Southeast Texas Regional Advisory Council/Regional Hospital Preparedness Council

AFTER ACTION REPORT & IMPROVEMENT PLAN

May 14th-17th, 2012

Operation Four Square

Mass Casualty Functional Exercise

Publication Date:
June 18th, 2012

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Exercise Detail:

After Action Report for:	☒ Exercise ☐ Actual Event/Incident
Exercise Date(s):	May 14th-17th, 2012
Exercise Type:	☐ Drill ☐ Tabletop ☒ Functional ☐ Full-Scale ☐ Retest
Exercise Geographical Scope:	☐ Local ☒ Regional ☐ State ☐ Multi-State ☐ International

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Executive Summary

The Southeast Texas Regional Advisory Council (SETRAC), Regional Hospital Preparedness Council (RHPC) functional mass casualty exercise Operation Four Square was developed to test Catastrophic Medical Operations Center's (CMOC) Emergency Operations Coordination and Medical Surge capabilities. The exercise planning team was composed of:

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Based on the exercise planning team's determination, the following mission(s) and objectives were developed for Operation Four Square Functional Exercise.

Mission(s):
Response

Capability:

Presidential Preparedness Directive #8 Core Capabilities tested

- Emergency Operations Coordination
- Medical Surge

Objectives:

Core Capability-Emergency Operations Coordination

1. Activate Emergency Operations
    - Demonstrate the activation process as described in the CMOC Activation Plan as required in response to a mass casualty incident.
2. Communicate the Message
    - Communicate the information to all relevant partners within the region.
3. Develop Incident Response Strategy
    - Prioritize objectives and coordinate the operational objectives designated by the Operations Chief, according to the National Response Framework and National Incident Management System, for each operational period.
4. Maintain and Sustain the Response
    - Maintain the regional response to a mass casualty incident in accordance with the CMOC Basic Plan.

Core Capability-Medical Surge

5. Assess the Nature and Scope of the Incident
    - Assess, through the collection and analysis of health data (e.g., from emergency medical services and public health) to define the needs of the incident and the available healthcare staffing and resources.
6. Activate Medical Surge Operations
    - Coordinate regional implementation of individual hospital medical surge operations plans in accordance with Center for Disease Control, Assistant Secretary for Preparedness and Response, and public health guidelines, during an operational period.

7. Support Medical Surge Operations
    - Coordinate medical surge capabilities in accordance with the Center for Disease Control, Assistant Secretary for Preparedness and Response, and public health during an operational period.

The purpose of this report is to analyze exercise results, identify strengths to be maintained and built upon, identify possible areas for further improvement, and support development of corrective actions.

Major Strengths Demonstrated:

The major strengths identified during this exercise are as follows:

- It must be noted that ALL participants in the exercise were new to their roles and had not previously served in the CMOC during an exercise or actual event – instead they had received an initial training session on the roles and responsibilities 2 weeks prior to the exercise. Their performance was outstanding and will provide additionally trained personnel for depth of positions.
- The CMOC communicated efficiently, both internally and externally, with hospitals, first response agencies, Emergency Operations Centers, and public health.
- The CMOC maintained situational awareness throughout the region by maintaining open lines of communications to outside agencies and relevant partners.
- The CMOC analyzed data received and disseminated appropriate information to those who would gain the most benefit.
- As a recognized national exercise team of designers and subject matter experts in the operations of CMOC's around the country, the contractor recognizes that the SETRAC CMOC is one of the most comprehensive and cutting-edge medical operations centers in the country. This was apparent in the overall capacities demonstrated successfully during the exercise.

Primary Areas for Improvement Identified:

The primary areas for improvement, including recommendations, are as follows:

- The reference materials used in the CMOC require additional information on the processes of operation and a method of continually updating the information
- The CMOC did not develop an incident response plan, establish objectives, define priorities, or communicate the tactics needed to fulfill the objectives.
- Many of the CMOC staff were unable to use WebEOC, EMResource, or Logistics Request board to their fullest. Additional training may be required.

Section 1: Exercise/ Overview

1.01 Exercise Name Designation:

Operation Four Square

1.02 Exercise Dates:

May 14th-17th, 2012

1.03 Exercise Duration:

4 days, encompassing 4 hours per day

1.04 Exercise Location(s):

City of Houston Emergency Operations Center

1.05 Sponsor:

Southeast Texas Regional Advisory Council/ Regional Hospital Preparedness Council

1.06 Funding Source:

US Department of Health and Human Services, Assistant Secretary for Preparedness and Response, Hospital Preparedness Program.

1.07 Program Requirements Addressed:

US Department of Health and Human Services/Assistant Secretary for Preparedness and Response Hospital Preparedness Program

1.08 Mission(s) Tested During the Exercise/:

Response

1.09 Grant Funded Systems and Capabilities Demonstrated/Validated:

Presidential Preparedness Directive #8 Core Capabilities tested

- Emergency Operations Coordination
- Medical Surge

1.10 Exercise Scenario/ Type:

Mass Casualty

1.11 Organizational Functions and Participants:

See Tab A for Participant Listings.

Section 2: Exercise Design Summary and Analysis of Capabilities

2.01 Exercise Purpose and Design:

The purpose of the "Operation Four Square" Functional Exercise was to evaluate the RHPC Catastrophic Medical Operations Center (CMOC) regional medical response plans and coordination of capabilities in healthcare facilities in the event of a no-notice incident.

This exercise was designed and executed in accordance with the US Department of Homeland Security Exercise and Evaluation Program guidance. The exercise planning team discussed the complexities of responding to a major event in the City of Houston and surrounding areas. This process was completed over a 3 month period by completing 3 exercise planning conferences and extensive communication between the vendor and SETRAC/RHPC. These meeting were held at facilities throughout the Houston area including the Houston Emergency Operations Center and the Montgomery County Health District.

