

KETHC 2017

Full Scale Exercise

Regional Pediatric Surge Event Exercise

After-Action Report/Improvement Plan

October 19, 2017



Ketcoalition.org



EXERCISE OVERVIEW

Exercise Name	KETHC 2017 FSE: Regional Pediatric Surge Event Full Scale Exercise
Exercise Dates	October 19, 2017
Scope	<p>This exercise is a full scale exercise planned for one day at various locations within the Knox/East TN Healthcare Coalition’s jurisdiction. Exercise play is limited to the parameters set forth within each participating organization. This Regional exercise ultimately involved many local, regional, and state organizations and resources and involved the following counties: Anderson, Blount, Campbell, Claiborne, Cocke, Hamblen, Jefferson, Knox, Loudon, Monroe, Morgan, Roane, Sevier and Scott. The exercise involved all of Region 2 EMS.</p>
Mission Area(s)	Response and Recovery
Core Capabilities	<p>HPP Capabilities</p> <ol style="list-style-type: none">1 Foundation for Health Care and Medical Readiness2 Health Care and Medical Response Coordination3 Continuity of Health Care Services Delivery4 Medical Surge
Objectives	<p>The exercise planning team selected objectives that focus on evaluating emergency operations/ procedures, identifying areas for improvement, and achieving a collaborative attitude. This exercise focused on the following objectives:</p> <ol style="list-style-type: none">1. Evaluate internal organizational plans ability to respond to a pediatric mass casualty event.2. Discuss the internal and external communications systems utilized during such events, to include patient tracking.3. Evaluate the resource needs and methods for requesting additional support.4. Define the organization’s ability to coordinate with outside agencies.5. Discuss how to manage and recover from a pediatric mass casualty in the healthcare system.6. Evaluate organizational and coalition reunification plans.

**Threat or
Hazard**

Mass casualty event resulting in a surge of pediatric patients

Scenario

The local community experienced a line of heavy storms with the possibility of tornadic activity. The National Weather Service issued a watch for possible tornados for the area. A tornado hit at the fairgrounds during student day, occurring at a central park area for each county. University of Tennessee Medical Center and East Tennessee Children's Hospital were at capacity. Patients were rushed to local facilities for treatment, with 80% of them below the age of 8. Many were brought in without guardians or identification. Several other patients were brought in by private vehicle. Media descended on facilities for information.

(Some facilities chose to add in decon scenario. A rail line that runs close to the fairgrounds was also hit. A train car that carried chlorine or acrylonitrile was damaged.

Sponsor

Knox/ East Tennessee Healthcare Coalition (KET HCC) utilizing ASPR grant funding, Knox County Health Department, East Tennessee Regional Health Office

**Participating
Organizations**

American Red Cross
AMR Knoxville EMS
Big South Fork Medical Center
Blount Memorial Hospital
Cherokee Health
Claiborne County Hospital
Covenant Health Corporate
East Tennessee Children's Hospital
Fort Loudon Medical Center
Fort Sanders Regional Medical Center
Jefferson Memorial Hospital
Knox County Regional Forensic Center
Knox County Schools
LaFollette Medical Center
LeConte Medical Center
Medic Regional Blood Center
Methodist Medical Center
National Weather Service, Morristown
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 Medical Center
Sweetwater Hospital Association
Tennessee Department of Health- East Tennessee Regional Health Office
Tennessee Department of Health- Knox County Health Department
Tennessee Wesleyan College
Turkey Creek Medical Center
University of Tennessee Medical Center

**Points of
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ANALYSIS OF Objectives/Capabilities and Domains

Aligning exercise objectives and core 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	Capability/ Domain	Program	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	Capability 1 Foundation for Healthcare and Medical Readiness Capability 3 Continuity of Health Care Services Delivery Capability 4 Medical Surge	HPP		S		
	Domain 1 Community Resilience	PHEP				
Discuss the internal and external communications systems utilized during such events, to include patient tracking.	Capability 2 Health Care and Medical Response Coordination	HPP		S		
	Domain 3 Information Management	PHEP				
Evaluate the resource needs and methods for requesting additional support.	Capability 1 Foundation for Healthcare and Medical Readiness Capability 2 Healthcare and Medical Response Coordination	HPP		S		

