



KING COUNTY
Healthcare
Coalition

Prepare. Respond. Recover.

Disaster Response: Are You Ready for the Kids?

Integrated Training Summit Workshop

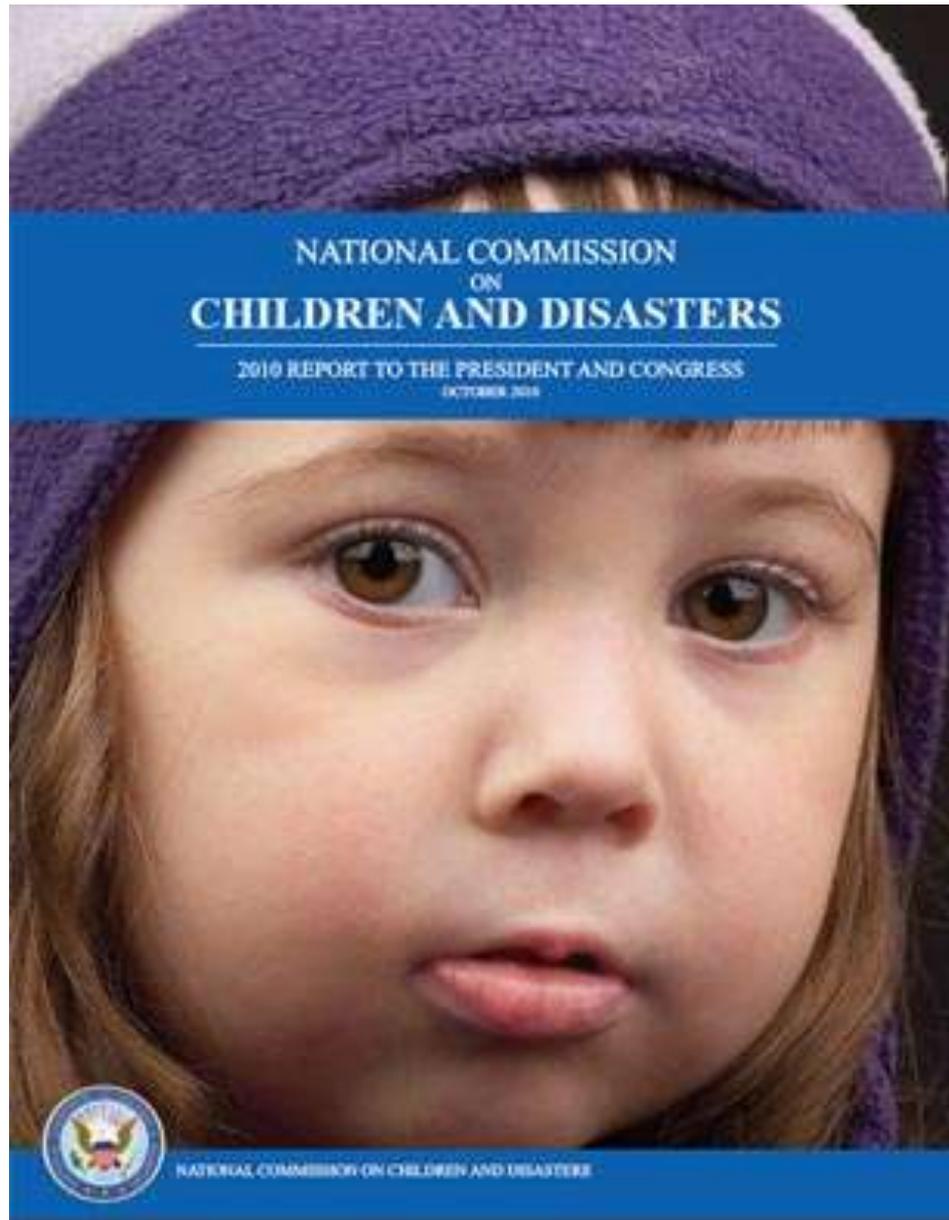
May 21, 2012

Workshop Faculty

- Kay Koelemay, MD, MPH
 - Public Health – Seattle & King County, WA
 - Vicki Sakata, MD
 - Mary Bridge Children's Hospital, Tacoma, WA
 - Mary Alice King, MD, MPH
 - Harborview Medical Center, Seattle, WA
 - Seattle Children's Hospital
 - Carolyn Blayney, RN
 - Harborview Medical Center
 - Team Commander, IMSurt West
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Learning Objectives

