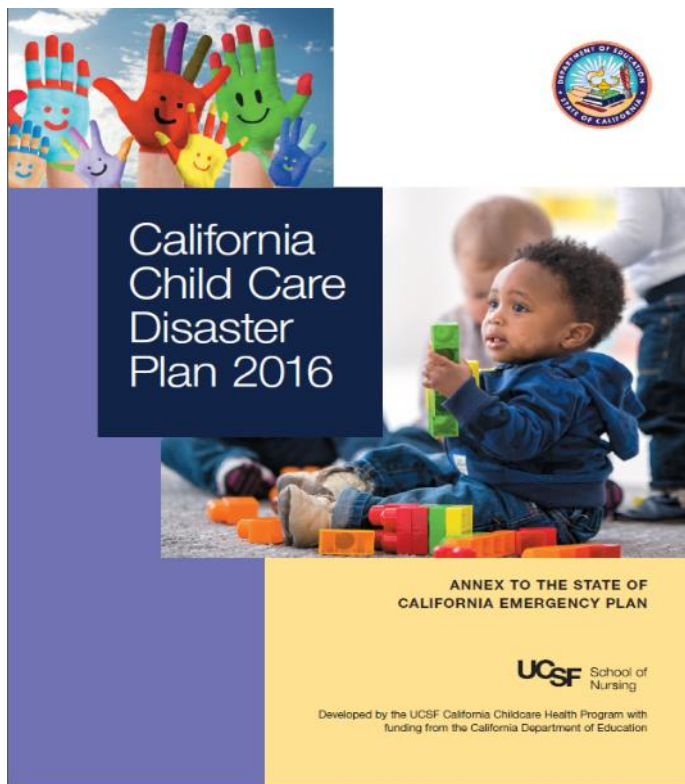
EMERGENCY MEDICAL SERVICES FOR CHILDREN
INNOVATION AND IMPROVEMENT CENTER

July 2016 - The Web resources of the [EMSC National Resource Center \(NRC\)](#) are moving to the new Center Website. During our transition, contact EIIC Coordinator Krisanne Graves, Ph.D., R.N. (kxgraves@texaschildrens.org; 832-824-1301) if you are in urgent need of information.

Child Care Preparedness

Essential to Sustaining Response and Recovery Workforce

Gaps = Preventable Stresses to Med/Health System



<http://cchp.ucsf.edu/content/disaster-preparedness>

Video's and On-Line Training



<http://hsc.unm.edu/emered/PED/education/onlineEd.shtml>





TRACIE

HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

Mike Fogel

Why Do We Need Emergency and Disaster Preparedness
that includes the special needs of children

Disasters can be....

Human Conflict Event	Technological Event	Public Health Event Natural Disasters
Explosive device (open vs. closed)	School bus crash, train derailment	Hurricane, tornado, tsunami, earthquake
Anthrax, plague, smallpox cluster	Chicken tainted by Salmonella typhi	Pandemic influenza, SARS, monkeypox
Nerve gas release	Chemical plant leak	Volcanic eruption
Nuclear plant attack	Nuclear plant leak (Three Mile Island)	Radon exposure
Incendiary device	Boiler explosion	Heat wave



Or Intentional Targets?

- Al-Qaeda has publicly asserted the "right" to kill 2,000,000 American children
- "Operations are in stages of preparation"
- Videotapes confiscated in Afghanistan:
 - Showing al-Qaeda terrorists practicing the takeover of a school
 - The trainees issue commands in English
 - Rehearse separating youngsters into manageable groups
 - Meeting any resistance with violence
 - Some "hostages" are taken to the rooftop, dangled over the edge, then shot



Tsunami, Indonesia



Building collapse, Jerusalem



Tornado Oklahoma City



Bus crash, Michigan

Children As Primary Targets

(Partial Listing)

- 1838 Blaukaans River, South Africa - Zulus kill 185 children
- 1974 Maalot School occupation after bus attack - 26 dead, 70 injured
- 1995 Murrah Building, Oklahoma City - 19 dead, 66 injured, nursery
- 1998 Elementary school, Jonesboro, Arkansas
- 1999 Columbine High School, Colorado
- 2000- Intifada, Israel
- 2003 Jerusalem Children's Bus (9 killed, 40 wounded)
- 2004 Baghdad US troops giving out candy 35 dead
- 2004 Beslan, Russia (186 dead, school)
- 2006 Platte Canyon High School, Colorado
- 2011 Norway (69/77 dead, summer camp)
- 2012 France Ozar Hatorah Toulouse (3 dead, day school)
- 2012 - Sandy Hook Elementary School Shootings, Newtown
 - 28 dead (20 children), 2 injured
- 2014 Syria: Chemical Weapons
- 2015 Nigeria, Pakistan Schools (100s)
- 2015 IRAQ/Syria: Killings, Slavery (10,000s)
- 2015 Paris Theatre (89)
- 2016 Truck Attack France

And the list goes on...and on...





