WRAP-EM

Western Regional Alliance for Pediatric Emergency Management

Hospital Evacuation Guide for *Pediatric Patients*

April 2025

Disclaimer and Acknowledgements

This manual was developed by the Western Regional Alliance for Pediatric Emergency Management (WRAP-EM). Final Version Completed January 2025. This guide is intended for planning and educational purposes only.

The document presents evidenced-based approaches for facility evacuations. In most emergencies, a full evacuation of a hospital will not be required. Hospitals are required to have plans for 1) partial evacuation - relocate patients from one area of the facility to another, and 2) complete evacuation – remove patients from the facility entirely. Clinical management should be adapted to meet the needs of individual patients and situations. This document contains additional resources and is intended to function as an offline document in case of limited or no web access.

Research reported in this publication was supported by the Department of Health and Human Services Administration for Strategic Preparedness and Response under award number 6 U3REP190616-01-11. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Department of Health and Human Services Administration for Strategic Preparedness and Response.

Development of this Guide

This guide was developed with expertise and support from a broad spectrum of contributors including pediatric intensivists, neonatologists, pediatric hospitalists, emergency medicine physicians, pharmacists, healthcare response specialists, and emergency managers across multiple states. Through an iterative development process, contributors provided insights, resources, and recommendations designed to assist organizations and systems with admitted pediatric patients responding to emergencies resulting in partial or complete hospital evacuation.

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Special thanks to Suzy Fitzgerald, M.D., and Gary McCalla, M.D., for their support in the early development of this project.

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Introduction

The evacuation of a hospital, all or part, is one of the most challenging disaster scenarios a healthcare facility can face. While historically rare, these events have become increasingly common in recent years due to extreme weather, wildfires, and other disasters. The core of the challenge is the obvious: the need to stay in place as long as it is safe and appropriate, and yet still be able to mobilize instantly to evacuate within a safe and appropriate timeframe. When hospitalized children or infants need evacuation, these challenges are intensified. Specialized pediatric needs must be considered: unique care, equipment, and transport, planning for parents and caregivers, and the capacity and capability of receiving sites. Pediatric specific resources to address those specialized concerns are always in shorter supply than for adult patients. Whether drilling or executing an evacuation with pediatric patients, these challenges are often so overwhelming that there may be frustration with or uncertainty about how to begin planning for this type of event.

Numerous resources to help a facility prepare for, drill, or execute an evacuation already exist (including toolkits and checklists from federal disaster support infrastructure, such as the National Incident Management System [NIMS] / Hospital Incident Command System [HICS] programs). These resources provide key elements hospitals should review as foundational information for an evacuations program. Additionally, the challenging questions of “when, how, and where” a hospital evacuation takes place is not solely the responsibility of hospital leadership. These decisions involve communication and collaboration with local, state, or federal emergency management command infrastructure. Established plans and policies delineate the process of these collaborations and access to available resources. Knowing the local processes and players is crucial to creating successful plans and drills, and the guidelines described here should be interpreted through the lens of local context.

Project aim: Identify issues unique to pediatric patient evacuation.

Project scope: Facilities-level planning for pediatric patient evacuation including practical perspectives for an actual event and guidance for evacuation preparedness and exercises.

Operational Framework

Key assumption: With the primary aim being to identify hospital evacuation issues unique to pediatric patients, there is an assumption that readers already have a basic knowledge of emergency management and general hospital evacuation concepts. This guide will not focus on general hospital evacuation issues, that may be equally important, as they are covered elsewhere.

Primary audience: Community hospitals that admit some children but may not have access to some pediatric resources helpful for evacuation or may be less familiar with pediatric systems.

Secondary audience: Pediatric centers that admit many children but may lack access to sufficient pediatric transport resources or partner facilities with pediatric capabilities in order to evacuate a large number of complex pediatric patients.

Background and Rationale

While children make up about one-fourth of the United States (US) population, neonatal and pediatric critical care beds account for only 3% of all hospital beds (American Hospital Association, 2021) and children's hospitals comprise only about 5% of all hospitals (Children's Hospital Association, n.d.). This has resulted in the concentration of most pediatric care, especially subspecialty and surgical, at children's hospitals with large catchment areas which often cross state lines. **Any evacuation of a children's hospital would have regional and likely national impacts, thus requiring regional coordination at a minimum**. To facilitate this coordination, it is important to understand the resource needs of hospitalized infants and children to appropriately allocate required resources.

Once rare events, hospital evacuations are more frequent due to extreme weather, wildfires, and other disasters. Lessons learned from several recent hospital evacuations in the US show advance preparation and training is essential for safe, orderly evacuations. Hospitalized neonatal and pediatric patients pose particular evacuation challenges as they may require specialized care and equipment during transport, as well as receiving hospitals with neonatal / pediatric capabilities (Espiritu et al., 2014).

For community hospitals, pediatric patient movement poses additional challenges. For example, some children cannot be moved securely in adult-size sleds and have different transport needs. Neonates often require temperature maintenance methods which may require specialized equipment. Pediatric respiratory care requires collaboration with the respiratory care department and local transport agencies as

mechanically-ventilated pediatric patients are at higher risk for accidental extubation, pediatric or neonatal-specific ventilators may be required to deliver appropriate pressures/volumes, and pediatric high-flow nasal cannula devices may not be available for transport.

For large regional pediatric centers, evacuation of many complex pediatric patients would stress the pediatric capacity of local transport agencies and transfer centers. Evacuation planning must incorporate regional load-leveling plans for both transport and bed placement, with the support of local agencies such as Emergency Medical Services (EMS), healthcare coalitions, city/county partners and potentially medical operations coordinating centers (MOCCs) (ASPR, 2024).

Stages of Evacuation

Not unique to pediatrics, the stages of evacuation include:

1) Pre-Evacuation

2) Evacuation

3) Post-Evacuation

4) Recovery

Just as with evacuating adult patients, general HICS hospital evacuation planning resources should be referenced. HICS provides an Incident Planning Guide for Evacuation, Shelter-in-Place, & Hospital Abandonment (California Emergency Medical Services Authority (EMSA), 2017). Many hospitals and public health entities have created their own general hospital evacuation resources and toolkits that can be referenced such as the *MDPH Hospital Evacuation Toolkit* (Harvard School of Public Health, 2014).

However, unique pediatric elements may warrant specific consideration along each stage of evacuation. Some common pediatric considerations are detailed below.

Distribution of and access to pediatric transport assets and pediatric bedspaces differ greatly region by region. These differences require locally tailored preparation for pediatric evacuation with unique focus on elements that impact their own pediatric resource availability and limitations. Thus, the relevance of the pediatric considerations included here will also vary regionally.

Pre-Evacuation Stage: Pre-evacuation is the stage when hospital evacuation is becoming likely and preparation to evacuate is indicated. This stage may last minutes to hours to days, depending on the type and timeline of the disaster.

Pre-Evacuation Pediatric Checklist:

- ☐ Determine how long the evacuation will take to be completed. Based on this timeline, establish timing and triggers to guide the decision to evacuate.
- ☐ Pre-identify specific pediatric transport needs. It often requires more time to identify and procure pediatric transport and bed spaces as compared to adult resources.
- ☐ Determine the priority levels of pediatric patients for evacuation.
- ☐ Identify special needs and resources for pediatric patients being evacuated, including mental health support.
- ☐ Confirm if parent/guardian is present or reachable, and if they need and/or can be moved with the child.
- ☐ Ensure clear process in place for children without parent/guardian contact.
- ☐ Ensure children who are medically discharged have access to a safe home and necessary resources.
- ☐ Consider arranging supplemental medications, total parenteral nutrition (TPN), specialized feedings, and other necessary specialty care items to be transported with the patient as it may take some time for the receiving facility to prepare these supplies.

