Regional Healthcare Preparedness Coalition

CMOC DIVISION 1

SETRAC

Catastrophic Medical Operations Center (CMOC) Regional Plan

January 14, 2019

Promulgation Statement

In 2012, The Regional Hospital Preparedness Council and the Southeast Texas Regional Advisory Council combined organizations and the Regional Hospital Preparedness Council evolved into the Regional Healthcare Preparedness Coalition (RHPC) and a standing Board Committee of the Southeast Texas Regional Advisory Council. The Southeast Texas Regional Advisory Council (SETRAC) has the authority and responsibility for coordination of medical operations in Southeast Texas during major special events, human-caused incidents, and natural disasters. This document provides planning and program guidance for implementing medical activities for the region under the Catastrophic Medical Operations Center (CMOC).

This plan has been developed in accordance with Comprehensive Preparedness Guidance (CPG) 101 and is intended to support local, regional, state, and/or federal operations requiring a coordinated medical response. The SETRAC Preparedness Director shall maintain this plan and will ensure its execution directly or through a delegation of authority. This plan is:

- The official operations source for the CMOC and medical agencies in the region; and
- Is authorized by and promulgated under the authority contained by local, state, and federal statutes listed herein; and
- Has obtained all appropriate authorities in the Southeast Texas region.

Approval and Implementation

The CMOC Regional Plan is effective upon the signature of the Preparedness Director for the Southeast Texas Regional Advisory Council (SETRAC) and shall supersede all previous versions.

This Plan and related Annexes will be reviewed and updated as required. Recommended changes shall be submitted to the Preparedness Director at SETRAC for consideration and approval. Minor changes identified as “pen and ink” revisions will be disseminated on a “Record of Change” document from the SETRAC. Any conceptual changes that modify existing activities or add new activities shall require the plan to be submitted for signature and recertification by the Preparedness Director.

If any portion of this Plan is held invalid by judicial or administrative ruling, such ruling shall not affect the validity of the remaining portions of the Plan.

Foreword

The overarching goal of this regional Catastrophic Medical Operations Center (CMOC) plan is to mitigate medical and healthcare consequences of any disaster affecting the Southeast Texas 25- County Region. This plan is a collaborative effort with input from the following entities:

- Regional Healthcare Preparedness Coalition (RHPC)
- Southeast Texas Regional Advisory Council (SETRAC)
- East Texas Gulf Coast Regional Advisory Council (RAC-R)
- Deep East Texas Regional Advisory Council (RAC-H)
- Emergency medical services (EMS) leaders
- Strategic National Stockpile coordinators
- Houston-Galveston Area Council (H-GAC)
- City, county, and regional health department representatives
- Texas Department of State Health Services (DSHS)

The CMOC serves as a center for collecting and disseminating current information about medical and healthcare resources and needs (e.g., equipment, bed capacity, personnel, supplies), developing priority allocations, identification of patient transport locations, support of field operations, allocating and tracking disbursement of resources, and addressing other relevant medical and healthcare response matters. If authorized to activate, the CMOC may be given purchasing authority, which will allow it to directly procure the resources needed to support healthcare response and recovery operations.

History

In 1997, Houston was named one of the first Metropolitan Medical Response System (MMRS) cities in the nation. The focus of the MMRS program is to support the integration of emergency management, health, and medical systems into a coordinated response to mass casualty incidents caused by any hazard. By integrating these systems, communities should be better prepared to reduce the consequences of a mass-casualty incident during the incident's initial response period by having augmented existing local operational response system before an incident occurs.

To help achieve this goal, the first hospital planning group was formed. The Houston Fire Department identified eight hospitals strategically located around the city as mass-casualty receiving hospitals during such an incident. This initial group, known as the Hospital Receiving Group (HRG), identified planning priorities necessary to integrate as a system, including a common communications network, a healthcare planning template, common equipment and training, executive support, and mutual aid agreements.

The year 2001 saw rapid growth as well as significant challenges to healthcare response in the region. Tropical Storm Allison lingered over the Houston area, causing extensive flooding and subsequent evacuation or closure of several hospitals. Most of the flooding occurred in the Downtown and Texas Medical Center (TMC) areas.

When the TMC hospitals were unable to accept patients, a devastating ripple effect occurred throughout the region as patients were diverted to other hospitals and overcrowding resulted. Of concern was the fact that hospitals responded individually or within their own systems and that no formal coordinating entity existed to ensure patients received the care they needed, and hospitals can provide that care.

Following the events of September 11, 2001, the HRG increased to include 12 more acute care agencies and developed a 50-member Community Hospital Subcommittee. These two groups later merged into one hospital planning group, the Houston Area Hospitals Emergency Management Collaborative (HAHEMC), with the unique needs of the healthcare system as its focus.

The Regional Hospital Preparedness Council (RHPC) officially formed in 2002 with the mission of providing collaborative planning and response to emergencies using a multidisciplinary approach and preserving the medical infrastructure of the region. The RHPC and other regional health and medical groups continued to discuss the need for a coordinating entity.

In 2005, despite the lack of a formal coordinating body at the time, the Houston region's medical response capability galvanized while responding to hurricanes Katrina and Rita. An ad hoc regional coordinating entity called the Disaster Unified Medical Command was formed and activated; it served as a precursor to today's CMOC. Since there was no formal plan, structure, or recognized authority, forming this entity constituted a leap of faith for hospitals, health officials, and emergency managers in the region; all the

coordinating organizations were committed to the mission and success of the overall response, dedicated to serving the medical community.

In 2006, the first version of the CMOC plan was developed in accordance with standards for local emergency management plans developed by the Texas Division of Emergency Management pursuant to §418.043(a) of the Texas Government Code and in accordance with existing plans, mandates, and standard operating procedures of the City of Houston Office of Emergency Management (OEM) for infrastructure support purposes. The CMOC plan is applicable in all natural and manmade emergency situations affecting the area residents, staff, patients, family members, and visitors of the region.

This revision accounts for lessons learned from exercises, training, and real-world incidents, such as Hurricane Ike (2008), Tax Day Floods (2016), and Hurricane Harvey (2017).

Record of Changes

Change #	Change Description	Change Made By:	Date
1	CMOC – made change to SETRAC	L. Upton	July 2012
2	▪ Addition of TSA H into CMOC response region ▪ Change from four (4) corridors to Five (5) corridors to include TSA H ▪ CMOC Demographics to include TSA H	L. Upton	September 2013
3	CMOC Organization Chart Revised	L. Upton	May 2015
4	Associated standard operating guidelines, annexes, and other attachments added to the CMOC Regional Plan	L. Upton	June 2015
5	CMOC plan operational considerations and other sections added and associated attachments updated across multiple Red Team review meetings	Tina Rose on behalf of Red Team Review	January 2019
6	Annex-9 Regional Burn Surge Plan approved by PHPC and added	L. Upton	February 2021
7	Attachment 9: Radiological Response Plan approved by RHPC and added	C. Cox	May 2023
8			
9			
10			

Table of Contents

Introduction

Purpose

The purpose of this plan is to provide general guidelines for preparation, response, and recovery to natural and manmade incidents that endanger the patients, visitors, staff, and family members of medical healthcare agencies within the region. This plan describes how medical and healthcare agencies within the region collectively mitigate, prepare for, respond to, and recover from the effects of an emergency or disaster. It also addresses the types of services and resources that are provided in certain situations. This plan outlines methods for assisting the staff of healthcare agencies within the region to deal with effects of disasters. It does not replace local, county, or agency plans and procedures.

Scope

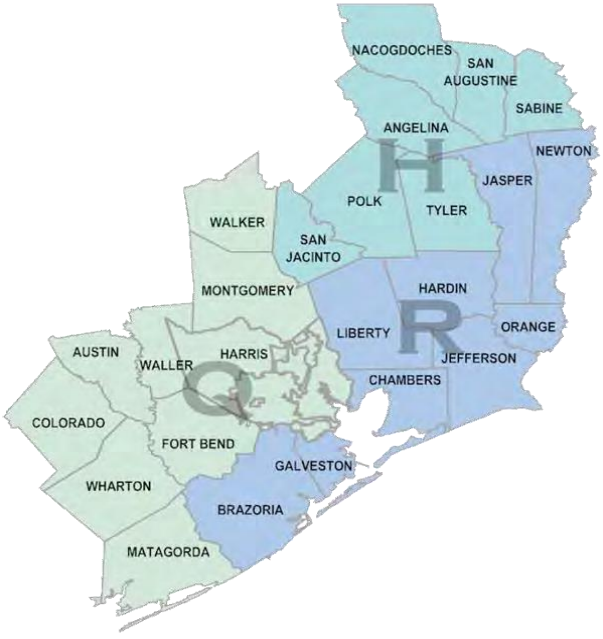
Any incident may cause a major emergency within the region with contingencies that will vary in severity, scope, and intensity. Devastation may be isolated and limited in one area and wide- ranging and extreme in another. Since incidents can occur in several locations simultaneously, planning efforts are made as general as possible so that latitude and flexibility is available in the application assumptions about the existence of specific resources and capabilities that are subject to change. Additionally, some variations in the implementation of concepts identified in this plan may be necessary to protect the health and safety of patients, staff, and medical infrastructure.

The healthcare agencies within the region are part of a regional healthcare coalition in Southeast Texas that includes Angelina, Austin, Brazoria, Chambers, Colorado, Fort Bend, Galveston, Hardin, Harris, Jasper, Jefferson, Liberty, Matagorda, Montgomery, Nacogdoches, Newton, Orange, Polk, Sabine, San Augustine, San Jacinto, Tyler, Walker, Waller, and Wharton counties. Agencies in these counties have signed a memorandum of agreement (MOA) with SETRAC to plan, prepare for, and respond to a regional disaster in a cooperative fashion.

Regional Overview

Geography

The Catastrophic Medical Operation Center (CMOC) supports a region that is primarily comprised of 25 counties in three Trauma Service Areas: TSA Q, TSA R and TSA H. Historically, the CMOC has supported as many as 34 counties and two parishes in Louisiana. The CMOC can expand or contract as the situation dictates or as mission-tasked by the state of Texas, but the primary region is the 25-county footprint shown.

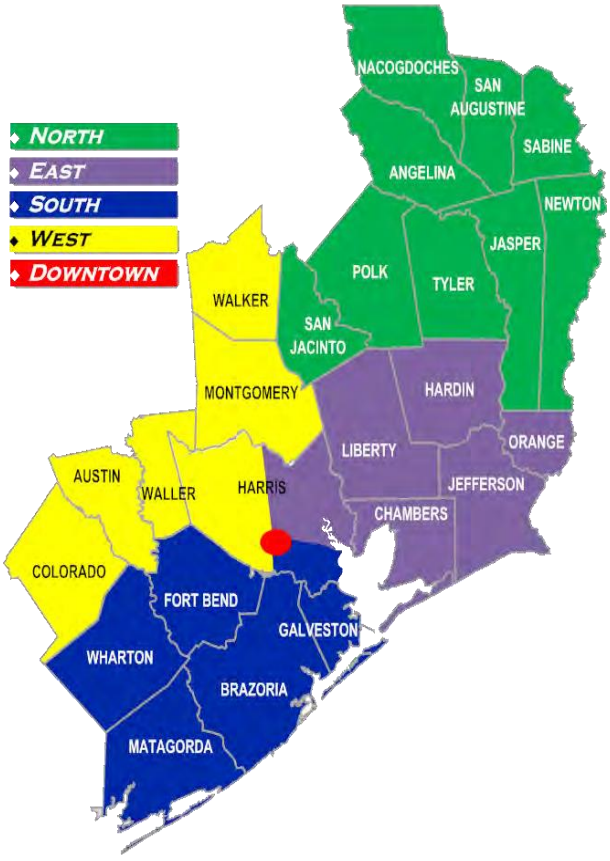


CMOC Location

The primary physical location for level I operations of the CMOC is in the Harris County Office of Homeland Security and Emergency Management TRANSTAR building in the Emergency Operations Center (EOC). Back-up locations include the Houston Emergency Center (HEC), Fort Bend County Emergency Operation Center, or any potential impacted location in the 25 coalition counties. The CMOC serves as a coordinating entity for healthcare agencies within the region and is designed to coordinate medical care, patient evacuation, and medical resources throughout the region prior to or following a large-scale incident.

Corridors

The SETRAC regional footprint is divided geographically into the five corridors described below (the North, East, South, West, and Downtown Corridors):



North Corridor

Includes the counties of:
Nacogdoches, San Augustine, Sabine, Angelina, San Jacinto, Polk, Tyler, Jasper, and Newton.

East Corridor

Includes the counties of: Hardin, Liberty, Chambers, Jefferson, Orange, and portions of Harris County that are outside Loop 610 and North of Hwy 225 and East of Hardy Toll Road.

South Corridor

Includes counties of: Ft Bend, Brazoria, Matagorda, Wharton, Galveston, and portions of Harris County outside Loop 610 and East of 288 and South of Hwy 225.

West Corridor

Includes counties of: Colorado, Austin, Waller, Montgomery, Walker and portions of Harris County outside Loop 610 and West of 288 up to Hardy Toll Road.

Downtown Corridor

Includes City of Houston and Harris County within Loop 610.

Demographics

The CMOC coordinates resource requests for approximately 180+ hospitals and 900+ nursing homes serving 25 counties with more than 7.7 million people and 28 percent of the self-reported disability population. See Table 1 for population information for the region served by the CMOC.

Table 1: CMOC Region Population

County	2000	2010	2018
Angelina	86,771	86,162	87,805
Austin	23,590	28,417	29,786
Brazoria	241,767	313,166	362,457
Chambers	26,031	35,096	41,441
Colorado	20,390	20,874	21,232
Fort Bend	354,452	585,375	764,828
Galveston	250,158	291,309	335,036
Hardin	48,073	54,635	57,139
Harris	3,400,578	4,092,459	4,652,980
Jasper	35,604	35,710	35,561
Jefferson	252,051	252,273	256,299
Liberty	70,154	75,643	83,658
Matagorda	37,957	36,702	36,840
Montgomery	293,768	455,746	570,934
Nacogdoches	64,524	65,330	65,580
Newton	15,072	14,445	13,952
Orange	84,966	81,837	85,047
Polk	45,413	51,806	49,162
Sabine	10,835	10,879	10,461
San Augustine	8,865	9,685	8,253
San Jacinto	26,384	29,292	28,270
Tyler	21,766	22,289	21,539
Walker	61,758	67,861	72,245
Waller	32,663	43,205	51,307
Wharton	41,188	41,280	41,968
TOTAL	**5,290,220**	**6,526,033**	**7,783,780**

Hazard Profile

Disaster conditions could be a result of a variety of natural phenomena, such as hurricanes, floods (river and flash), winter storms, drought, and fires (urban, grass, and forest). In addition, the region is subject to a myriad of other disaster contingencies, such as transportation accidents involving chemicals and other hazardous materials, plant explosions, train derailments, pipeline ruptures, aircraft disasters, building or bridge collapses, sink holes, utility service disruptions, energy shortages, civil disturbances, terrorist incidents, or a combination of any of these. Please refer to county specific hazard mitigation plans and the detailed regional medical Hazard Vulnerability Analysis for further detail[1].

