Knox/East Tennessee Healthcare Pediatric Surge Tabletop Exercise

Ketcoalition.org

After-Action Report/Improvement Plan

05/24/17

EXERCISE OVERVIEW

Exercise Name	Knox/East Tennessee Healthcare Coalition Pediatric Surge Tabletop Exercise (KET HCC Water Contamination TTX)
Exercise Dates	April 27,2017
Scope	This exercise is a tabletop exercise, planned for 4 hours at Bearden Banquet Facility. Exercise play is limited to healthcare coalition members, local community partners (as identified by participating healthcare facilities).
Mission Area(s)	Response and Recovery
Healthcare Preparedness Capabilities	HPP Capabilities 1: Healthcare System Preparedness, 2: Healthcare System Recovery, 3: Emergency Operations, 5: Fatality Management, 6: Information Sharing; and 10: Medical Surge
Objectives	- Evaluate internal organizational plans ability to respond to a pediatric mass casualty event. - Discuss the internal and external communications systems utilized during such events. - Evaluate the resource needs and methods for requesting additional support. - Define the organization's ability to coordinate with outside agencies. - Discuss how to manage and recover from a pediatric mass casualty in the healthcare system. - Evaluate organizational and coalition reunification plans.
Threat or Hazard	Mass casualty event resulting in a surge of pediatric patients.
Scenario	The local community has been experiencing a series of heavy rains and storms with flooding, which ultimately results in the municipal water system being contaminated with E.coli.
Sponsor	Knox/ East Tennessee Healthcare Coalition (KET HCC) utilizing ASPR grant funding

Participating Organizations	American Red Cross
	AMR Blount County
	AMR Knoxville EMS
	Blount Memorial Hospital
	Cherokee Health Systems
	Claiborne County Hospital/Claiborne County Nursing Home
	Claiborne County Office of Emergency Services
	Cocke County Emergency Management Agency
	Covenant Health Corporate
	East Tennessee Children's Hospital
	Fort Loudon Medical Center
	Fort Sanders Regional Medical Center
	Homeland Security District 2
	Jefferson Memorial Hospital
	Jellico Community Hospital
	Knox County Regional Forensic Center
	Knox County Schools
	Knoxville County Health Department
	Knoxville Fire Department
	Lakeway Regional Hospital
	Loudon County High School
	Maryville City Schools
	Medic Regional Blood Center
	Methodist Medical Center
	Morristown Hamblen Emergency Management Agency
	Morristown Hamblen Hospital
	Newport Medical Center
	North Knoxville Medical Center
	Parkwest Medical Center
	Penninsula Psychiatric Hospital
	Physicians Regional Medical Center
	Regional Medical Communications Center/Medlink 2
	Roane County Emergency Medical Services
	Roane County Medical Center
	Roane County Office of Emergency Services
	Roane County Schools
	Sevier County Emergency Management Agency
	Sevier County Emergency Medical Services
	Sweetwater Hospital Association
	Tennessee Department of Health- East Tennessee Regional Health Office
	Tennessee Department of Health- Knox County Health Department
	Turkey Creek Medical Center
	University of Tennessee Medical Center

Points of Contact	Charity Menefee Knox County Health Department 140 Dameron Avenue Knoxville, TN 37917 (865) 215-5098 Charity.menefee@knoxcounty.org	Wanda Roberts East TN Regional Health Office 2101 Medical Center Way Knoxville, TN 37920 (865) 549-5294 Etrhc.health@tn.gov

ANALYSIS OF HEALTHCARE PREPAREDNESS CAPABILITIES

Aligning exercise objectives and healthcare preparedness capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis. Table 1 includes the exercise objectives, aligned core capabilities, and performance ratings for each core capability as observed during the exercise and determined by the evaluation team.

Objective	Healthcare Preparedness Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Evaluate internal organizational plans ability to respond to a pediatric mass casualty event.	1. Healthcare System Preparedness			M	
	5. Fatality Management	P			
	6. Information Sharing	P			
	10. Medical Surge			M	
Discuss the internal and external communications systems utilized during such events.	1. Healthcare System Preparedness	P			
	3. Emergency Operations	P			
	6. Information Sharing	P			
Evaluate the resource needs and methods for requesting additional support.	1. Healthcare System Preparedness			M	
	10. Medical Surge			M	
Define the organization's ability to coordinate with outside agencies.	3. Emergency Operations	P			
Discuss how to manage and	2. Healthcare System Recovery		S		

Objective	Healthcare Preparedness Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
recover from a pediatric mass casualty in the healthcare system.					
Evaluate organizational and coalition reunification plans.	1. Healthcare System Preparedness		S		

Ratings Definitions:

- Performed without Challenges (P): The targets and critical tasks associated with the healthcare preparedness capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- Performed with Some Challenges (S): The targets and critical tasks associated with the healthcare preparedness capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified.
- Performed with Major Challenges (M): The targets and critical tasks associated with the healthcare preparedness capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- Unable to be Performed (U): The targets and critical tasks associated with the healthcare preparedness capability were not performed in a manner that achieved the objective(s).