- List special considerations that impact planning for pediatric victims of an MCI
 - Describe strategies and tools that can improve pediatric emergency response capability in the field, in ambulatory and in hospital settings
 - Design and develop components of a regional pediatric disaster response plan
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<http://www.ahrq.gov/prep/nccdreport/>

Children: Not “Small Adults”

- Anatomical/ physiological differences
 - Vital signs vary with age
 - Smaller, shorter stature
 - Lower “breathing zones”
 - Higher minute volume
 - Less intravascular volume reserve
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Uniquely Vulnerable

- Greater body surface area to weight ratio
 - Increased skin permeability
 - More pliable skeleton
 - Weight is critical in determination of:
 - drug dosages
 - fluid requirements
 - equipment sizes
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Decontamination of Children

- Must be done with high-volume, low-pressure, heated water systems
 - Must be designed for decontamination of all ages and types of children
 - All protocols and guidance must address:
 - Water temperature and pressure
 - Nonambulatory children
 - Children with special health care needs
 - Clothing to provide for post-decon
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Developmental Differences

- Preverbal children cannot describe symptoms or relate identifying information
 - Dependent on others for food, clothing, shelter
 - Motor skills may deter escape from site of incident
 - Cognitive development may limit abilities:
 - How to flee from danger
 - How to follow directions
 - How to recognize a threat
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Mental Health Issues

- Issues are developmentally dependent
 - Short- and long-term manifestations
 - PTSD, fear, depression, sleep disturbances, social or behavioral difficulties, anxiety, changes in school performance
 - Related to parental reaction
 - Family-centered approach recommended
 - Certain children may be more vulnerable
 - Children with pre-existing mental health problems
 - Low income and racial or ethnic minorities
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Katrina: Lessons Learned

- Mobile Pediatric Emergency Response Teams
 - Pre-assigned is preferable to just-in-time volunteers
 - Mental health and social services ASAP
 - Sheltering families/children requires special planning
 - Emergency credentialing needs streamlining
 - Centrally located functional communication device is crucial (phone, cell phone, radio)
 - Do not expect distant assistance soon, if at all
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School Bus MCI

- 23.5 million kids ride to and from school
- Annual average: 10 bus crash deaths
- 8500-12000 bus crash injuries annually
 - 96% minor injuries: bumps, bruises, scrapes
 - Based on police reports
 - “Not all go to the emergency department”

Savage et al. *Protecting Children: A guide to child traffic safety laws*.
National Conference of State Legislators, 2002.