Evacuation Stage: The evacuation stage starts when hospital evacuation has been ordered and ends when all hospital patients, visitors, physicians, and other personnel have been cleared from the facility.

Evacuation Pediatric Checklist:

- ☐ Determine pediatric transportation resources and capabilities needed for each patient.
- ☐ Coordinate transportation and determine if pediatric transport subject matter expert (SME) input is needed if coordinated by a general EMS entity.
- ☐ There are pediatric developmental and safety issues that may need to be considered prior to deciding on non-traditional modes of transport (such as transporting ambulatory patients in a bus).
- ☐ Identify the level of pediatric or neonatal care required at the receiving facility for each patient.
- ☐ Confirm a pediatric SME is assisting HICS Unified Command as well as any regional response structure to assist with pediatric placement and needs.

- ☐ For pediatric tracking, parent/guardian names and contacts must be documented in the tracking record, and parent/guardian should be provided with all unique patient tracking information to ensure reunification.
- ☐ Communicate effectively with patients, families, and the public.

Post-Evacuation Stage: Post-evacuation is the stage immediately following completion of evacuation until completion of patient tracking and family reunification.

Post-Evacuation Pediatric Checklist:

- ☐ Complete tracking all patients, physicians, and staff.
- ☐ Work with receiving hospitals to determine if there are immediate patient supplies, equipment or staff needed to support ongoing care. Implement family reunification plan for pediatric patients in collaboration with community partners.
- ☐ Assess patient, family, and staff mental and behavioral health following an evacuation and connect affected individuals to resources, possibly through regional partners.

Recovery Stage: The Recovery Stage lasts until the evacuated hospital is reopened. Few pediatric-specific considerations exist during this stage. Refer to general HICS evacuation references for more general activities.

Recovery Pediatric Checklist:

- ☐ Document lessons learned and best practices to inform future evacuation planning and response activities.
- ☐ Include assessments of how well pediatric needs were addressed throughout the evacuation stages.
- ☐ Assess returning staff, pediatric patients and parent/guardians' experiences with the evacuation.

Education, Training, and Exercises

General Evacuation Education, Training, and Exercises

Multidisciplinary interprofessional evacuation education and training for staff, nurses, physicians, and administrators is an essential part of hospital evacuation preparedness. General education and training on HICS are also required to meet regulatory requirements and provide a solid foundation in emergency management concepts. HICS concepts should be integrated into all evacuation education and training. Also, exercising with tabletops and simulations with regional partners can validate assumptions and operational models while building individual, organizational, and

system level capabilities. Include enough children in these exercises to stress the system and, ideally, a proportion of youth that would be seen within the community (i.e., 25% of the impacted population).

General HICS training and educational resources can be found here:

California Hospital Association - Hospital Incident Command Center (HICS) Training

Hospital Incident Command System Current Guidebook and Appendices

Pediatric-Specific Educational Elements

Unfortunately, essential pediatric elements are often not specified in HICS training. That can result in some pediatric evacuation issues not being addressed fully. It is recommended that community hospitals identify a Pediatric Medical/Technical Specialist within the HICS structure at their facility (see HICS section below) and ensure they are versed in HICS and hospital evacuation. Every hospital that houses any pediatric or neonatal inpatients, it is recommended they place special focus on pediatric evacuation resources, systems, and communication when planning for evacuation.

Pediatric-specific evacuation education and training resources can be found here:

National Pediatric Conference Significant Event Readiness (2022 Mass Evacuation After Action)

NICU Evacuation Guide 2009 (EMSC Illinois ad IDPH)

Safe Transport of Children (NASEMSO)

NHTSA Hospital Discharge Recommendation for Safe Transport of Children

Community Hospital Educational Support

Some healthcare coalitions offer pediatric evacuation training opportunities, and those relationships should be leveraged to support community hospitals that care for children. Additionally, some pediatric courses have special applicability to the community hospital preparing for pediatric evacuation, either as a sending or receiving hospital.

Course appliable to preparing for pediatric evacuation can be found here:

Pediatric Fundamental Critical Care Support (PFCCS) course on the basics of pediatric critical care

Hospital Incident Command Integration

It is imperative that all staff involved with pediatric care be actively engaged in disaster preparedness and response, including participation and representation in HICS. A rapid large event, such as a hospital evacuation, requires a large multidisciplinary effort by hospital staff (hospital administration, physicians, nurses, allied health professionals, technicians, etc.) that have little knowledge of or training in HICS.

What is HICS?

The Hospital Incident Command System (HICS) is the specialized hospital version of the Incident Command System (ICS) that is compliant with the National Incident Management System (NIMS). Most local, state, regional and federal agencies use NIMS and ICS to manage a community's response to disasters. HICS integrates well with ICS because it is based on the same structure and organizes disaster response under the sections of Command, Operations, Planning, Logistics and Finance. Patient Care falls under and reports to the Operations Section in HICS under the Medical Care Branch.

Who from pediatrics should be involved with HICS?

Pediatric medical leaders and experts must be integrated within the HICS structure both prior to and during a hospital evacuation including pediatric patients. Engagement is especially vital for pediatric and neonatal critical care leaders given the critical nature of these patients and increased risk and complexity of pediatric transport that could lead to immediate pediatric mortality risk.

What role should pediatrics play in HICS?

Pediatric experts should serve as **Medical/Technical Specialist** reporting to the Incident Commander, or to the Operations or Planning Sections. The Pediatric Medical/Technical Specialist could be located within the Hospital Command Center to help facilitate matching of evacuating pediatric patients to potential receiving hospitals and transport assets. These Medical/Technical Specialists should be trained in HICS, their role, and reporting structure.

An example Job Action Sheet for a Medical/Technical Specialist is available from the California Emergency Medical Services Authority:

Medical-Technical Specialist: Pediatric Care Job Action Sheet

How to integrate Neonatal Intensive Care Unit (NICU) and Pediatric Intensive Care Unit (PICU) with HICS?

The American College of Chest Physicians (ACCP) 2014 Mass Critical Care Taskforce recommended designation of a **Critical Care Team Leader (CCTL)** during an impending evacuation to provide close coordination and support of intensive care unit (ICU) evacuation preparations (King et al., 2014). The CCTL is responsible for: 1) categorizing ICU patients by ICU resource and transport requirements needed, and 2) communicating ICU resource and transport requirements under the Operations Section - Medical Care Branch within the Hospital Incident Command. As seen in *Figure 1*, this position would also interface with the Pediatric Medical/Technical Specialists.

