COLORADO
North Central Region
Healthcare Coalition

North Central Region Healthcare Coalition: Coalition Surge Test – Operation Jumping Tornado

After-Action Report/Improvement Plan

April 3, 2019

The Coalition Surge Test – Operation Jumping Tornado was facilitated through Colorado's North Central Region Healthcare Coalition, comprised of the Boulder Health and Medical Response Partnership Healthcare Coalition Chapter, the Metro Foothills Healthcare Coalition Chapter, and the Tri-County Healthcare Coalition Chapter.

EXERCISE OVERVIEW

Exercise Name	**North Central Region Healthcare Coalition (NCR HCC): Coalition Surge Test - Jumping Tornado**
Exercise Dates	April 3, 2019
Scope	This exercise was a low/no notice Tabletop Exercise (TTX), with Functional Elements, conducted on April 3, 2019 for four hours at numerous locations within the ten-county North Central Region. Exercise play was limited to the health and medical partners located within Colorado's North Central Region.
Mission Area(s)	Response
HPP Capabilities	1. Healthcare and Medical Readiness 2. Health and Medical Response Coordination 3. Continuity of Healthcare Service Delivery
Objectives	1. Test the ability of an evacuating facility and its coalition partners to rapidly shift into disaster mode. 2. Test whether an evacuating facility knows whom to contact upon learning of the need to evacuate, and whether it can reach them at a moment's notice. 3. Exercise coalition members' ability to communicate and coordinate quickly to find and match available beds with those that need to be evacuated. 4. Exercise coalition members' ability to communicate and coordinate quickly to find and match available transportation resources with those that need to be evacuated. 5. Exercise coalition members' ability to track a subset of patients throughout the evacuation and reception process. 6. Exercise the coalition's ability to respond to and support the event with existing on-site staff without excessive guidance or prompting from leadership.
Threat or Hazard	Tornado event that causes structural damage, forcing patient evacuations at two of the region's acute care hospitals.
Scenario	Parts of the NCR are experiencing a line of heavy storms with possible tornadic activity. The National Weather Service issues a tornado watch for Arapahoe County, including the City of Aurora. This watch is then upgraded to a warning. Shortly after the warning is issued, a tornado hits two of the region's acute-care hospitals, creating enough structural damage that a full evacuation of both facilities is necessary. Impacted facilities must activate their incident command system to manage the incident, assess patient/resource needs, and coordinate the evacuation process.

Exercise Name	**North Central Region Healthcare Coalition (NCR HCC): Coalition Surge Test - Jumping Tornado**
Sponsor	The North Central Region Healthcare Coalition (NCR HCC) and its associated chapters sponsored this exercise.
Participating Organizations	Participants: members of the health and medical system, emergency management, and other supporting partners within the North Central Region.
Point of Contact	Michelle Deland NCR HCC Executive Director 1385 South Colorado Blvd., Suite A622 Denver, CO 80222 303-588-8488 mdeland@ncrhcc.org

Executive Summary

Colorado's North Central Region Healthcare Coalition (NCR HCC) conducted its annual Coalition Surge Test (CST) to exercise the region's capabilities aligned with the response to and support of a low/no notice *simulated* evacuation of 20 percent of the NCR HCC's staffed acute care bed capacity.

The CST is a component of the Hospital Preparedness Program (HPP) requirements and was sponsored, at the Federal level, by the Department of Health & Human Services (HHS) and the Assistant Secretary for Preparedness and Response (ASPR). The test consisted of two phases, and was conducted as a tabletop exercise with functional elements.

Phase 1: The first phase of the test lasted approximately 3.5 hours (210 minutes) and began with the Lead Assessor placing phone calls to two (2) acute care hospitals in the region, UCHealth University of Colorado Hospital and The Medical Center of Aurora. The Lead Assessor requested that each facility activate their hospital command center within 60 minutes, and provided evacuating facilities with a scenario that required the rapid, full evacuation of their hospital. Once all command centers had been stood up, and CST assessors had arrived on-site, evacuating facilities were instructed to assess their current patient census and start working to identify available and appropriate transportation resources and destinations for all patients. There was no actual movement of resources or patients. Evacuating facilities were give 90 minutes to work the incident. Following the 90-minute evacuation activity, healthcare coalition partners participated in a collaborative facilitated discussion via conference call. This discussion focused on exercise data collection from each of the five evacuating facilities, and a brief discussion around issues that arose during the test.

Phase 2: The second, and final, phase of the test lasted approximately 0.5 hours (30 minutes) and consisted of a virtual After Action Review (AAR). This review primarily consisted of discussions on strengths and areas for improvement for both the coalition as well as the individual players. Many organizations had executive leadership present for the AAR discussion.