Table 1. Summary of Healthcare Preparedness Capability Performance

The following sections provide an overview of the performance related to each exercise objective and associated core capability, highlighting strengths and areas for improvement.

Capability 1: Healthcare System Preparedness

Definition:

Healthcare system preparedness is the ability of a community's healthcare system to prepare, respond, and recover from incidents that have a public health and medical impact in the short and long term. The healthcare system role in community preparedness involves coordination with emergency management, public health, mental/behavioral health providers, community and faith-based partners, state, local, and territorial governments to do the following:

- Provide and sustain a tiered, scalable, and flexible approach to attain needed disaster response and recovery capabilities while not jeopardizing services to individuals in the community
- Provide timely monitoring and management of resources
- Coordinate the allocation of emergency medical care resources
- Provide timely and relevant information on the status of the incident and healthcare system to key stakeholders

Healthcare system preparedness is achieved through a continuous cycle of planning, organizing and equipping, training, exercises, evaluations and corrective actions.

Objectives:

- Evaluate internal organizational plans ability to respond to a pediatric mass casualty event.
- Discuss the internal and external communications systems utilized during such events.
- Evaluate the resource needs and methods for requesting additional support.
- Define the organization's ability to coordinate with outside agencies.
- Discuss how to manage and recover from a pediatric mass casualty in the healthcare system
- Evaluate organizational and coalition reunification plans.
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Objective 1: Evaluate internal organizational plans ability to respond to a pediatric mass casualty event.

Capability 1: Healthcare System Preparedness-
> *Function 2: Coordinate healthcare planning to prepare the healthcare system for a disaster; Function 3; Identify and prioritize essential healthcare assets and services; Function 4: Determine gaps in healthcare preparedness and identify resources for mitigation of these gaps; Function 6: Improve healthcare response to capabilities through coordinated exercise and evaluation; Function 7: Coordinate with planning for at-risk individuals and those with special medical needs.*

Objective 2: Discuss the internal and external communications systems utilized during such events.
Capability 1: Healthcare System Preparedness-
> *Function 2: Coordinate healthcare planning to prepare the healthcare system for a disaster; Function 4: Determine gaps in healthcare preparedness and identify*

resources for mitigation of these gaps; Function 6: Improve healthcare response to capabilities through coordinated exercise and evaluation

Objective 3: Evaluate the resource needs and methods for requesting additional support.
    Capability 1: Healthcare System Preparedness-
        Function 2: Coordinate healthcare planning to prepare the healthcare system for a disaster; Function 3; Identify and prioritize essential healthcare assets and services; Function 4: Determine gaps in healthcare preparedness and identify resources for mitigation of these gaps; Function 7: Coordinate with planning for at-risk individuals and those with special medical needs.

Strengths

The capability level can be attributed to the following strengths:

Strength 1: Current systems in place (HRTS, TNHAN) are routinely used and familiar processes for healthcare partners

Strength 2: Current MOU's, facility specific and region-wide, provide quick access to healthcare needs during an event

Strength 3: Overall strong and effective communication methods in place between multiple community partners. This has been fostered by years of exercising and training together allowing key contacts to be notified early in an event. Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Healthcare facilities, outside of East Tennessee Children's Hospital and University of Tennessee Medical Center are sorely lacking in terms of surge pediatric supplies. This has been identified as a gap on the KET HC annual gap analysis.

Reference: Local (on-site) assets for pediatric surge

Analysis: Asset needs for pediatric patients was demonstrated to be a gap during the exercise

Area for Improvement 2: Hospitals outside of designated pediatric centers need additional training specific to pediatric surge care.

Reference: Training

Analysis: The exercise demonstrated an overarching need for more specific training for healthcare facilities to address special considerations when treating pediatric patients.

