



Operation Toxic Tide

After-Action Report/Improvement Plan

June 18th, 2024

EXERCISE OVERVIEW

Exercise Name	Operation Toxic Tide
Exercise Dates	June 18th, 2024
Scope	This exercise was a tabletop exercise, conducted over two hours at the SETRAC Conference Center. Exercise play was limited to existing plans, policies, and procedures.
Focus Area(s)	Response
Capabilities	<ul style="list-style-type: none"> - Healthcare and Medical Response Coordination - Medical Surge
Objectives	<ul style="list-style-type: none"> - The Healthcare Coalition and partners will examine the expected requirements, means, and methods for interagency communication to coordinate the regional response to a chemical incident based on existing plans, protocols, and capabilities. - The Healthcare Coalition and partners will identify deficiencies in the regional response to a chemical incident based upon the existing CMOC Chemical Plan. - The Healthcare Coalition and partners will validate the planning assumptions identified for the regional response to a chemical incident based upon the existing CMOC Chemical Plan. - The Healthcare Coalition and partners will analyze the anticipated regional response to a chemical incident based upon the existing CMOC Chemical Plan.
Threat or Hazard	Chemical Release
Scenario	On a hot summer weekend, hypochlorite and sulfuric acid leak in and near a pool at a popular waterpark. Many attendees begin to complain of symptoms associated with chemical exposure and seek emergency medical assistance. In total, more than 100 people seek some form of emergency medical attention due to this exposure.
Sponsor	SouthEast Texas Regional Advisory Council (Hospital Preparedness Program)
Participating Organizations	SETRAC, and six hospitals from three healthcare systems, Harris County Office of Homeland Security and Emergency Management, Harris County Public Health, the Texas Department of State Health Services, Harris County ESD 11 Mobile Healthcare, and Spring Fire Department played in this exercise.
Point of Contact	<p>James Meaux 281-822-4445 James.Meaux@SETRAC.org</p> <p>Timothy Chapman 281-822-4439 Timothy.Chapman@SETRAC.org</p>

ANALYSIS OF CAPABILITIES

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

Objective	Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Examine the expected requirements, means, and methods for interagency communication to coordinate the regional response to a chemical incident.	Healthcare and Medical Response Coordination		S		
Identify deficiencies in the regional response to a chemical incident.	Healthcare and Medical Response Coordination		S		
Identify deficiencies in the regional response to a chemical incident.	Medical Surge	P			
Validate the planning assumptions identified in the existing CMOC Chemical Plan	Healthcare and Medical Response Coordination	P			
Validate the planning assumptions identified in the existing CMOC Chemical Plan	Medical Surge	P			
Analyze the anticipated regional response to a chemical incident.	Healthcare and Medical Response Coordination		S		
Analyze the anticipated regional response to a chemical incident.	Medical Surge	P			

Table 1. Summary of Hospital Preparedness Capability Performance

Ratings Definitions:

Performed without Challenges (P): The targets and critical tasks associated with the 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 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 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 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 capability, highlighting strengths and areas for improvement.

Objective 1: Examine the expected requirements, means, and methods for interagency communication to coordinate the regional response to a chemical incident.

The strengths and areas for improvement for each capability aligned to this objective are described in this section.

HPP Capability: Healthcare and Medical Response Coordination

Strengths

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

Strength 1: Fire and Emergency Medical Services partners indicated a plan to notify SETRAC of the incident early in the response by having the EMS service's communications center contact SETRAC's on-call duty officer.

Strength 2: SETRAC indicated a plan to notify regional healthcare facilities of the incident via an EMResource Mass Casualty Incident notification.

Strength 3: SETRAC voiced plans for the on-call duty officer or CMOC to facilitate passing information between the on-scene command and healthcare facilities.

Areas for Improvement

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

Area for Improvement 1: Healthcare partners identified that emergency medical services providers may transport patients to hospitals that have already become overburdened by self-presenting patients.

Analysis: While receiving facilities are accustomed to completing the initial bed availability report sent to the region via EMResource by SETRAC within an hour, their available beds begin to fill with self-presenting patients. If emergency medical services providers coordinate with SETRAC to identify transport destinations based on the initial bed availability, then they may transport patients to hospitals that originally had beds open but have since filled those beds with walk-in patients.