General areas for improvement, as detailed in this report, include: development of a regional EMS MAC system, standardization and implementation of patient movement prioritization processes, evaluation of the EMS Liaison role in hospital command centers, continued training on EMResource and EMTrack, and an examination of processes that can support a more structured and efficient response.

The NCR HCC has approximately 4,530 staffed acute care beds in the region. To meet the HPP CST requirement of a 20 percent simulated evacuation, a total of 906 bed needed to evacuate. Based on data provided by the region's acute care facilities, the two facilities selected to evacuate would have surpassed this requirement. On the date of the CST, the total census for these facilities was slightly lower than expected and only totaled 820 patients. Over the course of the 90-minute exercise play, the evacuating facilities and supporting response partners, worked to discharge 150 patients and identify open beds and transportation for 439 patients (153 patients transported via EMS and 286 transported via non-medical transport).

Analysis of Hospital Preparedness Program (HPP) Capabilities

Aligning exercise objectives and HPP 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 HPP capabilities, and performance ratings for each HPP capability as observed during the exercise and determined by the assessment team.

Objective	HPP Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
1.Test the ability of an evacuating facility and its coalition partners to rapidly shift into disaster mode	Capability 1: Healthcare and Medical Readiness	P			
2. Test whether an evacuating facility knows whom to contact upon learning of the need to evacuate, and whether it can reach them at a moment's notice	Capability 2: Healthcare and Medical Response Coordination		S		
3. Exercise coalition members' ability to communicate and coordinate quickly to find and match available beds with those needing to be evacuated	Capability 2: Healthcare and Medical Response Coordination Capability 3: Continuity of Healthcare Service Delivery		S		
4. Exercise coalition members' ability to communicate and coordinate quickly to find and match available transportation resources with those needing to be evacuated	Capability 2: Healthcare and Medical Response Coordination Capability 3: Continuity of Healthcare Service Delivery		S		

Objective	HPP Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
5. Exercise coalition members' ability to track a subset of patients throughout the evacuation and reception process	Capability 2: Healthcare and Medical Response Coordination Capability 3: Continuity of Healthcare Service Delivery		S		
6. Exercise the coalition's ability to respond to and support the event with existing on-site staff without excessive guidance or prompting from leadership	Capability 1: Healthcare and Medical Readiness		S		

Table 1. Summary of HPP Capability Performance

Ratings Definitions:

Performed without Challenges (P): The targets and critical tasks associated with the HPP 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 HPP 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 HPP 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 HPP capability were not performed in a manner that achieved the objective(s).

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

Objective 1

Test the ability of an evacuating facility and its coalition partners to rapidly shift into disaster mode.

Capability 1: Healthcare and Medical Readiness

Strengths

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

Strength 1: Evacuating facilities demonstrated the ability to activate, notify, and assemble their command teams quickly during a low/notice event. Assembled teams were diverse and large enough to support all activities associated with a full evacuation.

Strength 2: Personnel staffing the Hospital Command Centers at the evacuating facilities were promptly assigned to functional areas within the command structure.

Strength 3: Hospital command staff at the evacuating facilities were provided with an initial brief and regular situational updates, as needed throughout the exercise.

Strength 4: Receiving and potential receiving facilities were able to rapidly determine their open bed availability and respond efficiently to requests from evacuating facilities.

Strength 5: Those response support entities (e.g., Office of Emergency Management [OEM], Public Health/Emergency Support Function [ESF] #8, transportation partners) that were notified, had the capacity to promptly activate, respond to, and/or provide data on available resources.

Objective 2

Test whether an evacuating facility knows whom to contact upon learning of the need to evacuate, and whether it can reach them at a moment's notice.

Capability 2: Healthcare and Medical Response Coordination

Strengths

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

Strength 1: Evacuating hospitals successfully utilized internal communication tools and were able to coordinate effectively with other departments within their facilities.

Strength 2: Notification of hospital evacuation, at both facilities, was posted to EMResource within ten (10) minutes of STARTEX. The utilization of EMResource provides initial notification, as well as ongoing updates, to hospitals in the region, local public health agencies, and fire/EMS and dispatch/communications centers.

Strength 3: The NCR HCC successfully tested a draft Essential Elements of Information data collection form. This form was sent out to all NCR HCC members, and received responses from 88 organizations during the 90 minutes of exercise play.

Areas for Improvement

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

Area for Improvement 1: Initial external notifications were not consistent, nor were they inclusive of all key external partners.

Analysis: There were two identifiable gaps related external partner notification processes: 1) outdated and/or incomplete contact information for external entities and 2) initial oversight in notification of key local support partners. Although both of these gaps were quickly addressed during the exercise, and appropriate external notifications were made, notification processes should be documented and completion confirmed on relevant checklists/job action sheets, reviewed with command staff on a regular basis, and include the task of updating and testing partner contact information on a regular basis. Failing to incorporate these partners early on in the response limits the resources and support for the impacted facilities and systems, and reduces the ability to obtain accurate situational awareness, especially during a cross jurisdictional or regional event(s).