Moscow theater siege



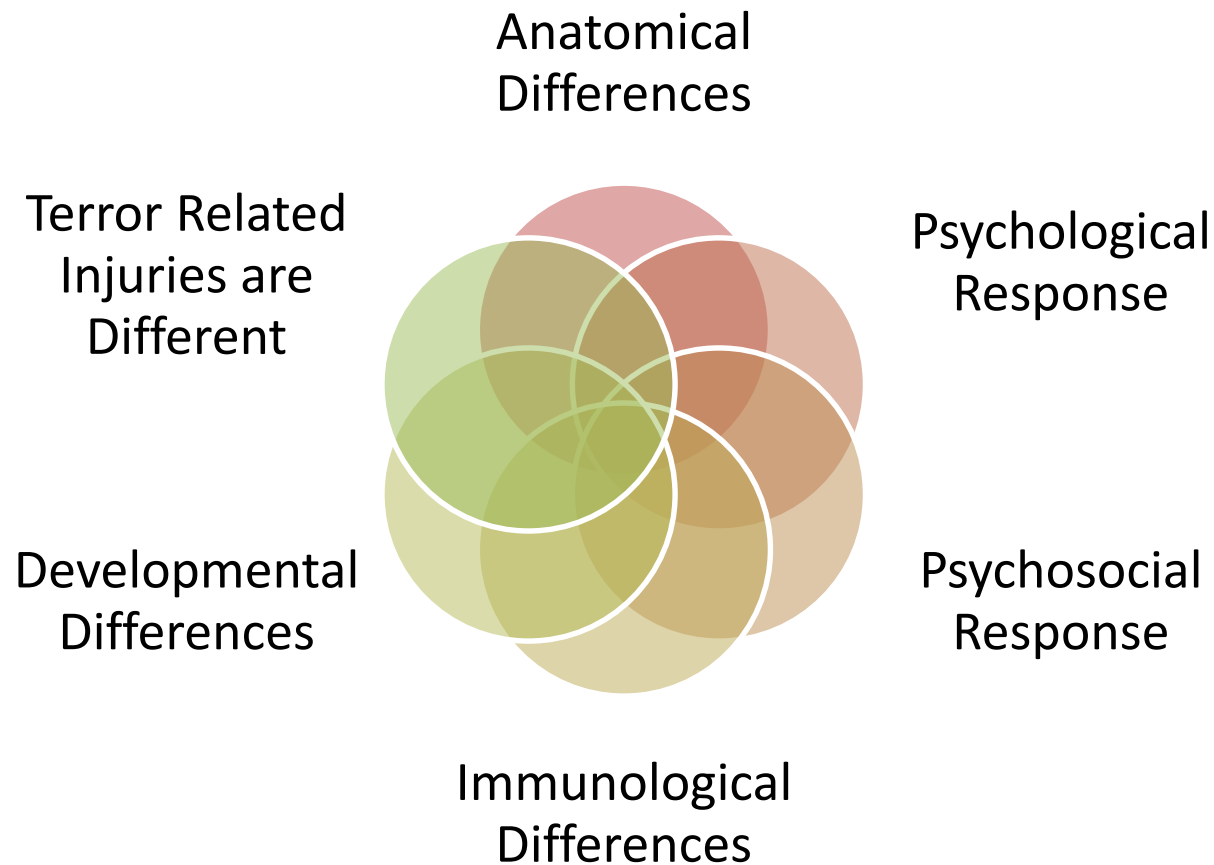
OKC Bombing

Beslan school siege





Children are different!



Therefore, the pediatric plan and response to disasters must be tailored to the special needs of children.