Objective 2: Identify deficiencies in the regional response to a chemical incident.

The strengths and areas for improvement for each capability aligned to this objective are described in this section.

HPP Capability: Healthcare and Medical Response Coordination

Strengths

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

Strength 1: Strong every-day relationships between regional partners enabled clear identification of agencies and partnerships for coordination and regional assistance.

Strength 2: Healthcare facilities and partners throughout the region identified the need to validate information about the incident, and universally identified SETRAC as the contact to verify healthcare related incident information.

Strength 3: Coalition partners identified several sources to coordinate with to acquire additional resources and assets for managing the incident, including jurisdictional offices of emergency management, fire marshal's offices, and SETRAC.

Areas for Improvement

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

Area for Improvement 1: Regional partners were unsure how to contact some organizations that would be necessary for response coordination.

Analysis: Many partners defaulted to contacting the SETRAC on-call duty officer because, while many of the organizations in the room have an on-call or 24-hour response number to contact, most of the participants were not sure where to find that information for every agency. This resulted in partners indicating that they would contact the SETRAC duty officer because it is a known contact, but many expressed that it would be better to know how to reach all partners on a 24-hour basis.

Area for Improvement 2: Some coalition partners were not aware of the capabilities of other organizations without the coalition.

Analysis: Most organizations that participated in the exercise were well-aware of the capabilities and resources that their organization could contribute to managing the incident at hand. However, many were not aware of the capabilities and resources of partner organizations that would also be responding to the incident, resulting in sometimes unclear roles.

HPP Capability: Medical Surge

Strengths

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

Strength 1: All participating healthcare facilities indicated that they had a plan in place, and the appropriate equipment to support that plan, for establishing decontamination operations and handling a surge of patients.

Strength 2: Healthcare facilities throughout the region are confident in their ability to handle patient surges, due to the resilience built by experience throughout the COVID-19 pandemic.

Strength 3: Healthcare facilities throughout the region build their decontamination plans and procedures on the assumption that the exact chemical contaminant will not be known immediately, which prevents the time it takes to identify the contaminant from delaying appropriate patient decontamination and care in most cases.

Objective 3: Validate the planning assumptions identified in the existing CMOC Chemical Plan.

The strengths for each capability aligned to this objective are described in this section.

HPP Capability: Healthcare and Medical Response Coordination

Strengths

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

Strength 1: All coalition partners indicated plans to follow the incident command procedures and guidelines set forth in their emergency operations plans.

Strength 2: Hospitals indicated that they had sufficient plans, personal protective equipment, and equipment to receive self-referring patients from this type and scale of incident.

Strength 3: Healthcare partners demonstrated an understanding of the expectations of their organizations are part of the coalition in the first minutes and hours of a large-scale chemical incident.

HPP Capability: Medical Surge

Strengths

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

Strength 1: Healthcare facilities indicated that they had adequate plans and procedures to decompress emergency centers to make room for a surge of patients.

Strength 2: Some healthcare facilities indicated that they had plans to use decontamination tents to accommodate a surge in patients requiring decontamination outside of the emergency center.

Strength 3: Healthcare facilities indicated that they had applications and consult services available to assist providers in caring for specialty patients during a surge.

Objective 4: Analyze the anticipated regional response to a chemical incident.

The strengths and areas for improvement for each capability aligned to this objective are described in this section.

HPP Capability: Healthcare and Medical Response Coordination

Strengths

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

Strength 1: Participating organizations easily identified existing channels to obtain any needed resources to respond to the presented scenario.

Strength 2: On-scene response agencies indicated that they would establish a unified command for the presented scenario, which would allow for communication and coordination with SETRAC to occur with on-scene agencies, including emergency medical services.

Strength 3: Healthcare partners identified that needed medical resources would be requested through SETRAC.

Areas for Improvement

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

Area for Improvement 1: Healthcare facilities expressed concern that patient registration will delay care for many patients being transported by emergency medical services.

Analysis: Patient tracking systems, like Pulsara, allow for increased communication between on-scene and transporting patient care providers and receiving facilities. However, these systems do not currently integrate with patient registration systems at the receiving healthcare facilities. This lack of integration leads to delays in patient care upon arrival at the receiving facility because the facility may already have all the information about the patient's condition, but they cannot place medication, procedure, or examination orders until the patient has been entered and received in the facility's registration system.