Objective 3

Exercise coalition members' ability to communicate and coordinate quickly to find and match available beds with those needing to be evacuated.

Capability 2: Healthcare and Medical Response Coordination

Capability 3: Continuity of Healthcare Service Delivery

Strengths

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

Strength 1: Evacuating facilities demonstrated that they could quickly obtain the information necessary to determine their census and identify the type/level of care needed for evacuating patients.

Strength 2: Evacuating hospitals utilized EMResource to obtain initial bed availability counts from non-impacted hospitals. Events were launched within ten (10) minutes of STARTEX.

Strength 3: All but one (1) of the NCR acute-care hospitals included in the EMResource HAvBED request provided bed availability data prior to ENDEX (25/26 or 96%).

Strength 3: Evacuating hospitals were able to successfully contact potential receiving facilities to confirm patient placement. This occurred utilizing a variety of communication modalities (e.g., phone, e-mail, etc.).

Strength 4: All evacuated patients (minus those that were discharged), from both hospitals, were able to find beds by ENDEX. Additionally, a significant percentage of these patients were absorbed by healthcare facilities within the North Central Region.

Areas for Improvement

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

Area for Improvement 1: There were inconsistencies with which EMResource template the evacuating facilities decided to utilize to obtain bed availability data, as well as with familiarity and training on how to launch an event.

Analysis: Although there has been a significant push to support and facilitate hospital staff training on EMResource, the need for additional and ongoing training still exists. Generally speaking, hospital staff are familiar with the day-to-day utilization of the system (e.g., reporting Emergency Department status), but need additional support on tasks that fall outside of that process (e.g., launching an event, updating an existing event, etc.).

Area for Improvement 2: Receiving hospitals that confirmed bed availability for at least one patient were not provided with additional information or updates following the initial call for bed space from evacuating hospitals.

Analysis: Evacuating facilities reached out to potential receiving facilities to confirm that they had appropriate beds for patients being evacuated, following the initial EMResource query. Those facilities that agreed to receive patients were not provided with any follow-up communication from the evacuating hospital(s) after this initial contact. This resulted in receiving facilities “holding” beds for evacuated patients, with no knowledge of when or how they would be arriving, which ultimately impacted operations and patient care at those facilities. Processes need to be put into place to “close the loop” between evacuating hospitals and receiving hospitals.

Area for Improvement 3: There are no standardized hospital or system-level processes for rapid discharge and/or receipt/admit of a large volume of patients during a disaster.

Analysis: Depending on the type of event, there may be a need for a hospital(s) to rapidly discharge and/or receive a large volume of patients. Due to the complexities of the event(s), and/or the number of patients involved, options for altering day-to-day transfer processes should be examined in an effort to increase efficiency and effectiveness. These modified disaster-related transfer processes should be standardized, and agreed upon, by facilities and systems throughout the region.

Area for Improvement 5: There were inconsistencies with how evacuating hospitals prioritized patient movement and/or determined the sequence of evacuation. This resulted in efficiencies in transport asset allocation and utilization.

Analysis: Due to the limited EMS transportation assets available to support a large event such as a hospital evacuation, it is critical that evacuating facilities prioritize patients and structure the evacuation to maximize medical transport capabilities and capacity. During this exercise, a significant number of critical patients, who had beds ready for them, remained at the impacted facilities because all regional EMS transport resources had been exhausted.

Area for Improvement 6: Evacuating hospitals, as well as receiving hospitals, stated the need for additional work to be done on the transferring of medical records and credentialing of medical personnel when patients are moved outside of the system.

Analysis: Within the hospitals systems, the sharing of staff and transferring of medical records is clearly outlined and processes are in place. The gap exists when patients are transferred out of the system to another system or a non-system facility.

Objective 4

Exercise coalition members' ability to communicate and coordinate quickly to find and match available transportation resources with those needing to be evacuated.

Capability 2: Healthcare and Medical Response Coordination

Capability 3: Continuity of Healthcare Service Delivery

Strengths

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

Strength 1: The NCR was able to coordinate and implement a regional Emergency Medical Services (EMS) Multiagency Coordination (MAC) Group to manage the allocation of all EMS transport assets throughout the exercise.

Strength 2: The NCR EMS MAC obtained real-time EMS asset availability data prior to the first patient transport request being submitted.

Strength 3: Evacuating hospitals were able to initiate, and maintain, contact with the EMS MAC Group throughout exercise play.

Strength 4: EMS MAC tracked EMS transportation assets and only allocated those resources that were available and had not already been committed to the event.