[1] Each hospital is required to complete a hazard vulnerability analysis (HVA). In turn SETRAC integrates the HVA into a single regional HVA.

Critical Assumptions

- SETRAC will activate the CMOC according to the CMOC Activation Standard Operating Procedure (see Activation Standard Operating Procedure).
- The CMOC may be activated as a precautionary measure for emergency situations that have the potential to escalate, impending disaster conditions, or when prolonged or catastrophic incidents cause widespread disruptions of daily life and have an adverse medical impact on those affected by these incidents.
- Within each jurisdiction, there exists a combination of emergency services and medical capabilities that are adequate to cope with normal emergencies. A normal emergency is considered to be any incident that can be addressed or handled with locally available resources. A basic premise of emergency planning is that incidents are generally handled at the lowest jurisdictional level possible. Each agency is responsible for incident management at that level.
- A disaster is considered to be something that cannot be addressed or handled with locally available resources.
- This region is at risk of various hazards that increase the likelihood of health and medical issues, loss of life, and extensive damage to property and the environment. Prolonged or catastrophic incidents cause widespread disruptions of day-to-day life and have an adverse impact on those affected by these incidents.
- It is the responsibility of officials under this plan to save lives, relieve human suffering, and sustain survivors.
- Each county, emergency medical services, and healthcare agencies must be prepared to address and provide comprehensive information on how human-caused incidents or natural disasters that directly impact area residents, patients, visitors, staff, and family members while being able to ensure immediate action on behalf of those most severely affected.
    - Effective prediction and warning systems have been established that make it possible to anticipate certain disaster situations that may occur throughout the region.
    - Each agency within the region will implement its specific, appropriate, and prudent plans and

      procedures when actually or potentially threatened by natural and/or manmade disasters.
- During emergencies residents within the region may experience numerous health problems. Some of these problems are attributable to preexisting medical conditions complicated by the emergency while other problems may arise as a direct result of the incident.
- The increased number of area residents needing medical assistance may burden and/or overcome the health and medical infrastructure. This increase in demand may require a regional response and/or subsequent state and/or

federal level of assistance.

- A catastrophic incident may cause widespread damage that the existing internal response capacity and capability of EMS and healthcare agencies are compromised or destroyed. During some emergencies, it may be necessary to evacuate patients and staff from the affected area(s) and/or healthcare agencies.
- Response actions will vary according to the specific conditions. Generally, these actions will follow a phase-in process based on the emergency type.
- When officials from an affected jurisdiction determine their own resources to be insufficient, assistance by response organizations from another jurisdiction is expected to supplement the efforts of the affected jurisdiction in an efficient, effective, and coordinated response.
- Continuity of Operations will be maintained and executed if the physical location of the CMOC is compromised.
- Healthcare agency staff involvement in planning, training, and exercising this CMOC Plan is essential for practicing mitigation efforts that emphasis preparedness, response, and recovery.

Activation

The CMOC may be activated by due to an incident of any cause as requested by incident command, including city, county, and state officials due to emerging public health threats that affect the medical infrastructure. The mission of the CMOC includes coordination of medical care and response resources for the affected area. SETRAC will activate the CMOC according to the CMOC Activation Standard Operating Procedure (see Appendix A).

Activation Sequence

The CMOC may be activated by many agencies, including the Department of State Health Services (DSHS), the Texas Division of Emergency Management (TDEM), and county or city OEMs to serve as the emergency medical component of Emergency Support Function (ESF) #8 in the Regional Health and Medical Operation Center (RHMOC) and the Multi-Agency Coordination Center (MACC), when activated. In accordance with guidelines from the National Incident Management System (NIMS), the CMOC follows the Incident Command System. Based on the need for additional resources and support, the CMOC may be activated by any of the following agencies:

- Local or Regional Public Health Authority
- Texas Department of Emergency Management (e.g. SOC, SMOC, DDC, etc.)
- City or County OEM/Emergency Management Coordinator (EMC)
- State or Regional DSHS

The following steps outline the CMOC activation from request to initial operations:

1. The requestor establishes the need for medical coordination and/or support based on an emergent or existing situation.
2. Notify SETRAC on-call duty officer at 281.822.4444 to request medical resources and/or support services.
3. The SETRAC determines CMOC activation level required based on information provided by the requestor and identifies/activates appropriate staffing levels.
4. Activated personnel will report to the CMOC or field location, as designated.
5. If not already established, the CMOC will work with the regional administrator to establish an incident in WebEOC.

Key Activation Steps

The activities need to be accomplished in response to a variety of hazards and emergency situations are listed below.

1. Identify and analyze the hazard or perceived threat to the medical infrastructure in the affected area.
2. Activate the CMOC to appropriate level.
3. Obtain and maintain a common operating picture.
4. Identify, prioritize, and coordinate the delivery of medical and healthcare needs and resources in the affected area.
5. Allocate healthcare and medical response resources based on need.
6. Coordinate public messaging with Public Information Officers (PIOs) in the authority having jurisdiction (AHJ), as needed.
7. Integrate and coordinate with the DDC/RHMOC.

CMOC Activation Levels

CMOC planners have also developed the following CMOC activation designations for readiness. Staffing, operations, and possible activating situations are described in Table 2.

Level 1: Full Activation

During an actual occurrence, the CMOC will implement actions to accomplish task assignments in accordance with applicable operational procedures. Notification will be issued to the healthcare agencies throughout the region that CMOC is operational. If the scope of the emergency expands to the point that agencies within the region have exhausted or are depleting internal response assets, the CMOC will assist with coordination of requests with the following agencies: local fire, law enforcement, EMS, public health, city and/or county emergency management offices, the Texas Department of Public Safety (DPS), Texas Division of Emergency Management (TDEM), the Texas Disaster District Committee (DDC), Texas Department of State Health Services (DSHS), the Federal Emergency Management Agency (FEMA), or other applicable agency.

Level 2: Partial Activation

When an emergency is imminent, all applicable protective action plans and procedures will be activated. This includes opening the CMOC as requested and implementing notification to healthcare agencies throughout the region. A process is in place for reporting ongoing incidents and assessing current factors and resources.

Level 3: Normal Operations

During normal conditions, primary emphasis will focus on awareness, readiness (i.e., planning, information, training, and exercising), and education. In addition, staff should complete training that is germane to applicable response activities. The agencies should conduct at least one annual exercise that includes testing disaster response with regional, city, and/or county agencies.

Table 2: Activation Levels and Support Examples[2]

	Level 1: Full Activation	Level 2: Partial Activation	Level 3: Normal Operations
Staffing	All positions in the CMOC will be staffed including liaisons and field operations	The CMOC Operations Chief and other positions (including liaisons and field operations), as required, will be staffed	SETRAC staff remain on call
Operations	Ground operations, strike teams, task forces, and other resources will be activated	Resources readied; requested as needed	Normal daily operations some resource requests car occur without an activation
Situation Example	Hurricane in Gulf of Mexico; terrorist attack resulting in a significant number of casualties	Including virtual activation, Significant weather affecting medical agencies; High Consequence Infectious Disease (HCID), localized mass casualty incident. Localized incident that could expand into a mass casualty situation or a special event, e.g., Super Bowl, Final Four	IV/supply shortages, MCI notifications, EMS coordination, and internal healthcare agency disaster not necessitating evacuation.

[2] Each situation requiring CMOC activation is different and needs will be evaluated individually by the CMOC Operations Chief on call. This table merely provides a scaled framework to assist in determining activation options.

Concept of Operations

This CMOC plan applies to all disaster and emergency situations in the region that requires a coordinated regional medical response and may be activated as a precautionary measure, as needed for emergency situations that have the potential to escalate or for impending disaster conditions. Implementation of procedures will begin as soon as practical after the incident is predicted or occurs and the priority for all decisions will be life-saving measures. Transportation and placement of patients will be made based on the patient's need and the receiving agency's capacity and capability. This section emphasizes operational considerations during CMOC activations.

Situational Awareness

SETRAC daily awareness initiatives, which includes alerts, notifications, preventive measures, and local trainings are critical aspects of the overall response strategy. Efforts will be made to foster individual involvement and to promote the idea of "neighbors helping neighbors" within the region. Effective agency-wide participation by administration, health and medical professionals, other staff, volunteers, outside healthcare and medical providers, and city/county emergency management personnel must be cultivated and sustained to ensure maximum protection of the patients, staff, and area residents.

Frequently communicated information may include the following situational awareness factors: evacuation areas, hospital closures, incident parameters, significant weather, the number of patients received, available bed capacity or specialty services/bed availability, fatalities, current guidelines regarding symptomatology and diagnosis, agency status, identified and/or ongoing threats, accessible routes/road conditions, and other recommendations.

External communications with a variety of entities is critical for continued functioning of the regional healthcare infrastructure, some of which may include:

- Texas state agencies
- Regional healthcare agencies
- City/County Departments of Health
- City/County Office of Emergency Management (OEM);
- Various Operation Centers (e.g., SOC, SMOC, RHMOC, DDC); and
- Local agencies (e.g., Fire, EMS, Law Enforcement).

Information Sharing

Coordination of disaster intelligence may require identifying what types of essential elements of information (EEI) is needed, where the information is expected to come from, who will use the information, how the information will be shared and determining the appropriate format for providing the information along with the specific times when the information will be needed.

Tracking/Distributing Resources

When the CMOC is authorized to activate, it may be given purchasing authority, which will allow the CMOC to directly procure resources needed to support healthcare response and recovery operations. Potential tasks will include collecting, tracking, and disseminating current information about medical and healthcare resources needed (e.g., equipment, bed capacity, personnel, supplies), developing priority allocations, identification of patient transport locations, support of field operations, allocating and tracking disbursement of resources, and addressing other relevant medical and healthcare response matters.

Staging Operations

The staging and assignment of all medical assets should be coordinated by the CMOC to reduce duplication and maintain efficient operation.

Priority Allocations

To develop priority allocations of scarce resources and achieve redistribution of medical resources, it is essential that available options are understood and accepted by all stakeholders. The proper use of medical resources changes from one disaster to another. Proper resource allocation— whether it is people, supplies, transport vehicles, or available treatment modalities—must be coordinated and geared to providing the most care for the most individuals without regard to financial capabilities or deficiencies.

Surge Capacity

To create additional surge capacity within any medical system, there must be redistribution of medical care and resources within regional healthcare. The placement of individuals into healthcare agencies will be determined based on hospital capacity and on medical capability matched with the healthcare needs of patients. Long-term care agencies and specialty hospitals will be included in the surge capacity decision making. By using this approach, acute care agencies will not become overwhelmed with non-acute patients, and the most medically fragile individuals will be treated in the most appropriate agency, thereby eliminating the need for further transfer of a patient for appropriate or specialized care.

Evacuation/Relocation

When assistance is requested by a healthcare facility or Jurisdictional Health Authority (JHA) for evacuation of a hospital, nursing home, assisted living center, or other bedded healthcare facility, the CMOC will contact the evacuating facility's point of contact and request the following information:

1. Number of patients to be evacuated/relocated.
2. Name of facility accepting evacuated/relocated patients (if known or obtained); and
3. Environmental or other hazards associated with the need for evacuation.

The CMOC will assign the evacuating facility to one of the Corridor Coordinators as primary lead for the evacuation. The coordinator will request a patient manifest from the evacuating facility. At a minimum, the manifest should include the patients':

1. First and last name(s);
2. Age and/or Date of Birth;
3. Chief complaint/diagnosis;
4. Supportive medical equipment to accompany the patient;
5. Other medical or physical considerations (e.g. infectious disease, immobility, orthopedic traction, IV medications for hemodynamic stability, O2, bariatric, etc.).

The Corridor Coordinators will take the additional steps outlined below, depending on if the evacuating facility has already designated a receiving facility to accept their patients or if the evacuating facility needs assistance identifying a designated receiving facility

A. If the evacuating facility does not have a receiving facility accepting their patients, then the Corridor Coordinator will:

- Review the patient manifest and identify receiving facilities base on bed availability, capability and capacity for the patient's needs.
- Make telephone contact with the receiving hospital for patient manifest acceptance.
- Obtain a point of contact from the receiving hospital and provide it to the evacuating hospital to call for formal transfer approval and the patient care report.
- Once the receiving facility is confirmed for accepting the evacuating facility patients, then all steps below can be followed by the Corridor Coordinator.

B. ***If the evacuating facility has a receiving facility already accepting their patients, then the Corridor Coordinator will:***

- Review the patient manifest for
    - transportation needs (e.g. paratransit vehicle, helicopter, Ambulance Bus (AmBus) ALS/BLS ambulance), and
    - number of each asset needed to safely transport the patient(s).

  Note: For evacuations, patients may be "double loaded" in ambulances if safety and infectious disease considerations are ruled out.
- Complete a CMOC 213 General Message form (see example 213s in Appendix C) then
    - Attach the form to the top of the patient manifest, and
    - Submit the evacuation packet to the Clinical Director for approval/review.
- Upon approval, the Clinical Director will
    - Input the evacuation mission into the CMOC Mission Task Board in WEBEOC
    - Route the request to the Transportation Sector of CMOC.

      The Transportation Sector will
    - Determine the appropriate staging area and assets for the mission and
    - Assign the mission to the Staging Manager who will then assign the individual asset and update the Mission Task as "in-progress."
- Upon successful transportation and care of the evacuated patient has been turned over to the receiving hospital, the transporting unit will notify the ambulance staging manager who will mark the Mission as "Complete."

Organization and Assignment of Responsibilities

The CMOC recognizes its unique role and responsibilities to the public and the medical community and will respond to community and national medical emergencies by providing coordination of regional assets, including transportation, medical surge capacity, notifications, updates, patient tracking, and agency requests for resources.

Each healthcare agency is responsible for developing and maintaining its own emergency management procedures. In addition to the coordination components listed above, the CMOC serves as a 'safety net' for healthcare agencies within the region when they are unable to execute their emergency operations plan.