	Domain 2 Incident Management Domain 3 Information Management	PHEP				
Define the organization's ability to coordinate with outside agencies.	Capability 2 Healthcare and Medical Response Coordination Capability 4 Medical Surge	HPP	P			
	Domain 2 Incident Management	PHEP				
Discuss how to manage and recover from a pediatric mass casualty in the healthcare system.	Capability 3 Continuity of Health Care Services Delivery	HPP	P			
	Domain 2 Incident Management	PHEP				
Evaluate organizational and coalition reunification plans.	Capability 3 Continuity of Health Care Services Delivery					
	Domain 2 Incident Management					

Ratings Definitions:

- Performed without Challenges (P): The targets and critical tasks associated with the core 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 core 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 core capability were not achieved in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance on the performance of other activities; contributed to additional health and/or safety risks for the public or facility 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 core capability were not achieved in a manner that achieved the objective(s).

Exercise Strengths / Areas of Improvement

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

Exercise Objective	Capability/Domain	Program
Evaluate internal organizational plans ability to respond to a pediatric mass casualty event	Capability 1 Foundation for Healthcare and Medical Readiness Capability 3 Continuity of Health Care Services Delivery Capability 4 Medical Surge	HPP
	Domain 1 Community Resilience	PHEP

Strengths:

1. Overall preparedness coordination within the community is excellent. Roles are clearly defined and processes create an efficient, expedient flow that minimizes loss and provides real time information sharing.
2. Previous lessons learned from pediatric surge tabletop exercise were implemented and tested during the full-scale exercise improving overall surge preparedness with this vulnerable population.
3. Hospitals provided realistic exercise results treating the vast majority of patients (over 80%) as pediatric patients, putting the region at 236% pediatric surge capacity. A total of 359 patients were surged (13% of total staffed beds).

Areas For Improvement:

1. 2016 pediatric surge tabletop exercise demonstrated a need for basic pediatric surge supplies. Supplies were purchased for each Emergency Department to treat up to 20 pediatric patients. The exercise demonstrated the need for additional surge supplies that would be used to treat pediatric patients past the emergency department.
2. HICS training needs to be provided specific to upper management.

Discuss the internal and external communications systems utilized during such events, to include patient tracking.	Capability 2 Health Care and Medical Response Coordination	HPP
	Domain 3 Information Management	PHEP

Strengths:

1. 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. Partners are familiar with the processes and have current information to contact appropriate personnel.

Areas For Improvement:

1. The Healthcare Resource Tracking System is a valuable asset to the region and has proved easy to use and efficient during past exercises/events. However, with recent updates to the system, there are some issues that make the system difficult to use to meet the needs of the event.
2. Internal radio communications were identified as area for improvement for the following reasons, lack of training on operation, not enough radios, improperly maintained, could not be located.

Evaluate the resource needs and methods for requesting additional support.	Capability 1 Foundation for Healthcare and Medical Readiness Capability 2 Healthcare and Medical Response Coordination	HPP
	Domain 2 Incident Management	PHEP

	Domain 3 Information Management	
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Strengths:

1. Use of the Regional Hospital Coordinators and the Regional Medical Communications Center to request/coordinate supply needs is the most efficient means to ensure quick response time. This process is familiar to all facilities and utilized as it should be, saving time and ensuring resources are distributed as needed, when needed.

Areas For Improvement:

1. The exercise removed the regional comprehensive pediatric hospital from play. However, facilities still tried to transfer patients. Oftentimes this was done through multiple avenues, creating confusion, especially when conversations were not prefaced with “This is an exercise”.

Define the organization’s ability to coordinate with outside agencies.	Capability 2 Healthcare and Medical Response Coordination	HPP
	Capability 4 Medical Surge	
	Domain 2 Incident Management	PHEP

Strengths:

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. Partners are familiar with the processes and have current information to contact appropriate personnel.