Areas for Improvement

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

Area for Improvement 1: This exercise provided an opportunity to pilot test the EMS MAC concept, but there were/are no documented processes related to EMS MAC Group operationalization within the NCR.

Analysis: Effective operationalization of the NCR EMS MAC Group will require that the following processes, at a minimum, be developed, tested, refined, and implemented: notification; activation; structure; information sharing; authority; integration into existing systems; and demobilization.

Area for Improvement 2: There were gaps and inefficiencies with the processes utilized to prioritize transport requests to the EMS MAC.

Analysis: The EMS MAC was managing transportation requests as they came in, which put the responsibility of prioritizing patients on the evacuating hospitals. Facility-level prioritization inconsistencies resulted in inefficient utilization of transportation assets (e.g., medical transport units designed for higher acuity patients were used to transport lower acuity patients, while critical patients remained in the impacted facilities).

Area for Improvement 3: The EMS MAC did not have a complete picture of patient acuity and census.

Analysis: The EMS MAC would have the ability to better assess, prioritize, and allocate resources if they had better situational awareness. Knowing how many total patients are being evacuated, as well as the acuity of those patients, based on an agreed upon stratification, the

MAC group would have the ability to more effectively determine the appropriate transportation modality (e.g., critical care transport, advanced life support, basic life support, non-medical, etc.).

Area for Improvement 4: There needs to be additional work done to develop and define the EMS Liaison role within the hospital command center.

Analysis: Not all hospitals in the NCR currently incorporate an EMS Liaison into their command center, so this exercise provided an opportunity to test the functionality of this position at the evacuating hospitals. During the exercise, evacuating facility command staff determined that the primary role of the EMS Liaison would be to request and help coordinate transportation assets with the EMS MAC. Although transportation coordination is a critical task, the potential exists for this role to expand, based on the need(s) of the hospital command center.

Objective 5

Exercise coalition members' ability to track a subset of patients throughout the evacuation and reception process.

Capability 2: Healthcare and Medical Response Coordination

Capability 3: Continuity of Healthcare Service Delivery

Strengths

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

Strength 1: Pre-identified receiving hospitals (5) were able to successfully log in to EMTrack, and obtain access to the appropriate event (NCR Surge Test_Evacuation) in the system.

Strength 2: Pre-identified receiving hospitals were able to confirm receipt of test patients in EMTrack.

Areas for Improvement

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

Area for Improvement 1: There is no widely adopted method or system for patient tracking across healthcare providers or EMS.

Analysis: Currently, hospitals and EMS do not have a standardized method for tracking patients who are evacuated and in transit. In a large-scale evacuation, this task can quickly become overwhelming and processes can fail. In addition, external partners will likely be requesting this information, which will require entities to track the data in a format that is quickly accessible and shareable.

Area for Improvement 2: Continued development of and training on the utilization of EMTrack.

Analysis: Although the basic functions of logging in, accessing the event, and "receiving" patients were successful during the exercise, EMTrack has still not been widely adopted as a standardized patient-tracking tool. Due to a number of varying factors, access to; training on; and utilization of the system has been minimal. Because it is currently the only statewide

supported patient tracking system, ongoing initiatives aimed at examining its utility and addressing existing gaps should continue. Should an assessment of the system determine that it does not meet the needs of end users; options for an alternate system should be explored.

Objective 6

Exercise the coalition's ability to respond to and support the event with existing on-site staff without excessive guidance or prompting from leadership.

Capability 1: Healthcare and Medical Readiness

Strengths

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

Strength 1: Strength 1: Overwhelmingly, participating NCR HCC partners demonstrated their ability to perform the tasks associated with facility evacuation, and subsequent coalition surge, with existing staff.

Areas for Improvement

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

Area for Improvement 1: The process of addressing gaps identified at a facility and/or system-level may require the integration of leadership.

Analysis: Players had the capacity, and capabilities, to manage the incident(s) with staff on hand and resources on hand, future initiatives aimed at addressing improvement plan items will likely need to be done in collaboration with leadership which, ultimately, will result in stronger systems and processes at all levels.

Appendix A: Improvement Plan (IP)

This IP has been developed specifically for the North Central Region Healthcare Coalition as a result of the NCR HCC Coalition Surge Test – Operation Armageddon, Jr. conducted on April 3, 2019.

