PEDIATRIC DISASTER PLANNING FOR THE EMERGENCY DEPARTMENT

ED Pediatric Emergency Care Coordinator Quarterly Meeting, Swathi Prasad
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May 24, 2023

National Pediatric Readiness Project
Ensuring Emergency Care for All Children

EMSC Emergency Medical Services for Children

The NPRP is funded in part by the HRSA EMSC Program

Wisconsin 2021 National Pediatric Readiness State Summary

2021 Pediatric Readiness Response Rate

Numerator: **101**
Denominator: **132**
Response Rate: **77%**

2021 Average State Score	2021 Median State Score
67	68
State AVERAGE Hospital Score out of 100 (n=96)	State MEDIAN Hospital Score out of 100 (n=96)

Disaster plan includes availability of medications, vaccines, equipment, supplies, and appropriately trained providers		34/99 (Missing = 2)	34.3%
Disaster plan includes decontamination, isolation, and quarantine of families and children		35/99 (Missing = 2)	35.4%
Disaster plan includes minimization of parent-child separation and methods for reuniting separated children with their families		33/99 (Missing = 2)	33.3%
All disaster drills include pediatric patients	HELP	29/99 (Missing = 2)	29.3%
Disaster plan includes pediatric surge capacity for both injured and non-injured children		30/99 (Missing = 2)	30.3%
Disaster plan includes access to behavioral health resources for children	HELP	24/99 (Missing = 2)	24.2%
Disaster plan includes care of children with special health care needs	HELP	26/99 (Missing = 2)	26.3%

Objectives

- Reviewing the importance and scope of pediatric-specific planning
- Reviewing recent assessment results and disaster-specific gaps and needs
- Providing resources to address disaster planning for pediatric patients

WHY PEDIATRIC-SPECIFIC PLANNING

Pediatric Patients

Age ranges

- Infants/toddlers (0-24 months)
- Toddlers/preschoolers (2-5 years)
- School-aged children (6-13 years)
- Adolescents (14-18 years)

Physiology

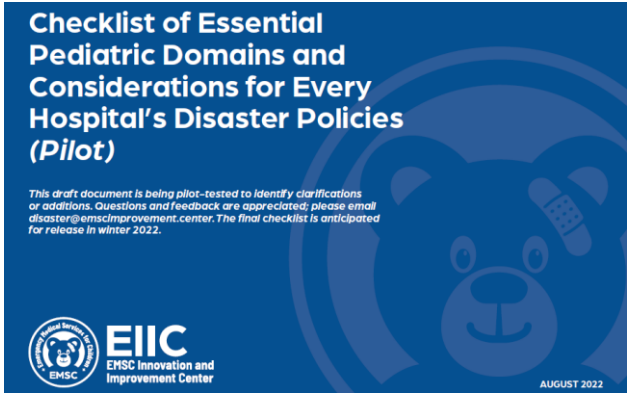
- Head size
- Body surface area
- Organ proportions
- Higher metabolic rates

Psych/mental needs

- Lack of self-preservation
- Variable cognitive skills or physical ability to react appropriately or respond to instructions
- Fewer coping skills and mechanisms
- Great resilience

Pediatric Domains and Considerations for Hospital Disaster Plans

- Pediatric Disaster Care Coordination → PECC
- Regional Coalition Building
- Surge Capacity
- Triage, Infection Contact, Decontamination
- Evacuation
- Patient Tracking and Reunification
- Legal / Ethics
- Behavioral Health
- Special Health Care Needs
- Exercise / Drills / Training
- Recovery and Resiliency



Link: Checklist of Domains and Considerations for Disaster Policies Checklist

WI National Pediatric Readiness Assessment Review

Overall Results

Wisconsin 2021 National Pediatric Readiness State Summary

2021 Pediatric Readiness Response Rate

Numerator: **101**
Denominator: **132**
Response Rate: **77%**

2013-14 Pediatric Readiness Response Rate

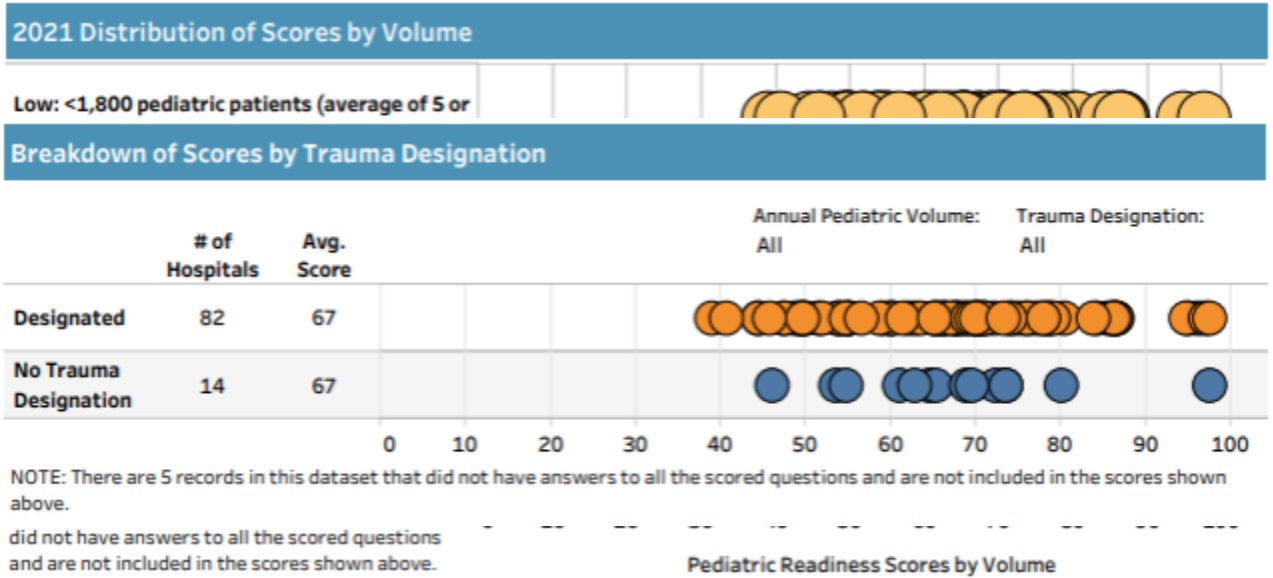
Numerator: **111**
Denominator: **128**
Response Rate: **87%**

2021 Average State Score	2021 Median State Score
67	68
State AVERAGE Hospital Score out of 100 (n=96)	State MEDIAN Hospital Score out of 100 (n=96)

NOTE: There are 5 records in this dataset that did not have answers to all the scored questions and are not included in the scores shown above.