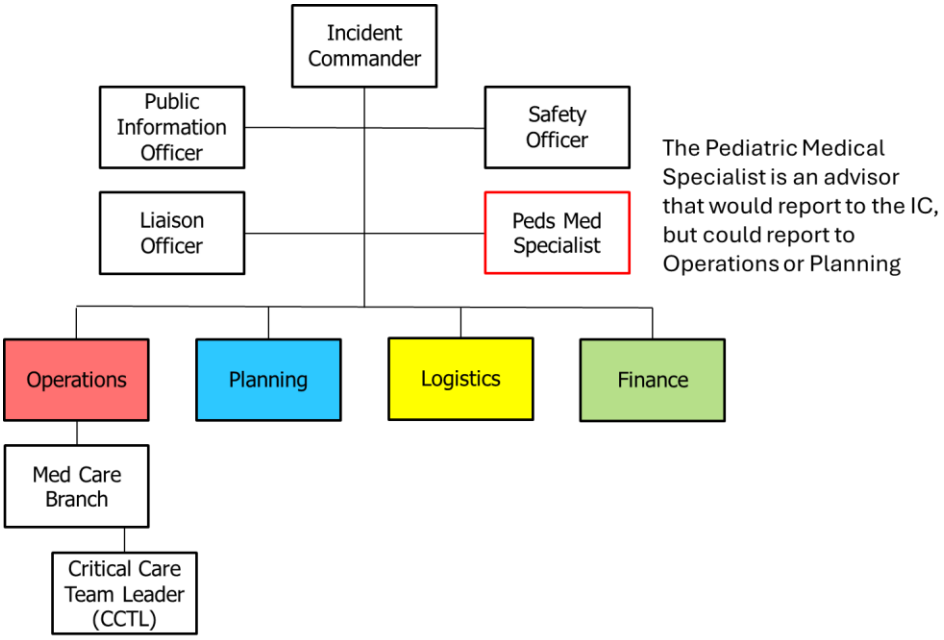


Figure 1 - Adapted from the HICS Organizational Chart

The designation of both a NICU and a PICU CCTL is recommended as their ICU resource and transport needs are often quite distinct. See the description below of Pediatric Levels (which categorize patient by hospital resource) and TRAIN® (which categorizes patient by transport resource requirement). Both Pediatric Levels and TRAIN® are useful tools to accomplish NICU and PICU CCTL categorization duties in one unified system.

Although not all hospitalized pediatric patients are critically ill, these same concepts can be used to integrate evacuation of pediatric general ward patients with HICS (as a Pediatric Team Leader [PedsTL]). The NICU and PICU CCTLs and PedsTLs will all serve as points of communication through the Operations Section, between Incident Command and the NICU, PICU, and pediatric ward areas. These roles can be a conduit

for requesting personnel and/or assistance for various tasks associated with pediatric patient evacuation.

Activation and Timing of Evacuation

In general, the safest place to continue care of complex and unstable patients is within the hospital. A full evacuation out of the hospital should only be considered when the infrastructure of the hospital is, or is anticipated to be, so damaged it poses a direct threat to patients, visitors, and staff. In fact, moving patients from one part of the hospital to another may be the safest plan. Any widespread patient movement within or out of a hospital requires centralized coordination through HICS. No individual unit should evacuate without a directive from a hospital leader authorized to do so or the Incident Commander. The key objective is to maintain safety of patients, visitors, and staff.

To assist with the decision to activate an evacuation plan, triggers must be pre-identified and take into consideration:

- Risk of patient movement versus non-movement.
- Urgency and imminent need with which evacuation must take place (fire/bomb threat vs hurricane vs impending generator failure).
- Time and resources needed to evacuate patients, visitors, and staff.

An example of a hospital evacuation planning toolkit is available from Harvard School of Public Health (Harvard School of Public Health, 2014).

Pediatric Transport Checklist for Timing of Evacuation:

- ☐ Determine availability of transport assets for evacuation or secondary transport.
    - Identify if there is potential competition for transport resources and/or if access is regionally coordinated.
    - Establish the time required to mobilize transport assets, if available.
- ☐ Identify the pediatric capabilities of EMS. *
- ☐ Determine if staff will need to accompany patients and establish how to track and repatriate staff who assist with patient transport and ongoing care.
- ☐ Verify if transport vehicles are compatible with the life support systems needed to keep pediatric patients safe.
- ☐ Identify any equipment required to send with transport for continuing safe care of pediatric patients and establish how to track and repatriate the equipment.
- ☐ Determine the duration of transport.

Bed Placement Checklist for Timing of Evacuation:

- ☐ Identify hospitals capable of receiving pediatric patients. *
- ☐ Consider increasing pediatric capability with expertise, staff, or equipment at receiving hospitals, if necessary. *
- ☐ Confirm regional and state plans for pediatric placement coordination support. *
- ☐ Establish if centralized pediatric patient placement coordination and movement is required at a local, state, regional, or national level.

* *These items should be performed as part of day-to-day pediatric evacuation preparedness, often in concert with regional partners such as healthcare coalitions (HCCs). Pre-identified resources can then be verified and built upon during an event.*

Regional Coordination

There are specific needs, resources, and information required for handling pediatric patients in the evacuation of a facility or jurisdiction. These pediatric considerations must be planned and coordinated through existing response and emergency management structures.

Planning and response: Partner with Healthcare Coalitions and/or Emergency Support Function #8

Jurisdictions, including public health agencies, emergency management, EMS, and healthcare coalitions (HCCs), support the healthcare delivery system. HCCs' authority depends on local member organizations and jurisdictional agencies, so their roles may vary. They may provide situational awareness, communications, pediatric bed availability, technical assistance, and/or resource coordination including pediatric support (access to pediatric subject matter experts, contacts at regional pediatric hospitals, details of transport capacity, etc.). If a HCC does not have an operational role in supporting evacuation, it is likely the local or state Emergency Support Function (ESF) #8 entity has defined healthcare surge management functions as part of the jurisdictional emergency operations plan.

Hospitals and healthcare systems should collaborate with their coalitions and regional partners to establish Memorandums of Understanding (MOU) or Agreements (MOA) for resource sharing and patient transfers in case of emergencies. They should also require emergency plans from suppliers and establish backup agreements to address specific pediatric considerations.

Some regions have formalized regional coordination for pediatric surge in the form of a Pediatric medical operations coordinating center (MOCC) such as the recent

Tripledemic RSV Surge of 2022 (Mitchell et al., 2023). Federal guidance on including pediatric consideration when establishing a MOCC can be found in the ASPR Medical Operations Coordination Centers Toolkit (ASPR, 2024). It remains unclear what role a MOCC may play in evacuation and each state may specify different regional organizing bodies to support evacuation.

Large evacuations: Shift to Unified Command

In large-scale events, Unified Command may include key agencies and evacuating hospitals making shared decisions. The Emergency Operations Center (EOC) and EMS agencies may assess and coordinate bed availability, patient movement, and transport coordination. The "TRAIN® model" may be used to assess patient needs, transport priorities, and resources.

Pediatric expertise: Support with Pediatric SMEs

Pediatric subject matter experts (SMEs) may advise HCCs, HICS, and Unified Command on hospital evacuations, helping prioritize pediatric needs. Efficient resource coordination is essential to provide appropriate care during evacuations. Evacuations can be emergent (quick response) or planned (phased for impending emergencies like wildfires or floods). The EOC Medical/Health Branch and EMS play a pivotal role in coordinating patient movement, resource allocation, communications, and situational awareness during hospital evacuations. Pediatric SMEs may also support governmental efforts by providing expertise to inform government incident response operations and policy decisions via the Technical Specialist Role.