Capability 2: Healthcare System Recovery

Definition:
Healthcare system recovery involves the collaboration with Emergency Management and other community partners, (e.g., public health, business, and education) to develop efficient processes and advocate for the rebuilding of public health, medical, and mental/behavioral health systems

to at least a level of functioning comparable to pre-incident levels and improved levels where possible. The focus is an effective and efficient return to normalcy or a new standard of normalcy for the provision of healthcare delivery to the community.

Objectives:

Objective 4: Discuss how to manage and recover from a pediatric mass casualty in the healthcare system.
Capability 2: Healthcare System Recovery-
>   *Function 1: Develop recovery processes for the healthcare delivery system;*
>   *Function 2: Assist healthcare organizations to implement Continuity of*
>   *Operations (COOP)*

Strengths

The partial capability level can be attributed to the following strength:

Strength 1: Participants put value in the specific need for a comprehensive planning process to involve events related to pediatric surge.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Facilities need to take lessons learned from this exercise back to create more robust plans that take into consideration the contingencies discussed at the exercise.

Current pediatric surge plans, if they are available, may not be adequate to meet the needs during the first 48 hours.

Reference: *Local plans, policies and procedures*

Analysis: Planning needs to be done at a clinical and administrative level to discuss plans directly related to pediatric surge in order for the facility to recover quickly.

Area for Improvement 2: Expedient avenues of communication between Coalition members and East Tennessee Disaster Mental Health team need to be explored. This robust team is a vital asset to the Coalition and needs to be a priority for early intervention during an event.

Reference: *Communication*

Analysis: The Disaster Mental Health Team needs to be included in the TNHAN system and tested to ensure understanding of the system for future notifications.

Capability 3: Emergency Operations

Definition: Emergency operations coordination regarding healthcare is the ability for healthcare organizations to engage with incident management at the Emergency Operations Center or with on-scene incident management during an incident to coordinate information and resource allocation for affected healthcare organizations. This is done through multi-agency coordination

representing healthcare organizations or by integrating this coordination into plans and protocols that guide incident management to make the appropriate decisions. Coordination ensures that the healthcare organizations, incident management, and the public have relevant and timely information about the status and needs of the healthcare delivery system in the community. This enables healthcare organizations to coordinate their response with that of the community response and according to the framework of the National Incident Management System (NIMS).

Objectives:

Objective 2: Discuss the internal and external communication systems utilized during such events
Capability 3: Emergency Operations

> *Function 1: Healthcare organization multi-agency representation and coordination with emergency operations; Function 2: Assess and notify stakeholders of healthcare delivery status; Function 3: Support the healthcare response efforts through coordination of resources*

Objective 4: Define the organization's ability to coordinate with outside agencies.
Capability 3: Emergency Operations

> *Function 1: Healthcare organization multi-agency representation and coordination with emergency operations; Function 2: Assess and notify stakeholders of healthcare delivery status; Function 3: Support the healthcare response efforts through coordination of resources*

Strengths

The capability level can be attributed to the following strengths:

Strength 1: Current systems in place (HRTS, TNHAN) are routinely used and familiar processes for healthcare partners

Strength 2: Current MOU's, facility specific and region-wide, provide quick access to healthcare needs during an event

Strength 3: Overall strong and effective communication methods in place between multiple community partners. This has been fostered by years of exercising and training together allowing key contacts to be notified early in an event. Areas for Improvement

Capability 5: Fatality Management

Definition: Fatality management is the ability to coordinate with organizations (e.g., law enforcement, healthcare, emergency management, and medical examiner/coroner) to ensure the proper recovery, handling, identification, transportation, tracking, storage, and disposal of human remains and personal effects; certify cause of death; and facilitate access to mental/behavioral health services for family members, responders, and survivors of an incident. Coordination also

includes the proper and culturally sensitive storage of human remains during periods of increased deaths at healthcare organizations during an incident.

Objectives:

Objective 1: Evaluate internal organizational plans ability to respond to a pediatric mass casualty event.

>*Capability 5: Fatality Management*

>*Function 1: Coordinate surges of deaths and human remains at healthcare organizations with community fatality management operations.*

Strengths

The capability level can be attributed to the following strengths:

Strength 1: Knox and East Tennessee healthcare facilities have already established the amount of morgue space that is available during periods of death surges and have developed the processes to request support from the Regional Forensic Center

Strength 2: The Regional Forensic Center is an active member in the Coalition and routinely participates in events and exercises. This makes them a well-known partner to the healthcare community and easy to access when needed.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Facilities not familiar with the processes needed for surges of deaths and human remains should contact their local medical examiner and/or the Regional Forensic Center to familiarize themselves with the processes and assets in place.

