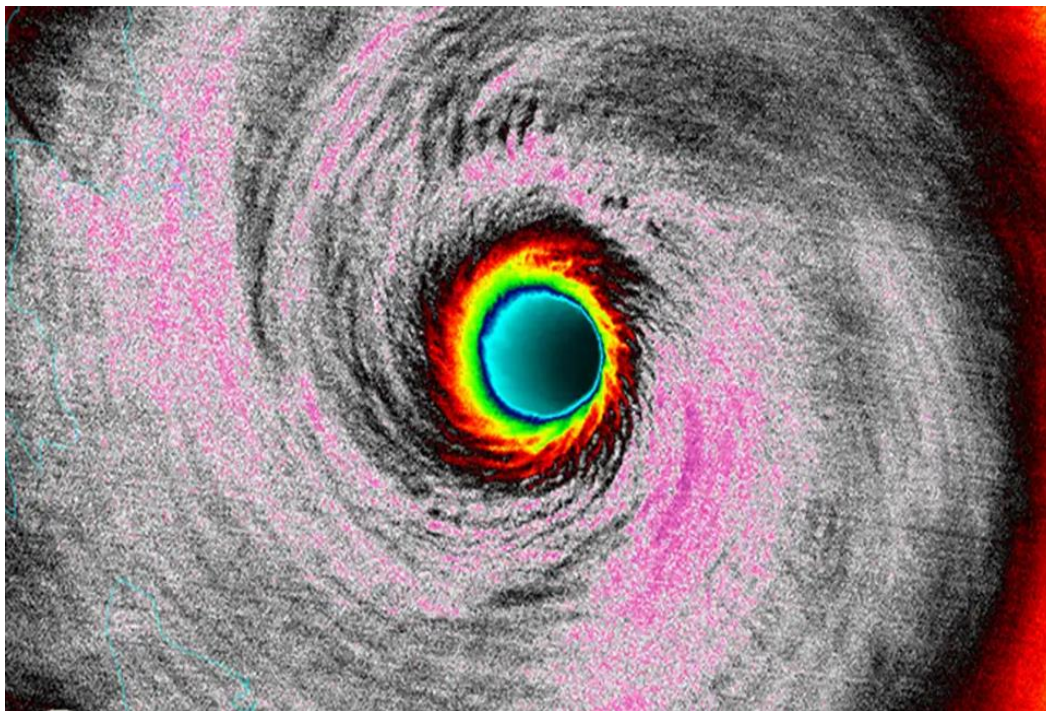# HURRICANE PREPAREDNESS TABLETOP EXERCISE

After Action Report and Improvement Plan (AAR-IP)

The After-Action Report and Improvement Plan (AAR/IP) summarizes exercise information required for preparedness reporting and trend analysis by aligning exercise objectives with preparedness doctrine, related frameworks, and national guidance. This information is compiled into recommendations and corrective actions in the improvement plan to improve local and regional preparedness, response, and recovery activities.

EXERCISE OVERVIEW

Exercise Name	Hurricane Preparedness Tabletop Exercise (TTX) 2022
Exercise Date	May-June 2022
Scope	This is a tabletop exercise planned to occur during Corridors' monthly meetings. Healthcare systems' inclement weather and hurricane plans will be discussed, as well as procedures for evacuation and recovery systems. Exercise play is limited to meeting participants.
Mission Area	Preparedness, Response, and Recovery
Capabilities	• Capability 2: Health Care and Medical Response Coordination • Capability 3: Continuity of Healthcare Service Delivery • Capability 4: Medical Surge
Objectives	• Evaluate evacuation and shelter-in-place policies and procedures in anticipation of a major weather event, including patient tracking and receiving. • Identify coordination and communication methods used to mitigate the effects of a hurricane.
Hazard	Major Weather Event - Hurricane
Scenario	A major hurricane is expected to impact the Texas Gulf Coast within 120 hours. Impacts may be experienced across Trauma Service Areas H, Q, and R.
Sponsor	Hospital Preparedness Program (HPP) Regional Healthcare Preparedness Coalition (RHPC) Southeast Texas Regional Advisory Council (SETRAC)
Participating Organizations	SETRAC, EMS, TDEM, DSHS, City & County EMCs, Hospitals, Public Health, Healthcare Management, Free Standing Emergency Rooms, ER, EM and other Healthcare Organizations/Departments, Regional, State, & Federal Partners.
Point of Contact	Carrie Cox & John Wingate Regional Exercise and Training Coordinators Southeast Texas Regional Advisory Council Carrie.Cox@setrac.org / John.Wingate@setrac.org 281-822-4445

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GENERAL INFORMATION

Exercise Objectives and HPP Capabilities

The following exercise objectives in Table 1 describe the expected outcomes for the exercise. The objectives are linked to HPP capabilities, which are distinct critical elements necessary to achieve the specific mission area(s). The objectives and aligned HPP capabilities are guided by elected and appointed officials and selected by the Exercise Planning Team.