2.02 Scenario Summary:

Monday – **Southeast Sector**, BP Chemical Factory, Pasadena, Texas
May 14th 2012

A 911 call is received; there has been a large explosion at the BP chemical factory in Pasadena, Texas. The caller states that several storage tanks have exploded and are emitting chemicals onto the ground emitting unknown vapors.. The caller also states that there are a large number of casualties.

Upon arrival of fire and hazmat units they find the situation is very grave and immediately call for all fire apparatus and ambulances that are available. The on-scene Incident Commander states that they will be establishing a mass decontamination station. Some of the workers are starting to self-evacuate the damage zone. Emergency crews start removing non-ambulatory victims as manpower arrives.

MAJOR EVENTS

Day 1

1. A large explosion occurred at BP in Pasadena, TX.
2. Chemicals are released on the ground and in the air.
3. Large numbers of people are in need of medical attention.
4. The CMOC is activated.
5. Decontamination is established on-site.
6. Individuals with minor casualties that were not exposed to the chemicals leave the facility to seek medical treatment on their own.
7. A number of patients have chemical burns and need specialized treatment.

8. There are vapors in the air which cause a larger than normal number of people to seek treatment for respiratory problems.

Tuesday – Southwest Sector, First Colony Mall, Sugarland Texas
May 15th 2012

During the morning, the First Colony Mall in Sugarland is hosting a large event. This is a popular event that happens every year and attracts large numbers of attendees.

A truck crashes through the entrance of the mall and explodes causing a partial collapse of the building and large numbers of casualties and fatalities.

The first arriving fire units from Sugarland Fire Department station "4" call in an initial report that that the situation is very bad and all available resources are required from surrounding jurisdictions. While on scene, equipment detects the presence of a biological agent.

MAJOR EVENTS

Day 2

1. A large delivery truck crashes into First Colony Mall and then explodes.
2. A portion of the mall suffers a collapse.
3. A large number of people are injured.
4. Numerous fatalities were confirmed by first arriving law enforcement.
5. First arriving fire units on-scene call for a general alarm (all available fire & Emergency Medical Service).
6. The Federal Bureau of Investigation arrives on the scene and identifies a possible terrorist connection.
7. Hazmat units arrive to monitor air quality.
8. People begin to self-evacuate.
9. A possible biological or chemical agent is suspected based upon intelligence provided by the Federal Bureau of Investigation.
10. The Federal Bureau of Investigation's Hazardous Material Response Unit (HMRU) is called.
11. Hazmat units begin sampling in the area of the explosion for biological and chemical agents.
12. News crews are asking questions about the presence of the hazmat units, the Federal Bureau of Investigation on the scene, and if there is a connection to Monday's explosion.
13. Hospitals in the area are reporting people showing up at the Emergency Department that were at the mall. They are feeling sick and are scared about their possible exposure to a chemical or biological agent.

Wednesday – **Downtown Sector,** St. Joseph's Hospital, Houston, Texas
May 16th 2012

St. Joseph's Hospital has an above average number of patients in the Emergency Department and waiting room. An explosion in the parking garage occurs causing a partial collapse of the garage and damage to the southern façade of the hospital. Debris from the blast has flown onto the highway that is right next to the hospital and closes Hwy 45 and Hwy 59 in both directions. This has eliminated access to the hospital from the surrounding streets.

Houston Fire and EMS confirm the reports of casualties and fatalities. The initial on-scene Incident Commander has requested activation of regional assets for the incident.

MAJOR EVENTS

Day 3

1. An explosion occurs at the parking garage to the south of St. Joseph's Hospital in downtown Houston. This results in a partial hospital building collapse, damage at the emergency entrance and destruction of the southern exterior portions of the facility.
2. Access to and from the hospital is extremely limited due to collapse of the parking garage and building onto Interstates 45 and 59.
3. St. Joseph's hospital is facing a possible evacuation. An alert goes out to the CMOC that surrounding hospitals may need to prepare for a surge of patients from St. Joseph's.
4. The nearby hospitals are seeing a surge of walking wounded and are becoming overwhelmed. Ambulances are being diverted from numerous hospitals.
5. Medical supplies in surrounding hospitals are running low due to the medical surge.
6. The hospitals' Emergency Operations Centers are receiving requests for items that are not in their inventory.
7. Coordination for ambulance transportation becomes an issue.

Thursday – **North Sector,** Union Pacific Rail Yard, Spring, Texas
May 17th 2012

Union Pacific rail yard has reported multiple large explosions and stated that there are multiple tank cars ruptured and emitting hazardous substances that are unknown at this time. They also state that there has been an explosion at LUB Chemical Company which is on its property. The railyard is reporting that there are casualties at this time. In addition, they report that there are substances on the property that will cause respiratory hazards and that the vapors might be of danger to the surrounding communities.

The first arriving Spring, Texas Fire Units report that they are going to need all regional hazmat response assets. The Incident Commander declares a Mass Casualty Incident with multiple injuries at the site along with all the possible exposures that will be attributed to this event from

any vapor clouds.

MAJOR EVENTS

Day 4

1. Numerous explosions occur at the Union Pacific Rail Yard in Spring, Texas.
2. Contents of the exploding tank cars are not confirmed.
3. The media is at the Houston Emergency Operations Center demanding a statement.
4. All North Sector hospitals are seeing surge level numbers within 1½ hrs. of the incident with the predominate symptoms being shortness of breath (SOB) and the "worried-well".
5. The hospitals located downwind are reporting that they are being overwhelmed by the gases and need to close to any further patients.
6. The respiratory medication and administration supplies in the area are running low and need to be resupplied in short order.
7. Hospitals located downwind are considering evacuation.