The overall 2021 National Pediatric Readiness scores (based on the 2018 Joint Policy Guidelines) are not directly comparable with the 2013-14 state scores (based on the 2009 Joint Policy Guidelines). These were two unique assessments based on two different published sets of guidelines. Questions were added/removed and point values changed based on the new guidelines. Although the overall scores are not comparable, several individual questions remained the same and these components can be compared over time.

Overall Results



Overall Results

Average Scores By Section

Section	Missing Records	Avg Section Score	Possible Score
Guidelines for Administration and Coordination of the ED for the Care of Children (19 pts)	0	5.0	19
Physicians, Nurses, and Other Health Care Providers Who Staff the ED (10 pts)	2	4.4	10
Guidelines QI/PI in the ED (7 pts)	0	2.3	7
Guidelines for Improving Pediatric Patient Safety in the ED (14 pts)	1	12.9	14
Guidelines for Policies, Procedures, and Protocols for the ED (17 pts)	3	10.1	17
Guidelines for Equipment, Supplies, and Medications for the Care of Pediatric Patients in the ED (33 pts)	1	31.9	33

Standouts

Guidelines for Administration and Coordination of the ED for the Care of Children (19 points)					
	KPI	2021 Number of EDs that Have Item	2021 Percent that Have Item	2013-14 Percent that Had Item	Difference Between Assessments
Physcian Coordinator	HELP	27/101 (Missing = 0)	26.7%	43.2%	-16.5% ▼
Nurse Coordinator	HELP	26/101 (Missing = 0)	25.7%	48.6%	-22.9% ▼

Standouts

KPI Legend:

- 100% of EDs Have Item
- 80 to 99.9% Have Item
- 60 to 79.9% Have Item
- 30 to 59.9% Have Item
- 29.9% or Less Have Item

Physicians, Nurses, and Other Health Care Providers Who Staff the ED (10 points)

	KPI	2021 Number of EDs that Have Item	2021 Percent that Have Item	2013-14 Percent that Had Item	Difference Between Assessments
Physician Competency Evaluations	◆	49/101 (Missing = 0)	48.5%	32.4%	16.1% ▲
Physician Maintenance of Board Certification	◆	36/100 (Missing = 1)	36.0%		
Nurse Competency Evaluations	●	86/101 (Missing = 0)	85.1%	64.0%	21.1% ▲
Nurse Maintenance of Specialty Certification	HELP	10/100 (Missing = 1)	10.0%		

Standouts

KPI Legend:

- 100% of EDs Have Item
- 80 to 99.9% Have Item
- 60 to 79.9% Have Item
- 30 to 59.9% Have Item
- 29.9% or Less Have Item

Guidelines QI/PI in the ED (7 points)

	KPI	2021 Number of EDs that Have Item	2021 Percent that Have Item	2013-14 Percent that Had Item	Difference Between Assessments
Patient care-review process (chart review)	◆	42/101 (Missing = 0)	41.6%	44.1%	-2.5% ▼
Identification of quality indicators for children	HELP	28/101 (Missing = 0)	27.7%	13.5%	14.2% ▲
Collection and analysis of pediatric emergency care data	◆	39/101 (Missing = 0)	38.6%	36.9%	1.7% ▲
Development of a plan for improvement in pediatric emergency care	◆	32/101 (Missing = 0)	31.7%	33.3%	-1.6% ▼
Re-evaluation of performance using outcomes-based measures	HELP	28/101 (Missing = 0)	27.7%	28.8%	-1.1% ▼

Standouts

KPI Legend:

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- 80 to 99.9% Have Item
- 60 to 79.9% Have Item
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- 29.9% or Less Have Item

Guidelines for Improving Pediatric Patient Safety in the ED (14 points)

	KPI	2021 Number of EDs that Have Item	2021 Percent that Have Item	2013-14 Percent that Had Item	Difference Between Assessments
Process in place for the use of pre-calculated drug dosing in all children	●	91/100 (Missing = 1)	91.0%	78.4%	12.6% ▲
Process in place that allows for 24/7 access to interpreter services in the ED	✓	101/101 (Missing = 0)	100.0%	100.0%	0.0%
Level of consciousness (e.g. AVPU or GCS) assessed in all children	●	84/100 (Missing = 1)	84.0%		
Level of pain assessed in all children	●	96/100 (Missing = 1)	96.0%		
Children seen in the ED weighed in kilograms (without conversion from pounds)	●	84/100 (Missing = 1)	84.0%	77.5%	6.5% ▲
Children's weights recorded in the ED medical record in kilograms only	▲	76/100 (Missing = 1)	76.0%		
Temperature, heart rate, and respiratory rate recorded	●	99/100 (Missing = 1)	99.0%	95.5%	3.5% ▲
Blood pressure monitoring available based on severity of illness	●	97/100 (Missing = 1)	97.0%	96.4%	0.6% ▲
Pulse oximetry monitoring available based on severity of illness	✓	100/100 (Missing = 1)	100.0%	99.1%	0.9% ▲
End tidal CO2 monitoring available based on severity of illness	●	93/100 (Missing = 1)	93.0%		
Process in place for notification (manual or automated) of physicians when abnormal vital signs are found	●	98/100 (Missing = 1)	98.0%	68.5%	29.5% ▲