Reference: *Fostering key partnerships*

Analysis: Facilities should familiarize themselves with local and regional policies and assets, particularly related to surge deaths of pediatric patients.

Capability 6: Information Sharing

Definition:
Information sharing is the ability to conduct multijurisdictional, multidisciplinary exchange of public health and medical related information and situational awareness between the healthcare system and local, state, Federal, tribal, and territorial levels of government and the private sector. This includes the sharing of healthcare information through routine coordination with the Joint Information System for dissemination to the local, state, and Federal levels of government and the community in preparation for and response to events or incidents of public health and medical significance.

Objectives:

Objective 1: Evaluate internal organizational plans ability to respond to a pediatric mass casualty event.

Capability 6: Information Sharing-
    Function 1: Provide healthcare situational awareness that contributes to the incident common operating picture

Objective 2: Discuss the internal and external communications systems utilized during such events.

Capability 6: Information Sharing-

Capability 6: Information Sharing-

    Function 1: Provide healthcare situational awareness that contributes to the incident common operating picture

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: Current systems in place (HRTS, TNHAN) are routinely used and familiar processes for current healthcare partners. These systems provide clear information that is easily accessed and used by healthcare partners.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Current updates have been made to the HRTS system that will ultimately enhance the system. However, the initial changes have created some gaps in program familiarity and have resulted in user errors as well as programmatic issues.

Reference: HRTS and TNHAN systems

Analysis: TNHAN and HRTS system use is not easily remembered if it is not used regularly or if new staff are not trained. These systems serve as the main information hub during an exercises and events and should be prioritized for key personnel use. The changes to the system should be identified and practiced until the new system becomes familiar.

Capability: Medical Surge

Definition:
The Medical surge capability is the ability to provide adequate medical evaluation and care during incidents that exceed the limits of the normal medical infrastructure within the community. This encompasses the ability of healthcare organizations to survive an all-hazards incident, and maintain or rapidly recover operations that were compromised.

Objectives:

Objective 1: Evaluate internal organizational plans ability to respond to a pediatric mass casualty event.

Capability 10: Medical Surge
> *Function 1: The Healthcare Coalition assists with the coordination of the healthcare organization response during incidents that require medical surge; Function 3: Assist healthcare organizations with surge capacity and capability;*

Strengths

The full capability level can be attributed to the following strengths:

Strength 1: Coalition partnerships formed through annual exercises and monthly meetings have fostered key relationships that are vital during surge events.

Strength 2: The role of the Regional Hospital Coordinators are utilized well in the Knox county/regional area to facilitate support

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Healthcare facilities, outside of East Tennessee Children's Hospital and University of Tennessee Medical Center are sorely lacking in terms of surge pediatric supplies and pediatric training. This has been identified as a gap on the KET HC annual gap analysis.

Reference: Assets and Resources

Analysis: Coalition should prioritize this area of improvement and provide the means for those facilities to treat any pediatric surge even by offering training opportunities and supplies.

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for the Knox/East TN (KET HCC) Healthcare Coalition as a result of Knox/East Tennessee Healthcare Coalition Water Contamination Tabletop Exercise conducted on November 12, 2015.

☒ The KET HCC accepts responsibility for assuring that the improvement plan issues identified will be integrated into an exercise in this or the next budget period.

Issue/Area for Improvement	Corrective Action	Capability Element[1]	Start Date	Completion Date
Core Capability 1: Healthcare System Preparedness				
1. Healthcare facilities, outside of East Tennessee Children's Hospital and University of Tennessee Medical Center are sorely lacking in terms of surge pediatric supplies. This has been identified as a gap on the KET HC annual gap analysis.	KET HC in partnership with East Tennessee Children's Hospital will provide a pediatric surge cart to each healthcare facility, along with instructions on use of supplies. A user agreement will be in place to ensure understanding from all involved parties as to usage and maintenance.	Equipment	04/30/17	06/31/17
Hospitals outside of designated pediatric centers need additional training specific to pediatric surge care.	The pediatric HAL manikin purchases with 2016/17 funding, will be offered to each facility for training. The KET Coalition will provide training opportunities to each coalition facility. In addition, 2016/2017 Regional exercises will focus on a pediatric surge event.	Training	01/01/17	06/31/18
Core Capability 2: Healthcare System Recovery				

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[1] Capability Elements are: Planning, Organization, Equipment, Training, or Exercise.