2.03 Exercise Objectives, Capabilities, Activities and Analysis:

Capabilities-based planning allows for exercise planning teams to develop exercise objectives and observe exercise outcomes through a framework of specific action items that are derived from the Presidential Preparedness Directive #8 programs. The mission related capabilities included below form the foundation for the organization of all objectives and observations in this exercise. The capabilities linked to the exercise objectives of Operation Four Square are listed below, followed by the corresponding activities required to demonstrate the capability. Each capability is followed by related observations, analysis of observed performance and recommendations for improvements where required.

CAPABILITY 1: EMERGENCY OPERATIONS COORDINATION

Capability Summary: Emergency operations coordination is the ability to direct and support an event or incident with public health or medical implications by establishing a standardized, scalable system of oversight, organization, and supervision consistent with jurisdictional standards and practices and with the National Incident Management System.

Activity 1.1: Activate Emergency Operations

Observation 1.1.A: Strength

The CMOC provided up-to-date contact rosters that included all assigned personnel.

References: **CMOC Draft Basic Plan**

Analysis: It was noticed that there were many "personal back-ups" used to assist staff in

maintaining or obtaining contact information. This included; cell-phones, laptops, or other means of documenting contact information of individuals outside of the CMOC.

Recommendations: As a Best Practice, keep a hard copy of the contact roster in case computers and other electronic devices are not accessible.

Observation 1.1.B: Area for Improvement
CMOC binders required additional information on processes for incident management and contained personal contact information that required updating.

References: CMOC Draft Basic Plan

Analysis: Phone directories were missing or provided outdated information. This is an on-going challenge and requires a process for updating the information on a regular basis. Staff frequently used the internet to search for resources and vendor information as well as personal PDAs, cell phones and laptops for information. Tasks books were not used by the staff because of missing information or confusion. During more than one occasion, the destination of deployed resources was changed and that change almost always led someone to question how the change would be communicated to the responding resource while en-route. Always have contact information (resource leader, phone number or radio channel) for positive communications with all deployed resources.

Recommendations:

1. Keep phone lists updated by periodically sending out the list to points of contact for review.
2. Create a comprehensive contact list with phone, fax, and satellite numbers for regional vendors and resources to include pharmacies, warehouses, offices of emergency management, etc. Ensure that an individual is assigned to update the contact list on a regular schedule. Develop processes for communicating with "deployed" or "en-route" resources. Resource lists should contain "how to deploy" instructions.
3. Review the telephone "roll-over" plan to ensure the operation and location of sequential phones.

Observation 1.1.C: Area for Improvement
There was no Planning Section in the CMOC.(However, it was recognized as an exercise artificiality). During an actual incident there would be a joint Planning Section with the Emergency Operations Center and CMOC would be fully integrated in the planning process..

References: CMOC Draft Basic Plan

Analysis: Due to the artificiality of the exercise, no Planning Section was readily apparent in the Catastrophic Medical Operations Center (CMOC). The CMOC managed the incident without a formal planning section in the exercise. They were able to identify an incident response strategy, define priorities, and communicate strategies and tactics with CMOC staff. The scope of the last three days of the exercise would have required significant planning meetings to accomplish the evacuation of entire hospitals during a significant event. A well run planning meeting could have identified a better means of moving hundreds of patients. It was not realistic for the CMOC to request 300 Ambulances and expect them on-site in (four) hours. It appeared at times that the "Clinical position" was trying to load- balance patient distribution based on severity (20 Red, 10 Yellow, etc.) without consulting the various receiving facilities.

Recommendations: It was noted that during an actual activation responsibilities for planning would be incorporated into the Houston Emergency Operation Center Planning Section. However, it is recommended that if there is no combined Emergency Operations Center/CMOC Planning Section, that a Planning Section with the capability for both short-term and long-term planning should be added to the CMOC. This would allow for dedicated staff to understand the current and forecasted situation, predict the probable course of incident events and prepare strategies with alternatives to address the incident. This planning can identify specialized resources that may be needed and allow the Logistics Section time to identify where and how they will obtain those resources. In addition to a Planning Section face-to-face meetings and interaction between members of the CMOC should be incorporated on a regularly scheduled basis throughout the event.

Observation 1.1.D: Area for Improvement
The CMOC is not totally integrated into the National Incident Management System.

References: **CMOC Draft Basic Plan**

Analysis: It is not clear to the observers exactly how the CMOC actually fits into the Incident Command System structure. There is no representative in the Incident Command Post from the CMOC. This is counter to National Incident Management System and a true Unified Command Structure. The use of the Incident Command System was unfamiliar to many of the CMOC staff. A large number of staff was unfamiliar with standard Incident Command System forms such as Radio Communication Plan, Assignment List, and the Communication List.

Examples included:
1. Unfamiliarity with Incident Command System 204 Assignment List

2. Unfamiliarity with Incident Command System 205 Incident Radio Communications Plan;
3. Unfamiliarity with Incident Command System 205a (Incident Command System 205-T) Communications List;
4. Disagreement over levels of staging areas (level I vs. level II);
5. Disagreement over levels in the Mass Casualty Incident Plan (level III);

Recommendations: The Incident Command Post needs to have full accountability to ensure responder safety at all times. Therefore, thought should be given to establishing a CMOC representative on-site to assist the Incident Commander in managing casualties. Training in Incident Command System/Hospital Incident Command System should be mandatory for all CMOC staff. Regular refresher training in the Incident Command System, Hospital Incident Command System, and the National Incident Management System should be conducted. This training should include standard position names, familiarity with Incident Command System forms, definitions of strike team, task force, etc. and National Incident Management System typing.

Activity 1.2: Communicate the Message

Observation 1.2.A: Strength

CMOC made notifications of the incident via WebEOC and Everbridge in a timely manner to all hospitals and stakeholders.

References: CMOC Draft Basic Plan

Analysis: CMOC staff immediately sent notification of the event out through WebEOC and Everbridge ensuring each hospital and stakeholder was notified quickly. The CMOC Medical Operations Section Chief asked each hospital to roster appropriate staff.