Standouts

Guidelines for Policies, Procedures, and Protocols for the ED (17 points)			
Triage policy that specifically addresses ill and injured children	◆	46/101 (Missing = 0)	45.5%
Policy for pediatric patient assessment and reassessment	▲	70/101 (Missing = 0)	69.3%
Policy for immunization assessment and management of the under-immunized child	◆	33/101 (Missing = 0)	32.7%
Policy for child maltreatment	●	94/101 (Missing = 0)	93.1%
Policy for death of the child in the ED	▲	70/101 (Missing = 0)	69.3%
Policy for reduced-dose radiation for CT and x-ray imaging based on pediatric age or weight	▲	72/100 (Missing = 1)	72.0%
Policy for behavioral health issues for children of all ages	▲	70/101 (Missing = 0)	69.3%
Involving families and caregivers in patient care decision-making	◆	55/101 (Missing = 0)	54.5%
Involving families and caregivers in medication safety processes	◆	54/101 (Missing = 0)	53.5%
Family and guardian presence during all aspects of emergency care, including resuscitation	◆	55/101 (Missing = 0)	54.5%
Education of the patient, family, and caregivers on treatment plan and disposition	◆	56/101 (Missing = 0)	55.4%
Bereavement counseling	◆	42/101 (Missing = 0)	41.6%
Disaster plan includes availability of medications, vaccines, equipment, supplies, and appropriately trained providers	◆	34/99 (Missing = 2)	34.3%
Disaster plan includes decontamination, isolation, and quarantine of families and children	◆	35/99 (Missing = 2)	35.4%
Disaster plan includes minimization of parent-child separation and methods for reuniting separated children with their families	◆	33/99 (Missing = 2)	33.3%
All disaster drills include pediatric patients	HELP	29/99 (Missing = 2)	29.3%
Disaster plan includes pediatric surge capacity for both injured and non-injured children	◆	30/99 (Missing = 2)	30.3%
Disaster plan includes access to behavioral health resources for children	HELP	24/99 (Missing = 2)	24.2%
Disaster plan includes care of children with special health care needs	HELP	26/99 (Missing = 2)	26.3%
Written inter-facility transfer guidelines	▲	73/100 (Missing = 1)	73.0%

KPI Legend:

- ✓ 100% of EDs Have Item
- ● 80 to 99.9% Have Item
- ▲ 60 to 79.9% Have Item
- ◆ 30 to 59.9% Have Item
- HELP 29.9% or Less Have Item

Standouts

Guidelines for Equipment, Supplies, and Medications for the Care of Pediatric Patients in the ED (33 points)

	KPI	2021 Number of EDs that Have Item	2021 Percent that Have Item	2013-14 Percent that Had Item	Difference Between Assessments
All staff trained on the location of all pediatric equipment and medications	✓	101/101 (Missing = 0)	100.0%	99.1%	0.9% ▲
Daily method used to verify the proper location and function of pediatric equipment and supplies	●	89/101 (Missing = 0)	88.1%	78.4%	9.7% ▲
Standardized chart or tool to estimate weight if resuscitation precludes the use of a weight scale (e.g., length-based tape)	✓	101/101 (Missing = 0)	100.0%	100.0%	0.0%
Neonatal blood pressure cuff	●	94/101 (Missing = 0)	93.1%	91.0%	2.1% ▲
Infant blood pressure cuff	✓	101/101 (Missing = 0)	100.0%	99.1%	0.9% ▲
Child blood pressure cuff	✓	100/100 (Missing = 1)	100.0%	100.0%	0.0%
Defibrillator with pediatric and adult capabilities including pads and or paddles	✓	101/101 (Missing = 0)	100.0%	100.0%	0.0%
Pulse oximeter with pediatric and adult probes	✓	101/101 (Missing = 0)	100.0%	100.0%	0.0%
Continuous end-tidal CO2 monitoring device	●	99/101 (Missing = 0)	98.0%	95.5%	2.5% ▲
22 gauge catheter-over-the-needle	✓	101/101 (Missing = 0)	100.0%	100.0%	0.0%
24 gauge catheter-over-the-needle	✓	101/101 (Missing = 0)	100.0%	100.0%	0.0%
Pediatric intra-osseus needles	●	99/101 (Missing = 0)	98.0%	99.1%	-1.1% ▼
IV administration sets with calibrated chambers or an infusion pump	●	95/101 (Missing = 0)	94.1%	97.3%	-3.2% ▼

Guidelines for Equipment, Supplies, and Medications for the Care of Pediatric Patients in the ED (33 points)

	KPI	2021 Number of EDs that Have Item	2021 Percent that Have Item	2013-14 Percent that Had Item	Difference Between Assessments
Endotracheal tubes: cuffed or uncuffed 2.5 mm	●	95/101 (Missing = 0)	94.1%	90.1%	4.0% ▲
Endotracheal tubes: cuffed or uncuffed 3.0 mm	●	99/101 (Missing = 0)	98.0%	94.6%	3.4% ▲
Endotracheal tubes: cuffed or uncuffed 3.5 mm	●	99/101 (Missing = 0)	98.0%	100.0%	-2.0% ▼
Endotracheal tubes: cuffed or uncuffed 4.0 mm	✓	101/101 (Missing = 0)	100.0%	100.0%	0.0%
Endotracheal tubes: cuffed or uncuffed 4.5 mm	✓	101/101 (Missing = 0)	100.0%	99.1%	0.9% ▲
Endotracheal tubes: cuffed or uncuffed 5.0 mm	✓	101/101 (Missing = 0)	100.0%	100.0%	0.0%
Endotracheal tubes: cuffed or uncuffed 5.5 mm	✓	101/101 (Missing = 0)	100.0%	100.0%	0.0%
Endotracheal tubes: cuffed 6.0 mm	✓	101/101 (Missing = 0)	100.0%	100.0%	0.0%
Laryngoscope blades: straight, size 0	●	93/101 (Missing = 0)	92.1%	88.3%	3.8% ▲
Laryngoscope blades: straight, size 1	●	99/101 (Missing = 0)	98.0%	98.2%	-0.2% ▼
Laryngoscope blades: straight, size 2	●	100/101 (Missing = 0)	99.0%	97.3%	1.7% ▲
Laryngoscope blades: curved, size 2	●	100/101 (Missing = 0)	99.0%	94.6%	4.4% ▲
Pediatric-sized Magill forcep	●	86/101 (Missing = 0)	85.1%	83.8%	1.3% ▲
Nasopharyngeal airways: infant-sized	●	94/101 (Missing = 0)	93.1%	86.5%	6.6% ▲
Nasopharyngeal airways: child-sized	●	98/101 (Missing = 0)	97.0%	91.9%	5.1% ▲

Guidelines for Equipment, Supplies, and Medications for the Care of Pediatric Patients in the ED (33 points)