Exercise Objectives	HPP Capability
Evaluate evacuation and shelter-in-place policies and procedures in anticipation of a major weather event, including patient tracking and receiving.	• Capability 2: Health Care and Medical Response Coordination • Capability 3: Continuity of Healthcare Service Delivery
Identify coordination and communication methods used to mitigate the effects of a hurricane.	• Capability 2: Health Care and Medical Response Coordination • Capability 4: Medical Surge

Table 1. Exercise Objectives and Associated HPP Capabilities

EXERCISE SCENARIO

This section summarizes the two modules with specific issues, exercise assumptions, and artificialities that participants considered and factored into discussions and actions during the TTX.

Inject 1: Weather Notice

A major hurricane is expected to make landfall on the Texas coast within 3 days. Meteorologists are categorizing the hurricane as a category 4, but are noting that pressure systems are favorable for increasing strength. Several models are predicting landfall in Galveston Bay and tracking northeast; however, two traditional models are predicting a southwestern shift toward Corpus Christi within the next 72 hours.

Inject 2: Landfall

A strong category 5 Hurricane made landfall in Galveston Bay Texas. Wind speed at land fall was 163 mph with gusts reaching 190 mph. After making landfall the center of circulation tracked over Channelview, Sheldon (west of Crosby), Atascocita, Porter then turned NNE following highway 59, with the storm still at a cat-3 over Lufkin and Nacogdoches, before turning more NE toward Shreveport, LA. Extensive property and infrastructure damage has been identified along the track and east of the storm.

Inject 3: Post-Hurricane

The hurricane has reduced to a tropical depression and moved out of the region. Many facilities in the hurricane's path are reporting major damage and do not expect to be operational for at least 36 hours.

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CAPABILITY PERFORMANCE RATINGS

Aligning exercise objectives and preparedness capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis nationwide. The core capabilities include Operational Coordination, Critical Transportation, Public Health and Medical Services, and Mass Care Services; however, the table below includes performance ratings for each Health Care Preparedness and Response capability objective written by the planning team and observed with average ratings based on the evaluator notes during the exercise.

Table 1: Summary of Health Care Preparedness & Response Capability Performance Ratings

Capability	Exercise Objectives	Rating
2. Healthcare and Medical Response Coordination	Evaluate evacuation and shelter-in-place policies and procedures in anticipation of a major weather event, including patient tracking and receiving.	**S**
3. Continuity of Healthcare Service Delivery	Evaluate evacuation and shelter-in-place policies and procedures in anticipation of a major weather event, including patient tracking and receiving. Identify coordination and communication methods used to mitigate the effects of a hurricane.	**S**
4. Medical Surge	Identify coordination and communication methods used to mitigate the effects of a hurricane.	**S**

Ratings Definitions:

- **Performed without Challenges (P):** The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it has conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- **Performed with Some Challenges (S):** The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified.
- **Performed with Major Challenges (M):** The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance has 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 core capability were not performed in a manner that achieved the objective(s).

ANALYSIS OF CAPABILITY OBJECTIVES

This section provides a summary of observations for each objective evaluated with its corresponding capability. The observations are compiled below as either strengths or areas for improvement with an analysis of factors identified and discussed by participants, then recorded by exercise evaluators.

Capability 2: Healthcare and Medical Response Coordination

Objective:

Evaluate evacuation and shelter-in-place policies and procedures in anticipation of a major weather event, including patient tracking and receiving.