Example: Chemical MCI



Example children have special needs

Pediatric Generic Decon Issues

- Avoid Separation of Families
- Cannot assume parents can decon child plus self
- Older children may resist due to fear, peer pressure, modesty issues
- Risk of Hypothermia if temp $<98^{\circ}$
- Large volume low pressure hand held hoses
- Beware airway management throughout
- Soap and water only





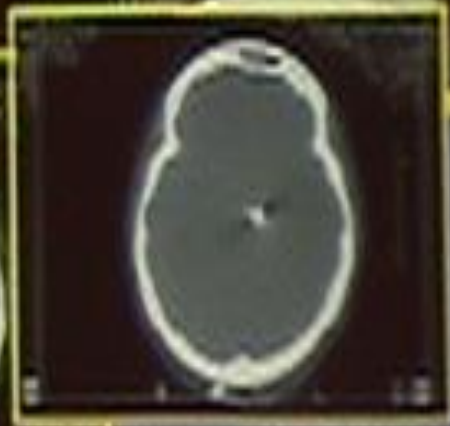
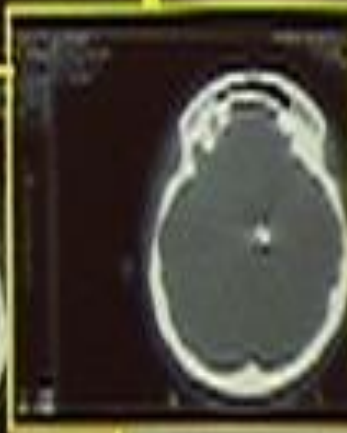
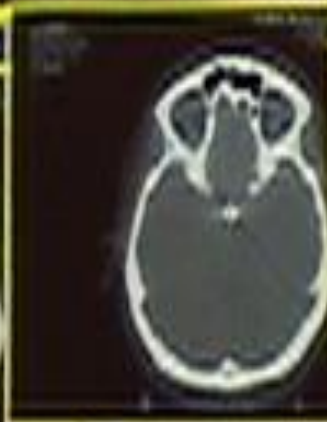
Injuries are Different
Jerusalem, Israel 2003
9 killed 40 injured
Women and Children's
Bus Attack

Fragments from Kassam
Rockets, Suicide Vests,
Bombs



14 Y/O Female

1. Nail Lodged in the Pituitary
2. Mangled Lt Upper Ext
3. Nails In Breast



Specific injury due to a suicide bomber. Patient Initially talking, walking at triage, losses consciousness and has a seizure a few minutes later. CT Nail in Pituitary

PDC 28 Hospital Exercise

Summary of Evaluation Scores

On a scale of 0-4...

- Highest performing hospital scored a 3.96/4.0 overall.
- Lowest performing hospital scored a 1.93/4.0 (This hospital was only able to conduct a limited exercise due to individual site limitations).
- The total average score overall of all 28 hospitals was 3.57/4.0. (These scores account for the total average of all the critical tasks scored combined).
- The total average scores of all hospitals by category are as follows:
 - Communications (3.65)
 - Emergency Operations Plans (3.67)
 - Surge (3.58)
 - Staffing (3.62)
 - Tracking (3.50)
 - Supplies (3.42)
 - Transfer (3.38)

Additional Information from the PDC Exercise

Key Findings from Responses (cont. 1)

Communications:

- Almost all hospitals were able to communicate with staff and to contact them about coming in during the surge event

Supplies:

- Over half (54%) of participating hospitals reported having gaps in their pediatric supplies during the exercise due to the influx of critical patients
- 6 hospitals reported not having a burn cart to deploy during a disaster

Key Findings from Responses (Cont. 2)

Staffing:

- Some hospitals had difficulty providing pediatric subspecialty services such as, Neurosurgery, Ear Nose and Throat (ENT), Orthopedics, Plastics, Vascular Surgery and Trauma Surgery
- 100% of Hospitals created Mental Health Response Teams for patients and Staff

Transfer:

- The Fire Department was able to send the Pediatric Intensive Care Review Team a list of patient's for secondary transport and subsequently receive the PIRT's triage and prioritization patient list

Key Findings from Responses (Cont.3)

Patient Tracking:

- 93% of hospitals were able to track patients during the event

Surge: Mental Health/Risk Communications

- 100% of hospitals established Family Information Service Centers for Reunification
- 100% of Hospitals created Mental Health Response Teams for patients and Staff
- 100% of Hospitals established an area for press briefings and a designated Public Information Officer

Additional Questions

- Was your hospital able to accommodate all patients and deliver appropriate care? If no, what were the obstacles in space/staff/stuff? **(Yes- 22, No – 5)**
- Was there a problem with enough blood product supply and pediatric ventilators? **(Yes- 15, No – 12)**
- Were there any gaps in specific staff that created problems with delivering patient care? (e.g. Neurosurgery coverage) **(Yes - 16, No – 11)**
- Did your institution benefit from participation in the exercise and improve your pediatric disaster preparedness program based on lessons learned? **(Yes- 27, No – 0)**