	KPI	2021 Number of EDs that Have Item	2021 Percent that Have Item	2013-14 Percent that Had Item	Difference Between Assessments
Oropharyngeal airways: size 0 (50mm)	●	95/101 (Missing = 0)	94.1%	89.2%	4.9% ▲
Oropharyngeal airways: size 1 (60mm)	●	99/101 (Missing = 0)	98.0%	95.5%	2.5% ▲
Oropharyngeal airways: size 2 (70mm)	●	99/101 (Missing = 0)	98.0%	93.7%	4.3% ▲
Oropharyngeal airways: size 3 (80mm)	●	99/101 (Missing = 0)	98.0%	96.4%	1.6% ▲
Stylets for pediatric/infant-sized endotracheal tube	●	98/101 (Missing = 0)	97.0%	98.2%	-1.2% ▼
Bag-mask device, self-inflating (infant/child)	✓	101/101 (Missing = 0)	100.0%	96.4%	3.6% ▲
Masks (neonatal size) to fit bag-mask device	●	98/101 (Missing = 0)	97.0%	90.1%	6.9% ▲
Masks (infant size) to fit bag-mask device	✓	101/101 (Missing = 0)	100.0%	100.0%	0.0%
Masks (child size) to fit bag-mask device	✓	101/101 (Missing = 0)	100.0%	99.1%	0.9% ▲
Simple oxygen face masks: standard infant	●	99/101 (Missing = 0)	98.0%	93.7%	4.3% ▲
Clear oxygen masks: standard child	●	98/101 (Missing = 0)	97.0%	100.0%	-3.0% ▼
Non-rebreather masks: infant-sized	●	83/101 (Missing = 0)	82.2%	78.4%	3.8% ▲
Non-rebreather masks: child-sized	●	91/101 (Missing = 0)	90.1%	91.0%	-0.9% ▼
Nasal cannulas: infant	●	96/101 (Missing = 0)	95.0%	93.7%	1.3% ▲
Nasal cannulas: child	●	100/101 (Missing = 0)	99.0%	97.3%	1.7% ▲
Suction catheters: at least one in range 6-8F	●	100/101 (Missing = 0)	99.0%	99.1%	-0.1% ▼
Suction catheters: at least one in range 10-12F	✓	101/101 (Missing = 0)	100.0%	100.0%	0.0%
Supplies/kit for pediatric patients with difficult airways	●	97/101 (Missing = 0)	96.0%	82.9%	13.1% ▲

Addressing the Gaps

Administration/Coordination

While identifying a physician and nurse coordinator, consider designating a **pediatric disaster care coordination champion:** designated staff member(s) who champions high-quality pediatric disaster care and response.

Sample Pediatric Coordinator Job Description

RECOMMENDED ACTIVITY	FOUNDATION	INTERMEDIATE	ADVANCED
Identify Key Staff	○ Identify a staff member to champion pediatric disaster care. This person may serve in the role of the pediatric emergency care coordinator (PECC), also known as a pediatric champion.	○ Designate a staff member to serve as the Pediatric Disaster Care Coordinator. ○ Staff member(s) have training in disaster response/emergency management or are willing to learn about disaster response/emergency management.	○ Identify and engage other hospital professionals who can provide specific expertise and advocate for the integration of the needs of children in planning and implementing pediatric disaster response (emergency management, neurosurgeon, trauma surgeon, infectious disease/infection control, emergency medicine physicians).
Designate Responsibilities of Key Staff	○ Staff members are identified and supported by hospital administration with a formal position or designation. ○ Staff members have official roles and designations on hospital committees (e.g., medical, trauma, emergency management, etc.) to serve as liaison for pediatric patients.	○ Coordinate department- and hospital-wide pediatric-inclusive disaster drills. ○ Facilitate disaster-related learning activities (e.g., FEMA, ICS courses, lectures, table-top activities) that include pediatric considerations and priorities for all staff.	○ Collaborate with hospital emergency management and engage in developing and reviewing hospital disaster policies, ensuring that pediatric needs are addressed. ○ Staff members serve as a liaison to EMS agencies and facilitate disaster-related learning that includes pediatric considerations. ○ Staff members promote pediatric disaster awareness within the community.

Competencies and Certifications

Pediatric Basic Life Support (PBLS)

Pediatric Advanced Life Support (PALS)

Advanced Pediatric Life Support (APLS)

Neonatal Resuscitation Program (NRP)

International Trauma Life Support (ITLS) (formerly Basic Trauma Life Support)

Advanced Trauma Life Support (ATLS)

QI/PI

The Pediatric Readiness Quality Improvement Collaborative (PRQC) focuses on harnessing the work of the National Pediatric Readiness Project (NPRP) to help participating teams take the next step in addressing gaps identified by NPRP assessment.

National PRQC
Pediatric Readiness Quality Collaborative
Ensuring Emergency Care for All Children

The Pediatric Readiness Quality Improvement (QI) Collaborative (PRQC) is continuing the work started in 2018 by creating a new cohort. The next PRQC cohort kicks off in June 2023. This is a free, 18-month opportunity for emergency department (ED)-based teams to accelerate their pediatric readiness. (Learn more about EIIC's QI Collaborative model.)

Registration is open.

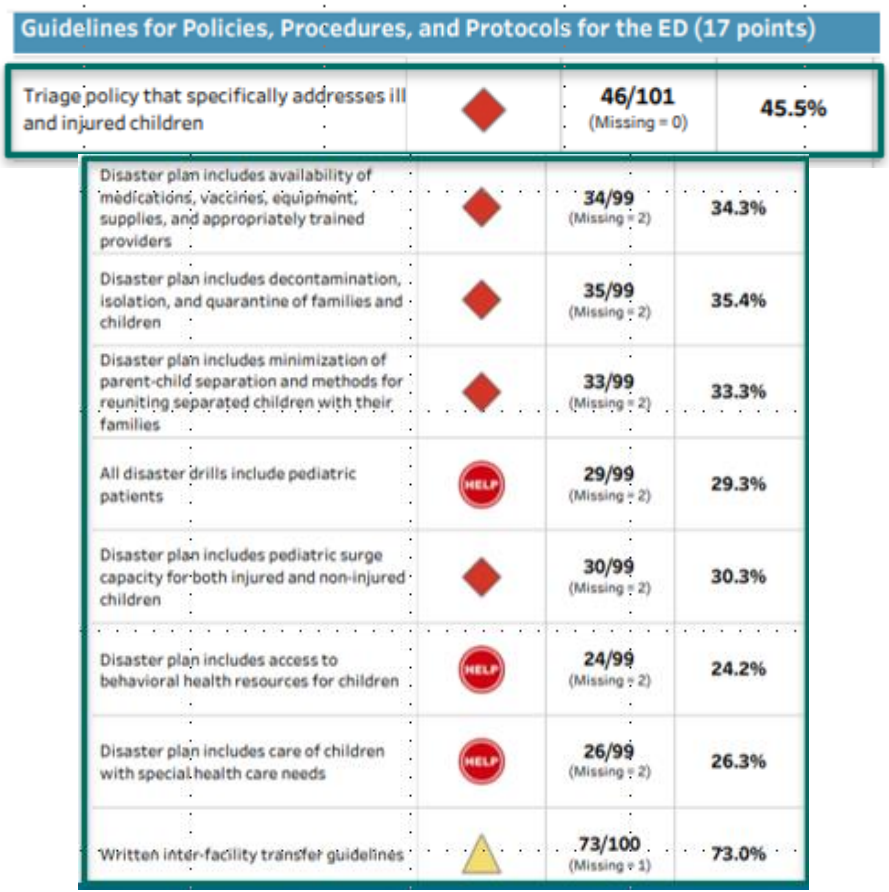
Join the collaborative to improve outcomes for children through pediatric readiness.