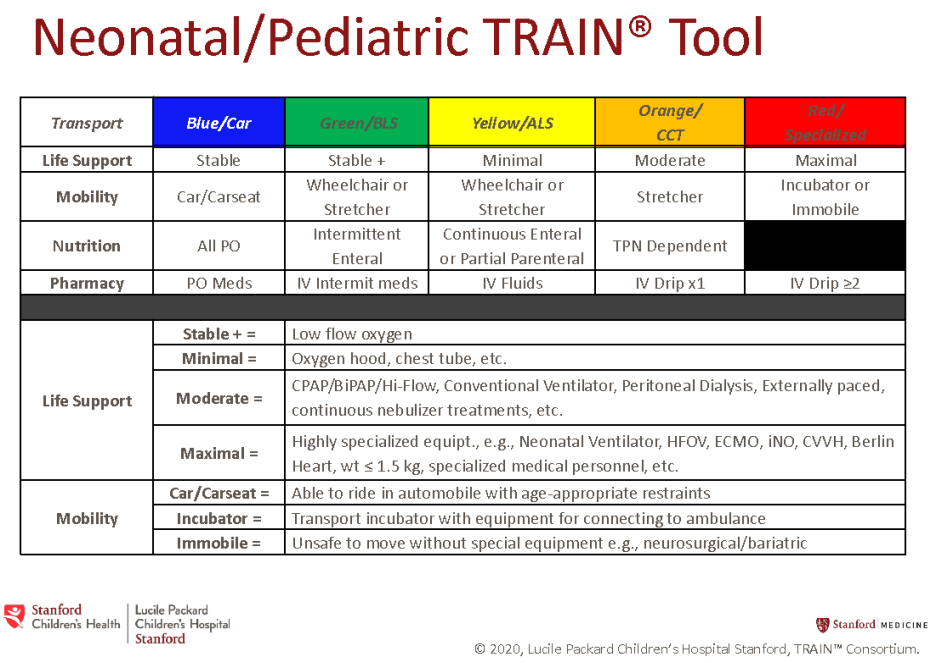
Patient Distribution & Resource Matching

Pediatric patient needs can be specialized and may require unique capabilities for both transport and receiving hospitals. The following tools identify patient needs quickly in the setting of evacuation and standard terminology for Pediatric Levels of Care can ensure successful coordination to receiving hospitals.

TRAIN® Tool

An event incapacitating a single major pediatric center would immediately be a regional disaster (Cohen et al., 2010). Any such event would therefore require regional cooperation and collaboration to move patients between hospitals. There is a need for a common regional system to help facilitate such a process. The TRAIN® Tool can be used to identify appropriate transport resources for the evacuation of neonatal, pediatric, and obstetric inpatients (Lin et al., 2018). Of note, the TRAIN® Tool uses a simple resource-based system for defining transport levels based on life support, mobility, nutrition, and pharmacy needs of patients. This tool can be used manually or

integrated into an electronic health record for automated unit-based and hospital-wide reports which can be generated in less than a minute. An example of the TRAIN® Tool is shown in *Figure 2*. Visit Stanford Medicine Children's Health for more details regarding the TRAIN® Tool.



Neonatal/Pediatric TRAIN® Tool

Transport	Blue/Car	Green/BLS	Yellow/ALS	Orange/ CCT	Red/ Specialized
Life Support	Stable	Stable +	Minimal	Moderate	Maximal
Mobility	Car/Carseat	Wheelchair or Stretcher	Wheelchair or Stretcher	Stretcher	Incubator or Immobile
Nutrition	All PO	Intermittent Enteral	Continuous Enteral or Partial Parenteral	TPN Dependent	
Pharmacy	PO Meds	IV Intermit meds	IV Fluids	IV Drip x1	IV Drip ≥2

Life Support	Stable + =	Low flow oxygen
	Minimal =	Oxygen hood, chest tube, etc.
	Moderate =	CPAP/BiPAP/Hi-Flow, Conventional Ventilator, Peritoneal Dialysis, Externally paced, continuous nebulizer treatments, etc.
	Maximal =	Highly specialized equipt., e.g., Neonatal Ventilator, HFOV, ECMO, iNO, CVVH, Berlin Heart, wt ≤ 1.5 kg, specialized medical personnel, etc.
Mobility	Car/Carseat =	Able to ride in automobile with age-appropriate restraints
	Incubator =	Transport incubator with equipment for connecting to ambulance
	Immobile =	Unsafe to move without special equipment e.g., neurosurgical/bariatric

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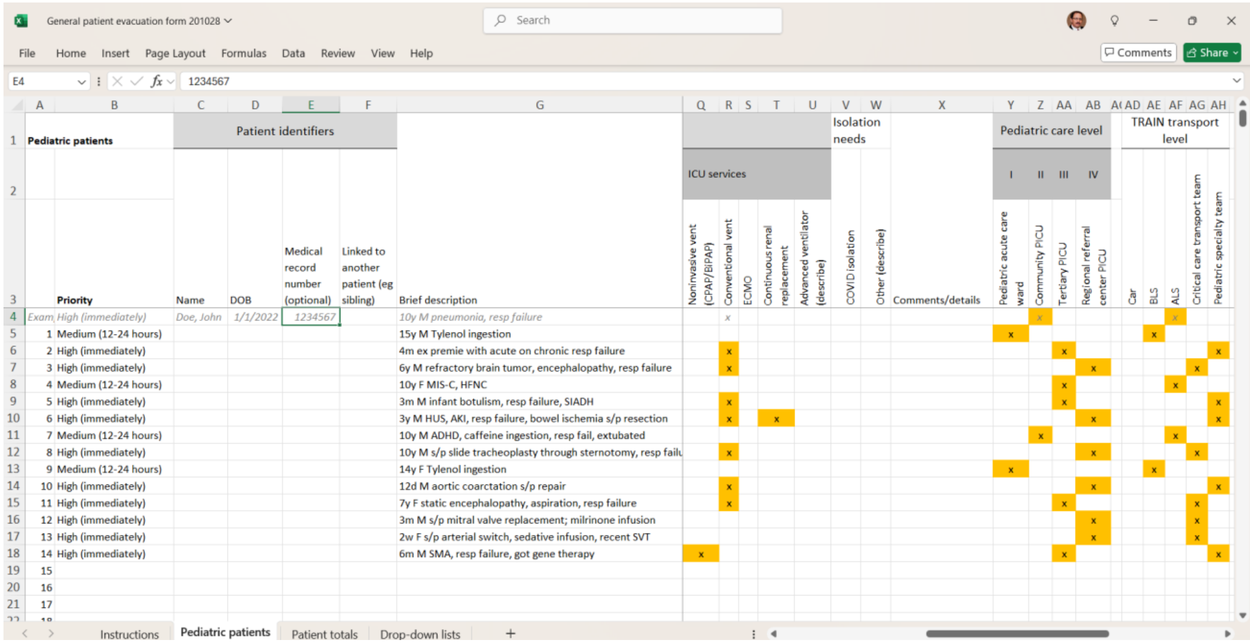
Figure 2 - Example of the TRAIN® Tool

Pediatric Patient Evacuation Tool

A Pediatric Patient Evacuation Tool was created for an impending evacuation during the 2020 Oregon Wildfires to quickly capture key care requirements of neonatal and pediatric patients. This tool synchronizes with the TRAIN® Tool levels as well as pediatric levels of care described in the next section.

The tool shown in *Figure 3* consists of a Microsoft Excel workbook with two tabs for data entry (one for pediatric and one for neonatal patients) and one tab that calculates the total number of patients needing each type of transport and receiving facility resource. A clinical care provider with knowledge of the patients can enter details for each patient in less than one minute, facilitating efficient categorization of patients (Eriksson & King, 2024).

Regional coordinating groups must maintain awareness of pediatric capabilities of potential receiving hospitals and transport teams. Once an evacuating facility has quantified the needs of its patients, the coordinating group can facilitate rapid deployment of transport resources and placement at appropriate receiving hospitals. Such capabilities should be captured in regional plans.