Organization Chart

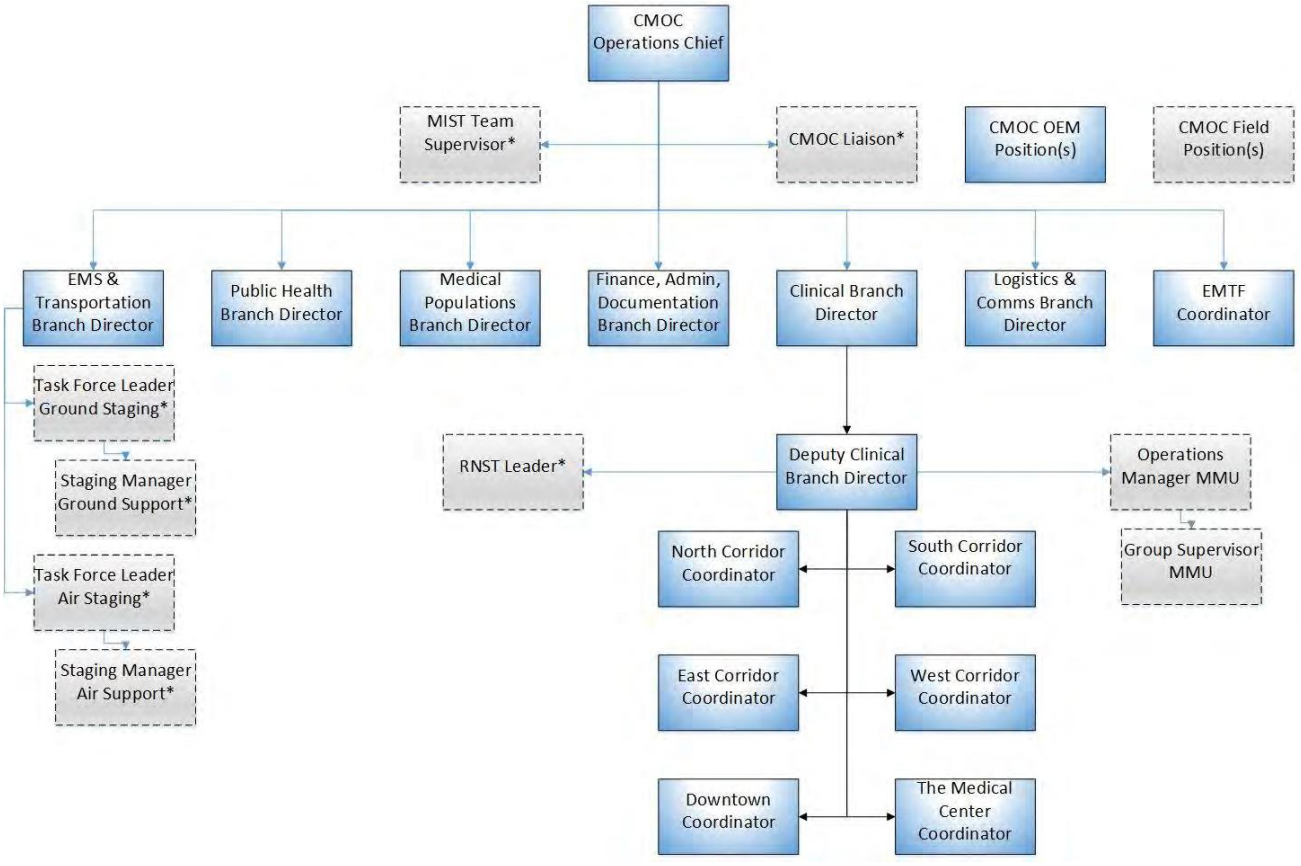


Figure 2: CMOC Organizational Chart

Position Responsibilities

All members of the CMOC team will collaborate in good faith to make decisions that are in the best interests of the region. Members will not consider their own agency or hospital affiliations when making any decisions. During full activation, the CMOC contains the positions portrayed in the CMOC organization chart along with some of the general responsibilities listed in Table 3.

Table 3: Responsibilities of CMOC Positions

Position	General Responsibilities
CMOC Operations Chief	• Develops the command structure that is necessary to carry out the objectives of the CMOC; • Maintains overall command and control for the CMOC's activities; • Briefs all members of the CMOC on the mission and objectives of the section and maintains a rotational schedule to provide 24-hour, 7-day coverage during the incident response; and • Works with governing entities in the coordination of response to ensure that emergency incidents do not adversely affect the quality, capacity, and continuity of healthcare operations for the region. • Maintains and submits situation reports of actions taken to the appropriate authority during a major disaster utilizing an incident command compliant format • Acts as an advisor to Unified Command or Area Command during any declared emergency affecting the public with medical needs, emergency medical services, healthcare agencies, and response personnel within the affected area • In the absence of the Joint Information Center, the Operations Chief will serve as the Public Information Officer for the CMOC.
Clinical Care Branch Director	• Serves concurrently as Deputy Operations Chief and oversees the Corridor Coordinators; • Approves appropriate requests for supplies, missions, and other resources; and • Works closely with EMS/Transportation Branch Director to ensure missions are completed.
Deputy Clinical Care Director	• Assists Clinical Care Director in position responsibilities; • Assists and supports Corridor Coordinators in position responsibilities; • Directly coordinates with MMU Supervisor (if activated); • Assumes role of Clinical Care Director when Clinical Care Director serves as Operations Chief
Emergency Medical Services/Transportation Branch Director	• Coordinates transportation services and staging areas for the CMOC health and medical partners; • Maintains situational awareness of field operations, including asset visibility; and • Receives and routes requests for transportation to the appropriate field operators.
Logistics/Communications Branch Director	• Responsible for asset management, including inventory; • Provides logistical and communications coordination for deployed resources to support medical operations; • Receives and processes all CMOC resource requests.

Position	General Responsibilities
Finance, Administration, and Documentation Branch Director	• Responsible for financial documentation (e.g. purchase orders, receipts) completed during disaster activations; • Gathers and collects all documentation developed and used during the incident response; • Ensures all CMOC workers meet NIMS standards for EOC reimbursement requirements.
Public Health Branch Director	• Provides support and recommendations to the CMOC Operations Chief about vector control, epidemiology, or mass prophylaxis considerations in response to natural and biological incidents; • Coordinates with the appropriate entities so that complete, accurate, and timely communication about life safety procedures, public health advisories, and other vital information is shared with the public within the affected region; and • Collaborates with the Medical Populations Coordinator to support non-hospital healthcare providers (e.g., nursing homes, long-term care agencies, dialysis clinics, medical special needs shelters).
EMTF Coordinator	• Serves as the primary point-of-contact for the EMTF State Coordinating Organization (SCO); • Provides support and management for all deployed teams under the EMTF Standard Operating Guide; • Attend conference calls with state partners as needed to accomplish the mission; • Facilitate tracking of deployed assets, staff, and documentation for financial reimbursement.
Medical Director Liaison	• Serves as a resource for the CMOC on clinical matters, as requested. • Coordinates directly with the CMOC Operations Chief. • Provides clinical expertise in their field
Corridor Coordinators	• Coordinate medical response requests for a hospital, group of hospitals, or a regional hospital corridor; • Ensure needed supplies and other resources are routed to the appropriate location for the duration of the incident; • Maintains situational awareness of healthcare agencies within the designated region; • Coordinates with healthcare agencies to meet the transportation, reception, evacuation, and resource needs required to continue patient care services; • Gathers information and clarifies the nature of requests for resources coming into the CMOC to streamline appropriate use of existing material; and • Tracks patient movement within and outside the boundaries of the region.
TMC Liaison	• Liaison between all non-hospital facilities within the TMC complex; • Coordinate response requests and ensures needed supplies are routed to the appropriate locations in the TMC area. • Maintain situation awareness and coordinate with CMOC branches to meet their transportation, reception, evacuation, and resources/needs.

Position	General Responsibilities
Medical Populations Coordinator	• Coordinates medical response requests for non-hospital agencies (e.g., nursing homes, long-term care agencies, dialysis clinics, medical special needs shelters) providing patient care within the region; • Ensures that needed supplies and other resources are routed to the appropriate location for the duration of the incident; • Maintains situational awareness of non-hospital healthcare agencies within the designated region and coordinates to meet the transportation, reception, evacuation, and resource needs required to continue patient care services; and • Gathers information and clarifies the nature of requests for resources coming into the CMOC to streamline appropriate use of existing resources.
MIST, MMU, Liaison, Staging (incident specific)	• * Incident Specific positions may be filled (e.g. Task Force Leaders, Strike Teams, Staging Managers, Air Ops, DDC Liaison, Family

Coordinating Partners

Coordinating with other government entities is essential for the CMOC in carrying out the incident mission. Examples of state and federal level departments that may support CMOC operations include:

- Regional Health and Medical Operations Center (RHMOC)
- Mutual Aid Associations (e.g., CIMA, Sabine Neches Chiefs)
- Texas Department of Public Safety
- Texas Division of Emergency Management (e.g., SOC, SMOC)
- Texas Military Department (e.g., State Guard)
- Texas Task Force 1
- Texas Department of State Health Services
- Texas Department of Health and Human Services Commission
- U.S. Coast Guard
- U.S. Health and Human Services

Private-sector organizations within the jurisdiction may assist with a wide variety of tasks based on their capabilities. They include emergency medical services, vendors, nongovernmental organizations, and volunteer agencies, as needed or requested.

Assistance from surrounding jurisdictions and supporting services is available through the execution of a memorandum of understanding (MOU) or a MOA.

Communications

During emergencies, the ability to communicate between healthcare agencies within the same areas and throughout the entire region will be critical. Communication strategies have been developed to allow healthcare agencies' EOCs to communicate with each other and each agency's local city and/or county EOC, as applicable.

Information Collection, Analysis, and Dissemination

During a disaster or emergency CMOC will coordinate medical essential/critical information. Disaster information managed by the CMOC is coordinated through representatives located within the center. These representatives collect information from, analyze information with, and disseminate information to counterparts in the field. These representatives also disseminate and analyze information within the CMOC that can be used to develop courses of action and manage response operations.

External communications within and between healthcare agencies and outside emergency organizations use existing communication systems. Community-wide or regional requests for assistance to medical emergencies will be communicated directly to the CMOC through any of the redundant means listed in the table below.

Table 4: Redundant Communication

Computer Software	EMResource
	EMTrack
	SmartNotice
	WebEOC
	Email
Radio	Land Mobile Radio (e.g. 700/800, Ham Radio, VHF, etc.)
Phone Networks	Dedicated telephone lines
	Land-line telephones or Fax machines
	Cellular phones
	Satellite phones
	Public Safety LTE (e.g. First Net, GETS, etc.);

Notifications and Warnings

Warning(s) of a potential disaster may come from a variety of sources (e.g. local health departments, fire departments, law enforcement, etc.). SETRAC/CMOC will share open source information that could impact the normal or continued operations of healthcare and EMS agencies. Multiple sources are available to provide redundancy in the external notification system listed above.

Logistical Considerations

Establishing logistics services and support systems to all the organizational components involved in the incident is critical. Once established Logistics is responsible for all support requirements needed to facilitate effective and efficient incident operations to include transportation, supplies, equipment maintenance, fuel, food services, communications and information technology support, emergency responder medical services/support and accountability of all personnel and resources.

The CMOC should quickly identify what is currently available to support the operations and the broad categories of resources that will be required. The following considerations should be accomplished as soon as possible when operations are in progress:

- Determine and establish staging areas for air and ground apparatus, personnel, and equipment.
- Rapidly assess personnel and equipment requirements based on the situation need and type.
- Determine the appropriate resource request process.
- Assess incident location and determine distance, time, and possible delays enroute resources or equipment may have.
- Determine what services are on-site for the duration of operations and request resources and/or support activities to support operations.

Resource & Support Considerations	
Resources	• Apparatus • Specialized Teams • Personnel • Vessels • Helicopters
Support	• Area Security • Traffic Control • Administrative Facilities • Communications (Radios, Phone, Data) • Medical Support / Crew Rehab • Personal Protective Equipment • Toilet Facilities • Food and Water • Equipment Maintenance Support • Fuel • Shelter

Resource Requests

When the resources of local agencies are exhausted or when a needed capability does not exist within a local jurisdiction, the agencies will place requests for medical support to the CMOC. Any non-medical requests will be forwarded to the appropriate jurisdiction.

State and Federal Resources

The assignment of local, regional, state, and federal assets must be coordinated to provide the most efficient operation and cover the greatest area in a catastrophic incident or widespread natural disaster. All medical resources operating outside of their home jurisdictions should operate under the established incident command structure. CMOC will coordinate state and federal medical assets assigned to the CMOC in response to affected jurisdictions.

Competing Resources

During large scale incident(s), availability of resources can become a critical point of failure during operations. Multiple aspects of the response will be considered when critical resource needs may outweigh availability. For example, similar resources needed to support the ESF 4 (Firefighting), ESF 8 (Public Health and Medical Services), ESF 9 (Search and Rescue), and ESF 13 (Public Safety and Security). Resources will be allocated based on the greatest need and/or risk due to various factors (e.g. type of incident, proximity to an impending natural disaster, etc.). Coordinating these resource concerns with the County EOC, State DDC, and State SOC is imperative to ensuring continuity of operations and resource allocations to fulfill critical missions.

Staging Operations

When an incident is expanding to multiple operational periods and the UC/AHJ has requested CMOC assistance and resources a Base of Operations / Staging Area will need to be established in the AHJ, to better support operations. The staging specific location may be predetermined by the local jurisdiction prior to the arrival of resources. If a staging will be established the following factors should be considered:

- Travel distance to and from the operational worksite
- Transportation and access routes
- Terrain and elevation
- Facilities for personnel and cache sheltering
- Communications
- Safety/security
- Adequate space and available infrastructure including:
    - Equipment cache set-up and maintenance
    - Command Post
    - Medical treatment area
    - Food preparation and feeding area
    - Toilet and sanitation area

- Helicopter landing zones (optional).

Rehabilitation, Reassignment, & Release

In addition to standard mission assignment demobilization procedures in a catastrophic disaster, CMOC resources may be reassigned to missions that are normally assigned to other resources. The logistics section will track and coordinate demobilization, rest, and/or redeployment with the appropriate parties, including the jurisdiction or agency that sent the resource.

The CMOC, in conjunction with appropriate state or local officials and agencies, will carefully assess the ability of a medical resource (e.g., personnel or equipment) that is already established and in operation to accept a tactical reassignment requiring a location change. It is incumbent upon the supervisory personnel to continually assess the physical and mental condition of their personnel and equipment status/readiness for continued operation. The following factors should be considered:

- Duration of operation already underway and its forecast completion
- Status of the medical and community infrastructure
- Re-establishment of the supply chain
- Local healthcare resources (EMS, hospitals, clinics, pharmacies, dialysis, etc.) are operational.
  and can handle the demand for services
- Physical and mental condition of task force personnel
- Rest period in response to safety concerns

Reimbursement

The H-GAC 12-hour MOU provides that the local request within 12 hours is free, then according to the Texas Government Code (Chapter 418.1181) after 12 hours the requesting local or state jurisdiction will be billed for personnel hours and equipment to support the mission.

> "Texas Government Code Sec. 418.1181 - REIMBURSEMENT OF COSTS:
>
> R
>
> EQUEST BY LOCAL GOVERNMENT ENTITY. (a) If a local government entity requests mutual aid assistance from another local government entity under the system that requires a response that exceeds 12 consecutive hours, the requesting local government entity shall reimburse the actual costs of providing mutual aid assistance to the responding local government entity, including costs for personnel, operation and maintenance of equipment, damaged equipment, food, lodging, and transportation, incurred by the responding local government entity in response to a request for reimbursement. Local government entities with a mutual aid agreement when the request for mutual aid assistance
> is made are subject to the agreement's terms of reimbursement, as provided by Section 418.111.