Recommendations: Sustain

Observation 1.2.B: Strength

The CMOC disseminated information to the hospitals and stakeholders using multiple technologies.

References: CMOC Draft Basic Plan

Analysis: The CMOC disseminated information in several ways. However, only the Everbridge tool had the capability to account for 100% accomplishment of the task through its reporting feature. Messages sent by the CMOC were completed without

including a request for receipt verification. Therefore, although it is assumed that 100% of the hospitals and stakeholders received the messaging, there was no way to confirm that this was accomplished.

Recommendations:

Ensure that there is 100% dissemination, and receipt, of all messages by requesting receipt verification.

Observation 1.2.C: Area of Improvement

Although the CMOC communicated with hospitals when necessary by WebEOC, EMResource, telephone, and 800MHz radio, the 800 MHZ had poor reception within the CMOC.

References: **CMOC Draft Basic Plan**

Analysis: The CMOC communicated with hospitals by WebEOC, EMResource, telephone, email, and 800MHz radio. They communicated general messages as well as specific hospital messages. At the outset of each scenario, the CMOC staff obtained bed counts, asked for staff rostering and provided situational status information to the hospitals. The corridor reps were very well versed in the needs of their associated hospitals. It was discovered that 800 MHZ radios do not work within the confines of the CMOC due to lack of reception and the ability to transmit and receive clear message traffic.

Recommendations: Develop a solution for the lack of reception for 800 MHZ radios used for backup communications in the CMOC. Additional radio channels should be added to each console.

Activity 1.3: Develop Incident Response Strategy

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Observation 1.3.A: Area of Improvement

The CMOC did not completely develop a Medical Operations Plan, establish objectives, define priorities, and communicate the tactics needed to fulfill the objectives.

References: **CMOC Draft Basic Plan**

Analysis: This task was partially completed. The Medical Operations Chiefs did not, specifically, define the needs of the incident to the entire team. All incident objectives and issues were handled in order of receipt by the CMOC Medical Operations Chiefs. Objectives were not established, and there was not a clear set of priorities developed. No statement or request to the rest of the team to prioritize issues was developed. No formal documentation of strategies or tactics related to the response was noted.

Recommendations: A Medical Planning Section with the capability for both short-term and long-term planning should be added to the CMOC when the regional

planning section is not activated. This would allow for dedicated staff to understand the current and forecasted situation, predict the probable course of incident events and prepare strategies with alternatives to address the incident. This planning can identify specialized resources that may be required and allow the logistics team time to identify where and how they will obtain those resources. This Planning Section would also be available to prepare the required briefings and information that would be necessary during a real event. It would provide the Medical Operations Chiefs with documentation for updates and briefings.

Observation 1.3.B: Strength (CMOC) Area of Improvement (Hospitals)
The CMOC asked for bed availability from the hospitals through an Mass Casualty Incident query, and followed up by phone with hospitals that did not respond.

References: CMOC Draft Basic Plan

Analysis: The CMOC Medical Operations Section Chief requested Mass Casualty Incident bed availability queries to include burn and critical care beds. Hospitals that did not respond were called by telephone which took a significant amount of time and resources.

Recommendations: Each hospital must be accountable for answering Mass Casualty Incident queries. Consider weekly testing with quarterly results presented to hospital Administrators from SETRAC.

Observation 1.3.C: Sustain / Area of Improvement
The CMOC Medical Operations Chiefs conducted a roll-call through the headsets along with a short briefing on the nature of the incident.

References: CMOC Draft Basic Plan.

Analysis: Upon notification of an incident, the Medical Operations Section Chief gave a quick briefing to the members of the CMOC. However, no strategic objectives were established.

Recommendations: Initial roll-calls are a great idea. It ensures that everyone is online and ready to operate. However, take the opportunity to ensure that during briefings to the staff, objectives and priorities are clearly defined.

Observation 1.3.D: Area of Improvement
No clear set of priorities and objectives were defined for the incidents by the Medical Operations Chiefs.

References: CMOC Draft Basic Plan

All incident objectives and issues were handled in order of receipt by the CMOC

Medical Operations Chief. This became a reactive, rather than proactive, stance for the CMOC. No statement or request to the rest of the team to prioritize issues was made known. There was no clear set of priorities developed.

Recommendations: Define what needs or actions take priority. Communicate to the entire CMOC the priorities and how they will be addressed. Write down objectives so it is possible to measure the success of the operation.

Observation 1.3.E: Area of Improvement

The CMOC staff was unfamiliar with the operation of the Emergency Operations Centers maps and their capabilities to assist as a resource.

References: CMOC Draft Basic Plan

Analysis: CMOC staff members were unfamiliar with the capabilities that maps and electronic technology could provide during an incident. Maps were placed on the large screens at the front of the Emergency Operations Center, however, the information was difficult to read.

Recommendations: Incorporate training of maps into the development of personnel for the CMOC. Include the ability to view the larger maps on the smaller consoles at each individual station so that they can be incorporated into the actual incident management. Consider an agreement with the Office of Emergency Management that their staff would be present to assist with the technologies during any CMOC activation.

Activity 1.4: Maintain and Sustain the Response

Observation 1.4.A: Strength

The CMOC senior staff maintained situational awareness by obtaining information regarding "significant events" from the Corridor reps, vetting the information, and providing it to the CMOC team and the "region" as a whole.

References: CMOC Draft Basic Plan

Analysis: The CMOC staff was very familiar with its role in relation to the other "external partners". The CMOC staff was well aware of the other functional positions within the Emergency Operations Center (although none were actually staffed for the exercise) and the roles, responsibilities and capabilities of each. For example, when a request for a media interview was sent to the CMOC Medical Operations Chief, it was always referred back to the Joint Information Center or to a public information officer associated with the information request. Hazmat related issues were always routed to the fire service and public health issues were routed accordingly. Additionally, the CMOC Medical Operations Chiefs took the proactive position to contact and notify the Harris County Medical Examiner of the number of bodies that were expected to be turned over

to the office. The CMOC was very careful about declining the responsibility to fulfill resource requests that were better suited for another functional group, such as when several hospitals requested security assistance. The CMOC appropriately advised the hospitals to contact the local law enforcement agency, instead of interceding on their behalf.