Registration is open through June 6.

Register today >

Register here

Policies, Procedures, and Protocols



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Disaster plan includes decontamination, isolation, and quarantine of families and children	◆	35/99 (Missing = 2)	35.4%
Disaster plan includes minimization of parent-child separation and methods for reuniting separated children with their families	◆	33/99 (Missing = 2)	33.3%
All disaster drills include pediatric patients	HELP	29/99 (Missing = 2)	29.3%
Disaster plan includes pediatric surge capacity for both injured and non-injured children	◆	30/99 (Missing = 2)	30.3%
Disaster plan includes access to behavioral health resources for children	HELP	24/99 (Missing = 2)	24.2%
Disaster plan includes care of children with special health care needs	HELP	26/99 (Missing = 2)	26.3%
Written inter-facility transfer guidelines	▲	73/100 (Missing = 1)	73.0%

PPP - Triage

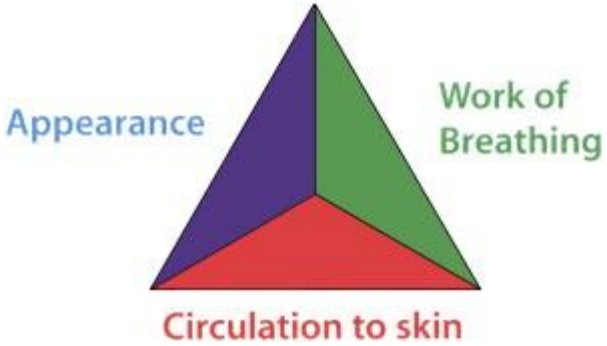
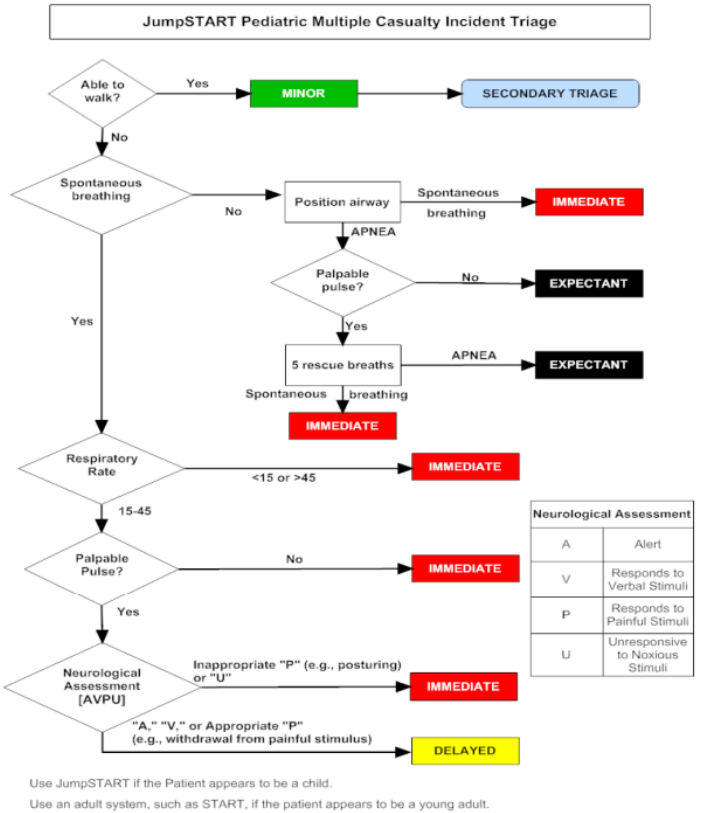


Figure 2 The Pediatric Assessment Triangle

60 Seconds to Survival. [Disaster Triage Game.]

Accepted Normal Vital Sign Ranges by Age

	Infant (0-12 months)	Toddler (1-2 years)	Preschool (3-5 years)	School (6-11 years)	Adolescent (12-18 years)
Pulse	110-165	100-140	80-125	70-110	60-100
Respiratory Rate	30-60	35-45	20-30	16-25	12-20
Systolic Blood Pressure	70-100	85-105	90-110	95-115	100-120
Temperature (Celsius)	36-38	36-38	36-38	36-38	36-38
Temperature (Fahrenheit)	96.8-100.4	96.8-101	96.8-101	96.8-101	96.8-102
Pulse Oximeter	>95%	>95%	>95%	>95%	>95%