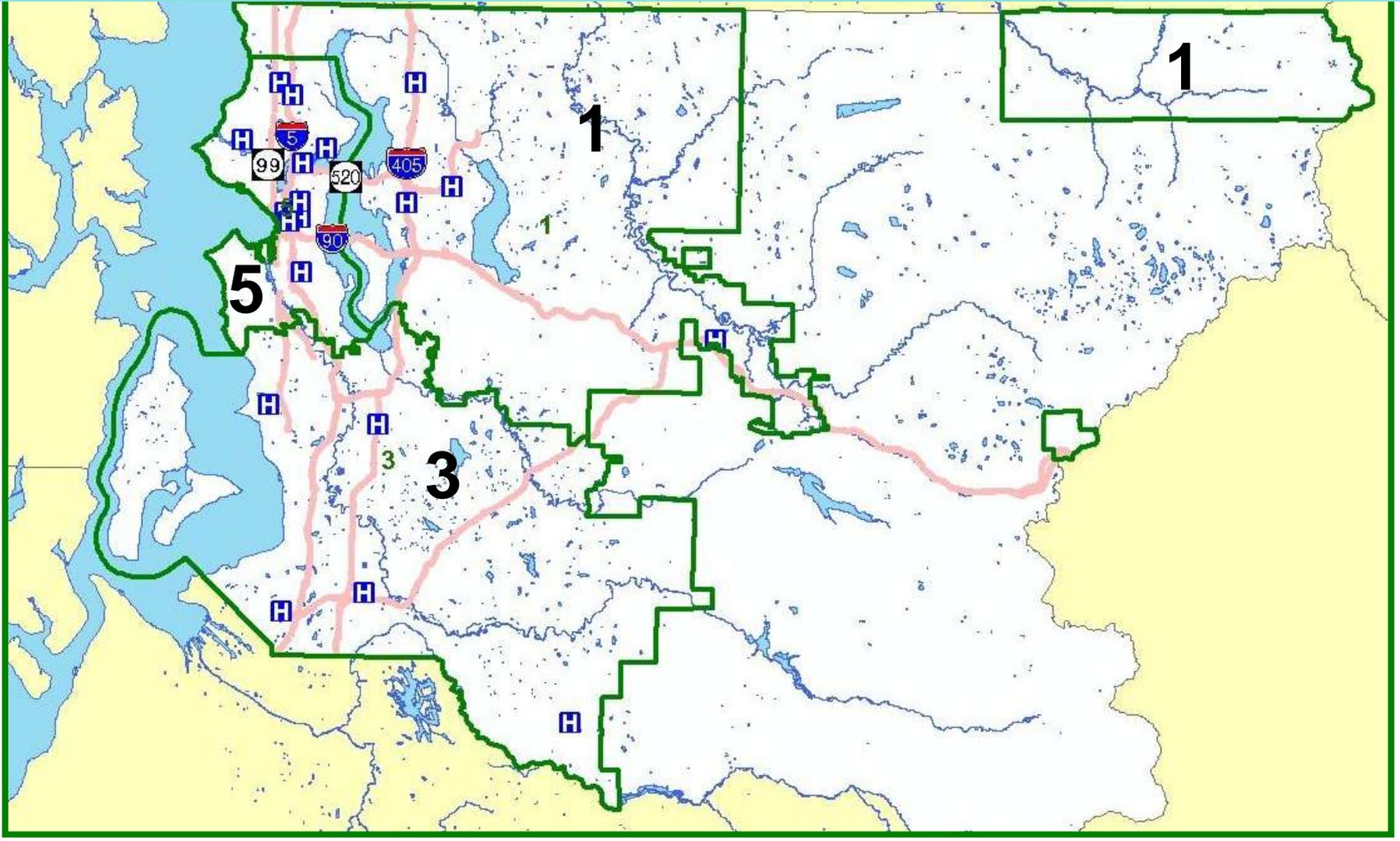
Pediatric Patients in MCI

- Critically ill or injured children may present to any and all hospitals
 - Accessibility issues for emergency responders
 - Transfer to specialized hospital may be impossible
 - Unstable patient
 - Shortage of vehicles
 - Impassable roads or bridges
 - Specialized hospital cannot accommodate
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Pediatric Preparedness in US Emergency Departments