Strengths:
- Experience level of participants
- Collaboration among organizations including first responders, hospitals, OEMs, and the Coalition
- Sharing and discussing different organizational plans
- Availability of resources in Southeast Texas

The following areas of improvement are required to achieve the full capability level:

Areas for Improvement:
- More preparedness training needed for staff
- Stronger communication and "buy-in" from senior leadership needed
- Contact information on EMResource should be reviewed and updated
- Ensure vulnerable areas and/or systems have a severe weather protection plan
- Many facilities noted that their 96-Hour Cache may not last full 96 hours, especially since the onset of the pandemic
- Review MOUs and contracts in place with organizations
- Involvement with LEPC
- Utilize resources like FirstNet and Wave app for communication
- Ensure staff know satellite phone numbers and HAM radio call signs

Analysis:
Participants appreciated the ability to collaborate among related organizations and response partners. The opportunity to share best practices with one another was enjoyed and will be implemented again in the future. From this exercise, there were many areas of improvement needed to better satisfy Capability 2 (Healthcare and Medical Response Coordination) and ensure patient tracking and receiving, as well as shelter-in-place policies. This can be done by addressing the areas for improvement noted above. Some of these areas can be accomplished immediately, and facilities expressed enthusiasm in carrying them out. Other areas will take more time, resources, and support to accomplish, however, it is believed that attainment is realistic and achievable within the next year.

Capability 3: Continuity of Health Care Service Delivery

Objective:

Evaluate evacuation and shelter-in-place policies and procedures in anticipation of a major weather event, including patient tracking and receiving.

Strengths:
- Beneficial to review risks to communications systems and plans to continue operations in one or more systems' absence
- Discussing and sharing tertiary plans in case secondary plans fail
- Discussion of staffing plans and considerations for personnel in a major weather event

The following areas of improvement are required to achieve the full capability level:

Areas for Improvement:
- Ensure staff know and are able to utilize other forms of communication in the event that primary communication systems fail
- Re-establish and review supply chain resource contacts
- Increase amount of on-call or backup staff available during severe weather events

Analysis:

Though the same objective as Capability 2, this objective under Capability 3 focuses more specifically on the contingencies of a severe weather event. Participants noted that the opportunity to share best practices and experiences over a range of topics was extremely beneficial to those looking to harden their continuity of operations plans. Some of the topics mentioned were communications systems, "Plan C" strategies, and potential staffing challenges related to the severe weather event. Similarly, areas for improvement discussion focused on back up communications plans, staffing challenges, and supply chain improvements.

Capability 4: Medical Surge

Objective:

Identify coordination and communication methods used to mitigate the effects of a hurricane.

Strengths:
- Sharing of surge plans during severe weather when facilities are already stressed

The following areas of improvement are required to achieve the full capability level:

Areas for Improvement:
- Consideration of vulnerable populations that bring themselves to emergency departments for shelter or medical attention for chronic illnesses
- Consideration of full-term pregnancies that must report to hospitals at physician's orders

Analysis:

Participants echoed a similar sentiment as stated in response to the other capabilities: sharing and discussing plans is paramount in ongoing medical response preparation. For this specific capability, the focus was on the inevitable surge of patients that occurs during and after a severe weather event. Participants also noted two areas of improvement for accomplishing this capability. First, plans should contain sections that address the influx of vulnerable populations that self-present to hospital emergency departments during and after storms. These individuals could come from several different medical backgrounds, but it is especially important to consider those experiencing homelessness, family members of patients, those in structurally insecure homes, home-health patients, and dialysis patients. Also worth preparing for, is pregnant women at full term. If delivery is expected during or near the time of a severe weather event, doctors will often elect to proactively place these mothers in the care of the hospital so that medical care is ready to be administered, should the woman go into labor.

APPENDIX A: REGIONAL IMPROVEMENT PLAN

This Improvement Plan (IP) was developed with the following recommendations and corrective actions for the Regional Healthcare Preparedness Coalition (RHPC) based on the Hurricane Preparedness Tabletop Exercises conducted between May and June of 2022.

Capability	Recommendations	Corrective Actions	Capability Element	Responsible Party	Projected Completion Date
Healthcare and Medical Response Coordination	Continued EMResource and EMTrack training for facility staff. Ensure POCs are updated in EMResource. Ensure 96-hour cache has all the resources it needs, and that staff are trained in rationing it. MOUs and Contracts in place should be reviewed and revised as needed. Attend LEPC meetings.	Empower hospitals to provide more training to emergency staff through provision of resources and educational opportunities. Encourage attendance at LEPC meetings.	Training & Planning	Individual facilities, SETRAC Training & Exercise	On-going
Continuity of Healthcare Service Delivery	Ensure staff are well-versed in alternative communications methods. Increase amount of on-call or backup staff during an emergency weather event.	Provide trainings and encourage attendance for alternative communications. Develop new policies for increased staffing during severe weather event	Training & Planning	Individual Facilities, SETRAC Training & Exercise	On-going
Medical Surge	Develop plans that address vulnerable populations surge during and immediately following a weather event.	Coordinate with facility emergency planners to create policies that address medical surge during and after severe weather.	Planning	Individual Facilities	On-going