Pediatric triage: **Jump-START**

PPP – Infection Control and Decon

RECOMMENDED ACTIVITY	FOUNDATION	INTERMEDIATE	ADVANCED
Pediatric infectious disease, chemical or biological exposure suspected	○ Identify a separate triage area and entrance away from other ED patients for both infectious and/or chemical exposure concerns. ○ Ensure adequate PPE (gown, gloves, masks, including N95 for airborne or PAPR) is easily available to staff. ○ Establish a relationship with a regional pediatric center and/or pediatric infectious disease specialist for consultation as needed ahead of time.	○ Establish an isolation area for infectious disease exposures/concerns (ideally negative pressure areas for all airborne disease: measles, TB, SARS, MERS, COVID, Ebola). ○ Enforce a Limited Visitor Policy during a disaster, allowing for one parent/guardian with a child. ○ If a negative pressure room is not available, identify a space with doors that will remain closed. ○ Secure pediatric PPE including disposable pediatric-sized face masks.	○ Set up appropriate PPE donning/doffing stations outside of all rooms. ○ Establish washing/shower areas in or next to isolation rooms.
Decontamination	○ Establish a basic contamination process, even if no decontamination area is available, that includes: • Disrobe patient • Wipe down skin • Irrigate eyes • Provide clean patient gowns/blankets ○ Keep families together when possible and allow parents to wash children. ○ Be mindful that children are at risk of hypothermia; have towels/dry clothes ready for children.	○ Establish a dedicated decontamination area with specific pediatric considerations. ○ Ensure staff is available to direct patients to the decontamination area. ○ Develop a plan to move small/immobile children through showers, which are a fall risk. Do not hold child. Consider using a laundry basket/bassinet/other safe way of moving a child through the shower. ○ Aim for a 3–6 minute shower with a water temperature of between 98-110oF (to avoid hypothermia) and max water pressure of 60 psi (to avoid damage to skin).	○ Protect modesty when possible, including separating sexes other than family members with curtains. ○ Provide same-sex staff member to help when family not available. ○ Provide modesty covers to patients immediately after showering.
Process for disinfection of communally available toys in the facility	○ Wipe down all toys and shared objects with bleach wipes or disinfectant wipes after every use regardless of patient chief complaint.		

AAP Resources for Pediatric Decon

PPP –

RECOMMENDED ACTIVITY	FOUNDATION	INTERMEDIATE	ADVANCED
Family Reunification Planning	○ Develop a comprehensive internal planning team to understand hospital family reunification capabilities and conduct a needs assessment of local community partners (including social work, pediatricians, emergency management, and child life if available). ○ Engage adjunct hospital departments (Public Relations, Risk Management, Chaplaincy, Food Services) for planning	○ Develop a leadership chain of command and organizational structure concerning family reunification with specific attention into how family reunification is incorporated into your overall emergency operations plan and HICS. ○ Develop procedures to establish and operate a Hospital Family Reunification Center, Pediatric Safe Area, and Family Reunification Site. Please see **Family**	○ Develop procedures with external stakeholders that govern the sharing of relevant information with other hospitals, public health agencies, and other partners involved in the response, as legally permitted, to facilitate family reunification. ○ Consider leading regional family reunification drills and/or tabletop exercises to test plans, plan components

RECOMMENDED ACTIVITY	FOUNDATION	INTERMEDIATE	ADVANCED
Staff	○ Ensure availability of security for Pediatric Safe Area, Hospital Family Reunification Center, and Family Reunification Site. ○ Define staffing plan for Pediatric Safe Area, Hospital Family Reunification Center, and Family Reunification Site that utilizes either hospital staff, community partners, or a combination of both. (These areas may be combined if sufficient staff is not available for all three areas). ○ Ensure that there is adequate medical oversight for children who might decompensate.	○ Consider appropriate staffing ratios for younger children in Pediatric Safe Area; utilize security staff to ensure children do not wander into other areas of the hospital.	○ Consider developing a family reunification team—consisting of both hospital personnel and community partners—that could provide assistance to impacted hospitals in your region.

	can assist with reunification (law enforcement, educators). Please see **Family Reunification Following Disasters: A Planning Tool for Health Care Facilities** for a description of these areas.		Pediatric Safe Area.

PPP – Tracking/Reunification

Other reunification resources:

1. AAP Disaster Preparedness Reunification Toolkit: https://downloads.aap.org/AAP/PDF/AAP%20Reunification%20Toolkit.pdf
2. Federal Emegency Management Agency (FEMA) Ready Campaign. (2013). Post-Disaster Reunification of Children: A Nationwide Approach. Retrieved from https://www.ready.gov/sites/default/files/2019-06/post_disaster_reunification_of_children.pdf
3. The US Department of Health & Human Services, Office of the Assistant Secretary for Preparedness and Response, & Technical Resources,Assistance Center, and Information Exchange (TRACIE),. (2015). Topic Collection: Family Reunification and Support. Retrieved from https://asprtracie.hhs.gov/technical-resources/64/family-reunification-and-support/0

PPP – Drills

RECOMMENDED ACTIVITY	FOUNDATION	INTERMEDIATE	ADVANCED
Exercises & Drills	○ Implement annual institution-wide disaster training exercises incorporating pediatric patients. ○ Train staff on location and use of pediatric-specific evacuation equipment and conduct surge exercises with evacuation components. ○ Ensure transfer agreements and protocols have been established within the regional coalition and include communication between institutions in drills.	○ Establish triage protocols and training to identify patients to be considered for immediate transfer (critically ill/injured or those sufficiently stable to move to another care center). ○ Practice transferring patients with appropriate pediatric specific equipment and personnel.	○ Establish a pediatric care-review process (Process Improvement, Quality Improvement, After Action Report, Corrective Action Plans, etc.) into disaster drills. ○ Lead regional disaster drills that include pediatric evacuation capabilities that test both receiving patients and evacuating your facility to other centers. ○ Incorporate lessons learned, after action reports, and improvement plans from exercises into future disaster planning.
Training	○ Ensure disaster drills incorporate pediatric patients (especially infants and toddlers) in order to test the system's ability to handle a surge in or evacuation of a variety of pediatric patients (high acuity, infants, CYSHCN).	○ Determine and plan for pediatric-specific staffing needs during a disaster scenario including: • Identification of pediatric-focused staff to champion pediatric disaster care. • Staff predetermined to be appropriate to accompany unaccompanied minors. ○ Ensure disaster drills incorporate "just-in-time" training specific to pediatrics (review of pediatric triage, age-specific vital signs, unaccompanied minors).	○ Develop curriculum and training opportunities that address gaps and increase skills specific to pediatric patients, ensure key staff access training at least annually. ○ Develop just-in-time training on the use of pediatric-specific evacuation equipment that can be used by both your facility and others within your region. ○ Utilize EMSC state manager for additional resources.