Areas For Improvement:

None noted

Discuss how to manage and recover from a pediatric mass casualty in the healthcare system.	Capability 3 Continuity of Health Care Services Delivery	HPP
	Domain 2 Incident Management	PHEP

Strengths:

1. Healthcare facilities did an excellent job implementing lessons learned from previous exercises (including the 2016 pediatric surge exercise) and implementing changes so that management and recovery efforts during a pediatric mass casualty event would show improvement.

Areas For Improvement:

None Noted

Evaluate organizational and coalition reunification plans.	Capability 3 Continuity of Health Care Services Delivery	HPP
	Domain 2 Incident Management	PHEP

Strengths:

- 1 The State of Tennessee has made available a new system for patient tracking that was utilized during this event. With minimal training the system was successfully used during the exercise. A total of 347 patients were entered into the system for a percent of total patient surge of 96.6%. Facilities commented favorably on the system with its ease of use and ability to manipulate fields so that it is relevant to the event.

Areas For Improvement:

1. More training needs to be made available to administrators and users of the patient tracking system so it can be utilized to its fullest potential, eliminating unnecessary fields, making it more user friendly.

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for Knox/East Tennessee (KET) Healthcare Coalition as a result of Regional Pediatric Surge Event Full-Scale Exercise conducted on 10/19/2017.

Capability Domain	Issue/Area for Improvement	Corrective Action	Capability Element ¹	Primary Responsible Organization	Organization POC	Completion Date	
						Start Date	Completion Date
Capability 1: Foundation for Healthcare and Medical Readiness Domain 1: Community Resilience	There was an observable lack of HICS training both with forms and overall system, particularly with upper management.	Further HICS training needs to be provided at all levels of staff, particularly upper-management.	Equipment	Facility	Emergency Management	12/01/17	12/01/18

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

Domain Capability	Issue/Area for Improvement	Corrective Action	Capability Element ²	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Capability 2: Healthcare and Medical Response Coordination Domain 2 Incident Management Domain 3 Information Management	The exercise removed the regional comprehensive pediatric hospital from play. However, facilities still tried to transfer patients. Oftentimes this was done through multiple avenues, creating confusion at the regional pediatric comprehensive hospital, especially when conversations were not prefaced with "This is an exercise".	Facilities should re-visit transfer protocol to ensure consistent means are used routinely or during an event. Correct exercise play should be reinforced before exercise start as to proper communication.	Training Exercise	Facility Specific	Emergency Management	12/30/17	12/30/18
	The Healthcare Resource Tracking System is a valuable asset to the region and has proved easy to use and efficient during past exercises/events. However, with recent updates to the system, there are some issues that make the system difficult to use to meet the needs of the event.	System flaw need to be reported to the State for revisions.	Equipment	KETHC	Charity Menefee Wanda Roberts	10/19/17	12/31/17
	Internal radio communications were identified as area for improvement for the following reasons, lack of training on operation, not enough radios, improperly maintained, could not be located.	Radio training should be routinely done for staff, and exercised often to ensure operational knowledge. Maintenance schedules should be followed to ensure units are located and operational for use	Equipment	Facility Specific	Emergency Management	12/30/17	12/30/18