Authorizing Signature: _____   **Date:** _____

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PARTICIPATING ORGANIZATIONS

Acadian Ambulance

Allegiance Mobile Health

Altus Houston Hospital

Altus Lumberton Hospital

Alvin EMS

AMR

Ashton Park Care Center

Avondale House

Baptist Hospital Beaumont

Baylor St. Luke's Medical Center

Bayou Pines Care Center

Beaumont Emergency Hospital

Beaumont Public Health

Behavioral Hospital of Bellaire

Bellaire

Ben Taub Hospital

Brazoria Co. Emergency Services District 3

Brazoria Co. Health Department

Chambers Co. Public Health

CHI San Augustine

CHI St. Luke's Health Livingston

CHI St. Luke's Sugar Land

Christus St. Elizabeth

City of Houston OEM

City of Port Arthur Public Health

City of Seabrook

City of Wharton EMS

Columbus Community Hospital

Cornerstone Specialty Hospital - Med Center

Deer Park EMS

DETRAC

DSHS

Dubuis Long-Term Acute Care Hospital

Eagles Trace Continuing Care

Elite Care Emergency Center

Emergency Hospital Systems

Emergency Hospital Systems

Encompass Health Rehab Hospital Humble

Encompass Health Rehab Hospital of Cypress

Encompass Health the Woodlands

Encompass Health Vision Park

Encompass/Enhabit Home Health

Facilities Management Group

Fort Bend Co. EMS

Galveston Co. Health District

Gulf Coast Regional

Hardin County Health Department

Harris Center for Mental Health & IDD

Harris Co. ESD 11

Harris County ESD 4

Harris County Public Health

Harris Health System

Harris Health System EMS

HCA Healthcare Pearland

HCA HH Clear Lake

HCA Houston Healthcare

HCA Houston Healthcare Medical Center

HCA Houston Healthcare West

HCA Houston Southeast

HCA Houston Tomball

Harris County Emergency Corps

HCOHSEM

Harris County Psychiatric Center

Houston Behavioral Healthcare Hospital

Houston Methodist Baytown

Houston Methodist Continuing Care Hospital

Houston Methodist Hospital

Houston Methodist Sugar Land

Houston Methodist West	Oak Bend Medical Center
Houston Physicians Hospital	Oak Bend Williams Way
Huntsville Memorial Hospital	Oakmont Healthcare & Rehab of Katy
Ignite Medical Resorts	Oceans Behavioral Hospital - Lufkin
Jasper Memorial Hospital	Omnipoint Health
Jasper-Newton Public Health	Orange Co. Health Service
Kindred Hospital	PAM Rehab
Kindred Hospital Sugar Land	Patients Emergency Room
Kingwood Endoscopy	Rice Medical Center
LBJ	Riceland Medical Center
Liberty Co. Healthcare Center	Riceland Medical Center
Liberty Dayton Regional Medical Center	River Oaks Hospital & Clinics
Matagorda Regional Medical Center	Sabine County Hospital
MD Anderson	SETRAC
Medical Center of Southeast Texas	Shriners Hospital
Memorial Hermann Cypress	Southeast TX Air Rescue Jasper/Beaumont
Memorial Hermann Health System	SSA Home Healthcare
Memorial Hermann Pearland	St. Joseph's Medical Center
Memorial Hermann Rehabilitation Hospital Katy	Sugar Land OEM
Memorial Hermann Southeast	Sun Behavioral
Memorial Hermann Sugar Land	Texas Children's Hospital TMC
Memorial Hermann Surgical Hospital Kingwood	Texas Children's Hospital the Woodlands
Memorial Hermann Texas Medical Center	Texas Children's Hospital West
Memorial Hermann the Woodlands	Texas Emergency Care Center Atascocita
Memorial Hermann Greater Heights	Texas Emergency Care Center Pearland
Memorial Hermann Southwest	Texas Medical Center
Michael E. DeBakey Veterans Affairs Medical Center	Tyler County Hospital
Mid-Jeff Hospital	United Memorial Medical Center
Mont Belvieu Fire Department	UT Health TMC
Mont Belvieu Rehabilitation & Healthcare Center	UTMB
Nacogdoches County OEM	Windsor EMS
North Channel EMS	Woman's Hospital of Texas
	Woodland Heights Medical Center

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