When mutual aid assistance will be provided for more than twelve (12) consecutive hours, the Requesting Party shall, prior to the expiration of the twelfth (12th) hour, confirm in writing to the Responding Party that the Requesting Party desires continued mutual aid assistance from the Responding Party.

Notwithstanding the above, if, due to the nature of the emergency, disaster, or other condition requiring mutual aid, the Requesting Party cannot confirm its request for continued mutual aid assistance before the expiration of the twelfth (12th) hour, the written request must be sent as soon as practicable, but in all cases, within ninety (90) days of the verbal request.

If a Party hereto requests mutual aid assistance that requires a response that exceeds twelve (12) consecutive hours, the Requesting Party shall reimburse the Responding Party its actual cost for providing mutual aid assistance to the Requesting Party after the first twelve (12) hours, including costs for personnel, operation and maintenance of equipment, damaged equipment, food, lodging, and transportation, provided that, in no event shall the cost for a service or item be greater than the rate, as such rates are amended from time to time, set by the Federal Emergency Management Agency (FEMA) for the substantially same service or item. FEMA rates are available at http://www.fema.gov

The Parties mutually agree that a Responding Party shall not be entitled to and will not seek reimbursement from a Requesting Party for either: (a) assistance provided that does not exceed twelve (12) consecutive hours or (b) for assistance provided during the initial twelve (12) hours of the response (See reimbursement packets in the Emergency Medical Task Force (EMTF) 6 Standard Operating Guide (SOG) for the additional requirements of the EMTF deployed assets).

Demobilization

The CMOC will develop a demobilization plan that considers the facility status', community infrastructure, continued medical resource needs, and healthcare agency repopulation that is approved by the mission tasking entity. The demobilization plan is approved by the CMOC Operations Chief and the requesting jurisdiction/entity. Once approved, SETRAC will demobilize the CMOC according to the following steps as a guide for a smooth demobilization process for all medical resources in the region (see Appendix B: Demobilization Standard Operating Procedures):

- The CMOC Operations Chief reviews and approves the CMOC demobilization plan.
- CMOC notifies staff, field personnel, and staging regarding tentative and final asset releases.
- The Staging and EMS/Transportation branches make sure all signatures are obtained and required documentation (e.g., ICS 221 Demobilization checklist) is submitted for demobilizing CMOC controlled assets in staging areas.
- The CMOC Operations Chief monitors the demobilization process of the CMOC staff, field personnel, and field assets and makes necessary adjustments to the process.
- The Logistics and Communications Branch Director ensures that nonexpendable property items are returned or accounted for prior to release.
- With oversight from the EMS/Transportation Branch and the Ambulance Staging Manager ensures vehicles receive a safety check prior to leaving the incident or staging area. Any deficiencies must be corrected before release of the asset.
- The Logistics and Communications Branch Director coordinates with staff and field operations
  to ensure all communications equipment is returned and accounted for.
- The Finance, Administration, and Documentation Branch Director ensures all personnel have returned to home base, all time sheets, ICS 214s, demobilization orders/packets and expenditures have been submitted for approval, and all purchase orders and task lists have been completed, canceled, or closed out.
- The Finance, Administration, and Documentation Branch Director is responsible for collecting all CMOC generated documents (e.g. notes, positions logs, P.O.s, STAR forms, etc.) and ensure safe storage, as required by government standard/statute.

Administration/Finance

This section outlines general policies for administering resources.

Agreements and Understandings

When a disaster overwhelms local government, requests may be made to neighboring jurisdictions, state agencies, and federal departments in accordance with mutual aid agreements. Outside assistance may be in the form of manpower, equipment, materials, and supplies for use by local officials and the affected community. All agreements will be formalized in writing, whenever possible, and signed by the proper officials. Copies of written agreements will be kept on file at the SETRAC offices – 1111 North Loop West Suite 160 Houston, Texas 77008.

Emergency Purchases

The CMOC Operations Chief has the authority to order any emergency purchases and/or authorize the contracting of any emergency services that might be required to fulfill the mission, as assigned. Because there is no provision in the regional budget to deal with a large emergency that might occur to tax limited resources, mutual aid agreements and procedures for requests for assistance from state and federal authorities are critical to the planning effort.

Records and Reports

All records of emergency managements meetings and emergency actions will be maintained at the SETRAC offices (1111 N Loop W # 160 Houston, Texas 77008). Responsibility for submitting reports to the Requesting Jurisdiction/Entity rests with the CMOC Operations Chief.

- The CMOC Finance, Administration, and Documentation Branch Director will maintain records of expenditures and obligations in emergency operations.
- Narrative- and log-type records or response actions to all emergencies will be maintained in accordance with law.

Plan Development and Maintenance

This plan is a cooperative effort among agencies within the SETRAC region. A copy of this plan is on file at in the state of Texas Department of Health and Human Services Emergency Preparedness Division offices and the Southeast Texas Regional Advisory Council office. An electronic version is placed on the SETRAC and UASI website in a password-protected location.

Maintenance Requirements

- The SETRAC Director of Preparedness will maintain, distribute, and update this plan.
- Revisions will reflect changes in procedures, improved methods, identified best practices, changes in availability of resources, and corrections of any deficiencies or omissions.
- The SETRAC will review and, if necessary, update this plan at least every 3 years.
- Revisions will reflect changes in procedures, improved methods, identified best practices, changes in availability of resources, and corrections of any deficiencies or omissions.
- Revisions will be forwarded to officials that appear on the record of distribution.
- Directors of supporting agencies have the responsibility of maintaining internal plans, SOPs, and resource data to ensure prompt and effective response to and recovery from disasters and emergency situations.

Review and Update

The CMOC plan will be reviewed at least every three years by representatives from the RHPC and SETRAC. SETRAC will establish a process for reviewing this plan. Changes should be made to the CMOC plan when the documents are no longer current. Changes to the CMOC plan may be needed when:

- Hazard consequences or risk areas change.
- The concept of operations for emergencies changes.
- Departments, agencies, or groups that perform emergency functions are reorganized and can no longer perform the emergency tasks laid out in planning documents; warning and communications systems change.
- Additional emergency resources are obtained through acquisition or agreement or through the disposition of existing resources changes or when anticipated emergency resources are no longer available.
- A training, exercise, or an actual emergency reveals significant deficiencies in existing planning documents; or state/territorial or federal planning standards for the documents are revised.

Authorities and References

Legal Authority	
Federal	• The Robert T. Stafford Disaster Relief and Emergency Assistance, Public Law 93-288 as amended • Other executive orders and acts pertaining to disasters enacted or to be enacted • Public Employees Occupational Safety and Health Act regulations • Emergency Planning and Community Right-to-Know Act, 42 U.S.C. Chapter 116 • Emergency Management and Assistance, 44 CFR • Homeland Security Presidential Directive (HSPD) 3, Advisory System • HSPD-5, Management of Domestic Incidents • PPD-8, National Preparedness • National Incident Management System • National Response Framework, FEMA, January 2008 • National Strategy for Homeland Security
Regional	• RP57—relating to implementing recommendations from the Governor's Task Force on Evacuation, Transportation, and Logistics
State	• Section 418.043(a) of the Texas Government Code
Local	• Draft Joint Powers Agreement • County emergency management plans (EMPs) • Medical and healthcare agencies EMPs
Volunteer, Quasi-Governmental	• Act 58-4-1905, American National Red Cross Statement of Understanding, December 30, 1985 • Mennonite Disaster Services—Agreement with the Federal Disaster Assistance Administration, 1974 • Public Law 93-288
References	
Federal	• Comprehensive Preparedness Guide (CPG) 101: Producing Emergency Plans: A Guide for All-Hazard Emergency Operations Planning for State, Territorial, Local, and Tribal Governments, Federal Emergency Management Agency, Interim Version 1.0, August 1, 2008 • Homeland Security Exercise and Evaluation Program (HSEEP), February 2013 • National Incident Management System (NIMS), 2017 • National Response Framework, FEMA, January 2008 • Assistant SecRITAry Preparedness and Response (US Health and Human Services)
Regional	• Houston-Galveston Area Council Regional MOU/MAA • Regional Multi-Agency Coordination Plan • Regional Mass Fatality Management ConOps • Regional Search and Rescue Plan
State	• State of Texas EMP • Texas Disaster Medical System Overview • Annex from State ESF #8

Local	• Local MOUs/MOAs and Inter-local agreement(s) • Local plans

Appendix A: Activation Standard Operating Procedure

Introduction

The Catastrophic Medical Operations Center (CMOC) is a coordinating body that supports resource needs of healthcare agencies within Trauma Service Areas Q, R and H. The CMOC responds to community and national medical emergencies by facilitating the coordination of regional assets, including transportation, medical surge capacity, notifications, updates, patient tracking, and agency requests for resources.

Roles and Responsibilities

The CMOC may be activated when prolonged or catastrophic incidents cause widespread disruptions of daily life and have an adverse impact on those affected by these incidents. The CMOC may be activated due to a mass casualty incident of any cause as requested by the incident commander as well as by local cities and counties due to emerging threats to public health. The CMOC may also be activated for an exercise or other training, or to obtain situational awareness during large-scale, high-profile events.

Based on the need for additional resources and support, the CMOC may be activated by any of the following agencies[3]:

- Department of State Health Services (DSHS)
- Texas Division of Emergency Management (TDEM)
- County OEM/EMC
- City OEM/EMC
- Local Public Health Departments/Authorities

Critical Assumptions

- The CMOC must be able to activate quickly at any time day or night, operate around the clock, and deal effectively with emergency situations that range from minor to catastrophic.
- Local resources will be used to respond to emergency situations and, if needed, requests will be made for external assistance from other jurisdictions or from the state pursuant to inter-local agreements. Because it takes time to summon external assistance, it is essential for the local jurisdiction to be prepared to carry out an initial emergency response independently.
- CMOC objectives will be identified by the requesting entity's incident or unified command, except where state or federal law provides that a state or federal

[3] Healthcare agencies must request activation through their county or city OEM and the department or agency requesting activation RITAins fiscal responsibility for the activation of the CMOC.

agency must take charge.

- Effective direction and control requires suitable agencies, equipment, guidelines, and trained personnel.

Catastrophic Medical Operations Center Regional Plan

- The initial response to a disaster or emergency situation will focus on lifesaving and injury reduction activities followed by protection of property and the environment.
- The CMOC should be ready to relocate on short notice and to stand up at alternate agencies if circumstances dictate.
- The CMOC will not necessarily be staffed with the positions listed in the organization chart.
- Some positions may be activated but may operate from an alternate location that allows them to operate more effectively.

CMOC Activation

The following actions are intended to be general and not comprehensive. Each incident or request for action may vary in nature. These steps should provide the foundational steps for further development of this standard operating procedure (SOP).

The following steps outline the CMOC activation from request to initial operations:

1. The requestor establishes the need for medical coordination and/or support based on an emergent or existing situation.
2. Notify SETRAC on-call duty officer at 281.822.4444 to request medical resources and/or support services.
3. The SETRAC determines CMOC activation level required based on information provided by the requestor and identifies/activates appropriate staffing levels.
4. Activated personnel will report to the CMOC or field location, as designated.
5. If not already established, the CMOC will work with the regional administrator to establish an incident in WebEOC.

CMOC Readiness Levels

Depending on the size and severity of the incident, CMOC planners have also developed the following designations for readiness (staffing, operations, and possible activating situations are described in Table 4).

Level 1: Full Activation

During an actual occurrence, the CMOC will implement actions to accomplish task assignments in accordance with applicable operational procedures. At this time, notification will be issued to the healthcare agencies throughout the region that CMOC is operational. If the scope of the emergency expands to the point that agencies within the region have exhausted or are depleting internal response assets, the CMOC will assist with coordination of requests with the following agencies: local fire, law enforcement, EMS, public health, city and/or county emergency management offices, the Texas Department of Public Safety (DPS), Texas Division of Emergency Management (TDEM), the Texas Disaster District Committee (DDC), Texas Department of State Health Services (DSHS), the Federal Emergency Management Agency (FEMA), or other applicable agency.

Level 2: Partial Activation

When an emergency is imminent, all applicable protective action plans and procedures will be activated. This includes opening the CMOC as requested and implementing notification to healthcare agencies throughout the region. A process is in place for reporting ongoing incidents and assessing current factors and resources.

Level 3: Normal Operations

During normal conditions, primary emphasis will focus on awareness, readiness (i.e., planning, information, training, and exercising), and education. In addition, staff should complete training that is germane to applicable response activities. The agencies should conduct at least one annual exercise that includes testing disaster response with regional, city, and/or county agencies.

Table 4: Activation Levels and Support Examples[4]

	Level 1: Full Activation	Level 2: Partial Activation	Level 3: Normal Operations
Staffing	All positions in the CMOC will be staffed including liaisons and field operations	The CMOC Operations Chief and other positions (including liaisons and field operations), as required, will be staffed	SETRAC staff remain on call.
Operations	Ground operations, strike teams, task forces, and other resources will be activated	Resources readied; requested as needed	Normal daily operations: some resource requests can occur without an activation
Situation Example	Hurricane in Gulf of Mexico; terrorist attack resulting in a significant number of casualties	Including virtual activation, significant weather affecting medical agencies; high Consequence Infectious Disease (HCID), localized mass casualty incident. Localized incident that could expand into a mass casualty situation or a special event, e.g., Super Bowl, Final Four	IV/supply shortages, MCI notifications, EMS coordination, and internal healthcare agency disaster not necessitating evacuation.

[4] Each situation requiring CMOC activation is different and needs will be evaluated individually by the CMOC Operations Chief on call. This table merely provides a scaled framework to assist in determining activation options.

Appendix B: Demobilization Standard Operating Procedure

Introduction

This standard operating procedure (SOP) outlines the general roles and responsibilities, critical assumptions, organizational chart, general tasks to be performed, and authorities and references that can be used for demobilization of the Catastrophic Medical Operations Center (CMOC).

Roles and Responsibilities

The Logistics Branch Director will facilitate all resource releases from the CMOC after obtaining the concurrence of the CMOC Operations Chief. All resources assigned by the CMOC will be held at their respective operating center or staging areas during the time it takes to process them through the demobilization process.

No resources are to leave the CMOC or staging areas until authorized to do so. The Logistics Branch Director will coordinate with the EMS/Transportation Branch to provide ground transportation of released personnel and equipment. The Finance, Administration, and Documentation Branch Director (e.g. reimbursement packets, etc.)