HPP Capability	Issue/Area for Improvement	Corrective Action	Capability Element(s)[1]	Primary Responsible Organization	Organization POC	Start Date	Completion Date
HPP Capability 1: Healthcare and Medical Readiness	1. Incorporate leadership into addressing facility and/or system level gaps	It is recommended that work done to address those gaps identified at the facility and/or system level should include leadership approval to expedite implementation of these processes during an event.	Planning	Healthcare Facilities and Systems			
HPP Capability 2: Healthcare and Medical Response Coordination	2. Notification processes for key partners	The region will review and refine processes around communication and notification and will re-educate partners on who, how, and when to notify external partners.	Planning & Training	NCR Healthcare Coalition and Associated Chapters	NCR HCC Executive Director and NCR HCC Chapter Leads		
		The NCR HCC will develop a regional communications resource that lists the contact information	Planning & Training	NCR Healthcare Coalition	NCR HCC Executive Director and Health and Medical		

[1] Capability Elements include: Planning, Organization, Equipment, Training, and Exercise.

		for key response partners. This resource will be included in the NCR Health and Medical Communications Framework.			Communications Committee Chair		
HPP Capability 2: Healthcare and Medical Response Coordination HPP Capability 3: Continuity of Healthcare Service Delivery	3. Utilization of EMResource to obtain bed availability data	EMResource training efforts will continue across the region, and will focus on the launching and updating of an event, as well as a review of available templates and their intended use.	Training & Exercise	NCR Healthcare Coalition and the NCR Healthcare Committee	NCR HCC Executive Director and NCR Healthcare Committee Chair(s)		
HPP Capability 2: Healthcare and Medical Response Coordination HPP Capability 3: Continuity of Healthcare Service Delivery	4. Continued communication from evacuating hospital(s) to receiving hospital(s) on patient movement	It is recommended that all hospitals build into their processes and plans, a prompt to follow up with receiving facilities on patient movement (e.g., how many confirmed patients are in transport, estimated time of arrival, any beds that they no longer need, etc.) in an effort to “close the loop.”	Planning & Organization	Healthcare Facilities and Systems			
HPP Capability 2: Healthcare and Medical	5. Development of standardized	The NCR Healthcare Committee will work with the Colorado Hospital Association	Planning & Organization	Healthcare Facilities/ Systems and	Colorado Hospital Association, NCR Healthcare		

Response Coordination HPP Capability 3: Continuity of Healthcare Service Delivery	processes for rapid discharge and/or receipt of patients during a disaster	(CHA) and hospital/system executives to determine if/how these processes can be altered during a disaster to better facilitate efficient patient movement.		Colorado Hospital Association, with support from the NCR Healthcare Committee and NCR HCC	Committee Chair(s), NCR HCC Executive Director		
HPP Capability 2: Healthcare and Medical Response Coordination HPP Capability 3: Continuity of Healthcare Service Delivery	6. Patient evacuation and movement prioritization	The region will work with the NCR Healthcare Committee and EMS partners to develop a standardized tool and/or process to facilitate prioritization of patients during an evacuation. This process/tool will align with the needs of the EMS MAC so that it can also be utilized to inform transportation allocation decisions.	Planning & Organization	NCR Healthcare Committee, EMS partners, NCR HCC	NCR Healthcare Committee Chair(s), EMS MAC Group development workgroup, NCR HCC Executive Director		
HPP Capability 2: Healthcare and Medical Response Coordination HPP Capability 3: Continuity of Healthcare Service Delivery	7. Determining processes for the transferring of patient records and credentialing of staff outside of the hospital system	It is recommended that hospitals work on formalizing processes for transferring medical records outside of their system as well as identifying credentialing processes for staff who travel outside of the system to provide support (this applies	Planning & Organization	NCR Healthcare Committee	NCR Healthcare Committee Chair(s) and NCR HCC Executive Director		

		when a facility is sending staff as well as receiving staff).					
HPP Capability 2: Healthcare and Medical Response Coordination HPP Capability 3: Continuity of Healthcare Service Deliver	8. Development of EMS MAC System	The NCR HCC will support the development of a regional EMS MAC system, in conjunction with EMS, Emergency Management, ESF-8, and Hospital partners.	Planning, Organization, Equipment, Training, and Exercise	NCR HCC and Colorado Regional Health Information Organization (CORHIO)	NCR HCC Executive Director		
HPP Capability 2: Healthcare and Medical Response Coordination HPP Capability 3: Continuity of Healthcare Service Deliver	9. Transportation resource prioritization and allocation	As part of the development of the EMS MAC system, the region will address what information the MAC Group will need from the hospitals to prioritize and allocate resources.	Planning and Organization	NCR HCC	NCR HCC Executive Director		
HPP Capability 2: Healthcare and Medical Response Coordination HPP Capability 3: Continuity of Healthcare Service Deliver	10. Development of hospital command center EMS Liaison role	Options for the implementation of an EMS Liaison into hospital command will be discussed within the NCR Healthcare Committee. If supported, the committee will work with the EMS Committee and EMS MAC development workgroup to outline roles and	Planning, Organization, & Training	NCR Healthcare Committee	NCR Healthcare Committee Chair(s)		

		responsibilities for this position.					
HPP Capability 2: Healthcare and Medical Response Coordination HPP Capability 3: Continuity of Healthcare Service Deliver	11. Patient tracking systems	It is recommended that hospitals continue to work on identifying and adopting a standardized patient tracking system in collaboration with EMS. Work aimed at addressing this gap has already been initiated within the NCR Healthcare Committee, and will continue to be supported by the NCR HCC, as needed.	Planning & Training	NCR Healthcare Committee, EMS Committee, NCR HCC	NCR HCC Executive Director and NCR Healthcare Committee Chair(s)		