	Priority	Name	DOB	Medical record number (optional)	Linked to another patient (eg sibling)	Brief description	ICU services: Noninvasive vent (CPAP/BiPAP)	Conventional vent	ECMO	Continuous renal replacement	Advanced ventilator (describe)	Isolation needs: COVID isolation	Other (describe)	Comments/details	Pediatric care level I: Pediatric acute care ward	II: Community PICU	III: Tertiary PICU	IV: Regional referral center PICU	TRAIN transport level: Car	BLS	ALS	Critical care transport team	Pediatric specialty team
Exam	High (immediately)	Doe, John	1/1/2022	1234567		10y M pneumonia, resp failure		x								x					x		
1	Medium (12-24 hours)					15y M Tylenol ingestion									x					x			
2	High (immediately)					4m ex premie with acute on chronic resp failure		x									x						x
3	High (immediately)					6y M refractory brain tumor, encephalopathy, resp failure		x										x				x	
4	Medium (12-24 hours)					10y F MIS-C, HFNC											x				x		
5	High (immediately)					3m M infant botulism, resp failure, SIADH		x									x						x
6	High (immediately)					3y M HUS, AKI, resp failure, bowel ischemia s/p resection		x		x								x					x
7	Medium (12-24 hours)					10y M ADHD, caffeine ingestion, resp fail, extubated										x					x		
8	High (immediately)					10y M s/p slide tracheoplasty through sternotomy, resp failu		x										x				x	
9	Medium (12-24 hours)					14y F Tylenol ingestion									x					x			
10	High (immediately)					12d M aortic coarctation s/p repair		x										x					x
11	High (immediately)					7y F static encephalopathy, aspiration, resp failure		x									x					x	
12	High (immediately)					3m M s/p mitral valve replacement; milrinone infusion												x				x	
13	High (immediately)					2w F s/p arterial switch, sedative infusion, recent SVT												x				x	
14	High (immediately)					6m M SMA, resp failure, got gene therapy	x										x						x
15																							
16																							
17																							

Figure 3 - Pediatric Patient Evacuation Tool

Pediatric Level of Care Designations

The range of pediatric capabilities at hospitals is extensive, and definitions of what constitutes critical care are variable. These variations hamper a codified understanding of how to align the care needs of evacuating pediatric patients with available resources.

There are long-standing, nationally accepted standards for neonatology Levels of Care (LoC) endorsed and disseminated by the American Academy of Pediatrics (Committee on Fetus and Newborn, 2012). Currently there are no nationally accepted LoC for pediatric beds, despite recommendations (Frankel et al., 2019) (Hsu et al., 2019).

As shown in *Figure 4*, a unified Pediatric LoC designation system has been proposed that is consistent with both current NICU and PICU levels supported by AAP (Lin et al, 2022). This simplified system is recommended for describing the acuity and resource needs of all pediatric patients. The Pediatric LoC classification system shown in *Figure 5* can be applied to all pediatric inpatient medical/surgical care units. It simplifies and facilitates the categorization and distribution of pediatric patients. It also is roughly in line with the TRAIN® tool (Lin et al, 2022).

Classification System	Increasing Acuity and/or Capability →				
Neonatal levels of care, AAP[a]	—	Level 1 well newborn	Level 2 special care	Level 3 NICU	Level 4 regional NICU
Pediatric ICU levels of care, AAP/ACCCM[b]	—	—	Community	Tertiary	Regional
Proposed pediatric levels of care	—	Level 1 acute	Level 2 intensive	Level 3 critical	Level 4 specialized
TRAIN® transport	Blue/Car	Green/BLS	Yellow/ALS	Orange/CCT	Red/specialized

ALS, advanced life support; BLS, basic life support; CCT, critical care transport. —, not applicable.

[a] AAP NICU levels numerically and by descriptors.

[b] 2019 AAP PICU levels of care by descriptors.

Figure 4 - NICU, PICU, and Proposed Pediatric Levels of Care Alignment with TRAIN® Tool

Level	Description
Level 1: Acute	• O2 by canula (simple or HFNC) • Intermittent respiratory therapies (MDI or nebulized breathing treatment) • IV fluids with intermittent IV medications • Simple monitoring
Level 2: Intensive	• Provide pediatric resuscitation and routine mechanical ventilation (conventional or CPAP/BIPAP) • Providers can be pediatricians, family practice docs, or adult or pediatric intensivists • Community-based, shorter term stays without complex subspecialty access
Level 3: Critical	• Provide pediatric resuscitation and advanced mechanical ventilation (conventional at high PEEP, high frequency, or advanced CPAP/BIPAP) • Provide full or almost full spectrum of pediatric subspecialty access • Providers are pediatric intensivists
Level 4: Specialized	• Provide pediatric resuscitation and all levels of lung, heart, kidney support (including ECMO, CRRT) and typically manage complex multi-system pediatric disease • Provide full spectrum of pediatric subspecialty access • Providers are pediatric intensivists • Support transport and regional education

Figure 5 - Proposed Pediatric Levels of Care Details

Pediatric Transport

Disaster response is a dynamic process shaped by the disaster type, scene conditions, resources, and casualty needs. Large-scale incidents often require a regional response, focusing on enhancing the capabilities of individuals, communities, and health systems. A key challenge is the availability and capabilities of pediatric emergency transport.

Pediatric Transport Capabilities

Knowledge of local transport agencies' pediatric and neonatal capabilities is crucial, as crew training, skills, and equipment vary. Important considerations include their ability to perform pediatric intubations, access to non-invasive and invasive mechanical ventilators for children, medication pumps, and the availability of specialized equipment like isolettes. Specialized pediatric extracorporeal membrane oxygenation (ECMO) transport teams may also be required, though their availability and the time needed to assemble and deploy them can delay response. The availability of trained crews and the time needed for mobilization are critical factors in effective disaster management. Regions must also be aware that some pediatric transport capabilities live at and are under the auspices of local pediatric specialty facilities and are not associated with a separate transport agency.

Questions to Ask About Pediatric Transport Capabilities

1. Do they perform pediatric intubations?
2. How routinely do they provide neonatal or pediatric care?
3. What equipment do they have available?
    - Do they have isolettes?
    - Do they have ventilators suitable for smaller pediatric patients?
    - Can they provide pediatric non-invasive mechanical ventilation?
4. Does the equipment vary across different bases?
5. Do they have medication pumps programmed for pediatric dose rates?
6. Are specialized pediatric ECMO transport teams available?
7. Are the trained crews available 24/7, or do they need time to assemble?
8. Do the specialized teams have to come from a different base, increasing response time?
9. Do you have other existing commitments or potential demands?

Pediatric Transport Regional Coordination

A significant limiting factor in a regional response may be the availability of pediatric EMS transport (typically ambulances). EMS support and coordination with sending and

receiving hospitals is essential to the logistical goals of this effort. Coordination is essential between EMS and existing pediatric hospital transfer systems (or a Pediatric MOCC) if they are assisting with bed allocation. Note that patient transfer coordination will include step-down transfers and assistance to local authorities as needed for family reunification efforts. EMS regulations differ widely by jurisdiction, therefore patient movement should occur in accordance with local protocols and in collaboration with appropriate state, national, and federal agencies.

In addition to pediatric transport capabilities, their availability must also be assessed. Some agencies are both adult and pediatric capable, yet those dual capable transport agencies may need to be regionally prioritized for children if pediatric transport is disproportionately limited. Also, some pediatric specialty trained crews are not available 24/7 or they may be on call and need time to assemble with their equipment. There is also the possibility the specially trained team will need to come from a different base that is further away, taking more time to assemble.