Recommendations: None

Observation 1.4.B: Area of Improvement
CMOC reference materials did not provide an updated list of Subject Matter Experts.

References: CMOC Draft Basic Plan

Analysis: The CMOC reference materials do not include a comprehensive list of subject matter experts or a list of organizations that could provide specific types of information. However, each CMOC Medical Operations Chief had a good base of "institutional knowledge" from which to draw in order to find subject matter experts. Most of these contacts were located in the personal cell phones or computers of individuals staffing the CMOC.

Recommendations: All CMOC staff should have the ability to contact Subject Matter Experts. Consider developing a list of subject matter experts from various disciplines and identify where these lists will be kept such as the CMOC binders or WebEOC. The CMOC will be better able to support the hospitals with the directory of Subject Matter Experts or specialized resource providers. The CMOC may also benefit from subject matter experts that are familiar with the mission of the CMOC that would be willing to provide information during an emergency.

Observation 1.4.C: Area of Improvement
There were issues with passwords, logins, and applications required for WebEOC and EMResource.

References: CMOC Draft Basic Plan

Analysis: Throughout the exercise, there were issues with passwords, logins, and applications required for WebEOC and EMResource. In order to facilitate information sharing in the CMOC, the Logistics representative spent a great deal of time providing technical assistance such as issuance or re-setting of passwords for various software products. Often, CMOC staff could not log into an appropriate level of WebEOC. Many of the staff in the CMOC were unfamiliar with the operation of the Logistics Request (LORE) board of WebEOC. Several staff used Word and or Excel to document event details instead. Information captured in this manner is not readily available to other CMOC staff which could create unnecessary issues, as well as, the fact that WebEOC is the Legal Record of events.

Recommendations: Continue to train additional core CMOC team members regarding the use of Everbridge and WebEOC. Provide refresher training and/or just-in-time training prior to working a shift in the CMOC. Consider building customized views by corridor in EMResource for Mass Casualty Incidents. Determine if the technology exists to check on the ability to flag the position log or Logistics Request entries to other seats for acknowledgement. A mechanism needs to be developed to ensure that CMOC staff has the appropriate access to all computer applications for the positions they are required to staff. This may require a higher level of access then they would normally use during the course of their daily routine. Ensure that staff from the Office of Emergency Management is present to provide technical assistance to the CMOC personnel.

CAPABILITY 2: MEDICAL SURGE

Capability Summary: Medical surge is the ability to provide adequate medical evaluation and care during events that exceed the limits of the normal medical infrastructure of an affected community. It encompasses the ability of the healthcare system to survive a hazard impact and maintain or rapidly recover operations that were compromised.

Activity 2.1: Assess the Nature and Scope of the Incident

Observation 2.1.A: Strength
Upon notification of an event, the CMOC evaluated type, location, and size of the incident to determine "next steps."

References: **CMOC Draft Basic Plan**

Analysis: From the initial notification, the CMOC considered all specifics of the incident to decide on appropriate actions. Although the Medical Operations Chiefs did not overtly define the needs of the incident, the CMOC responded properly by obtaining bed reports and evaluating resource requirements.

Recommendations: Define the needs of the incident and communicate those needs to the CMOC via priorities and objectives.

Activity 2.2: Activate Medical Surge Operations

Observation 2.2.A: Area of Improvement
The CMOC entered resource requests on the Logistics Request board in the order the requests came in, but did not prioritize them.

References: **CMOC Draft Basic Plan**

Analysis: The CMOC did address all resource requests, but without regard for priority. The CMOC did not look at the "big picture" while entering the request, and often marked them as all being urgent. Resources were entered on the Logistics Requests board in the

order they were received. However, there was no attempt to prioritize resources, or obtain a regional view of the resources that were being requested. Many resources were marked urgent, but making all requests "urgent" does not result in a quicker response and in fact renders the request the same as "routine" because it falls in with all the other requests of the same urgency. Resources were ordered without clarifying whose responsibility it was to order and pay for the resource. The CMOC identified a private fuel supplier/transporter and simulated the purchase and delivery of fuel to a designated ambulance staging area. There was a perceived lack of communication between the CMOC and the Incident Commander and/or ambulance staging area manager when questions were raised about who had the authority to place the fuel tender in the staging area and who would be responsible for payment of the fuel.

Recommendations: Resource requests should be marked according to the urgency of the request. A set of guidelines should be established which will allow a quick determination of "urgent" compared to "routine" requests. It may be beneficial to hold a series of meetings with various local response agencies to determine how those agencies perform staging and other operations. Several variables dictate the number and safe locations for any staging area. Therefore, the task books for both the Emergency Medical Services/Communications and the Logistics Section Chiefs should include formatted inquires of several response disciplines to determine and understand what staging management decisions have been made or are in effect throughout the life of an incident. This information should be captured in writing for reference along with a list of regional resources with "how to deploy" instructions. Resource requests should follow the acronym SALT, which stands for Size, Amount, Location, and Timing.

Observation 2.2.B: Area of Improvement
There was a recognized overwhelming of the Transportation Coordinator due to the extremely large number of tasks that position is responsible for in the CMOC.

References: CMOC Draft Basic Plan

Analysis: The transportation seat in the CMOC was busy during the entire exercise. Throughout the exercise play, the CMOC was asked to support both hospitals and Emergency Medical Service providers by providing resources and subject matter expertise. On several occasions when asked by a response agency representative in the field to perform a specific task or provide support, the CMOC questioned the appropriateness of the request or the merits of the tactics. At times, the merits of the tactics were debated in the CMOC, thus delaying the provisioning of the support, or actual questions were directed back to the requesting party. At such time, the field personnel had to provide background detail to persuade the CMOC to continue with the support activities. There was a lack of understanding of how Emergency Medical Services and staging areas work at an incident.