Facilities need to take lessons learned from this exercise back to create more robust plans that take into consideration the contingencies discussed at the exercise. Current pediatric surge plans may not be adequate to meet the needs during an event	Facilities should incorporate information gathered from trainings and exercises to specifically address pediatric surge needs into their plans. Coalition subject matter experts (East Tennessee Children's Hospital) should be consulted if there are any questions.	Planning	06/01/17	06/31/18
Expedient avenues of communication between Coalition members and East Tennessee Disaster Mental Health team need to be explored. This robust team is a vital asset to the Coalition and needs to be a priority for early intervention during an event.	The Disaster Mental Health Team needs to be included in the TNHAN system and tested to ensure understanding of the system for future notifications.	Training	06/01/17	07/01/17
Core Capability 5: Fatality Management				
Facilities not familiar with the processes needed for surges of deaths and and human remains should contact their local medical examiner and/or the Regional Forensic Center to familiarize themselves with the processes and assets in place.	Facilities should familiarize themselves with local and regional policies and assets, particularly related to surge deaths of pediatric patients.	Planning	06/01/17	06/31/18
Core Capability 6: Information Sharing				
Current updates have been made to the HRTS system that will	KET HC will offer trainings for EMS and Hospitals for every day	Training	05/30/17	06/31/17

ultimately enhance the system. However, the initial changes have created some gaps in program familiarity and have resulted in user errors as well as programmatic issues.	and event usage of the new system. If any facility is having difficulty they should contact the help desk on the HRTS sight for assistance			
Core Capability 10: Medical Surge				
Healthcare facilities, outside of East Tennessee Children's Hospital and University of Tennessee Medical Center are sorely lacking in terms of surge pediatric supplies and pediatric training. This has been identified as a gap on the KET HC annual gap analysis.	KET HC should prioritize this area of improvement and provide the means for those facilities to treat any pediatric surge even by offering training opportunities and supplies.	Equipment Training	05/30/17	06/31/18

APPENDIX B: EXERCISE PARTICIPANTS (130)

	Participating Organizations			
Coalition Member Type	**# in Coalition**	**% Coalition Member Participation**	*Additional Participants (Non Coalition Members)*	*Total Participants*
Federal Government				
Homeland Security Dist. 2	1	100	1	2
State & Local Government				
Local Health Department	2	75	0	2
Regional Health Department	2	50	3	5
EMS	1	25	6	7
• AMR Knox (2)				
• AMR Blount (1)				
• Claiborne County EMS (1)				
• Roane County EMS (1)				
• Sevier County EMS (2)				
Emergency Management	1	50	7	8
• Sevier County EMA (2)				
• Cocke County EMA (1)				
• Morristown Hamblem EMA (1)				
• Claiborne County EMA (2)				
• Roane County EMA (2)				
Non-government Coalition Members and Partners				
Hospital	19	95	66	85
• Blount Memorial Hospital (2)				
• Claiborne County Hospital (4)				
• East Tennessee Children's Hospital (12)				
• Fort Loudon Medical Center (7)				
• Fort Sanders Regional Medical Center (5)				
• Jefferson Memorial Hospital (6)				
• Jellico Community Hospital (3)				
• Lakeway Regional Hospital (2)				
• LeConte Medical Center (2)				
• Methodist Medical Center (4)				
• Morristown Hamblen Healthcare (3)				
• Newport Medical Center (3)				
• North Knoxville Medical Center (3)				
• Parkwest Medical Center (6)				
• Physicians Regional Medical Center (6)				
• Roane County Medical Center (3)				
• Sweetwater Hospital Association (1)				

• Turkey Creek Medical Center (4) • University of TN Medical Center (7) • Covenant Corporate (2)				
Mental Health • Peninsula Psychiatric Hospital (1) • Cherokee Health (1)	1	100%	1	2
Long Term Care Facilities • Claiborne County Nursing Home	0	N/A	1	1
Dialysis Centers				
Community Health Center				
Public Utilities				
Medic • Medic Regional Blood Center	1	100%	2	3
Fire		N/A	1	1
Other				
Schools: • Loudon County High School (1) • Maryville City Schools (1) • Knox County Schools (2) • Roane County Schools (1)	0	N/A	5	5
American Red Cross	1	100	3	4
Regional Forensic Center	2	100	2	4
Regional Medical Communication Center	1	100	0	1

Additional Information/Comments