Air ambulance services are available to move patients to definitive care and transport those who are unstable. Whenever possible, an Advanced Life Support (ALS) /critical care capable vehicle should be used to transport a critical patient.

Additional aircraft considerations include the patient's weight and girth as well as if the minor is traveling with a parent or caregiver. Accommodation for a family unit is dependent on the type of aircraft and the crew configuration. Given the strict weight restrictions, it may be necessary to limit equipment and personal items that can feasibly be sent with a patient. This may include family member escorts.

Patient Records

Ideally, patient records will be shared via patients' electronic medical records with the receiving facility but may need to happen on paper should that not be possible. Transport must additionally record the patient's arrival time, tracing, and relevant information in an electronic or paper platform and be shared with the patient's originating facility. Patient weight and parent/guardian contact information are critical elements that must be included for the pediatric patient.

Pediatric Evacuation Devices

Equipment for the evacuation of pediatric patients is specialized due to size and weight differences from adults. Staff's physical capability and training need to be considered in the selection of evacuation devices with safety being most important. *Figure 6* provides examples of the Evac+Baby slinged attachment and the Med Sled® Pediatric Evacuation Systems. This is not exhaustive nor is it an endorsement of the devices or products available.

	
The Evac+Baby slinged attachment integrated with the Evac+Chair	Med Sled® Pediatric Evacuation Systems

Figure 6 - Examples of Evacuation Devices

Pediatric Telemedicine

During both pediatric patient placement and transport, clinical care of the pediatric patient is ongoing. When children must be moved urgently, these processes may need to occur in the hands of less pediatric-experienced medical providers. Telehealth consultations enable prompt and safe support of numerous clinical conditions in pediatrics, particularly in disaster and emergency situations, as well as other urgent scenarios like patient evacuations (Saidinejad et al., 2023) (Ellenby & Marcin, 2015). Using telehealth, remote pediatric specialists can assist in real-time triage, improve clinical decision-making, and help local agencies determine which patients need immediate attention or can be safely monitored remotely (Marcin et al., 2023). Studies have shown telehealth can reduce delays in care, minimize unnecessary transfers, and optimize resource allocation to ensure the highest-need children receive proper care (Saidinejad et al., 2023) (Ellenby & Marcin, 2015).

Telehealth can be used to assist in stabilizing patients before transport by providing real-time consultations with specialists who guide prehospital and receiving hospital teams in appropriate pediatric care (Pedrotti et al., 2021) (Su & Quinn, 2024). For example, telehealth supports non-specialist personnel in administering emergency treatments, managing ventilators, and stabilizing children before safe transfer to higher-level care, which has been shown to improve outcomes (Mitra et al., 2023). Additionally,

telehealth facilitates the logistics of transferring pediatric patients by enhancing coordination between facilities and transport teams, providing continuous communication, and ensuring proper care during evacuations (Pedrotti et al., 2021). Real-time access to digital records and video consultations allows seamless patient handoffs, enabling receiving facilities to prepare based on accurate information (Pedrotti et al., 2021). Overall, telehealth's ability to support triage, stabilize patients, and streamline transfers makes it an essential tool in pediatric hospital evacuations.

Access and Functional Needs Populations

Patients with Intellectual/Developmental/Sensory Disabilities

Evacuations can create additional stressors or challenges for patients with intellectual/developmental disabilities; it will be important to consider how to alleviate stressors that may impede the evacuation process. Children with neurodivergent diagnoses may have challenges with the evacuation process itself. Staff can be trained in verbal de-escalation strategies to ensure patient-centered care delivery and improve adherence during this process.

Examples of ways to support pediatric patients with intellectual/development/sensory disabilities includes:

- Utilize Child Life resources and Social Work teams to create tools to alleviate challenges.
- With input from Child Life and Social Work teams, develop social stories with pictures explaining the evacuation process.
- Ensure trusted support individuals can stay with the patient and offer safety.
- Provide sensory boxes with items to help calm the patient. Examples include headphones, fidget toys, music.
- Ensure the patient's electronic devices, which may offer calming tools specific to that patient, are transported with them.

Mechanical Devices

Patients may come into the hospital with their own specialized equipment, which could include wheelchairs, ankle-foot orthosis devices, augmentative communication devices, and other medical technologies. It is important to ensure any specialized equipment customized specifically for a patient goes with them (and is appropriately labeled) during evacuation or has a plan to ensure the equipment meets that patient at the next destination.

Parent/Caregiver

Pediatric patients will most likely be accompanied by a parent and/or caregiver when in the hospital. It is important to plan to keep the patient and parent/caregiver together. There may also be additional considerations if a parent/caregiver has any access or functional needs to ensure those are being addressed as well. Language proficiency must be considered and translators or supporting tools should be integrated into evacuation planning.

Some of the pediatric population in a facility may be alone without an identified responsible adult. At times, these children are wards of the state. It is advisable during an evacuation to identify one individual in your hospital system (such as the primary nurse) that can be designated the temporary responsible adult for that child.

Overall, it is key to understand patients' needs and what would work best for them during an evacuation. Sometimes the best way to understand and plan for patients' needs is to ask them and their parent/caregiver. Most families with individuals with access and functional needs are adaptable to different environments and good advocates for what they need.

Pediatric Medications, Nutrition, and Medical Equipment

One of the easily overlooked aspects of hospital evacuation is answering the question: "Does the patient have enough stuff to make it to the final destination?" Meaning, does the patient have enough medications, nutrition, and equipment? These questions are even more critical for pediatric patients given that transport agencies and receiving hospitals may not have an adequate supply of pediatric specific resources.

How Long is the Trip?

- Flights: How long is the transport to the airhead or airport, the anticipated flight, and the transport from the airport to the final destination? How much time will be spent in the staging area at the airport and at either end of the flight?
- Drives: How long to drive to the final destination? Are driving times during 'normal times' or current 'disaster' timeframes?
- Both: What kind of buffer timeframe does the team want to add?

What is the Burn Rate?

- What are the rates of supplies and medications required by the patient based on current conditions/level of care?

- What are the rates of supplies and medications required by the patient with the assumption of worsening conditions (i.e. PRN seizure meds for a child with epilepsy)?

Plan for 24 Hour Supply of Medications, Nutrition and Equipment

Based on the answers to the above questions, an estimation can be made about the amounts of supplies and medications needed for the transport of the patient. This can be very difficult to estimate due to the changing condition of the patient, road closures, the possibility of diverting patients to a different final destination, and many other wildcards during a disaster. Consider a 24-hour supply of medications and medical supplies a gold standard because this would give an abundant buffer, in most cases, and provide the receiving facility with supplies to take care of the patient if they do not have a specific supply. This 24-hour supply has increased importance in special populations or those with unique pediatric medical and pharmacy needs.

Special Medication Considerations

The availability of staff to prepare the supplies, and the available quantities of supplies on the sending unit, may also be a limitation both for medications and medical supplies. Plans for intravenous (IV) and oral medications that may need to be refrigerated should also be considered. An additional consideration with IV medications is many medications are of a small volume and benefit from the use of syringe pumps. A good capability to ask in the preplanning stages of both ground and air resources is their ability to handle syringe administration of medications.

Another challenge of sending medications with a patient is ensuring proper documentation for controlled substances to comply with U.S. Department of Justice and Drug Enforcement Administration (DEA) requirements. Each medication's documentation of utilization and waste needs to be sent back to the originating facility for both pediatric and adult patients. Each transport team should ensure a copy of all narcotic documentation is sent back to the sending facility to close the narcotic loop. The DEA Diversion Control Division has a task force that will work with affected facilities. Contact the DEA as early as possible to assist in staying compliant with all the applicable federal laws (U.S. Department of Justice, n.d.).