Recommendations: Ensure that individuals filling the transportation seat have adequate knowledge of Emergency Medical Services and first response practices. Appropriate training on CMOC mission and policy should be ongoing.

Observation 2.2.C: Area of Improvement
There was no true determination of "Surge Capacities and Capabilities." (During an actual emergency, surge capacities would be increased by adding alternate care sites.)

References: **CMOC Draft Basic Plan**

Analysis: The regional level of "medical surge capacity" varied with no truly defined capacity being developed during the exercise. The bed counts may not accurately portray actual capacity. Staffing may be more of a factor in actual "medical surge capacity" of the facility.

Recommendations: Solidify the actual "medical surge capacity" for the region. An incident may occur that could spike the level of casualties past the immediate capacity. The CMOC should be capable of identifying this point of excess within a very short timeframe. Staffing qualifications and typologies should be addressed in any "medical surge capacity" calculations.

Activity 2.3: Support Medical Surge Operations

Observation 2.3.A: Area of Improvement
The CMOC staff was unfamiliar with the regional inventory and resources.

References: **CMOC Draft Basic Plan**

Analysis: CMOC staff indicated two warehouses with medical equipment caches, those being Cardinal Warehouse and Adams Warehouse. Staff believed the warehouses contained Mass Casualty Incident caches, pharmaceuticals and other medical supplies but were unsure of actual supplies stored. CMOC staff did not have an inventory of what resources were stored in both of those warehouses and were not familiar with how to request and activate those resources.

Recommendations: CMOC staff needs access to an inventory of what is available in both warehouses and how to request and activate those. Tracking of regional assets should be continuous and in "real-time."

Observation 2.3.B: Strength
CMOC maintained great communications with vendors and public health.

References: **CMOC Draft Basic Plan**

Analysis: The CMOC maintained collaboration with Public Health as they were involved with the Family Assistance Center set-up and providing information to the public. The Operations Team made a list of confirmed cases of anthrax from each hospital and requested that all hospitals notify the CMOC with new cases with the assistance of public health.

Recommendations: None

Observation 2.3.C: Area of Improvement
CMOC reference materials should include additional processes and a process for continually updating the information.

References: **CMOC Draft Basic Plan**

Analysis: "Operation Four Square" was a no-notice event which involved unique incidents that tested the experience level of the CMOC staff. Due to the fact the staff in the CMOC had very little experience in the roles they were playing; it became evident that the CMOC reference materials required additional processes. Phone directories were missing or provided outdated information. This is an on-going process and extremely difficult to maintain accuracy. There was no evidence of regional resource lists or tracking policies. Staff frequently used the internet to search for resources, Subject Matter Experts, and vendor information as well as personal PDAs, cell phones and laptops for information used to manage the incidents. Task books were not used by staff. Every situation was handled sufficiently due to a vast array of personal knowledge from CMOC staff, but it had to be retrieved from memory or electronic devices instead of a CMOC binder.

Recommendations: All internal and external contact information should be included in the position specific binders and validated on a regular basis for accuracy. These contact numbers should include landline, cell, fax and radio information for all hospitals, outside first response agencies, outside Emergency Operation Centers, SETRAC warehouses, Disaster Mortuary Response Team contacts, pharmacy vendors and resources. Develop a list of Subject Matter Experts from various disciplines that are available during an emergency and that are familiar with the mission of CMOC. The binder should have a list of regional resources with "how to deploy" instructions. Manuals should include contacts with phone numbers and approved vendors list with contact info. Manuals need to be as inclusive as possible in the event access to the Internet is lost.

Observation 2.3.D: Area of Improvement
There needs to be a stronger coordination and understanding of the role of Public Health in

the CMOC.

References: **CMOC Draft Basic Plan**

Analysis: During the exercise, the CMOC faced public health issues. The CMOC spent a lot of time dealing with tracking patients, making notifications, and compiling lists while the public health seat sat idle because those tasks were being completed by others. There may have been redundancy if the public health outside of the CMOC was working on the same items. There was a lack of understanding regarding public health's responsibility which was evident by not tasking all public health related items to the public health seat.

Recommendations: Consider more coordination with Public Health to determine how hospitals and Public Health can support each other. Provide education on Public Health's surveillance measures and reporting processes required of hospitals to avoid duplication of work. Explore how Public Health could take a more active role in the CMOC.

Section 3: Conclusion

"Operation Four Square" was a Functional Exercise (FE) testing the capability of the Houston Region CMOC to manage a no-notice event. During this exercise the following capabilities were exercised:

- Emergency Operations Coordination
- Medical Surge Operations

Based on exercise play, it is evident that the CMOC is experienced in their operations even when new staff members assume new roles during a no-notice event scenario. The objective was to train and educate new members of the CMOC to provide depth of positions for real incidents. It must be noted that ALL participants in the exercise were new to their roles and had not previously served in the CMOC during an exercise or actual event – instead they had received an initial training session on the roles and responsibilities 2 weeks prior to the exercise.

Exercise participants demonstrated an initial ability to:

- Activate the emergency operations in the CMOC in response to an Mass Casualty Incident;
- Communicate the message by making mass notifications to relevant partners within the region;
- Obtain 100% reporting on bed availability from individual hospitals;
- Monitor public health;
- Support Emergency Medical Services;
- Communicate with hospitals when needed;
- Maintain situational awareness by establishing communication with first responders, public health, nursing homes, and Emergency Operations Centers;
- Identify bed resources;
- Coordinate disaster intelligence and identify type of information or subject matter expertise needed;
- Coordinate patient movement throughout the region;
- Fill resource requests from hospitals;
- Request State and Federal assets when necessary;
- And, maintain communications with vendors and public health.