Resource Demobilization

- Resources will not leave staging area(s) until authorized.
- No personnel will be released without having a minimum of 8 hours off shift, unless specifically approved by the CMOC Operations Chief.
- All resources must be able to arrive at their home base prior to 2200 (10 p.m.) unless specifically approved by the Incident Commander at each respective incident site.
- All assigned personnel will be briefed prior to leaving the CMOC.
- The EMS/Transportation and Finance, Administration, and Documentation Branch Director will be notified as soon as possible when surplus resources are to be deactivated.
- The Incident Action Plan (IAP) for the CMOC will include notifications regarding resources being deactivated or reassigned.
- Branch Directors are responsible for determining when assigned resources become surplus resources and for submitting tentative release lists to the Logistics Branch Director 12 to 24 hours prior to the estimated release date and time.

CMOC Demobilization

A Demobilization Plan is developed and approved by the CMOC Operations Chief and the requesting jurisdiction/entity. Once approved, the following steps should be used as a guide for a smooth demobilization process for all medical resources in the region:

- The CMOC Operations Chief reviews and approves the CMOC demobilization plan.
- CMOC notifies staff, field personnel, and staging regarding tentative and final asset releases.
- The Staging and EMS/Transportation branches make sure all signatures are obtained and required documentation (e.g., ICS-221 Demobilization checklist) is submitted for demobilizing CMOC controlled assets in staging areas.
- The CMOC Operations Chief monitors the demobilization process of the CMOC staff, field personnel, and field assets and makes necessary adjustments to the process.
- The Logistics and Communications Branch Director ensures that nonexpendable property items are returned or accounted for prior to release.
- With oversight from the EMS/Transportation Branch and the Ambulance Staging Manager ensures vehicles receive a safety check prior to leaving the incident or staging area. Any deficiencies must be corrected before release of the asset.
- The Logistics and Communications Branch Director coordinates with staff and field operations to ensure all communications equipment is returned and accounted for.
- The Finance, Administration, and Documentation Branch Director ensures all personnel have returned to home base, all time sheets, ICS-214s, demobilization orders/packets and expenditures have been submitted for approval, and all purchase orders and task lists have been completed, canceled, or closed out.
- The Finance, Administration, and Documentation Branch Director is responsible for collecting all CMOC generated documents (e.g., notes, positions logs, P.O.s, STAR forms, etc.) and ensure safe storage, as required by government standard/statute.

Appendix C: CMOC 213 Form Examples

EXAMPLE (Facility Request)

CMOC 213 - GENERAL MESSAGE – EVACUATION/REPOPULATION			
TO: CMOC	POSITION: Transportation		
FROM: Sacred Heart Nursing Home	POSITION: DON		
MISSION: Facility evacuation	DATE: 01/01/2020	TIME:0900	
MESSAGE:			
From: Sacred Heart Nursing Home Address: 123 Bluebell Road City, Texas 77000 POC: Sister Jones – 281-555-1212 To: CareWell Nursing Home Address: 123 Angel Hwy Far Away City, Texas 77001 POC: Jim Smith – 832-555-1212			
Date/time Entered and Mission Number: 01/01/2020 0900 Mission number E486		Signature: My name	
Name(s), age, diagnosis/complaint/transport type:			
27 patients to be transported at 1700 1/1/2010 MANIFEST ATTACHED – all patients can go directly to their assigned rooms.			
DATE/TIME: 01/01/2020 1300	UPDATES: Remove Jim Jones from transport list – family picked him up		SIGNATURE: Name

EXAMPLE (Individual Request)

CMOC 213 - GENERAL MESSAGE – EVACUATION/REPOPULATION					
TO: CMOC			POSITION: Transportation		
FROM: Texas County OEM			POSITION: EMC		
SUBJECT: Individual evacuation			DATE: 01/01/2020	TIME:0900	
MESSAGE:					
From: Home Address: 123 Bluebell Road City, Texas 77000 POC: Sister Jones – 281-555-1212 To: Medical Shelter 1 Address: 123 Angel Hwy City, Texas 77001 POC: Chief Smith – 832-555-1212					
Date/time Entered and Mission Number: 01/01/2020 0900 Mission number E486			Signature: My name		
Name(s), age, diagnosis/complaint/transport type:					
James Jones – 87 y/o bedridden, on vent					
DATE/TIME:	UPDATES:				SIGNATURE:

CMOC 213 - GENERAL MESSAGE – EVACUATION/REPOPULATION					
TO:		POSITION:			
FROM:		POSITION:			
SUBJECT:		DATE:		TIME:	
MESSAGE:					
From: Address: POC: To: Address: POC:					
Date/time Entered and Mission Number:			Signature:		
Name(s), age, diagnosis/complaint/transport type:					
DATE/TIME:	UPDATES:				SIGNATURE:

Attachment 1: Regional Plan One-Pager

Catastrophic Medical Operation Center Plan (CMOC) And Associated Attachments

Plan Purpose

This plan provides guidelines for preparation, response, coordination, and recovery of medical infrastructure and components within the region. This plan has associated attachments that include the process for rapidly activating, coordinating, and mobilizing EMS resources throughout the region, as well as, coordinating regional emergency medical response to large-scale, no-notice incident(s).

Plan Owner

Owner: Southeast Texas Regional Advisory Council
Last Revised: January 2019
Contact: Lori Upton
Email: lori.upton@setrac.org
Phone: (281) 822-4450

Plan Triggers

1. When a scheduled event, natural disaster, or human -caused incident requires a coordinated whole-community medical response.
2. When the local jurisdiction affected has exceeded its capability and exhausted local mutual aid in response to a mass casualty incident and/or has few resources available.
3. When a single or multiple jurisdictions have been affected by an incident (e.g., IED) or multiple incident sites requiring coordinated emergency medical response.

Plan Activation

The CMOC may be activated by a number of agencies, including the Department of State Health Services (DSHS), Texas Division of Emergency Management (TDEM), and county or city offices of emergency management by calling the SETRAC 24/7 duty officer at (281) 822-4444.

Recommended Partners to Consider

Local (City/County)

Texas Medical Center

Healthcare Organizations
Hospitals
Public Health Departments
Emergency Management
Emergency Medical Services
Fire Departments
Law Enforcement
Local Government Non-Governmental Organizations
Non-Profit Organizations

Regional/State Functions

Medical Reserve Corps
Southeast Texas Regional Advisory Council Houston Galveston Area Council
Texas Department of State Health Services Texas Division of Emergency Management Texas Department of Public Safety
Texas Health and Human Services
Texas Department of Assistive and Rehabilitative Services
Texas State National Guard

Emergency Support (Federal)

☒ 1- Transportation
☒ 2- Communications
☒ 3-Public Works/Engineering
☒ 4-Firefighting
☒ 5-Info./Planning
☒ 6-Mass Care/Housing
☒ 7-Logistics/Resource Support
☒ 8-Public Health/Medical
☒ 9-Search And Rescue
☒ 10-Oil/HazMat Response
☐ 11- Agri/Natural Resources
☒ 12-Energy
☒ 13- Public Safety/Security
☒ 14- Long-Term Recovery
☐ 15- External Affairs

This plan can be accessed at: https://www.HoustonUASI.com

Catastrophic Medical Operation Center

- Medical resource requests and coordination
- Hospital Assessments
- Ambulance/EMS Coordination
- Patient Distribution/Tracking
- Highly Contagious Infectious Disease (HCID) transport
- Emergency Medical Task Force (EMTF) SOGs
- Hospital Medical Counter Measure Distribution
- Healthcare protocols & templates
- Medical Surge Management

Regional Epidemiology Coordination Plan	Outbreak surveillance and investigations; Laboratory testing, analysis, and results; HIPAA sharing between hospitals and epi; Distributing information to the public.
Regional Emergency Public Information Plan	Joint Information Center (JIC) activation; Coordinate public information across jurisdictions
Regional Search & Rescue	Coordinated SAR response. Examples: (Air, water, ground SAR)
Regional Mass Fatality	Victim accounting; Victim Identification; Fatality site management; Family Reception Center (FRC); Family Assistance Center (FAC); Morgue Operations; Human Remains
Regional Wildfire	Wildland/urban interface fires; Resource management and sharing protocols; Unified Command.
Texas Medical Center Response Guide	Staffing and Response Guidance
Coordination of Multiple Incident Sites	Multi-jurisdictional Unified Command (UC); Scene coordination and investigation between local, state, and federal partners.
Regional Interoperable Communications	Formal Network Operation Center notification; Multi-jurisdictional Radio Interoperability.
Regional Public Health Coordination	Regional Public Health Strategic Advisory Group (RPHSAG); Local Health Authority (LHA) / Local Health Department (LHD) recommendations for Strategic National Stockpile (SNS) Points of Dispensing (PODs); Alternate Care Sites (ACSs), and crisis standards of care.
Multi-Agency Coordination Center	Non-medical resource and mutual aid coordination; Multi-jurisdictional situational awareness.
City/County	When local resources are strained or exhausted any regional, state, and/or federal plans may be integrated to assist with the response.
State/Federal	There are Emergency Support Functions that may be integrated to assist with the response.

This page intentionally left blank.

Attachment 2: EMTF 6 Standard Operating Guidelines

EMTF-6 Regional Plan Intra-regional Response

WARNING: This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with U.S. Department of Homeland Security policy relating to FOUO information and is not to be released to the public or other personnel who do not have a valid “need-to-know” without prior approval of an authorized official.

The opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the U.S. Department of Homeland Security, the Governor's Texas Division of Emergency Management, or any individual jurisdiction within the 25-county EMTF-6 region.

Implementation of this EMTF6 Regional SOG is coordinated by SETRAC.

For more information, call 281-822-4444.

Attachment 2 Contents

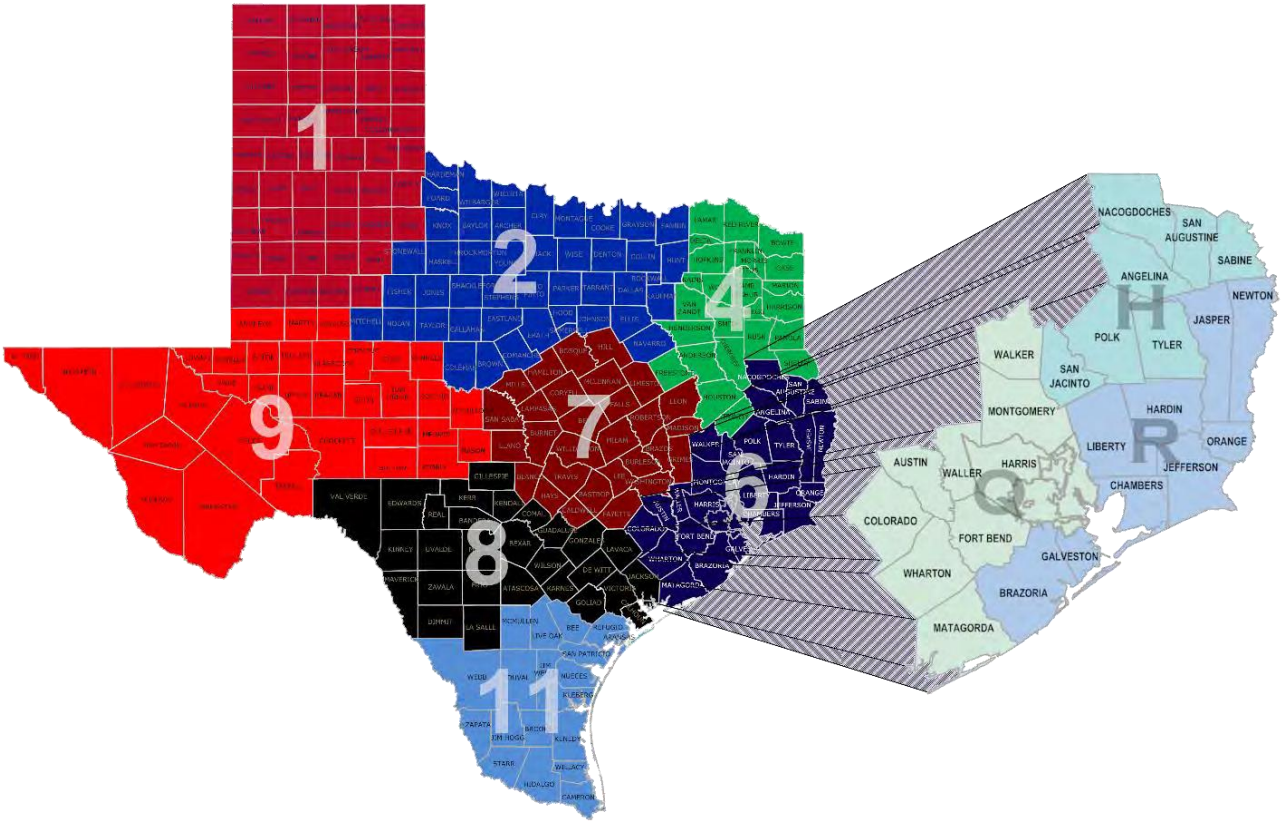
EMTF-6 Intra-Regional Deployment Operations

Scope

This Standard Operating Guideline (SOG) addresses the intra-regional, one or two operational period
(<24 hours) mission profile for the Region 6 Emergency Medical Task Force (EMTF).
Not addressed in this document is the extra-regional and/or multi-operational period mission profile.

The footprint supported by this plan is presented in Figure 1. The map in Figure 1 shows the 25 counties included in the EMTF-6 region. Nine of the counties are within TSA-Q; nine of the counties are within TSA-R; seven of the counties are within TSA-H.

Figure 1: EMTF-6 Region



Purpose

The EMTF-6 Regional SOG focuses exclusively on regional support and coordination for activation, notification, mobilization, and deployment of regional medical resources.

This SOG is designed to provide guidelines for the resource response, incident management team structure and oversight, communications, and logistical support for each of the subcomponents of the EMTF, including Ambulance Strike Teams (AST), Nurse Strike Teams (RNST), AMBUS, Mobile Medical Unit (MMU), Ambulance Staging Management Teams (ASMT), Medical Incident Support Teams (MIST), and the Infectious Disease Response Unit (IDRU) team across the twenty-five counties of the EMTF of region six (6). Support Services for the TMORT and IDRU teams, still in a germinal stage, will be better identified and included in future versions of this document.

These strategies are developed to support local and regional jurisdictions and entities, as well as the Texas Department of State Health Services (DSHS) during large scale medical emergencies, evacuations, and other public health threats.

The intended audience for this SOG includes governmental and emergency response representatives from the 25 counties and various large cities within the EMTF-6 region the Catastrophic Medical Operations Center serves, non-governmental and private sector representatives, state governmental and emergency response representatives, and federal government representatives.