APPENDIX B: EXERCISE PARTICIPANTS

Participating Organizations
Healthcare Facilities *(*Denotes an evacuating facility)*
Avista Adventist Hospital
Children's Hospital Colorado
Denver Health
Garden Terrace of Aurora
Good Samaritan Medical Center
Life Care Center of Aurora
Life Care Centers of America
Littleton Adventist Hospital
Longmont United Hospital
Lutheran Medical Center
North Suburban Medical Center
Parker Adventist Hospital
Penrose Hospital
Platte Valley Medical Center
Porter Adventist Hospital
Presbyterian/St. Luke's Medical Center
Rose Medical Center
Saint Joseph Hospital
Spaulding Rehabilitation Hospital
Sky Ridge Medical Center
St. Anthony Hospital
St. Anthony North Health Campus
The Medical Center of Aurora*
The Medical Center of Aurora – North Campus
Swedish Medical Center
UCHealth Broomfield Hospital
UCHealth Grandview Hospital
UCHealth Longs Peak Hospital
UCHealth Medical Center of the Rockies
UCHealth Memorial Central
UCHealth Memorial Hospital North
UCHealth Poudre Valley Hospital
UCHealth University of Colorado Hospital*
UCHealth Yampa Valley Medical Center
Emergency Medical Services/Transportation Resources *(*Denotes EMS MAC Group Member)*
Action Care Ambulance

Adams County Fire
AirLife Denver
American Medical Response (AMR)
Apex Paramedics
Banner Health Service Ambulance
Castle Rock Fire
Classic Air Medical
Clear Creek EMS
Denver Health Paramedic Division*
Flight For Life Colorado
Gilpin Ambulance Authority*
iCare Ambulance
Mile High Ambulance
Mountain States EMS
North Colorado Med Evac
North Metro Fire Rescue*
Northglenn Ambulance*
Platte Valley Ambulance Services
South Metro Fire Rescue
Stadium Medical
Thornton Fire Department
UCHealth EMS
West Metro Fire Rescue
Western Ambulance
Westminster Fire Department
Regional Transportation District (RTD)
South Metro Fire Rescue
Stadium Medical
Thornton Fire Department
West Metro Fire Rescue
Office of Emergency Management
Aurora Office of Emergency Management
Boulder Office of Emergency Management (EMS MAC group operations)
Public Health/ESF #8
Tri-County Public Health Department
Other
Medical Center of Aurora Busses
North Central Region Healthcare Coalition (NCR HCC)
Regional Transportation District (RTD)
A total of 88 NCR HCC organizations completed the EEI – for a full list, please contact mdeland@ncrhcc.org

APPENDIX C: COALITION SURGE TEST HOSPITAL SURVEY

Following the NCR HCC CST, the coalition sent out an electronic survey to all hospitals in the region to obtain additional data and feedback. Appendix C includes general feedback received from the survey on the CST (N=9). Complete survey results will be shared with the NCR HCC chapters, NCR HCC Governance Board, and assessors. In addition, this data will be utilized during the development and implementation of future CST exercises in the North Central Region.

Link to quantitative data summary.

Qualitative Data

Question: All hospitals, please explain the methods/tools that played a role in your situational awareness of activities occurring outside of your facility:
Our internet connection and e-mail.
EMResource and receiving direct communication from UCH.
Utilized EMResource to look for updates on event.
We used EM System and EM Track for information and there was a questionnaire from TCHD. If TCHD were the ESF 8 lead, we would have more information.
An email from Michelle! Just kidding... EMResources HAVBED request.
EMResource.
EMTrack system and EMResource system.
Just used EMResource and phone calls.

Question: All hospitals, if applicable: Please list the top 3 areas for improvement or lessons learned that your facility identified as a result of this exercise:
The lesson we got of it was that in a situation like this, we probably would need transportation assistance as our contractor, HSS, would probably be overwhelmed responding with their other hospital clients.
Our House Sup may need to consider the ongoing effects of receiving pt's from evacuating hospitals (i.e. - security, additional incoming family, increase in supply and staffing needs, etc...). We need to identify triggers for standing up IC in anticipation for receiving more evacuees. We need to ensure communication with evacuating hospitals is established early for support.
1. Need more engagement in EM resource monitoring 2. Needed more information than what was being sent out 3. The idea of having a regional touch point about the situation would have been nice.