Pediatric Basic Equipment and Nutrition 101

Children of different ages require different nutrition and supplies by age, size, and developmental status. Aside from medications and medical equipment such as IV tubing, feeding tubes, endotracheal tubes etc. that all vary by size, there are some basic nutrition and supplies many transport agencies (and receiving hospitals) may not carry that need to be sent with patient depending on age/size:

- Neonate**:** Formula, breast milk (and ability to store), diapers, car seats

- Toddler/child**:** Pediatric formula, developmentally appropriate snacks, diapers, toys, car seats
- Child/teen**:** Distraction devices (toys, video games, movies), booster seats

Children with Complex Medical Considerations

Many receiving hospitals may not carry the pediatric-specific medications and appropriate and/or equivalent forms of unique pediatric nutrition or equipment. Receiving hospitals may be less familiar with how to properly identify, store and administer breast milk and other forms of pediatric formulas, including those for specialized pediatric patients such as those on a ketogenic diet. Receiving hospitals may not carry certain medicines that are unique to pediatrics or the formulations they may require. Pediatric equipment can also be quite specific, especially for the smaller child with complex medical needs. There should be a clear process towards delivery and availability of nutrition, pediatric-specific medications and pediatric-specific equipment for the transport team to deliver with the patient to the receiving hospital. These considerations can be hard to work through, but with appropriate planning and teamwork, a successful plan and evacuation of patients is within reach of any facility. This planning is especially important when sending complex children to facilities that don't routinely care for them.

Pediatric Specialized Equipment

Some supplies are so pediatric specific and/or otherwise unavailable they may need to be sent with the patient (e.g., neonatal bubble continuous positive airway pressure [CPAP] machine, a pediatric peritoneal dialysis machine, an Extracorporeal Life Support [ECLS] pump, a replacement tracheostomy tube). The sending hospital should have a system in place to label and document major supplies sent with a patient as well as track their location.

Pediatric Emergency Measuring Tape Systems for Medications and Equipment

Broselow™ or similar length-based systems can decrease cognitive load and especially help the provider less familiar with pediatric patients. They can be helpful for transport agencies and non-pediatric hospitals, in emergency departments and inpatient settings, especially for pediatric arrest (Woods et al, 2019). Length-based measuring tape systems can also be used to simplify and organize storage of pediatric equipment such as in Broselow™ based code cart as well as to generate standardized code sheets.

Tracking

All hospitals, including those that admit children, are required to track the distribution and transportation to the receiving location of patients. Parents/guardians/caregivers must be kept informed during the evacuation process for both notification and reunification. Existing hospital, regional, and state systems used to track patients for mass casualty incidents can be used for tracking patients during evacuations. These systems can be web-based or as simple as a spreadsheet and phone, fax, or radio.

Simulate and Drill
Hospitals should work with their regional partners (which may include HCCs) for planning the establishment and use of tracking systems. These systems should be tested and exercised on a regular basis both at a hospital and regional level (including potential receiving hospitals and EMS). Testing should include a significant number of pediatric patients and have community hospitals serve as both evacuating and receiving facilities. Pediatric center evacuation should also be simulated with transport and receiving hospitals identified, including community hospitals and other pediatric centers. It is especially important for EMS and private transport agencies to participate in pediatric center evacuation drills given the limited pediatric transport resources.

Family Reunification

Reunifying unaccompanied minors with their families after an evacuation is a critical and challenging task that requires careful planning and execution. Children separated from their parents or guardians can leave them vulnerable. A national survey found only 42% of hospitals had systems in place to track unaccompanied minors, and only a third had formal plans to protect or reunify these vulnerable children (Niska & Shimizu, 2011).

Plan: Family Reunification Center and Pediatric Safe Area

The American Academy of Pediatrics (AAP) partnered with Massachusetts General Hospital to create a Family Reunification Toolkit that emphasizes the need for hospitals to plan and prepare for the intake, care, and reunification of children separated from their families in the aftermath of disasters (American Academy of Pediatrics, 2018). Hospitals must create dedicated spaces like the Hospital Family Reunification Center (HFRC), which is a secure area where families can gather to receive updates and support. Another crucial space is the Pediatric-Safe Area (PSA), where children can safely wait under supervision until their families are located. These areas must be separate from the emergency department to prevent disruption of medical care while still providing families with the information and emotional support they need. Additionally, hospitals must implement systems for registering and tracking children

from the moment they arrive until they are safely reunited with their guardians. An adaptable template for Hospital Reception Site Plans that includes guidance for set-up, organization, and Job Action Sheets and is aligned with the AAP Toolkit [is Coyote Crisis Campaign, n.d.]

Engage: Community Partners

Involving community partners such as schools, childcare centers, law enforcement, emergency management personnel and healthcare coalitions is essential to a hospital's successful reunification efforts. Schools can assist hospitals by providing identification records and other important information about children. Law enforcement and emergency management teams can help verify the identity of family members and assist in tracking unaccompanied children. Healthcare coalitions can partner with hospitals to support their HFRC, especially if there are multiple hospital evacuations during a regional disaster event. Hospitals must also form multidisciplinary teams that include representatives from pediatrics, social work, security, and legal services to manage the reunification process efficiently and ensure that the right custodial adults are identified before releasing a child.

Simulate and Drill

Testing and refining reunification plans through exercises is essential. The AAP toolkit recommends conducting drills and simulations, from tabletop exercises to full-scale emergency response scenarios, to identify and address any gaps in the family reunification process. These exercises allow hospital staff to familiarize themselves with the reunification procedures and ensure that both internal operations and external collaborations with community partners are functioning effectively. By incorporating these exercises into regular preparedness activities, hospitals can significantly improve their capacity to handle family reunification during real disasters and mitigate the risks of further trauma or harm to children and their families.

Mental Health Considerations for Reunification Post-Hospital Evacuation

Evacuation of a healthcare facility and reunification efforts will produce significant mental health impacts for those being evacuated and reunified. Children being evacuated without a parent/caregiver present or if they have trouble contacting them during/after an evacuation may be particularly distressed. Evacuations have significant risk and/or uncertainty for the pediatric patient and family unit. Rapid triage is critical to identify children who are separated from parents and caregivers, situations where the status or location of the child or parent is unknown, situations where there are injuries, perceived life threat, and/or loss of their home and/or deaths related to the disaster. These factors create mental health risk for children as captured on the WRAP-EM PsySTART Triage system [(PsySTART, n.d.)].

Strategies to manage these acute impacts as well as the continuum of extended risk hospital evacuation and acute injury entails, require a comprehensive approach and linkage between child, family, hospital staff and internal or external mental health resources. Pediatric mental health considerations must be integrated into nearly all aspects of reunification operations and communications. In addition, training and planning should include ensuring adequate mental health support at both the evacuating hospital and the receiving facility for children, parents/caregivers, and responding staff, in addition to planning for on-going support based on triaged needs afterwards. Psychological First Aid (PFA) training in one or more psychological first aid models is a first step but should not be the only one. Aligning PFA training efforts with community partners such as healthcare coalitions is recommended.