The EMTF-6 Regional SOG's primary purpose is to describe the process for rapidly activating and mobilizing medical resources throughout the region in response to large-scale events or incidents. The SOG is scalable and flexible and may be adapted to address the specific characteristics of the incident or jurisdiction affected.
The SOG does not supersede or exclude any existing jurisdictional or regional plans; rather, it places relevant plans in the context of a response to an incident within the region, during which time a series of regional plans (including Catastrophic Medical Operations, Multi-Agency Coordination) are activated. More specifically, it does not address local procedures for:

- Incident Command (IC)
- Local response activities
- Established mutual aid relationships and procedures at the local level
- Joint information and messaging through the Joint Information System (JIS)/Joint Information
  Center (JIC)
- Tactical operations on scene, including patient triage and transport, HAZMAT, and mass

fatality management

Regional emergency medical response objectives:

Obtain situational awareness of the event to deploy resources into the affected area.
The AHJ should initiate triage (S.T.A.R.T. is the standardized regional triage system).
Join the developing IC structure at each incident site.
Notify area hospitals via EMResource.
Implement EMTrack, the regional patient tracking system using appropriate technologies throughout the disaster continuum.
Transfer victims from search and rescue collection points to the triage area.
Identify routes of ingress and egress and establish staging areas for EMS units.
Implement and maintain accountability procedures for EMS personnel, equipment, and
Coordinate with the CMOC for transfer from the treatment area to an appropriate health care facility based on capability and capacity.
Maintain visibility on the results from hazardous materials assessments.
Establish an IC structure at health care facilities and redundant communications with the CMOC
Identify hospital surge and morgue capacity.
Establish the linkage between law enforcement and medical care for the gathering of evidence and investigation.
Establish the demobilization process.

Mission

The purpose of the Emergency Medical Task Force (EMTF) is to build alternate care capacity with an acute care medical focus, such as emergency medical transport, hospital surge staffing, and mobile medical units that could be deployed during a large mass-casualty event, significant regional incident, statewide disaster, a pandemic response or any other event that requires surge capacity and capability to augment the local or regional response by the healthcare delivery system.

The EMTF is structured as eight regions across Texas; region 6 comprises the following twenty-five counties: Angelina, Nacogdoches, Polk, Sabine, San Augustine, San Jacinto, Tyler, Brazoria, Chambers, Galveston, Hardin, Jasper, Jefferson, Liberty, Newton, Orange, Austin, Colorado, Fort Bend, Harris, Matagorda, Montgomery, Walker, Waller, and Wharton. The EMTF-6 comprises TSAs H, R, and Q.

- The EMTF MMU Component is to augment and support the needs of an impacted community
  with temporary healthcare infrastructure configured to the incident occurring.
- The EMTF AMBUS Component is to provide the capability for mass transportation and/or care to
  the sick and/or injured as well as responders across a variety of incidents that may threaten the health and safety of Texans and others.
- The EMTF Ambulance Strike Team Component is to provide supplemental medical
  transportation during large-scale patient movements or other special circumstances.
- The EMTF R.N. Strike Team component is to augment staffing of a hospital(s) in an affected
  jurisdiction.
- The EMTF IDRU (Infectious Disease Response Unit) is a team of Texas-credentialed, uniquely
  trained clinicians that, upon request, deploy to supplement the pre-hospital transport and care, as well as the in-hospital patient care of a patient experiencing a high consequence infectious disease (HCID).
- The MUR-C (Medical Unit Rehab Crew) is a highly trained Paramedic medical crew dedicated to
  the health and wellbeing of all incident responders, complete with a pharmacy cache, suturing and emergency dental capabilities, and prescription writing authority.
- The TMORT (Texas Mass Fatality Operations Response Team) is currently under development.

Critical Assumptions

To ensure consistency this SOG makes the following assumptions:

1. This document is to be considered a living document which may be updated from time to time as new information becomes available. The most current copy will be maintained by the EMTF-6 Coordinator and will be kept by the Southeast Texas Regional Advisory Council (SETRAC) and will be posted on the SETRAC website.
2. The term “region” or “regions” will be utilized throughout this document and refers to the EMTF regions as defined by the state. Instances where this does not apply will be noted as such.
3. The EMTF-6 response and operations will operate within the parameters set forth by SETRAC, in conjunction with the Catastrophic Medical Operations Center (CMOC).
4. The EMTF-6 teams will not “self-dispatch” or freelance. The EMTF-6 teams will activate upon the appropriate request from authorized personnel.
5. The EMTF-6 has identified, partnered with, and trained a public safety communications center with 24/7 operations, regarding EMTF-6’s deployment package. This center is Cypress Creek EMS Communications Center and will be referred to as the “Regional Communication Center” or “RCC”.
6. EMTF-6 has a primary contact phone number (281)822-4444), answerable 24/7, that has been publicized to the Regional and State’s disaster response entities, including but not limited to: DSHS, DDC, TDEM, OEMs, etc.
7. EMTF-6 has identified and implemented systems or technologies with redundancies, designed for the notification of deployment team members, from all participating agencies.
8. This EMTF-6 Team is developed and used in conjunction with local and county emergency management, hospital facilities, pre-hospital agencies, fire and law

enforcement departments, industry, public health offices and/or other agencies with responsibility and authority for the incident.

9. Homeland Security Presidential Directive-5 (HSPD-5) provides a National Incident Management System (NIMS) through which all incident response agencies and assets are to be integrated and coordinated. EMTF-6 teams will be integrated into the Incident Command System (ICS) structure implemented by the requesting Authority Having Jurisdiction (AHJ).
10. Local and regional resources will be exhausted before requesting state and/or federal assistance. This SOG will be activated during the regional request phase of the process.
11. Regional response assets will be available immediately, but scene reporting times will vary depending upon location.
12. EMTF-6 will have pre-identified Emergency Medical Services (EMS) agencies for deployment as part of the EMTF's Ambulance Strike Team component.
13. Each Ambulance shall be licensed as an Ambulance by the Department of State Health Services to become a deployable asset and must maintain the license to remain deployable.
14. EMTF-6 will have executed appropriate MOA's with partnering agencies and personnel to allow for a State tasked mission.
15. Members of the R.N. Strike Team will be working in customary and familiar clinical environments.
16. The Sponsoring Entity shall continue to assume legal and financial responsibility of the personnel and equipment for the duration of activation or deployment.
17. Sponsoring Entity shall ensure that all personnel meet all licensing, training and certification requirements related to his/her profession and/or mission.
18. Sponsoring Entity shall ensure that all personnel are actively employed and engaged in the clinical specialty which they are assigned within the team.

Safety

All EMTF activities involve variables and unknowns which may have a substantial impact on the health and welfare of staff members. These potential risks require frequent identification, assessment, analysis, and planning to minimize their impact. Risks should be assessed based on the likelihood of occurrence and potential severity. When appropriate, a qualified person may fill the role of Safety Officer.

A survey should be conducted to determine basic needs (e.g., sleep/rest, food, and mental health support), as well as ensure post-incident medical monitoring of first responders. Consider critical incident stress management (CISM) teams, if applicable.

Requests for police escort during regional Convoy Operations should be submitted to the CMOC via the proper channels, who will work with the Authority Having Jurisdiction (AHJ) to provide the resource, if possible.

Command Operations

It is beyond the scope of this document to address all operational concerns of resources deployed as part of EMTF. However, the following general guidelines can be assumed to apply in most deployments.

Command Operations should be documented on appropriate ICS forms available if unable to utilize WebEOC. A 214 (unit log) should be completed by each unit for each operational period and provided to the team leader. The team leader should also complete a 214 (unit log) for each operational period and submit is as a summary to the CMOC.

EMTF-6 Teams will follow an appropriate incident command system structure. Intervening levels of command may be inserted as incident scope affects the span of control. See Appendix D for a sample EMTF-6 and FEMA ICS Organizational Chart.

As a part of any deployment, EMTF-6 team members should be prepared to perform a variety of missions, both in and out of the scope of normal daily operations. Concerns related to assigned missions should be forwarded to the team leader. At all times, it is the intention of the EMTF to "Be Helpful, Be Nice" in all interactions with the public as well as fellow responders and affected region stakeholders.

Logistical Support

Each of the components of the EMTF may have a support systems package which supports their respective missions. The supplies, equipment, staffing, and other provisions should be determined in advance, including Ambulance Staging Managers, CMOC Liaisons, Task Force Leaders, Ambulance Strike Team Leaders, Medical Incident Support Teams and appropriate SETRAC personnel.

Communications Support

Each of the components of the EMTF may have a communications package which supports their respective missions. The interoperable communication equipment and redundant systems have been determined in advance and can be adjusted during the incident.

The leadership assigned during each mission shall ensure that SETRAC personnel and EMTF6 teams have the communication support needed and will work with local, regional, and state agencies or Medical Operation Centers to satisfy additional needs or gaps during a regional response. See "Appendix E" for additional interoperable communications channels from the Texas Statewide Interoperability Channel Plan.

Table 2: EMTF-6 Default ICS-205

INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205)

1. Incident Name:	2. Date/Time Prepared:	3. Operational Period:			
SETRAC / EMTF6 Generic	Date:	Date From:	***12/1/14***	Date To:	***12/1/15***
	Time:	Time From:	***8:00***	Time To:	***17:00***

4. Basic Radio Channel Use:

Zone Grp.	Ch #	Function	Name/Trunked Radio System Talkgroup	Assignment (Div/Group/etc.)	RX Freq N or W	RX Tone/NAC	TX Freq N or W	TX Tone/NAC	Mode (A, D, or M)	Remarks
		Command	*VTAC14**		*159.4725*	*CSQ*	*159.4735*	*156.7*	*A*	
		Support/Logs	*VTAC12**		*154.4525*	*CSQ*	*154.4525*	*156.7*	*A*	
		Staging	*VTAC13**		*158.7375*	*CSQ*	*158.7375*	*156.7*	*A*	
		Travel	*VMED29**		*155.3475*	*CSQ*	*155.3475*	*156.7*	*A*	
		Air to Ground	*VFIRE25**		*154.2875*	*CSQ*	*154.2875*	*156.7*	*A*	
		MMU Clinical	*VTAC 11**		*151.1375*	*CSQ*	*151.1375*	*156.7*	*A*	
		MMU Logistics	*VTAC 12**		*154.4525*	*CSQ*	*154.4525*	*156.7*	*A*	
		MMU Pt Reports	*VMED 28**		*155.34*	*CSQ*	*155.34*	*156.7*	*A*	
		Security	*VLAW31**		*155.475*	*CSQ*	*155.475*	*156.7*	*A*	
		Fire	*VFIRE24**		*154.2725*	*CSQ*	*154.2725*	*156.7*	*A*	
		Travel	*MSAT/SETRAC1*							
		CypressCreek	*MSAT/Interagency*							

5. Special Instructions:

This 205 has been created as a "Generic" starting point if you do not have a Communications Plan at the start of an EMTF Incident (Primarily for an MMU activation).

****CMOC1,CMOC2, CMOC3, CMOC4, CMOC5, CMOC6 or CMOC Command 800mHx channels may be substituted, as necessary.***

SETRAC's communications resources include:

- Regional Communications Vehicle (RCV-Q)
- Mobile Communications Center (MCC-602 & MCC-603)
- Cache of Motorola CM-200 Mobile VHF radios
- Cache of Puxing Portable VHF radios
- Cache of Motorola XTS2500 Portable 800mHz radios
- Cache of Motorola APX6000 Portable 800mHz radios
- Cache of M-SAT (mobile satellite) push-to-talk units
- Internet Mi-Fi units
- VSAT units
- Motorola WAVE (in development)

Mutual Aid

"Texas Government Code Sec. 418.1181 - REIMBURSEMENT OF COSTS: REQUEST BY LOCAL GOVERNMENT ENTITY. (a) If a local government entity requests mutual aid assistance from another local government entity under the system that requires a response that exceeds 12 consecutive hours, the requesting local government entity shall reimburse the actual costs of providing mutual aid assistance to the responding local government entity, including costs for personnel, operation and maintenance of equipment, damaged equipment, food, lodging, and transportation, incurred by the responding local government entity in response to a request for reimbursement. Local government entities with a mutual aid agreement when the request for mutual aid assistance is made are subject to the agreement's terms of reimbursement, as provided by Section 418.111.

(b) The requesting local government entity shall pay the reimbursement from available funds. If federal money is available to pay costs associated with the provision of mutual aid assistance, the requesting local government entity shall make the claim for the eligible costs of the responding local government entity on the requesting entity's subgrant application and shall disburse the federal share of the money to the responding local government entity, with sufficient local funds to cover the actual costs of the responding local government entity in providing assistance."

The EMTF6 SOG does not supersede or exclude any existing jurisdictional or regional plans or agreements.

Operational Support

The EMTF-6 is a regional asset under the SETRAC / CMOC, and as such the support and operations of any or all of the four EMTF components during activation will be provided under SETRAC/CMOC mission assignment. The following general guidelines can be assumed to apply in most deployments.

The teams will adhere to chain of command and will work collaboratively with the following agencies/organizations utilizing the National Incident Management System's (NIMS) chain of command.

- State Medical Operation Center (SMOC)
- Regional Mutual Aid
- Medical Operations Centers
- Public Health Regions, Local Health Authorities/Local Health Departments
- Disaster District Committees (DDCs)
- Local and County Emergency Operation Centers (EOCs)
- Incident Commanders

It may be necessary at times to "assign" a single resource or strike team under the command of either another responding agency or local jurisdiction. This neither relieves the EMTF members of their responsibility to the unit, nor does it remove the resource or strike team from the regional chain of command. Rather, it is an opportunity for close cooperation between the two entities in order to accomplish locally significant missions.

All other operational concerns and questions should be forwarded to the appropriate person in the SETRAC/CMOC Command structure.

Command and Control

EMTF-6 is first and foremost a local/regional asset and must coordinate with their local EOCs and MACCs for regional deployments. The leadership for the EMTF includes command, operational, and logistical authority for the personnel and assets assigned to that EMTF for the incident.

In a local event, the EMTF leadership will guarantee a unified command approach to successfully work with local jurisdictions of authority to coordinate the efforts of the EMTF teams with local responders.

In a regional tasking, the EMTF leadership understands that it is granted command, operational, and logistical authority of the EMTF at the discretion of the CMOC and the AHJ to support local, regional jurisdictions. Planning and operational decisions for the EMTF may be collaborative between the IMT, SOC, DSHS MACC, MOCs, DDCs, and/or other local responding agencies.