<p>Capability 3 Continuity of Health Care Services Delivery</p>	<p>Training needs to be made available to administrators and users of the patient tracking system so it can be utilized to its fullest potential, eliminating unnecessary fields, making it more user friendly.</p>	<p>Facilities/services should identify neighboring facilities and community partners and ensure contact is made before an event to identify processes for support. Train more staff on facility info.</p>	<p>Training Planning</p>	<p>Facility/Service Specific</p>	<p>Management</p>	<p>12/01/17</p>	<p>12/01/18</p>
<p>Capability 4 Medical Surge Domain 5 Medical Surge</p>	<p>2016 pediatric surge tabletop exercise demonstrated a need for basic pediatric surge supplies. Supplies were purchased for each Emergency Department to treat up to 20 pediatric patients. The exercise demonstrated the need for additional surge supplies that would be used to treat pediatric patients past the emergency department.</p>	<p>By working with hospital staff directly involved with supply needs, the hospitals should request surge equipment needs through the Coalition</p>	<p>Equipment</p>	<p>Facility</p>	<p>Emergency Management</p>	<p>12/01/17</p>	<p>12/01/18</p>
	<p>Clinical needs for patients not clearly defined</p>	<p>Clinical needs for patients, including transport specific processes, triage documentation and alternate care site functions during a disaster needs to be addressed with community partners before an event and those processes need to be clearly conveyed to all staff.</p>	<p>Planning Training</p>	<p>Knoxville/East TN Healthcare Coalition Facility/Service Specific</p>	<p>Wanda Roberts Charity Menefee Management</p>	<p>12/01/17</p>	<p>12/01/18</p>

² Capability Elements are: Planning, Organization, Equipment, Training, or Exercise.

APPENDIX B: Exercise Metrics

Surge Capacity	Total Beds*	Total Patients Surged	Percentage
	2762	359	13%

IT Systems	TNHAN	KET Coalition (new group)	Knox/East Hospitals
	Percentage Confirming**	65%	71.8%

Patient Tracking	Total entered into system	Percent of total surge patients
	Percentage Confirming* 347 patients	96.6

HRTS

Hospitals that updated within 30 minutes of activation	80%
Total posts on message board	168
Mislabeled as a resource request or response needed	6 (3.2%)
Resource request	5 (100% follow up)
Improperly routed HRST posts (not nested correctly)	26 (15.4%)
Request response breakdown***	
Request 1: Command Center Activation	10 (33%) nested properly 20 (67%) nested improperly
Request 2: Blood Needs Request	7 (58%) nested properly 5 (42%) nested improperly
Request 3: Red Cross Needs	12 (92%) nested properly 1 (8%) nested improperly

* 2105 TDH JAR Report

**100% of hospitals were reached and confirmed via TNHAN with the alert.

*** Corrective actions during exercise seemed to show improvement

APPENDIX C: EXERCISE PARTICIPANTS

Participating Organizations
Federal
National Weather Service: Morristown
State
East Tennessee Regional Health Office
Tennessee Department of Health- Central Office
Regional
Medlink 2 (Regional Medical Communications Center)
Region II EMS
Knox County Regional Forensics Center
County
Knox County Health Department
Knoxville/Knox County Emergency Management Agency
Hospital
Big South Fork Medical Center
Blount Memorial Hospital
Claiborne County Hospital
East Tennessee Children’s Hospital
Fort Loudoun Medical Center
Fort Sanders Regional Medical Center
Jefferson Memorial Hospital
LaFollette Medical Center
LeConte Medical Center
Methodist Medical Center
Morristown Hamblen Healthcare
Newport Medical Center
North Knoxville Medical Center
Parkwest Medical Center
Physicians Regional Medical Center
Roane Medical Center
Sweetwater Hospital Association
Turkey Creek Medical Center
University of Tennessee Medical Center

APPENDIX D: Acronyms

Acronym	Term
AAR	After Action Report
ALT	Assisted Living Facility
ASPR	Assistant Secretary for Preparedness and Response
DHS	U.S. Department of Homeland Security
EEGs	Exercise Evaluation Guides
EMS	Emergency Medical Services
ETRO	East TN Regional Office (Tennessee Department of Health)
ExPlan	Exercise Plan
FSE	Full Scale Exercise
HH	Home Health
HPP	Hospital Preparedness Program
HSEEP	Homeland Security Exercise and Evaluation Program
IAP	Incident Action Plan
ICS	Incident Command System
IP	Improvement Plan
HICS	Hospital Incident Command System
KCHD	Knox County Health Department
KET HC	Knox/East TN Healthcare Coalition
MSEL	Master Scenario Events List
POC	Point of Contact
SIMCELL	Simulation Cell
SME	Subject Matter Expert
SNF	Skilled Nursing Facility
VIPs	Very Important Persons