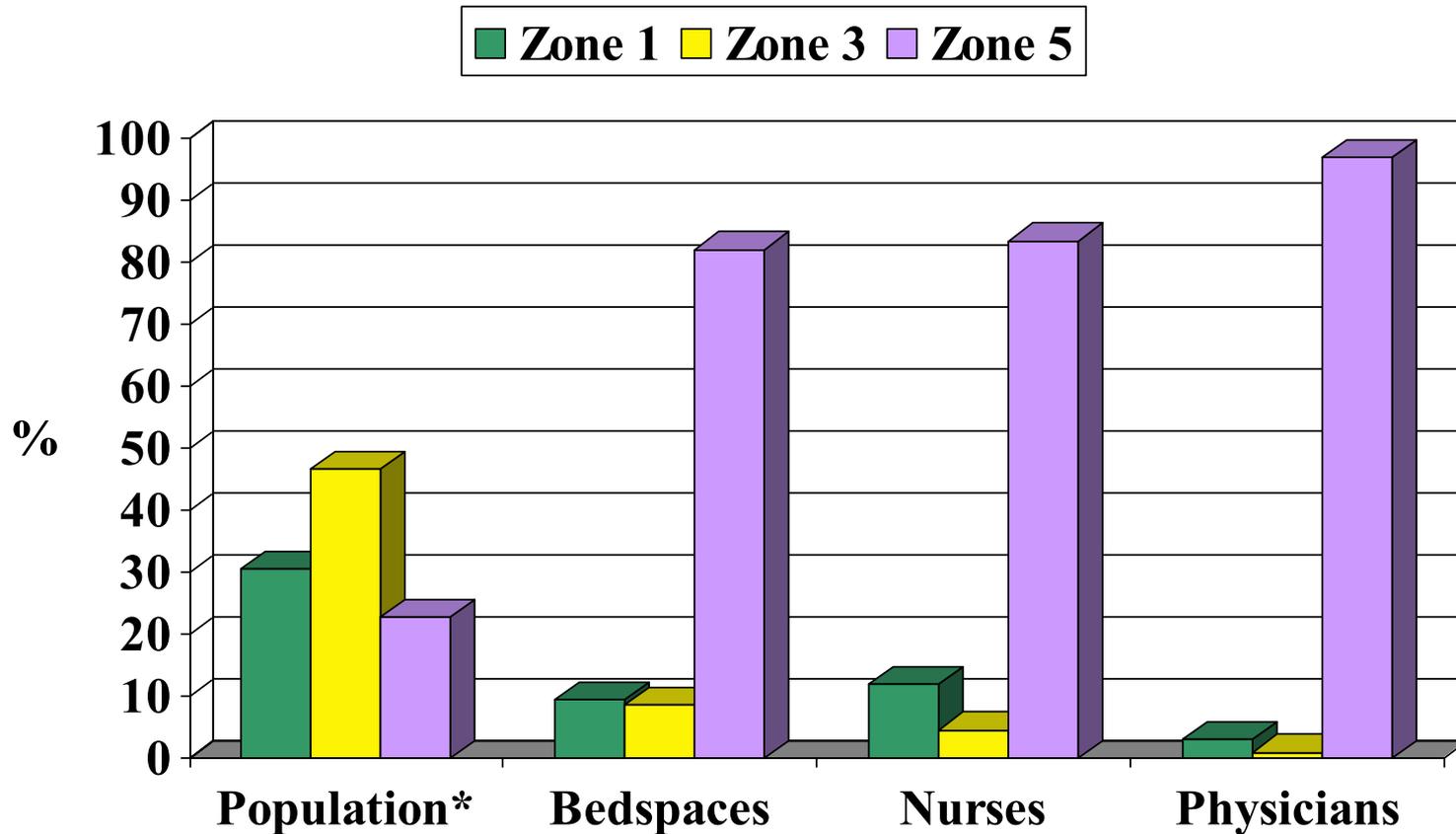
- 89% of pediatric visits: non-children's hospitals
- 50% EDs: see < 10 pediatric patients per day
- 6%: have recommended equipment & supplies
- 43% hospitals have no pediatric ward
- 89% admit pediatric patients
- 10% without PICU admit critically injured kids

