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| Documentation and review of emergency response to the |
| Northeast Tennessee Healthcare Preparedness Coalition  2022 Full-Scale Exercise |
| Cyber-Security Attack / Extended Power Outage / Burn Surge |
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| **Real-World Incident Name** |  | Northeast Tennessee Healthcare Preparedness Coalition  2022 Full-Scale Exercise |
| **Response Dates** |  | May 4, 2022 |
| **Type** |  | Full-Scale Exercise |
| **Scope** |  | This exercise is a community wide full-scale exercise focusing on cybersecurity, communications failure, medical surge and burn related incidents with participation from partners of the Northeast Tennessee Healthcare Preparedness Coalition. |
| **Mission Area(s)** |  | Prevention, Protection, Mitigation and Response |
| **Objectives** |  | **Healthcare Facility Objectives**   * Evaluate the participating hospitals’ ability to process a surge of patients with varying levels of injuries and illness. * Evaluate the hospitals’, the RMCC and other participating agencies use of the incident command system to manage the incident. * Evaluate internal and external communications with participating agencies and ability to adapt backup communication methods. * Evaluate the ability of participating agencies to assess available resources and appropriately request additional support if required. * Evaluate the participating agency’s ability to manage medical surge due to large number of burn patients. * Evaluate the participating agency’s ability to manage a cybersecurity attack that hinders their IT systems within the facility. * Evaluate the participating agency’s ability to manage electrical outages at facilities for multiple days.   **Healthcare Coalition Objectives**   * Evaluate the ability of the HCC to enhance situational awareness for its members during an event * Evaluate the ability of the HCC to demonstrate resource support and coordination among its member organizations under time urgency, uncertainty and logistical constraints of an emergency * Evaluate the ability of the HCC to demonstrate the capability of redundant means of communication to achieve situational awareness * Evaluate the HCCs ability to monitor patient acuity and staffed bed availability in real time, tracking and documenting patient movements * Evaluate coalition members ability to communicate and coordinate quickly to find and match available staffed beds, transportation, supplies, equipment and personnel during a large-scale surge incident * Evaluate coalition members ability to use the Healthcare Resource Tracking System (HRTS) |
| **Threat or Hazard** |  | * Medical Surge and loss of life due to cybersecurity attack on electrical grid. | |
| **Scenario** |  | May 2nd: A cybersecurity attack has affected the region’s electrical grid, shutting down power in various areas across the Northeast TN region. Healthcare agencies are experiencing varying power outages and communication failures.  Due to loss of water, a large furnace in a plant that makes glass has exploded leading to multiple burn patients. The explosion has injured up to 20 people.  Multiple traffic accidents have led to an increase in trauma patients. Communication outages at responder agencies has made response difficult.  Electrical outages at residents’ homes have led to electronically dependent vulnerable populations seeking care at area hospitals.  Electrical outages at other area healthcare facilities have led some LTCs seeking evacuation to sister facilities. Additional healthcare facilities are experiencing communication and IT failures. |
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1. **Executive Summary / Overview**

The Regional Healthcare Coordinators, EMS Consultant, and Vulnerable Populations Coordinator facilitated the exercise from the Regional Medical Communications Center. RHCs, EMS consultants, and VPC participated in the exercise as a responding agency. RMCC managed transfers and communications during response. Facilities were connected via HRTS, TNHAN and WebEx

1. **Key Findings**

Overall, the exercise went well. Coalition members found the exercise participation to be helpful for their disaster planning efforts. Many members expressed a need to reevaluate plans and update based on key findings during the exercise.

**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.

*\*Add or remove objectives as needed to correctly reflect individual exercise environment.*