PPP – Drills

1. Advocate Health Care, & Advocate Good Shepherd Hosptial. (2013). Pediatric Disaster Drills. Retrieved from https://www.youtube.com/watch?v=kAOFWxK-RoE
2. American Academy of Pediatrics. (2019). Pediatric Tabletop Exercise Resource Kit: https://www.aap.org/en/patient-care/disasters-and-children/pediatric-tabletop-exercise-resource-kit/
3. Ballow, S., Behar, S., Claudius, I., Stevenson, K., Neches, R., & Upperman, J. S. (2008). Hospital-based disaster preparedness for pediatric patients: how to design a realistic set of drill victims. American journal of disaster medicine, 3(3), 171-180. Retrieved from https://pubmed.ncbi.nlm.nih.gov/18666514/
4. EMSC Innovation & Improvement Center. Pediatric Disaster Preparedness Toolkit -Training Resources & Courses. Retrieved from https://emscimprovement.center/education-and-resources/toolkits/pediatric-disaster-preparedness-toolbox/
5. Federal Emergency Management Agency, & Institute of Emergency Management. (2015). IS-366.1: Planning for the Needs of Children in Disasters. In Federal Emergency Management Agency | Emergency Management Institute https://emilms.fema.gov/is_0366a/curriculum/1.html
6. Illinois Emergency Medical Services for Children Program. (2016). Addressing the Needs of Children in Disaster Preparedness Exercises 2nd Edition. Retrieved from https://www.luriechildrens.org/globalassets/documents/emsc/disaster/other/addressingneedschildrenindisaterprepexercisessept-2016l5.pdf

PPP – Surge Capacity

RECOMMENDED ACTIVITY	FOUNDATION	INTERMEDIATE	ADVANCED
General Surge Planning	○ Identify and continue to augment baseline pediatric capabilities:	○ Establish a plan for caring for sick/ more complex pediatric patients as part	○ Lead coordination efforts across the region regarding pediatric patient
RECOMMENDED ACTIVITY	**FOUNDATION**	**INTERMEDIATE**	**ADVANCED**
Equipment & Supplies	○ Ensure institution has adequate pediatric-sized equipment, dietary supplies, diapers, and medications to manage pediatric patients. ○ Investigate ability to utilize non-pediatric equipment, supplies, and medications for pediatric use and develop institutional guidelines to do so. ○ Engage with supply chain management and sterile processing staff to ensure enough supply to meet needs for prolonged patient stays in your facility when transfer is not immediately possible (shelter in place).	○ Engage with supply chain management staff to track usage of pediatric supplies and medications.	○ Create pediatric supply carts and/or kits that can easily be deployed to areas in need. ○ Establish plans to secure sufficient quantities of key equipment to meet surge targets (pediatric-capable ventilators) through vendor agreements, MOUs with adjacent pediatric centers as well as local and federal government agencies.
Staff	○ Develop a process to bring in additional staff including emergency credentialing, verification, and background checking. ○ Ensure current staff is trained in pediatric disaster response, including surge capabilities. ○ Develop plans to most efficiently utilize new staff, including staff to secure expanded care areas, oversight of unattended minors, and family reunification. ○ Consider utilizing adult care takers and locations especially for older children.	○ Develop an institution-wide emergency notification system to mobilize current staff during a surge. ○ Identify and create formal relationships with additional staff that can help meet pediatric needs: • Within the hospital (nursing, physician, respiratory therapy, pharmacy). • Within the community (family medicine, school nurses, local EMS, medical reserve corps).	○ Leverage staff expertise to increase to surge targets (tiered staffing models). ○ Consider Memorandum of Understanding (MOU) or other agreements to support adjacent regional pediatric centers (telemedicine, phone consultation, Disaster Medical Assistance Teams). ○ Establish a mission control center to coordinate response and provide leadership to regional healthcare centers. ○ Consider how critical care transport teams and other key hospital functional areas can provide mutual support.
	public.		

RECOMMENDED ACTIVITY	FOUNDATION	INTERMEDIATE	ADVANCED
Pediatric mental health evaluation and triage capabilities	○ Provide basic pediatric screening training to all triage staff. ○ Establish protocols to ensure qualified behavioral health staff's availability to assist in assessment of behavioral health needs and screening in a disaster (by phone or telehealth consultation). ○ Identify referral sites for evaluation of children with behavioral health emergencies that do not require hospitalization.	○ Establish protocols to identify specific in-house staff trained and qualified to conduct pediatric-specific secondary behavioral health screening to identify when higher level or emergency behavioral health services are indicated.	○ Create and disseminate educational materials to prepare all triage staff in the hospital to understand and conduct pediatric-specific secondary behavioral health screening to identify when higher level or emergency behavioral health services are indicated. ○ Lead advocacy efforts to create and disseminate acute pediatric-specific mental health evaluation resources that are available to all regional healthcare facilities.
Death notification and bereavement support	○ Establish a process for providing clinical guidance on death notification for children and support for grieving children and families. ○ Ensure that resources are readily available and that clinical staff are aware of these resources.	○ Establish processes for behavioral health professionals (social workers, religious services or community-based professionals) with expertise in death notification involving children to be available on-call to assist with notification and to provide acute and ongoing support to grieving children and families as well as community healthcare practitioners.	○ Develop protocols to ensure behavioral health professionals are in house or readily available to support pediatric death notification and can provide ongoing support for grieving children who are hospitalized. ○ Ensure behavioral health professionals have expertise in evaluation and support for sub-populations of children (e.g., intellectual, and neurodevelopmental disabilities, pre-existing mental illness, etc.).
Policies and strategies to reduce unnecessary exposure to disaster-related sensitive stimuli	○ Establish specific rooms/areas in the ED and inpatient units with ability to reduce exposure (curtains) to injured or upset patients and families.	○ Ensure all rooms in ED are designed to meet these requirements.	○ Ensure that there are designated areas in the hospital to have crucial conversations with families and allow families to grieve in private.