Hospitals in King County, Washington by Emergency Coordination Zones 1, 3, 5



Pediatric Resources by Emergency Response Zone

2007 survey by Mary King, MD, MPH
Prehospital and Disaster Medicine, 2010



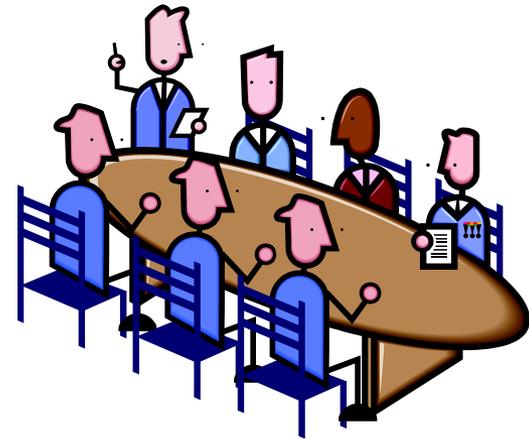
*Source: 2005 Population Estimates for Public Health Assessment, Washington State Department of Health

Baseline Assessments

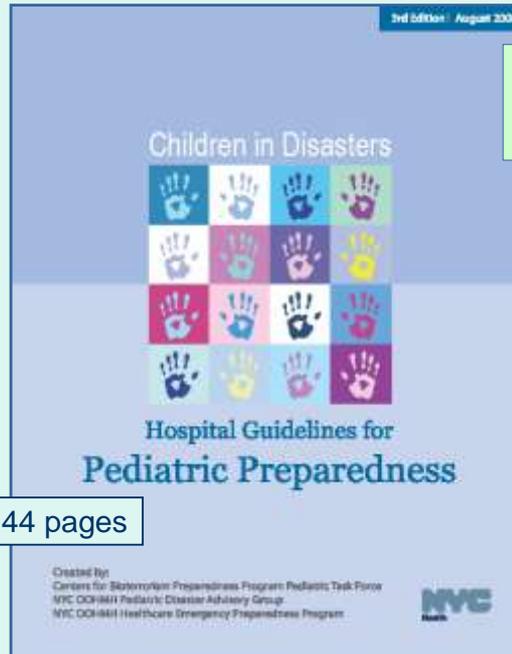
- Hazard Identification & Vulnerability Assessment (HIVA)
 - Study (King *et al*) re: pediatric inpatient beds, staff, supplies, equipment
 - Regional evacuation planning workshop
 - Facility surge capacity evaluations
 - Hospital surveys
 - Length-based Resuscitation Tape Survey of Emergency Departments
 - Perinatal Emergency Planning Survey
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King County Healthcare Coalition Pediatric Planning ...since 11/07

- Steering Committee
- Task Forces
 - Mental Health
 - Perinatal
 - Triage & Critical Care
- Toolkit Implementation Workgroup
- Clinical Coordinator Committee



“Pediatric Toolkit”

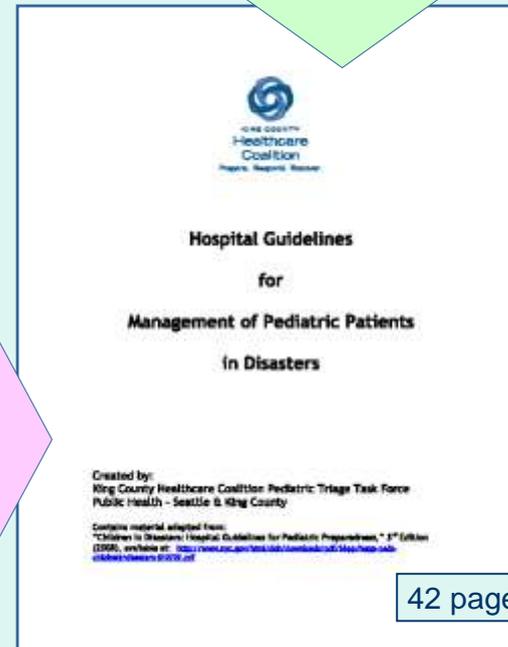


144 pages

Guidelines for:

- Staffing and training
- Equipment and supplies
- Pharmaceutical planning
- Dietary planning
- Transportation
- Inpatient bed planning
- Security and psychosocial support
- Decontamination of children
- Hospital-based triage