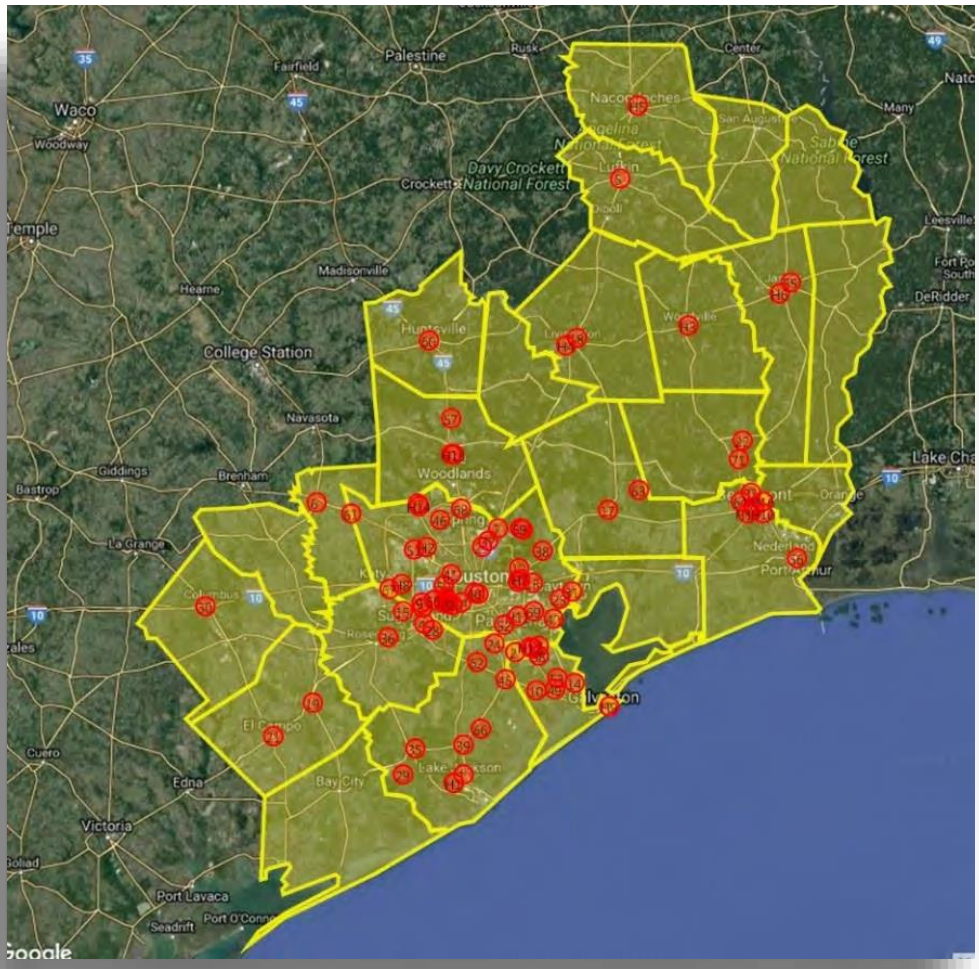
EMTF-6 Team Members

The EMTF-6 region has a pre-screened roster of persons agreed upon by both the sponsoring entity and the SETRAC/CMOC. EMTF-6 Region has developed a system of notification for these stakeholder agencies upon tasking from the CMOC.

Following this notification, it will be the responsibility of the stakeholder agencies to activate personnel appropriate to the tasked mission. Stakeholder agencies, upon notification, are to report back to their EMTF Coordinator and/or CMOC with their personnel and asset information, current status and estimated time of arrival at their individual mustering point.

The EMTF Coordinator will roster the teams, so the information is available to the region. The EMTF-6 Team Application is detailed in Appendix K. See Figure 2 for EMTF-6 partnering entities, as of Dec 2016.

Figure 2: 2016 EMTF-6 MOA Entities



Activation

When the need for a regional mass casualty response is apparent, the local Emergency Operations Center (EOC), Incident Command Post (ICP), or a designated agency representative will request the EMTF-6 teams by contacting the Regional Communications Center (Cypress Creek EMS Communications Center / RCC) at (281)822-4444. The RCC will then notify the SETRAC/CMOC On-Call Duty Officer of the situation. The Duty Officer will notify appropriate SETRAC leadership, elevating the CMOC activation level, as needed.

The individual contacting the RCC to request EMTF-6 teams should be prepared to provide the following information:

- Incident type
- Incident location
- Estimated number of patients
- Complicating factors
- Resource requirements
- Staging area information
- IC/Point of Contact

Having this information will allow staff to determine what level of response is required. The following recommendations do not supersede local jurisdictional/agency mass casualty plans for additional resources. The SETRAC/CMOC on-call duty officer will consider requesting resources using the following MCI Levels:

Table 2: MCI Tier Levels with Suggested Resources

MCI Level	# of Immediate/Delayed Victims	Minimum Resources Requested
Level 1	10-20	1 Ambulance Strike Team (5 ambulances); 6 First Responder Personnel
Level 2	20-50	2 Ambulance Strike Teams; 15 First Responder Personnel 1 AMBUS (optional); 2 MCI Trailers (optional)
Level 3	51-100	5 Ambulance Strike Teams; 30 First Responder Personnel 2 AMBUSES; MCI Trailers (optional); SETRAC RCV-Q
Level 4	101-250	10 Ambulance Strike Teams; 50 First Responder Personnel 2 AMBUSES; MCI Trailers; SETRAC RCV-Q Mobile Medical Unit (optional)
Level 5	251+	25 Ambulance Strike Teams; 100 First Responder Personnel 2 AMBUSES; MCI Trailers; SETRAC RCV-Q; Mobile Medical Unit

Incident Component Notification

When the SETRAC and/or CMOC receives a request for EMTF assistance, the CMOC will consult with
EMTF Coordinator to determine the most appropriate region and component to respond to the pending request. Utilizing the technology identified by the EMTF-6 (see Appendix F), a notification will promptly
be broadcasted to appropriate EMTF-6 teams.

Activation of any of the four components of EMTF may trigger the elevation of the CMOC. EMTF-6 should pre-identify persons that are qualified to assume an EMTF leadership role. Other individuals that may be rostered for these leadership roles will be organized and activated through the CMOC.

The CMOC may assign specific EMTF leadership roles to the individuals that respond to the call out process.

Notification

A call for the EMTF team activation may lead to immediate mass-messaging sent through a Mass Notification System (i.e., SmartNotice; see Appendix F). SmartNotice is a mass notification internet- based program that will send and receive time-sensitive messages to a home, business, cell phone, email, hearing impaired devices or by text message. The notifications will adhere to the notification terminology detailed in Table 2.

Table 3: Notification Terminology

NAME	ACTION	FISCAL IMPACT	STATE MISSION ASSIGNMENT NUMBER
Awareness	Tell team members and staff that there is a possible incident that has *occurred*, Information only. No action requested.	NONE	NO
Standby	EMTF Coordinators will check *availability* of resources and may initiate conference calls.	NONE	NO
Alert	A request or the possibility of request for EMTF resources is *imminent*. The CMOC or SMOC will be responsible for Alert initiation. We will *place* names of team members in team member slots, EMTF resources should be ready for deployment, rental trucks rented, warehouse and other team leadership activated.	Yes, probably <$10,000.00 4 Suburbans $100.00/day 1 box truck $100.00/day 10 personnel $40.00/hour	YES
Activation	Call in all team personnel and necessary coordination center personnel. Deployment of personnel/assets through demobilization.	Yes, TBD by scope and type	YES

Incident Report notification

The initial notification will be brief, informative and will provide situational awareness to the EMTF-6 throughout the region. The message can be developed using information provided by the responder on- scene and contains a description about what type of incident has occurred, where it occurred, and approximately how many immediate and delayed patients are present. The initial message serves as an alert to agencies throughout the region and gives leadership a chance to gauge readiness levels while the need for specific resources becomes apparent. The message will instruct recipients to stand by for additional messages containing specific resource requests.

The Incident Report may be sent to all agencies in the CMOC Region, regardless of whether they will be required to respond. In addition to fire and EMS agencies, message recipients may include Emergency Management personnel, CMOC command representatives, RACS Q, H, R and other partners that could participate in an expanding incident and response.

Resource Request notification(s)

The second notification sent should contain specific information about what resources are needed for incident response. Staff member(s) sending Resource Needs notification should work with applicable personnel to ensure that resource types and quantities are requested clearly and appropriately.

The RCC may utilize the mass notification polling function to identify the availability for assets. Upon receipt of the message, agencies can respond both affirmatively or negatively with their ability to send resources to the incident. Polling results will determine the need for additional mass notification requests.

Response to Resource Request notifications

EMTF-6 teams should follow the appropriate procedure to acknowledge the receipt of the mass- notification. EMTF-6 teams should provide their availability at (url) http://roster.setrac.org, or as otherwise directed by the notification message.

The decision of when to inform and request EMS personnel for regional response lies with individual response agencies. Some may choose to notify staff immediately, while others await confirmation of the exact quantity of personnel and equipment required.

Incident Update notification

The Incident Update notification provides a brief summary of developments that have occurred since the initial notification and may include clarifying facts or situational awareness relevant to first responders throughout the region. Additionally, the Incident Update should include a report on resource needs and the level to which requests have been fulfilled. After reading the Incident Update, recipients should have an indication of whether to stay on standby for

potential mobilization and deployment.

Mobilization

EMTF-6 team mobilization[5] takes place at individual agencies. Though agencies belong to Strike Teams and are summoned accordingly, they do not physically meet with Strike Team partners before moving to the incident staging area. As soon as response staff and equipment are ready and given clearance by their agency, they mobilize to the staging area and report to local Incident/Unified Command.

A "Level- 3", regional resource staging area may be utilized, if appropriate. It is the goal of the EMTF to be an agile, rapid response force dedicated to the public health and safety of the citizens of the EMTF-6 region and Texas. In the following sections, timely, efficient, modular and prepackaged activations and deployments are the goal of the EMTF.

No contractual obligation or alteration of other contractual documents is implied by the following EMTF deployment time goals.

Mustering

EMTF-6 teams may utilize predetermined or ad hoc mustering points which will be determined upon activation. These sites are *not* considered base camps, rather a common meeting area for final deployment tasks to be completed. Geographical diversity is suggested to ensure the site selected by
the team leader is in the direction of the deployment. EMTF teams may wish to select sites that are lit and allow overnight parking which is secured for cases where team members have arrived in their personal vehicles at the mustering point. This deployment model is, for various reasons, not ideal but may be the best option in some regions.

Once released from the mustering point, the team leader will be responsible for ensuring his assigned units arrive at the deployment staging area.

Travel

Travel by the EMTF will be accomplished in convoy style. The make-up of the EMTF convoy will be at the discretion of the team leader. Members should be aware that they may travel with mobile assets that have different performance profiles and may need to adjust their driving habits as a result. The key to safety in convoy is communication; the convoy team will maintain radio communications and, preferably, an activated GPS tracking app. The route to the deployment area will be at the

[5] This SOG uses the term *mobilization,* rather than *deployment,* to describe the process by which resources are gathered and transported to a staging area. Under the National Incident Management System guidelines (NIMS), mobilization is defined as "the process and procedures used by all organizations – Federal, State, local, and tribal – for activating, assembling, and transporting all resources that have been requested to respond to or support an incident" - FEMA, *NIMS* (FEMA 501/Draft), 2007, p. 154.

discretion of the team leader, working in cooperation within theatre and CMOC.

Teams should anticipate efficient travel. Stops for non-mission essential reasons are discouraged and should be at the discretion of the team leader. Units should travel at the best, safe speed of the slowest unit in the convoy. Road and weather safety should be considered by all.

Travel by the EMTF will be incident driven. Considering the distances, mission profile, infrastructure available in the deployment region and other factors, the EMTF-6 region may have multiple travel profiles planned. These can include but are not limited to: contingency contracts for rental vehicles, travel by air, travel with another EMTF Component (e.g., AST, AMBUS, etc.). Flexibility and an all-hazard approach to planning is the recommendation for best mode of travel. If the EMTF Teams are to travel by ground, EMTF-6 may wish to plan for vehicles large enough to carry the entire team, with deployment equipment, and suitable to the deployment environment.

Individual EMTF strike teams should anticipate travel as a group and should plan to muster at a point determined when activated to ensure a coordinated arrival to the deployment as well as follow on travel and accommodations.

Demobilization

A strategy for demobilization of the regional assets should be developed at the time of mobilization. Criteria for making the determination that the asset is no longer necessary should be determined in advance. These types of determination factors may involve volume of utilization or benefit vs cost at the current time.

Demobilization may occur at the deployment staging area or regional mustering point according to the CMOC, Strike Team Leader and/or Task Force Leader's discretion. Demobilization will not occur directly from field assignments. Exceptions will be the discretion of the CMOC, Strike Team Leader and/or Task Force Leader. The Leader for each Strike Team will ensure that all persons in his/her care have a comprehensive demobilization briefing and ensure that all incident specific paperwork and forms are being completed appropriately. Travel from the deployment region during demobilization may be different than methods utilized in deployment and will be the discretion of the CMOC, Strike Team Leader and/or Task Force Leader.

The EMTF-6 region may utilize a Demobilization Checklist (Form ICS 221) for use by the Group. Supervisors to ensure that appropriate documentation was completed during and after the deployment. The Demobilization process should include a "Hotwash" of observations for improvement and best practices to be included in the documentation packet submitted for reimbursement, if applicable.

R.N. Strike Team Composition

Each R.N. Strike Team will consist of five (5) licensed Registered Nurses of like specialization with one of which is designated as a Strike Team Leader. Given the operational profile of the R.N. Strike Teams, it is expected that existing technologies will provide each team with common communications between the team, other EMTF-6 components and/or the CMOC.

The composition of each team, based on specialty (ER, ICU, Medical/Surgical, Pediatric, etc.), may be limited by resources available to the EMTF-6 Region. As such, it is the guidance of this SOG that each of the R.N. Strike Teams be composed of personnel with appropriate care experience, though no rules regarding the distribution of specialty is made. EMTF-6's distribution of specialty may be determined by resources available to the specific EMTF region.

RNs with unique specialty focus (Burn, Neurology, Neonatal, etc.) may all have high and specific value to the EMTF given the mission profile. However, due to the relative rarity and wide variety of specialties it is not the recommendation of this SOG to pre-roster entire strike teams of these personnel in the EMTF- 6 region. Rather, personnel who hold these specialties may be included as Single Resources attached to the EMTF as part of the most appropriate component.

R.N. Strike Teams shall be assigned to a "like" department within a facility that is comparable, and within their skill set and competency to perform, to their specialty area.

Operations

It is beyond the scope of this document to discuss every aspect of operations as a hospital acute care provider. However, certain planning should be made clear. It is the expectation of the EMTF-6 that nurses on the R.N. Strike Team will operate as caregivers in a hospital environment familiar to them. While the working conditions and patient load are difficult to quantify in advance, it is not the intention of this EMTF component to work in austere or environmentally harsh conditions.

At the onset of operations in the deployment hospital, the R.N. Strike Team Leader should determine that facility's clinical scope for nursing staff and perform to that level, if it is within their training and competency (see Appendix G). The RNST members shall bring verifying documentation of their licensure/certifications, preferably on a digital memory device (e.g., thumb drive).

The R.N. Strike Team Leader will be responsible for determining and communicating reporting structure for team members while on the unit, as well as command

structure for personnel with regards to logistical support and assignments. The R.N. Strike Team Leader is responsible for accountability of the members of their team while either on or off duty.

Other working conditions should be consistent with those encountered in the everyday hospital environment. While 12-hour shifts are common, incidents that demand additional hospital staffing may request a member(s) of the R.N. Strike Team to work extended shifts. R.N. Strike Team members should use discretion when working longer than 12-hour periods and MUST have, at minimum, eight (8) hours of downtime within a 24-hour period.