The strength, leadership, and knowledge of the Medical Operations Chiefs was outstanding. The Medical Operations Chiefs delegated tasks appropriately, and followed up on items that were not closed. The Medical Operations Chiefs gave good direction, and had a strong understanding of the CMOC mission. At times, the CMOC was asked to provide resources that were outside of their scope, and they responded appropriately. The Medical Operations Chiefs briefed the CMOC on the incident, and kept them updated as it progressed.

There was efficient communication with hospitals and first response agencies throughout the exercise. The CMOC disseminated all pertinent information out to the region, and kept control of any rumors. The CMOC used redundant systems to ensure the message was disseminated

throughout the region. Information was flowing both ways, at all times, which kept the CMOC ahead of most issues. The CMOC did an outstanding job communicating using EMResource and WebEOC, and when the scenario took those methods out of play, the hospitals adapted and overcame by switching to radios and email.

Due to comprehensive communications, the CMOC maintained outstanding situational awareness throughout the exercise. At the outset of the exercise, the CMOC quickly obtained specialty bed counts, asked for staff rosters and provided situational status information to the hospitals.

The CMOC coordinated disaster intelligence and identified types of information or subject matter expertise that was required. This information was disseminated to the appropriate partners and agencies throughout the region. The Medical Operation Chiefs gave direction to hospitals and Emergency Medical Services regarding hazmat and decontamination when they asked for it maintaining a constant situational awareness.

Feedback

Feedback from exercise participants in the Hot-Wash identified several lessons learned for improvements in the overall ability to respond to a no-notice event. Major recommendations include:

- "Each person needs to have a CMOC only login in WebEOC instead of their hospital specific login to be able to access better information".
- "Would be helpful to have a regional view in EMResource".
- "We need to be able to sort bed reporting by corridor".
- "It makes it difficult to talk on the headsets when there is only one talk group and no individual talking to positions".
- "We need training on back row jobs and WebEOC/EMResource".
- "All phone lists needs updating, and would like to have numbers to hospitals and other frequently called people"
- "There was too much radio communication between the clinical seat and logistics. If they sat next to each other, it would eliminate all of the radio traffic".
- "Transportation seat has too much to do at times and could have used a deputy".
- "Using WebEOC took a significant amount of time. We could use a person dedicated to WebEOC".
- "There is a lot of duplicate work when you out something into a position log, and then send it to other positions. It would be nice if once you entered it in, you could push it out"
- "The lack of understand of other people's plans. We would like to have a copy of those available".
- "We need to use Subject Matter Experts more"
- "We should task thing to public health when it is their area of expertise"
- " There is a need for updated bed queries during the incident"
- "Need to get Ambulance Operations Plan approved so we can use it in the CMOC"

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IMPROVEMENT PLAN

This IP has been developed specifically for the Southeast Texas Regional Advisory Council (SETRAC) as a result of Operation Four Square conducted on May 14-17, 2012. These recommendations draw on both the After Action Report and the After Action Conference.

Capability #	Observation Title	Recommendation	Corrective Action Description
1	1. CMOC staff members were utilizing personal resources to find key information.	Provide all key contact information in the position binders with annual review to ensure accuracy	Create a comprehensive contact list, that is reviewed at least annually, with phone, fax, and satellite numbers for regional vendors and resources to include pharmacies, warehouses, offices of emergency management, etc.

Capability Element	Primary Responsible Agency	Agency Point of Contact	Start Date	Completion Date
Planning				

Capability #	Observation Title	Recommendation	Corrective Action Description
1	2. CMOC staff members were not utilizing the position task books and reference materials in the Task Books need to be updated.	Provide a task book that contains up to date reference materials.	Update, through the utilization of committee, position task books that are well organized and easy to use. Content of these task books should be determined by polling participants on what the short falls were during the exercise and during actual emergencies

Capability Element	Primary Responsible Agency	Agency Point of Contact	Start Date	Completion Date
Planning				

Capability #	Observation Title	Recommendation	Corrective Action Description	
1	3. The lack of a Planning Section severely limited the ability of CMOC staff to be proactive in their response and hampered their ability to predict or anticipate needs.	Develop the ability to incorporate a planning seat into the CMOC when the regional planning section is not activated.	Organize the CMOC to include a seat for planning. The planning seat should have at least 3 people trained to work that seat and have a thorough understanding of the Incident Command System.	
Capability Element	**Primary Responsible Agency**	**Agency Point of Contact**	**Start Date**	**Completion Date**
Training and Organization				

Capability #	Observation Title	Recommendation	Corrective Action Description	
1	4. It appears that some staff in CMOC are not very well versed in the Incident Command System.	Work toward incorporating all principles of the Incident Command System into CMOC operations for staff working in CMOC.	Train all CMOC staff in Incident Command System 300, 400, 700, and 800 with utilization of Tabletop exercise to reinforce what was learned.	
Capability Element	**Primary Responsible Agency**	**Agency Point of Contact**	**Start Date**	**Completion Date**
Training				

Capability #	Observation Title	Recommendation	Corrective Action Description	
1	5. The 800 mhz radios were unable to be used in the CMOC due to lack of reception.	The CMOC management staff should work with COH EOC staff and/or an outside vendor to gain the ability to communicate on the 800 mhz system.	Coordination with City of Houston Emergency Operations Center staff to find a solution to the communications issues.	
Capability Element	**Primary Responsible Agency**	**Agency Point of Contact**	**Start Date**	**Completion Date**
Equipment				

Capability #	Observation Title	Recommendation	Corrective Action Description	
1	6. The CMOC staff members were unfamiliar with the operation of the Emergency Operations Center maps and their capabilities to assist as a resource.	Quarterly training of CMOC staff should be held to ensure the competencies of the staff members in all computer systems and programs that are utilized in the CMOC.	Add CMOC computer systems training into the Multi Year Training and Exercise Plan	
Capability Element	**Primary Responsible Agency**	**Agency Point of Contact**	**Start Date**	**Completion Date**
Training				