Adapted by:
Healthcare Coalition Pediatric
Workgroup Triage Task Force



42 pages

Toolkit Contents

- Staffing and training
 - Equipment and supplies
 - Pharmaceutical planning
 - Dietary planning
 - Transportation
 - Inpatient bed planning
 - Security and psychosocial support
 - Decontamination of children
 - Hospital-based triage
 - Infection control guidance
 - Family Information and Support Center
 - Psychological First Aid (PFA)
 - Pediatric transport issues
 - Pediatric surge strategies
 - Tracking protocol
 - Job action sheets
 - Pediatric Safe Area checklist
 - Sample menu
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Important 1st Steps

Create pediatric leadership positions

- Physician Coordinator
- Nursing Coordinator

**"...Guidelines for Care of Children in the Emergency Department"
2009 joint policy statement of committees of
American Academy of Pediatrics
American College of Emergency Physicians
& the Emergency Nurses Association**

<http://pediatrics.aappublications.org/cgi/reprint/124/4/1233> .

Toolkit Implementation Plan

- Identify training “package”
 - “Every Kid Every Time” project
 - Just-in-time training materials
 - Team training resources

 - Communication plan
 - Pediatric bed tracking
 - Situational awareness
 - WATrac
 - Web-based disaster management tool

 - Surveys to track progress
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Mid-Project Survey



King County Regional Pediatric Disaster Response Plan
Survey Results
January 2011

Pediatric Planning Implementation									
Survey Response Rate = 13/18 = 72%	Ability to Activate a Pediatric Response Team to Staff a 72-hr Period	Training Plan for Pediatric Response Team	Color-coding System to Estimate Weight of Pediatric Patients	Hospital-based Triage System to Provide Medical Management	Designated Pediatric Safe Area/ Dependent Care Area	Estimated Pediatric Surge Capacity	Equipment Supply Meets Estimated Pediatric Surge Capacity	Pharmaceutical Supply Meets Estimated Pediatric Surge Capacity	Planning to Provide Basic Pediatric Diets Meets Estimated Surge Capacity
Evergreen Hospital	In progress	In progress	Completed	Completed	Completed	Completed	Completed	Completed	Completed
Harborview Medical Center	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	In progress
Northwest Hospital	In progress	In progress	In progress	Completed	Completed	In progress	In progress	In progress	In progress
Seattle Children's Hospital	Completed	Completed	Not started	Completed	In progress	Completed	Completed	Completed	Completed
Snoqualmie Valley Hospital	Not started	Not started	Completed	Not started	Not started	Not started	Not started	Not started	Not started
St. Elizabeth Hospital (Enumclaw)	Not started	Not started	In progress	In progress	In progress	Not started	Not started	Not started	In progress
St. Francis Hospital	Not started	Not started	In progress	Completed	In progress	Not started	Not started	Not started	Completed
Swedish - Cherry Hill	In progress	In progress	Completed	Completed	Not started	In progress	Completed	Completed	Completed
Swedish - Ballard	Completed	In progress	Not started	In progress	In progress	In progress	In progress	In progress	In progress
Swedish - First Hill	Completed	Completed	In progress	Completed	In progress	In progress	Completed	Completed	Completed
UW Medical Center	In progress	Not started	In progress	Not started	Completed	Not started	Not started	Not started	Not started
Valley Medical Center	In progress	In progress	In progress	Completed	Completed	Completed	Completed	Completed	In progress
Virginia Mason Medical Center	In progress	In progress	Completed	Completed	In progress	Not started	Not started	Not started	Not started
Total Not Started	23%	31%	15%	15%	15%	38%	38%	38%	23%
Total In Progress	46%	46%	46%	15%	46%	31%	15%	15%	38%
Total Completed	31%	23%	38%	69%	38%	31%	46%	46%	38%