PPP - Special healthcare needs

RECOMMENDED ACTIVITY	FOUNDATION	INTERMEDIATE	ADVANCED
Planning	O Identify content experts and partners skilled in caring for CYSHCN in your community (caretakers, community pediatricians, developmental-behavioral pediatricians, home health agencies, parent support organizations). O Anticipate and incorporate the needs of CYSHCN in your community and plan for their initial care during a disaster (consider estimating the number of patients with specific needs to ensure they can be cared for in a disaster).	O Develop relationships with state and regional planning agencies to identify regional sheltering opportunities for CYSHCN. O Strategize with patients, families, Public Health and Public Safety officials to create a plan to keep CYSHCN who are dependent on water, power, or technology from needing hospitalization to support their baseline needs during a disaster. O Collaborate with local advocacy groups and community partners to ensure that children with developmental disabilities or technology dependence are considered in all aspects of disaster preparedness, including in emergency shelters.	O Identify the hospitals closest to your institution's more fragile patients and create a coordinated plan for their care during a disaster scenario. O Disseminate best practices regarding preparedness for families of CYSHCN via their medical homes embedded in your institution (complex care clinic). O Create a robust system for remote support of non-pediatric hospitals in the care of CYSHCN. O Lead advocacy efforts for state- and region-level planning to provide appropriate sheltering operations for CYSHCN during a disaster.
Equipment, supplies and medications required	O Identify equipment, supply and medication needs (ventilators, suction, oxygen) for CYSHCN in your community that may be required in your hospital in the event of a crisis. O Establish protocols with local EMS agencies to ensure CYSHCN are transported with all their medications and equipment (backup tracheostomy tubes, power cords for vents). O Coordinate with local durable medical equipment companies to develop a process for securing essential equipment during a disaster.	O Develop plans to obtain specialized equipment (wheelchairs, pediatric-capable ventilators, pediatric feeding tubes, pediatric suction catheters, tracheostomy, portable source of electricity, etc.) or MOUs to meet the needs of CYSHCN in a prolonged disaster scenario.	O Have advanced pediatric resources on site and a plan to distrubute them to enable continued care of CYSHCN at regional centers.

PPP – CYSHCN Resources

1. AAP, Committee on Pediatric Emergency Medicine, etc. Emergency Information Forms and Emergency Preparedness for Children With Special Health Care Needs: **https://publications.aap.org/pediatrics/article-pdf/125/4/829/895276/zpe00410000829.pdf**
2. EMSC Innovation & Improvement Center. (2021a). Be Ready: Tips for Families of Children and Youth with Special Healthcare Needs.
https://emscimprovement.center/domains/preparedness/asprcoe/eglpcdr/cyshcn/toolkit/beready/
3. EMSC Innovation & Improvement Center. (2021b). Disaster and Families of Children with Disabilities: What Every Health Care Provider Needs to Know.
https://emscimprovement.center/domains/preparedness/asprcoe/eglpcdr/cyshcn/toolkit/need_to_know/
4. National Academy for State Health Policy. (2020). National Care Coordination Standards for Children and Youth with Special Health Care Needs. Retrieved from
https://www.lpfch.org/sites/default/files/field/publications/national_care_coordination_standards_for_cyshcn.pdf
5. National Association of County and City Health Officials, & Association of State and Territorial Health, Officials. Capacity-Building Toolkit for including Aging & Disability Networks in Emergency Planning. Retrieved from **https://www.naccho.org/uploads/downloadable-resources/NACCHO_Aging-and-Functional-Needs-Planning-FINAL.pdf**

PPP – Transfers

RECOMMENDED ACTIVITY	FOUNDATION	INTERMEDIATE	ADVANCED
Plan	○ Identify both facility-wide and/or unit-based triggers or metrics to indicate the need to evacuate patients, ensuring there is regional knowledge of pediatric bed space and interfacility transfer guidelines. ○ Formalize agreements with regional	○ Develop a plan to evacuate specialized pediatric patients, including those who are unaccompanied. ○ Develop a plan to evacuate children with special equipment and/or behavioral needs. This includes long-term care facilities with pediatric patients.	○ Lead regional evacuation planning in coordination with local healthcare facilities, governmental, and federal agencies. ○ Develop plans to assist in evacuation of non-pediatric centers and absorb those evacuated from other centers.

RECOMMENDED ACTIVITY	FOUNDATION	INTERMEDIATE	ADVANCED
Transport services	○ Utilize a systematic approach to identify pediatric transport needs (TRAIN® matrix).	○ Create a transport team that can assist in regional evacuation efforts with specific training and capability to transport pediatric patients (ALS crew, Critical Care Transport, etc.).	○ Create or enhance your institution's regional transport services especially with consideration to specialized pediatric patients (critical care, ECMO, etc.) ○ Develop a strategy to leverage your pediatric critical care transport resources/expertise to augment regional transport services (embedding a critical care transport nurse from your facility into another agency's ambulance/ helicopter). ○ Lead efforts to coordinate the activities of regional transport capabilities together with the appropriate regional authorities. ○ Engage other regional authorities (air transport) for assistance in transporting patients from your center.

PPP – Transfer Resources

1. EMSC EIIC Interfacility Transfer Toolkit: https://emscimprovement.center/education-and-resources/toolkits/interfacility-transfer-toolbox/
2. Child Life Disaster Relief. (2021). Retrieved from https://cldisasterrelief.org/
3. Federal Emergency Management Agency (FEMA). (2009). Evacuating the Special Needs Population. Retrieved from https://training.fema.gov/programs/emischool/el361toolkit/assets/evacuatingspecialneedspopulation.pdf
4. Hospital, Lucile Packard Children's. (2022). Preplanning Disaster Triage for Pediatric Hospitals. TRAIN Toolkit. Retrieved from http://cdphready.org/wp-content/uploads/2015/06/TRAIN-Toolkit-Triaging-by-Resource-Allocation-for-Inpatients.pdf

An important resource: your Children's Hospital

Hospital	Location	Capabilities
American Family Children's Hospital	HERC 5 (South Central) 600 Highland Ave Madison, WI 53792	Level I Trauma Center Pediatric Burn Center PICU NICU
Children's Wisconsin	HERC 7 (Southeast) 9000 W Wisconsin Ave Milwaukee, WI 53226	Level I Trauma Center Pediatric Burn Center PICU NICU
Marshfield Medical Center	HERC 2 (North Central) 611 N Saint Joseph Ave Marshfield, WI 54449	Level II Trauma Center PICU NICU

Thank you!

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Additional Resources

AAP Disaster Preparedness Overview
- Disaster Resources by Topic
- Other Disaster Preparedness Resources

Region V For Kids
- Main Site
- Disaster Education

WI DHS Pediatric Medical Surge Plan
MN DHS Pediatric Surge Toolkit

Questions?