Capability #	Observation Title	Recommendation	Corrective Action Description	
2	7. The CMOC entered resource requests on the Logistics Request board in the order the requests came in, but did not prioritize them.	There should be active discussion among the CMOC staff as to what items are the top priorities for the CMOC to handle.	Train the CMOC staff how to effectively prioritize requests.	
Capability Element	**Primary Responsible Agency**	**Agency Point of Contact**	**Start Date**	**Completion Date**
Training				

Capability #	Observation Title	Recommendation	Corrective Action Description	
2	8. Transportation Coordinator was overwhelmed due to the extremely large number of tasks that position is responsible for in the CMOC.	The responsibilities of the transportation should be analyzed to see if 1. Some of the duties could be given to another position or 2. Add another seat to the CMOC and have them work as a team	The primary CMOC staff needs to analyze the duties of the Transportation Coordinator to determine what the best course of action is.	
Capability Element	**Primary Responsible Agency**	**Agency Point of Contact**	**Start Date**	**Completion Date**
Planning				

Capability #	Observation Title	Recommendation	Corrective Action Description	
2	9. The CMOC staff was unfamiliar with the regional inventory and resources.	The CMOC staff should have access to hard copy and computerized inventory management system software.	CMOC staff should consider the use of an inventory management system and implement the chosen system into CMOC operations.	
Capability Element	**Primary Responsible Agency**	**Agency Point of Contact**	**Start Date**	**Completion Date**
Equipment				

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TAB A

Exercise Participant Rosters

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Monday

Local and Regional Health and Medical Agencies	Number of Participants
Christus St. John Hospital	8
Clear Lake Regional Medical Center	45
Kindred Bay Town	5
Kindred East	15
Kindred Healthcare Clear Lake	175
Kindred Hospital Bay Area	20
Memorial Hermann SE Hospital	70
Riverside General Hospital	16
St Luke's Patients Medical Center	23
Surgery Specialty Hospitals	10
Texas Children's Hospital West Campus	50
Total:	437

Tuesday

Local and Regional Health and Medical Agencies	Number of Participants
Bellville General Hospital	5
Christus St. Catherine Hospital	20
El Campo EMS	10
Gulf Coast Medical Center	1
HCA West Houston Medical Center	10
Matagorda Regional Medical Center	1
Memorial Hermann Katy	30
Memorial Hermann Rehabilitation Hospital-Katy	3
Memorial Hermann Sugar Land	125
Memorial Hermann SW	150
Methodist Sugarland	4
Oak Bend Medical Center	20
Rice Medical Center	15
St. Luke's Sugarland Hospital	50
Total:	444

Wednesday

Local and Regional Health and Medical Agencies	Number of Participants
Cornerstone Hospital - Bellaire	4
Doctors Tidwell Hospital	93
Houston DHHS Bureau of Public Health Preparedness	10
Memorial Hermann Memorial City	40
Memorial Hermann Northwest	60
Memorial Hermann-TMC and Children's Memorial Hermann Hospital	80
Methodist Hospital-TMC	30
Michael E. Debakey VAMC	45
Plaza Specialty Hospital	5
Regional Catastrophic Preparedness Initiative	6
Shriners Hospitals for Children - Houston	7
St Joseph Medical Center	11
St Luke's Episcopal Hospital	75
Texas Children's Hospital Main Campus	50
Texas Medical Center	30
Texas Orthopedic Hospital	23
The Woman's Hospital of Texas	15
UT MD Anderson Cancer	1
State Agencies	
Texas State Guard - Medical Brigade, Galveston MRG	1
Total:	586

Thursday

Local and Regional Health and Medical Agencies	Number of Participants
Aspire Behavioral Health	25
Atascocita VFD	1
Conroe Regional Medical Center	5
Cy-Fair Volunteer Fire Department	1
Cypress Creek Hospital	30
Harris County Gateway to Care Medical Reserve Corps	3
HealthSouth Rehabilitation Hospital of Cypress	74
HealthSouth Rehabilitation Hospital The Woodlands	3
Houston Northwest Medical Center	23
Huntsville Memorial Hospital and off site facilities	100
Icon Hospital	24
Intracare North Hospital	22
Kindred Hospital Houston Northwest	6
Kingwood Medical Center	50
Memorial Hermann (System)	4
Memorial Hermann The Woodlands	45
Methodist Willowbrook Hospital	50
Nexus Specialty Hospital	20
North cypress medical center	30
Northwest EMS, Tomball Texas	5
San Jacinto County Public Health	2
Solara Hospital	22
St Luke's Lakeside Hospital	25
St. Anthony's Hospital	70
St. Luke's Hospital at The Vintage	12
St. Luke's The Woodlands Hospital	20
Tomball Regional Medical Center	30
State Agencies	
Texas Department of Public Safety	1
Department of State Health Services Region 6/5S	5
Texas Division of Emergency Management	1
Total:	709
Overall 4 Day Total	**2176**

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TAB B

Grant Funded Systems and Capabilities Exercised

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ASSISTANT SECRETARY FOR PREPAREDNESS AND RESPONSE
Capabilities Worksheet

This worksheet is designed to assist you in documentation of systems and capabilities tested and validated during the exercise/incident response. Place an "X" in the "Yes" column below to identify the hospital preparedness response system exercised.

Selected Capability or System Exercised	Yes
1. Healthcare System Preparedness	
2. Healthcare System Recovery	
3. Emergency Operations Coordination	**X**
4. Fatality Management	
5. Information Sharing	
6. Medical Surge	**X**
7. Responder Health and Safety	
8. Volunteer Management	
9. Other Capabilities or Systems exercised	
a.	
b.	

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