Communication once you promise beds there needs to be follow up if they are using the beds or if they can release them for someone else. 2) EM Track would have been very useful for #1.
1.) We need more beds for the ICU. 2.) Need training on EMResource. 3.) Need to work on Decompression Plan for hospital
No notice drills are tough - I understand the importance, but a fake emergency will never take precedence over real events when people can't schedule in advance to play along.
1. Contact local ESF-8 2. Discuss visitor and family reunification area 3. Identified a need for a central incident command center with supplies needed

Question: All hospitals, if applicable: Please list the top 3 exercise successes from your facility or successes related to coordination efforts:
Able to handle request to receive evacuees without need to standing up IC. Monitoring of EMResource done well and used for sit-awareness. All contact info accurate and in place for use in EMResource.
Incident Command Planning Bridge was used to discuss the situation and begin the planning efforts
Collection of information in terms of bed availability. We were able to get a count of staffed beds quickly then kept that current by keeping track of discharges, transfers and admits within the hospital
1.) Actually stretched capacity by taking more than we normally would be based on staffing / bed availability. 2.) Good communication process with departments (getting real time info quickly)
Utilized google drive for HICs forms; provided controlled and good communication and updates to our facility; the Planning Section Chief ensured solid collaboration

Question: All hospitals: Please provide feedback on the Coalition Surge Test as a whole:
Our participation was very limited (as our capabilities are limited). I would have liked a little more communication and situational update as the drill progressed.
Good to see the improvements from last similar test. Debrief/Hotwash had good conversation and participation. It provided plenty to consider for real world event. Well done and very helpful.
This year's drill was much more organized and had some good improvements from the previous year. The MAC for transportation I think is a huge improvement.
Successful. I think this always helps us with our plans
Our Nurse Supervisor said it was easy stating, "All I need to do is the HAVBED request." With that being said, it was nice to see that the EMS portion yielded results.

It was a good test for our capabilities. I allowed my Senior Leader to leave the designated time they were supposed to be on the debriefing call because it wasn't a good use of their time. Their lacked a main facilitator on the call so discussions dragged on. A structured debrief next time would be extremely helpful.
I think we test the EMS MAC again. We should be more realistic about their notification and activation. They would not all be already activated in Boulder OEM ready to go. That takes time to stand up.

Question: All hospitals: Please provide your thoughts on what the NCR HCC can do to help you be better prepared for an evacuation, patient movement, surge, etc.:
Keep doing these drills!!
Ability to push out situational updates would be helpful to continue to plan and be prepared
Fund evacuation exercises that actually involve the movement of "fake patients."
No, it was a good drill and tabletop for us. Again, the debrief could be better.

Question: All hospitals: Please provide any additional feedback, suggestions, comments, not captured above:
Great job as always! Great exercise and conversation around support. We always appreciate the work that is being done at the NCRHCC level. This is an amazing group to be among.
You did a fantastic job putting this together.

APPENDIX D: NCR EMS MAC GROUP REPORT

In partnership with the NCR EMS Committee, the NCR HCC incorporated a regional EMS MAC function into the 2019 CST. At the time of the CST, the MAC group function lacked formalized processes, so the objectives focused on foundational components and activities.

The EMS MAC Group Report will be used to guide the continued development of an operational EMS MAC within the NCR.

EMS MAC Group and Transportation Asset Data	
Number of regional EMS partners contacted for resource availability	38
Real-time availability of regional EMS transport assets	• ALS Units: 51 • BLS Units: 16 • Flight/CCT: 7 TOTAL = 74
Total number of patients transported via EMS	153 patients over the 90 minutes exercise *EMS transportation assets ran out at the 23-minute mark.

EMS MAC Group ***Pre-Activation:*** Findings and Recommendations			
Area for Improvement	**Analysis**	**Recommendation**	**Additional Notes**
The EMS MAC group relied on personal connections to identify and communicate with EMS/fire agencies within the region. Tracking of transportation resources, both availability and dispatched, was conducted on a whiteboard. This became cumbersome and confusing as the incident progressed.	The ad hoc process used during the exercise proved to be inefficient and dependent upon the relationships of those in the room. A more structured and reliable process should be developed to support communication and resource tracking.	Develop a master list of EMS/fire transport agencies in the region, which includes: • 24/7 contact information to obtain information on available resources • Baseline count of transportation assets operated by the agency • Section for tracking resources This list will need to be accessible to the group at all times, and updated on a regular basis. Examine the option of using Google Sheets to develop a shared document.	