| Objective | Capability/ Domain | | Program | Performed without Challenges (P) | Performed with Some Challenges (S) | Performed with Major Challenges (M) | Unable to be Performed (U) |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Evaluate the ability of the HCC to enhance situational awareness for its members during an event** | Healthcare and Medical Response Coordination, Medical Surge | | HPP |  | X |  |  |
| Strengths: | | Areas of Improvements: | | | | | |
| * Strength #1: HRTS, TNHAN and Webex platforms were able to enhance situational awareness during the exercise. * Strength #2: | | * Area of Improvement #1: Hospitals, Long Term Care and EMS are all established in the HRTS system, but other participating coalition members are only established in TNHAN. There is a need for additional communication with other needed agencies during a disaster. * Area of Improvement #2: There is a need for contact lists to be on hand via paper and electronic form. | | | | | |
| **Evaluate the ability of the HCC to demonstrate resource support and coordination among its member organizations under time urgency, uncertainty, and logistical constraints of an emergency** | Healthcare and Medical Response Coordination, Medical Surge | | HPP |  | X |  |  |
| Strengths: | | Areas of Improvements: | | | | | |
| * Strength #1: RMCC is staffed and available 24/7. * Strength #2: RHCs, RMCC, ERCs and EMS consultants have established communication with many response agencies in the region. | | * Area of Improvement #1: There is a need to work more closely with EMAs to establish resource requests with TEMA and identify resources that may be available for coalition members. | | | | | |
| **Evaluate the ability of the HCC to demonstrate the capability of redundant means of communication to achieve situational awareness** | Healthcare and Medical Response Coordination, Medical Surge | | HPP |  | X |  |  |
| Strengths: | | Areas of Improvements: | | | | | |
| * Strength #1: Communications were strengthened with additional licensed care agencies onboarded into HRTS and TNHAN. * Strength #2: HAM radio was an additional asset that was tested during the exercise. * Strength #3: Many facilities had outside support from corporate offices. | | * Area of Improvement #1: There was an identified need for expanded training on HAM radio and Winlink. * Area of Improvement #2: Many facilities emergency phones were mobile based and would not work in this scenario. * Area of Improvement #3: There are some transport agencies that may have no backup power. * Area of Improvement #4: Many agencies identified a need for additional radios and batteries. | | | | | |
| **Evaluate the HCCs ability to monitor patient acuity and staffed bed availability in real time, tracking and documenting patient movements** | Healthcare and Medical Response Coordination, Medical Surge | | HPP |  | X |  |  |
| Strengths: | | Areas of Improvements: | | | | | |
| * Strength #1: HRTS is an asset for monitoring bed numbers in real time. * Strength #2: | | * Area of Improvement #1: There is a need to establish patient tracking procedures and processes for Long Term Care and an update for hospitals and EMS. * Area of Improvement #2: Cell Phone and Voice over IP (VOIP) would not work in this scenario which many facilities use routinely for correspondence. | | | | | |
| **Evaluate coalition members’ ability to communicate and coordinate quickly to find and match available staffed beds, transportation, supplies and equipment, and personnel during a large-scale surge incident** | Healthcare and Medical Response Coordination, Medical Surge | | HPP |  | X |  |  |
| Strengths: | | Areas of Improvements: | | | | | |
| * Strength #1: RMCC is a valuable asset for identifying and coordinating patient movement in the region. * Strength #2: EMS consultant was available to assist with EMS coordination. * Strength #3: Many long-term cares identified additional space that could be utilized during a disaster situation. | | * Area of Improvement #1: Due to exercise artificiality between WebEx and HRTS, RMCC was not aware of all patient transfer needs. * Area of Improvement #2: There is a need to make sure that all transports available are identified in real time. Updates to HRTS do not happen at regular intervals due to smaller agencies not having available staff to update. * Area of Improvement #3: There was an identified need for a refrigerated truck in the region to support Forensics Center in case of extended power outage. * Area of Improvement #4: There was an identified need for additional blood in the region during this type of disaster, and establishing communication between the blood centers and the HCC. | | | | | |
| **Evaluate coalition members ability to use the Healthcare Resource Tracking System (HRTS)** |  | | HPP |  | X |  |  |
| Strengths: | | Areas of Improvements: | | | | | |
| * Strength #1: Coalition members, including newly onboarded Long Term Cares, were able to navigate the HRTS system. | | * Area of Improvement #1: Some confusion between HRTS message board and WebEx used during the exercise. | | | | | |

# Appendix A: Improvement Plan

This IP has been developed specifically for Northeast Tennessee Health Care Coalition as a result of Cybersecurity Full Scale Exercise 2022.

| Issue/Area for Improvement | Corrective Action | Primary Responsible Organization | Start Date | Completion Date |
| --- | --- | --- | --- | --- |
| Hospitals, Long Term Care and EMS are all established in the HRTS system, but other participating coalition members are only established in TNHAN. There is a need for additional communication with other needed agencies during a disaster. | ReadyOp rollout this upcoming year will be an additional opportunity for establishing communication between these agencies. | RHCs | July 1, 2022 | June 30, 2023 |
| There is a need for contact lists to be on hand via paper and electronic form. | Ensure that all available contracts are printed and backed up electronically via external drives for mobility. | RHCs | July 1, 2022 | June 30, 2023 |
| There is a need to work more closely with EMAs to establish resource request procedures with TEMA and identify resources that may be available for coalition members. | Continue working with EMA to identify resources that would be available in this type of disaster situation. Communicate that with the HCC partners. | RHCs | July 1, 2022 | June 30, 2023 |
| There was an identified need for expanded training on HAM radio and Winlink. | Establish a HAM training class for coalition members. | RHCs | July 1, 2022 | June 30, 2023 |
| Many facilities emergency phones were mobile based and would not work in this scenario. | Establish additional backup communication methods. | RHCs and EMA | July 1, 2022 | June 30, 2023 |
| There are some transport agencies that may have no backup power. | Identify backup power options for smaller transport agencies. | RHCs, EMS consultant | July 1, 2022 | June 30, 2023 |
| Many agencies identified a need for additional radios and batteries. | Assist agencies to identify radios for interoperability in the region. | RHCs, RMCC | July 1, 2022 | June 30, 2023 |
| There is a need to establish patient tracking procedures and processes for Long Term Care and an update for hospitals and EMS. | Patient tracking training needed in the region. | RHCs | July 1, 2022 | June 30, 2023 |
| Cell Phone and Voice over IP (VOIP) would not work in this scenario which many facilities use routinely for correspondence. | Consider communication procedures with no cell phone or phone communication. | RHCs | July 1, 2022 | June 30, 2023 |
| Due to exercise design, RMCC was not aware of all patient transfer needs. | Ensure that all patient transfer needs are sent to RMCC including helicopter requests. | RMCC, RHCs | July 1, 2022 | June 30, 2023 |
| There is a need to make sure that all transports available are identified in real time. Updates to HRTS do not happen at regular intervals due to smaller agencies not having available staff to update. | EMS consultant to assist with updates in HRTS. | EMS consultant | July 1, 2022 | June 30, 2023 |
| There was an identified need for a refrigerated truck in the region to support Forensics Center in case of extended power outage. | Consider additional regional resource projects related to refrigerated trucks. | RHCs | July 1, 2022 | June 30, 2023 |
| There was an identified need for additional blood in the region during this type of disaster and a need for establishing communication with the HCC and the blood centers. | Establish communication with Marsh as the regional blood supplier and consider other outside region options. | RHCs | July 1, 2022 | June 30, 2023 |