Conclusion

Hospital evacuation of pediatric patients from either a community hospital or regional pediatric center requires additional pediatric expertise and planning considerations beyond general hospital evacuation principles. For community hospitals, pediatric planning can be considered an afterthought but a fundamental shift in this philosophy is proposed in this guide. Pediatric expertise and planning must be incorporated at all stages of hospital evacuation planning and response for any hospital that admits children. For pediatric centers, the high number of complex pediatric patients can quickly overwhelm available local pediatric transport and pediatric bedspaces. Given the scarcity of pediatric transport and bedspace resources, this guide emphasizes the importance of coordinating with regional partners (HCCs, EMS, MOCCs, etc.) for all hospitals evacuating pediatric patients.

Described in this guide are pediatric considerations along the continuum of hospital evacuation. Structurally, it is recommended to 1) include a pediatric medical technical specialist within HICS and 2) standardize pediatric levels of care. Pediatric evacuation educational resources and novel pediatric evacuation tools were provided and focused attention to uniquely pediatric issues as related to medications, nutrition, developmental needs, and family reunification were offered. This document is meant to supplement general hospital evacuation toolkits for any hospital that admits children, including both community hospitals and pediatric centers.

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Recommended Resources

Educational Resources

- **The Economic Impact of Hurricane Evacuations on a Coastal Georgia Hospital: A Case Study** (Desai, S.P., Gordon, J., Harris, C.A., 2019) - A study exploring the economic consequences of hurricane evacuations on a hospital in Georgia. Available in Frontiers in Public Health.
  Read the study (PDF)
- **Mass Transfer of Pediatric Tertiary Care Hospital Inpatients to a New Location in Under 12 Hours: Lessons Learned and Implications for Disaster Preparedness** (Fuzak, J. K., Elkon, B. D., Hampers, L. C., et al., 2010) - An article discussing rapid patient transfers and its implications for disaster preparedness. Published in The Journal of Pediatrics.
  Read the article (PDF)
- **Aeromedical Transport** (Loyd, J. W., Larsen, T., & Swanson, D., 2020) - An overview of aeromedical transport and its applications, provided by StatPearls.
  Read the resource (Web Page)
- **2017-2022 Health Care Preparedness and Response Capabilities** (Office of the Assistant Secretary for Preparedness and Response, 2016) - A comprehensive report on healthcare preparedness and response capabilities.
  Access the data set (PDF)
- **American Community Survey** (U.S. Census Bureau, 2019) - Demographic data for the United States, provided by the U.S. Census Bureau.
  View the data (Web Page)

Training Resources

- **California Patient Movement Plan Video Playlist** (California EMSA) - A series of instructional videos on patient movement planning in California.
  Watch the video playlist (YouTube)
- **Med Sleds Training Videos** - Training videos on the use of Med Sleds for patient evacuation in hospitals and nursing homes.
  Watch the training videos (Web Page)
- **Med Sleds - Neonatal** - Information on Med Sleds specifically designed for neonatal use.
  Learn more (Web Page)
- **Neo Aprons** - Details on newborn baby mover aprons used for evacuation.
  View product information (Web Page)
- **Evac Chairs** - Information on evacuation chairs for assisting patients during emergency situations.
  Learn more (Web Page)

Toolkits

- **NICU/Nursery Evacuation Tabletop Exercise Toolkit** (EMSC Illinois and Illinois Department of Public Health) - A toolkit for conducting NICU/nursery evacuation tabletop exercises.
  Access the toolkit (PDF)
- **Minutes to Hours - The Kaiser California Evacuation Toolkit** - A toolkit for rapid hospital evacuation planning and implementation.
  Download the toolkit (PDF)

- **Pediatric/Neonatal Disaster Planning Reference Guide**: Bridging the Gap between EMS and Hospital Care - A reference guide to improve coordination between EMS and hospitals during pediatric/neonatal disasters.
  Read the guide (PDF)
- **MDPH Hospital Evacuation Toolkit** - A toolkit to guide hospitals through evacuation planning and preparedness.
  Download the toolkit (DOCX)
- **Pediatric Interfacility Transfer Guide** - A guide for transferring pediatric patients between facilities during emergencies.
  Access the guide (Web Page)
- **Neonatal Disaster Preparedness Toolkit** - A toolkit to help prepare for disasters involving neonatal patients.
  View the toolkit (Web Page)

Checklists and Plans

- **Hospital Evacuation Checklist** (California Hospital Association) - A checklist to assist hospitals in planning and conducting an evacuation.
  Download the checklist (DOC)
- **Shelter-in-Place Checklist** (California Hospital Association) - A checklist for hospitals to plan and implement shelter-in-place procedures.
  Download the checklist (PDF)
- **Hospital Evacuation Plan Template** (Southern Maine Regional Resource Center for Public Health Emergency Preparedness) - A template for hospitals to create their own evacuation plans.
  Download the template (DOC)
- **Emergency Action Plan Template** (CDC) - A template to assist in creating emergency action plans for healthcare facilities.
  Download the template (PDF)
- **Hospital Assessment and Recovery Guide** (AHRQ) - A guide to assess and recover hospital operations after a disaster.
  Download the guide (PDF)
- **Evacuation and Shelter in Place Guidance for Healthcare Facilities: Part I - Guidance** - Guidance on planning evacuation and shelter-in-place for healthcare facilities.
  Read the guidance (PDF)
- **Evacuation and Shelter in Place Guidance for Healthcare Facilities: Part II - Plan Template** - A template for healthcare facilities to create evacuation and shelter-in-place plans.
  Download the template (PDF)
- **Evacuation and Shelter in Place Guidance for Healthcare Facilities: Part III - Tabletop Exercises** - Tabletop exercise scenarios to validate evacuation and shelter-in-place plans.
  Download the exercises (PDF)
- **Incident Response Guide: Evacuation, Shelter-in-Place, & Hospital Abandonment** - A guide for responding to incidents involving evacuation, shelter-in-place, or hospital abandonment.
  Read the guide (PDF)
- **Hospital Reception Site Template** - A template for planning hospital reception sites during mass casualty events.
  Download the template (DOCX)

General Evacuation Resources

- **Wireless Communications Interoperability Awareness Guide** (Office for Interoperability And Compatibility, U.S. Department of Homeland Security) - A guide on ensuring wireless

communication interoperability during emergencies.
Read the guide (PDF)

- **Advisory Circular: Helicopter Air Ambulance Operations** (U.S. Department of Transportation Federal Aviation Administration, 2015) - Advisory guidelines for helicopter air ambulance operations.
  Read the advisory (PDF)
- **Burn Mass Casualty Operations Plan** (Western Region Burn Disaster Consortium, 2020) - A plan for managing mass casualty incidents involving burn victims.
  Read the plan (PDF)
- **Red Cross Pillowcase Project** - A project by the Red Cross teaching children about emergency preparedness.
  Learn more (Web Page)
- **GLPCDR Be Ready** - A toolkit designed to help children and youth with special healthcare needs be prepared for emergencies.
  Access the toolkit (Web Page)
- **The Exchange Newsletter Volume 1 Issue 6** - A newsletter focusing on emergency preparedness and response.
  Read the newsletter (PDF)
- **Topic Collection: Healthcare Facility Evacuation / Sheltering** - A collection of resources related to evacuation and sheltering in healthcare facilities.
  Access the topic collection (Web Page)
- **Disaster Planning for Obstetrical Services** - Information on planning for obstetrical services during disasters.
  Learn more (Web Page)
- **National Children's Disaster Mental Health Concept of Operations** - Disaster mental health planning.
  Read the National Children's Disaster Mental Health Concept of Operations
- **WRAP-EM Mental Health Resource** - Resources for pediatric mental health.
  Access WRAP-EM Mental Health Resources