Staffing for Pediatric Disaster Response Planning						How would you describe the leadership support at your facility?
	Physician Coordinator	Nursing Coordinator	Pediatric Safe Area/Dependent Care Unit Coordinator	Pediatric Logistics Coordinator/ Planning Lead	Pediatric Services Coordinator/ Planning Lead	
Evergreen Hospital	Completed	Completed	Completed	Completed	Completed	
Harborview Medical Center	Completed	Completed	Completed	Completed	Completed	
Northwest Hospital	Completed	Completed	Completed	Completed	Completed	
Seattle Children's Hospital	Completed	Completed	Completed	Completed	Completed	
Snoqualmie Valley Hospital	Not started	Not started	Not started	Not started	Not started	
St. Elizabeth Hospital (Enumclaw)	In progress	In progress	Not started	Not started	Not started	
St. Francis Hospital	Not started	Completed	Not started	Not started	Not started	
Swedish - Cherry Hill	Completed	Completed	Completed	Completed	Completed	
Swedish - Ballard	Not started	Completed	In progress	In progress	In progress	
Swedish - First Hill	Completed	Completed	Completed	Completed	Completed	
UW Medical Center	Completed	In progress	Completed	In progress	In progress	
Valley Medical Center	Completed	Completed	Completed	Completed	Completed	
Virginia Mason Medical Center	Completed	Completed	In progress	In progress	In progress	
Total Not Started	23%	8%	23%	23%	23%	
Total In Progress	8%	15%	15%	23%	23%	
Total Completed	69%	77%	62%	54%	54%	

Drill: “Operation Red Rover”



- Simulated evacuation of pediatric patients from Swedish First Hill Hospital
 - 76 NICU, 6 PICU, 28 Med/Surg, 4 Psych patients)
- Simulated receipt of distributed patients by KC hospitals
 - Trial run of a pediatric patient distribution tool
- Simulated transport via EMS
 - Assets assessment
- Objectives:
 - Test pediatric response and surge capacity
 - Patient tracking
 - Communication
 - Security and crowd control

Progress in Regional Planning

- ASPR monies applied to purchase of pediatric equipment/supplies
 - Concurrent pediatric planning in Pierce County
 - Pilot project: an interregional pediatric chat room in WATrac for communication and collaboration
 - Pediatric Disaster Response Workshop
 - Pediatric triage and color-coding
 - Pediatric disaster transport & equipment training
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Our Recommendations for Success

- Identify pediatric “champions”
 - Involve community providers as well as hospitals
 - Plan for pediatrics in Alternate Care Facilities
 - Keep hospitals available for sickest and most injured
 - Make pediatric learning a “standard practice”
 - CME
 - On-line modules
 - Mock codes
 - Disaster drills
-

Expect Challenges

- Participation
 - Cost considerations
 - Planning/training, pediatric supplies and equipment
 - Staff time/ prioritization
 - Reallocation of facility space
 - Leadership “buy-in” and support
 - Surge planning estimates
 - Disaster medical control planning
-

Goal: A Regional Pediatric Disaster Response Network...Why?

- Consistent approach across the region
 - Communication and collaboration network
 - Coordination with pre-hospital emergency responders and emergency management agencies
 - Increased pediatric capability and capacity
 - Redefined role of pediatric specialty hospitals and ambulatory care pediatricians in a disaster
 - Telemedicine
 - Pre-privileged pediatric-trained responders
 - Triage and treatment referral decisions
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Resources

- “Children in Disasters: Hospital Guidelines for Pediatric Preparedness,” 3rd Edition (2008),
<http://www.nyc.gov/html/doh/downloads/pdf/bhpp/hepp-peds-childrenindisasters-010709.pdf>
 - King MA, Koelemay K, Zimmerman J, Rubinson L.
Geographical maldistribution of pediatric medical resources in Seattle-King County. *Prehospital and Disaster Medicine*. July-Aug 2010; 25 (4): 326-32
 - National Commission on Children and Disasters: 2010 Report to the President and Congress
<http://www.ahrq.gov/prep/nccdreport/>
 - King County/ Healthcare Coalition website: Pediatric resources
<http://www.kingcountyhealthcarecoalition.org/>
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The Child Emergency Plan



Questions?
Comments?