Area for Improvement 2: Emergency medical services systems initiating incidents in Pulsara do not have procedures developed to ensure that SETRAC is added to those incidents as an owner.

Analysis: While emergency medical services systems recognize the need to alert SETRAC to mass casualty incidents, as well as the need to begin an incident in Pulsara to track patients from that incident, the task of initiating the incident on Pulsara often falls to the first transporting paramedic. During a mass casualty incident, the first transporting paramedic may not know to add SETRAC to the incident that they are creating on Pulsara, or to ensure that SETRAC has co-ownership of the incident.

HPP Capability: Medical Surge

Strengths

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

Strength 1: On-scene response entities identified fire department personnel as being responsible for on-scene decontamination and triage, freeing emergency medical services personnel to focus on treatment and transportation.

Strength 2: Healthcare facilities indicated preparedness to accept and treat patients from populations that they do not routinely serve in the event of a medical surge, such as adult hospitals tending to pediatric patients and pediatric hospitals tending to adult family members of pediatric patients in order to quickly care for patients, limit the burden on transfer services and specialty facilities, and keep families together while being cared for.

Strength 3: Emergency medical services providers indicated that in this scenario they would likely transport two to three patients at a time in each ambulance to limit the need to decontaminate additional ambulances and to facilitate rapid patient movement while additional resources, such as multi-patient evacuation vehicles, are mobilized.

Appendix A: IMPROVEMENT PLAN

Capability	Issue/Area for Improvement	Corrective Action	Capability Element	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Capability 1: Healthcare and Medical Response Coordination	1. Bed availability at receiving facilities changes between completing the report and receiving patients from EMS.	Discuss at Corridor meetings and develop procedures to encourage hospitals to keep MCI bed availability up to date after initial report.	Planning	SETRAC		1 July 2024	1 December 2024
Capability 1: Healthcare and Medical Response Coordination	2. Regional partners were unsure how to contact some organizations that would be necessary for response coordination.	Develop a 24/7 contact list for the SETRAC Duty Officer to use as a reference when answering questions or validating incident information.	Organizing	SETRAC		1 July 2024	1 September 2024
Capability 1: Healthcare and Medical Response Coordination	3. Some coalition partners were not aware of the capabilities of other organizations	Develop an awareness-level training about the CMOC Chemical Plan, including partner agency roles, responsibilities, and resources to post on	Training	SETRAC		1 July 2024	1 December 2024

Capability	Issue/Area for Improvement	Corrective Action	Capability Element	Primary Responsible Organization	Organization POC	Start Date	Completion Date
	without the coalition.	SETRAC's Learning Management System.					
Capability 1: Healthcare and Medical Response Coordination	4. Healthcare facilities expressed concern that patient registration will delay care for many patients being transported by emergency medical services.	Notify Pulsara of need for integration between Pulsara and receiving facility patient registration systems.	Equipping	SETRAC		1 July 2024	1 September 2024
Capability 1: Healthcare and Medical Response Coordination	5. Emergency medical services systems initiating incidents in Pulsara do not have procedures developed to ensure that SETRAC is added to those incidents as an owner.	Discuss with the Pre-Hospital group and develop one-page procedure for adding SETRAC to an incident with co-ownership to share with EMS services developing their own MCI procedures.	Planning	SETRAC		1 July 2024	1 December 2024

This IP is developed specifically for the Regional Healthcare Preparedness Coalition as a result of the Operation Toxic Tide Tabletop Exercise conducted on June 18th, 2024.

APPENDIX B: EXERCISE PARTICIPANTS

Participating Organizations
Regional Healthcare Preparedness Coalition
SouthEast Texas Regional Advisory Council
Memorial Hermann System
Memorial Hermann Texas Medical Center
Memorial Hermann Children’s Hospital Texas Medical Center
Memorial Hermann The Woodlands Hospital
Texas Children’s Hospital
Texas Children’s Hospital The Woodlands
Texas Children’s Hospital West
HCA Houston Healthcare - Tomball
Office of Emergency Management
Harris County Office of Homeland Security and Emergency Management
Public Health
Harris County Public Health
Texas Department of State Health Services Public Health Region 6/5 South
Emergency Medical Services
Harris County Emergency Services District 11 Mobile Healthcare
Other
Spring Fire Department