There are currently no trigger points for the activation of the EMS MAC group.	The development of the EMS MAC group should include information on possible activation triggers. It was recommended that a large healthcare facility evacuation would be an automatic trigger for activation due to the significant need for medical transportation assets and patient transfers.	Develop guidance on the activation triggers and processes for the EMS MAC group, and provide this document to key response partner organizations.	
There may be a need for the EMS MAC to operate virtually, depending on the incident(s).	If the incident(s) dictate that the EMS MAC group must operate virtually, processes and systems will need to be identified to support virtual operations.	The EMS MAC group development process should include guidance on operating the EMS MAC group both in-person, as well as virtually.	
The EMS MAC group should obtain as much information related to the incident(s) as possible in an effort to assess the impact to potential transportation assets (e.g., how many units are tied up responding to the incident(s), incident impact(s) to roadways, etc.).	Integration into information sharing and situational awareness processes allows the EMS MAC group to evaluate and account for the incident's impact on available transportation resources, which can then inform resource identification and allocation decisions.	The EMS MAC group should have a documented process for notifying key response partners of their activation, and requesting that the MAC group be integrated into information sharing and situational update activities.	

EMS MAC Group *Transportation Requests:* Findings and Recommendations

Area for Improvement	Analysis	Recommendation	Additional Notes
There are no standardized processes related to the prioritization of patient evacuation and transport during a healthcare facility evacuation.	The lack of patient prioritization at the facility may result in inefficient utilization of limited medical transportation assets.	Develop an agreed upon stratification of patients from evacuating facilities so that the EMS MAC can allocate appropriate resources (e.g., critical care, BLS, ALS, non-medical, etc.). The EMS MAC group should attempt to obtain the total	

		number of patients that need to be moved, and their acuity, so that they can determine how they will be moved. If possible, the evacuating facility should identify those patients that can/will be moved via non-medical transport, prior to medical transportation assets being allocated.	
There are some patients that are outside of the scope of practice for EMS providers.	Healthcare facilities need to be aware of what types of patients fall outside of the scope of practice for EMS, so that they can explore alternate transportation modalities.	EMS should develop a guidance document that details their transportation limitations per their scope of practice. This guidance document should also include a checklist of things that an evacuating facility can do to prepare the patients for medical transport. This document should be provided to healthcare facilities as part of the planning process.	

EMS MAC Group ***Patient Transportation:*** Findings and Recommendations			
Area for Improvement	**Analysis**	**Recommendation**	**Additional Notes**
There is no guidance on the management of EMS transportation assets once they have been allocated within the incident(s).	During a large scale incident(s), there should be set processes for the management of allocated medical transportation units to reduce inefficiencies and track assets.	If the incident is occurring at a single facility, or if the facilities are co-located, then the option for setting up a staging area should be considered. Re-typing of medical transport assets may occur at the staging area, depending on needs. Personal Protective Equipment and other supplies can also be sent to the staging area, as needed. Consider integrating ESF-1 (transportation) for management and/or coordination of non-medical transportation assets.	

EMS MAC Group ***Healthcare Facility Integration:*** Findings and Recommendations			
Area for Improvement	**Analysis**	**Recommendation**	**Additional Notes**
Additional work needs to be done on the EMS Liaison role and its function(s) within the hospital command center.	An EMS Liaison, when built into the hospital command center structure, can support patient prioritization and EMS asset resource requests.	Hospital and EMS partners should explore the development and utilization of an EMS Liaison. *Proposed* structure for this role: Local and/or State EOC/ESF-8 ↑ Regional EMS MAC Group ↑ EMS Liaison in Hospital Command Center	

EMS MAC Group ***Miscellaneous:*** Findings and Recommendations			
Area for Improvement	**Analysis**	**Recommendation**	**Additional Notes**
Pursue funding for the development of a regional response system, including the EMS MAC and associated response structure.	The development process should include and examination of reimbursement issues and the relationship to ESF-8 and emergency operations.	Ensure that the development of EMS MAC group processes are inclusive of key partners, including subject matter experts, as needed.	
The region should identify opportunities to practice and develop processes and procedures for managing larger incidents.	When possible, exercises and drills should include at least one activity associated with an operational EMS MAC group.	Develop and support regional healthcare facility training and testing on the utilization of the EMS MAC group, including familiarization and experience working with the EMS MAC group instead of 911 (when appropriate).	

APPENDIX E: ACRONYMS

Acronym	Term
ALS	Advanced Life Support
AAR	After Action Report/Review
ASPR	Assistant Secretary for Preparedness and Response
BLS	Basic Life Support
CCT	Critical Care Transport
CST	Coalition Surge Test
EMS	Emergency Medical Services
ENDEX	End of Exercise
ESF	Emergency Support Function
HHS	Department of Health and Human Services
HPP	Hospital Preparedness Program
IP	Improvement Plan
MAC	Multiagency Coordination Group
NCR	North Central Region
NCR HCC	North Central Region Healthcare Coalition
OEM	Office of Emergency Management
STARTEX	Start of Exercise
TTX	Tabletop Exercise