Medical Records

Medical records will be recorded using the Host Facility's routine documentation method. In the event the RNST members are unable to use the facility's routine documentation method, the T-Sheet medical record system has been preplanned and can be put in place. Paper copies of a contact roster (patient list which include a unique identifier that could traced back to a patient but does not include HIPAA protected information) should be provided to the RNST Leader, ideally, at the end of each operational period or at least during demobilization, for all patient encounters.

The original patient care records will be maintained by the host agency.

Mobile Medical Unit

Scope of Care[6]

The following descriptions of the MMU's capability are guidelines only; no restrictions, no limitations, or promises of level of care are implied. Generally, the MMU will not have laboratory or radiology capability. In some cases, the MMU may be used for specific tasks, including:

Non-Critical Care Capability

The MMU may be used to assist in providing bed capacity for hospital relief. The staffing supplies and equipment of an MMU result in a limited scope of care for hospital relief. The minimal scope of care includes:

- nursing care for stabilized internal medicine, trauma, orthopedic, and obstetric patients;
- medical workups and examinations;
- nursing care for special needs patients;

[6] The intent of the MMU is to provide "fast track" or "urgent care" style medical care for cases with rapid disposition. Mission specific objectives will be dependent on the requesting jurisdiction and/or DSHS tasking.

- ability to provide care for a variety of acuity levels while providing treatment, transfer or discharge;
- preparation for transport for patients who require transfer to hospitals.
- The MMU does not provide surgical services.

If available, the equipment and supplies may allow for resuscitative intervention if needed in individual cases.

Emergent Care Capability

The MMU may be used to assist in providing acute or emergent care level of services for hospital relief. The staffing, supplies, and equipment of an MMU must be appropriately increased to provide such intensity of care. In rare instances when staffing, supplies, and infrastructure permit, the MMU may be configured to provide emergency intervention. The scope of care for such a configuration includes:

- Administration of intravenous medications and drips
- Minimal short-term cardiac monitoring
- Minimal short-term ventilator support

Isolation Capability

The MMU may provide support to isolation operations with the capability to evaluate and hold persons suspected of being either exposed to or affected by an agent requiring isolation. The MMU, with an appropriately configured isolation cache, equipped with staff, and provided with service support facilities enables:

- Holding and segregation of persons suspected or confirmed to have illness.
- Taking of biological samples for submission to local, State or Federal laboratories.
- Short-term isolation of patients pending transfer to a hospital isolation ward.

Staffing Framework

Staffing of the MMU is a critical task. For the optimal standards of a 16-bed MMU, Appendix H MMU Typing Document is provided for comparison with State-Mission-Assigned MMU deployments. It is expected that for rotational purposes, each EMTF region will roster at least one team with consideration for depth when needed for extended periods of operation.

Personnel Requirements

Enormous numbers of patients seeking treatment in excess of a region's bed capacity during a disaster, for any reason, will cause healthcare facilities to fill to capacity. Available in-region staff will also be fully engaged. EMTF-6 will, as part of its deployment package, identify the team required and deployable for MMU operation.

MMU Team Skill Mix

The MMU team is staffed to maximize the use of limited staffing resources, not only to provide for an expected large quantity of patients, but also to ensure sustainability while providing the highest quality care possible given the limited resources. The team skill mix should be appropriate to adequately care for the patients in the MMU facility within the scope of care planned.

MMU Staff Training

It is incumbent upon EMTF-6 to ensure that member agencies and deployment personnel are adequately prepared to perform at their highest level under the dynamic and often adverse circumstances faced in disaster medical operations. In order to facilitate this readiness, the EMTF-6 MMU team meets regularly for training and planning to ensure the highest level of preparedness for the EMTF MMU Component's all-hazard response.

MMU Staff Activation

EMTF-6 will have pre-screened teams approved for deployment. Rostering and staffing plans may be impacted by the resources available to the region during an incident. EMTF-6 region should have appropriate relationships with the facilities & agencies to contribute resources to the formation of the MMU team roster. It will be the responsibility of the stakeholder agencies to activate personnel appropriate to the tasked mission. Stakeholder agencies, upon notification, are to report back to their EMTF Coordinator with their personnel and asset information, current status and estimated time of arrival at their individual mustering point.

MMU Supervision

Unlike other components of the EMTF (Ambulance Strike Teams, Ambus, and RN Strike Teams) the MMU faces unique challenges related to its deployment and operation. Specifically, given the large and complex scope of most foreseeable mission profiles it is apparent that the MMU may require the greatest level of organizational support during the incident. Owing to span of control and other operational factors, elements of the EMTF's overarching support structure may need to be housed within the MMU command structure or those MMU specific positions may need to be filled uniquely for the MMU.

Internally, each MMU will follow an ICS structure for a public health or medical emergency and provide necessary operations as stated in the incident action plans (IAPs) for the specific incident.

To ensure organized operations through an incident command structure, the MMU and associated staff will have a clearly defined reporting structure integrated into the CMOC structure. This structure may be provided within the organization of the MMU, by an overarching support team, or by infrastructure from a authority having-jurisdiction (AHJ).

Consistent with the ICS, each staff position should receive a job action sheet (JAS), which is a simple checklist that describes the role, responsibility, and reporting structure of each position within the ICS structure. These forms should be prepared in advance of the incident for rapid distribution to participating staff on their arrival to the MMU.

Supplies and Equipment

The MMU is designed to rapidly surge healthcare capacity into an affected region. Owing to that mission, it is the recommendation of this SOG that supply caches be configured based on interventions to be performed, rather than in bulk caches. This will limit the set-up time required for the stocking of treatment areas in the MMU, thus shortening the deployment to open time as well as aid in demobilization and restocking.

MMU supplies may be broken out into categories of care, both to aid in par stocking levels (related to expected patient loads) and cache configuration. EMTF–6 utilizes the following categories:

- Admin
- Diagnostic
- Facility
- IV
- Med Admin
- Pt Supplies
- PPE
- Respiratory
- Specialty
- Wound Care

Communications

Mechanisms for internal communication between EMTF-6 MMU functional areas and associated staff may include at a minimum cellular, radio and satellite phone capability. In many cases portable two- way radios may be available and used.

Operational Support

Coordinated through CMOC Logistics, the MMU may require the following external support services:

- Waste disposal (routine and biohazard)
- Food / potable water for patients and staff
- Security
- Water
- Fuel
- Latrines and showers
- Mortuary
- Private space for staff should be available to include incident briefing and medical report areas as well as eating, sleeping, toilet, showering, and rest facilities apart from the general patient population.

Security

Physical security of the MMU staff, equipment and the facility is essential. Physical security points include the following:

- Entry and exit points to the area (e.g., the city block), if practicable.
- Access points to the building.
- High-risk or high-value areas within the building, such as the temporary morgue and pharmacy

Patient Management

Based on the predetermined role of the MMU, patients may arrive either by private transportation or by ambulance. A receiving area for initial evaluation and registration should be in place and easily accessible for arriving patients.

A medical record system has been planned for and put in place on activation of the MMU. Every patient encounter will be documented using the medical record system planned for the MMU (T-System).

Preprinted order sheets and care plans may facilitate the management of patients, consistent with the planned role of the MMU. The EMTrack system for tracking patient location within the MMU or disposition after completion of treatment at the MMU will be utilized. This system strives to be interoperable with the State of Texas

WebEOC ETN system.

The original patient care records will be maintained by the sponsoring entity or SETRAC. A copy of each patient care record may be submitted to the Department of State Health Services via the reimbursement packet for the incident, as applicable.

Ambulance Strike Team Composition

Each ambulance strike team is five (5) ambulances under the direction of an Ambulance Strike Team Leader (ASTL) in a separate vehicle. The six (6) vehicles in the strike team (five (5) ambulances plus ASTL vehicle) must have common communications. This recommendation is met with the member agency compliance with the TICP (see Appendix E).

Specialty ambulances, (bariatric capable, Critical Care Transport (CCT), or Neonatal Transport units, etc.) may all have high and specific value to the EMTF, given the mission profile. However, due to the rarity and wide variation of capabilities of these types of apparatus, it is not the recommendation of this SOG to pool a "Specialty" Strike Team in place of a traditional one. Rather, these assets in the region may be included as Single Resources attached to the EMTF as part of the most appropriate component.

In a regional or state response affecting the EMTF-6 region, all ambulance assets will

be coordinated under CMOC Transportation Director to the Ambulance Staging Manager(s).

Incident Component Staffing

EMTF-6 should have appropriate relationships with the region's EMS agencies to contribute resources to the formation of the AST roster. EMTF-6 will have, as noted in the planning assumptions, a system of notification for these stakeholder agencies upon tasking from the CMOC. Following this notification, it will be the responsibility of the stakeholder agencies to activate personnel appropriate to the tasked mission. Stakeholder agencies, upon notification, are to report back to the EMTF Coordinator with their personnel and asset information, current status and estimated time of arrival at their individual mustering point. The EMTF Coordinator will roster the teams in preparation of deployment.

Medical Records

Medical records will be recorded using the EMS agencies routine documentation method. Paper copies should be made available to the ASTL, ideally, at the end of each operational period or at least during demobilization, for all patient encounters.

The original patient care records will be maintained by the sponsoring entity or SETRAC. If applicable, a copy of each patient care record may be submitted to the Department of State Health Services via the reimbursement packet for the incident.

AMBUS Crew Composition

The TX-EMTF AMBUS is a TDMS Type-1 Medical Ambulance Bus, capable of providing advanced medical transportation services and additional capabilities during a large-scale disaster, mass casualty incidents, incident rehabilitation, point of dispensing and other appropriate missions. The AMBUS has a maximum capacity of twenty supine patients with six care providers on-board. See Appendix I for typing details.

The AMBUS shall be licensed as Specialty Emergency Medical Services Vehicle allowing for variances
from the proscribed staffing levels set forth by DSHS for ambulances. At a minimum, this SOG recognizes that in some instances the Incident Commander (IC), based upon the incident, may alter staffing needs in special circumstances. See Appendix J for AMBUS request considerations.

EMTF-6 has two AMBUSES within its region. See Figure 3.

- MPV-601 – operated by Atascosita Fire Department; housed at Station 2, 4000 Atascosita Road, Humble, TX
- MPV-602 – operated by Houston Fire Department; housed at Station 8, 1919 Louisiana St, Houston, TX

- MPV-603 – Owned and operated by Fort Bend County EMS (future, in progress)
- MPV-604 – Acadian Ambulance (future; in progress)

Figure 3: EMTF-6 AMBUS Locations

Incident Component Staffing Pool

EMTF-6 has relationships with the Houston Fire Department and the Atascocita Fire Department to house and operate the AMBUS. EMTF-6 has developed a system for notification of these stakeholder agencies upon tasking from the CMOC. Following this notification, it will be the responsibility of the stakeholder agencies to activate personnel appropriate to the tasked mission. Stakeholder agencies, upon notification, are to report back to the EMTF Coordinator with their personnel and asset information, current status and estimated time of arrival at their individual mustering point. The EMTF Coordinator will roster the teams in preparation for

deployment.

Operations

AMBUSes will be deployed to various scenarios utilizing Appendix J as a guideline for deployment.

AMBUS deployments will follow an appropriate incident command system structure. Each AMBUS will have an "AMBUS Crew Boss" assigned to it. This position serves as a resource and operations expert of the AMBUS itself.

The AMBUS Crew Boss will report to an Ambulance Strike Team Leader and the Strike Team Leader in turn reports to the Ambulance Group Supervisor. Intervening levels of command may be inserted as incident scope affects the span of control.

At all times the AMBUS is subject to recall for higher priority missions.

All other operational concerns and questions should be forwarded to the appropriate person in the EMTF Command structure.

Medical Records

Medical records will be recorded using the EMS agencies routine documentation method. Paper copies should be made available to the ASTL, ideally, at the end of each operational period or at least during demobilization, for all patient encounters.

The original patient care records will be maintained by the sponsoring agency or the Lead RAC. A copy of each patient care record is to be submitted to the Department of State Health Services via the reimbursement packet for the incident.

Reimbursement Process

If applicable, the Sponsoring Entity will submit a completed Reimbursement Packet to the SETRAC Comptroller. All appropriate supporting documentation, including receipts, paycheck stubs, and ICS214, should accompany Reimbursement Packet for processing.

Documents

Updated documents, including the current EMTF Memorandum of Agreement, Typing Documents, Team Application, as well as this SOG, are available at setrac.org/emtf6 or by following this QR-code:

Appendix 2-A: Index of Acronyms and Abbreviations

AHJ	Authority Having Jurisdiction
AMBUS	Ambulance Bus
CMOC	Catastrophic Medical Operations Center
DDC	Disaster District Chair/Committee
DSHS	Department of State Health Services
EMResource	A day-to-day crisis application hosted by Juvare
EMTF	Emergency Medical Task Force
EMTrack	Web-based application for tracking of evacuees, patients, items
EMS	Emergency Medical Services
ESF-8	Emergency Support Function 8 – Public Health & Medical
EOC	Emergency Operations Center
FOUO	For Official Use Only
HAZMAT	Hazardous Materials
HEC	Houston Emergency Center
H-GAC	Houston-Galveston Area Council
IAP	Incident Action Plan
IC	Incident Command
ICP	Incident Command Post
ICS	Incident Command System
IDRU	Infectious Disease Response Unit
MACC	Multi-Agency Coordination Center
MCI	Mass Casualty Incident
MIST	Medical Incident Support Team
MOA	Memorandum of Agreement
MPV	Multiple Patient Vehicle
NIMS	National Incident Management System
PST-Q	Personnel Support Trailer-Q
PSTT-Q	Personnel Support Tow Vehicle-Q
RAC-H	Regional Advisory Council-H
RAC-Q	Regional Advisory Council-Q
RAC-R	Regional Advisory Council-R
RITA	Regional Infectious Transportation Ambulance
RCC	Regional Communication Center
RCV-Q	Regional Communications Vehicle-Q
RHPC	Regional Hospital Preparedness Council
SMOC	State Medical Operation Center
SOC	State Operations Center
TDEM	Texas Division of Emergency Management

TMORT	Texas Mass Fatality Operations Response Team
TSA-H	Trauma Service Area-H
TSA-Q	Trauma Service Area Q
TSA-R	Trauma Service Area R
WebEOC	Web-Based Emergency Operations Center

Appendix 2-B: Related Plans

The following is a non-inclusive list agency plans outlining their roles and responsibilities during a response to a no-notice mass casualty incident.

- Catastrophic Medical Operations Center (CMOC) Basic Plan
- Houston-Galveston Area Council (H-GAC) Multi-agency Coordination (MAC) Plan Annex
- Regional No-Notice Emergency Response CONOPS (Dec 2012)

The following organizations have policies and procedures detailing their response to mass casualty incidents.

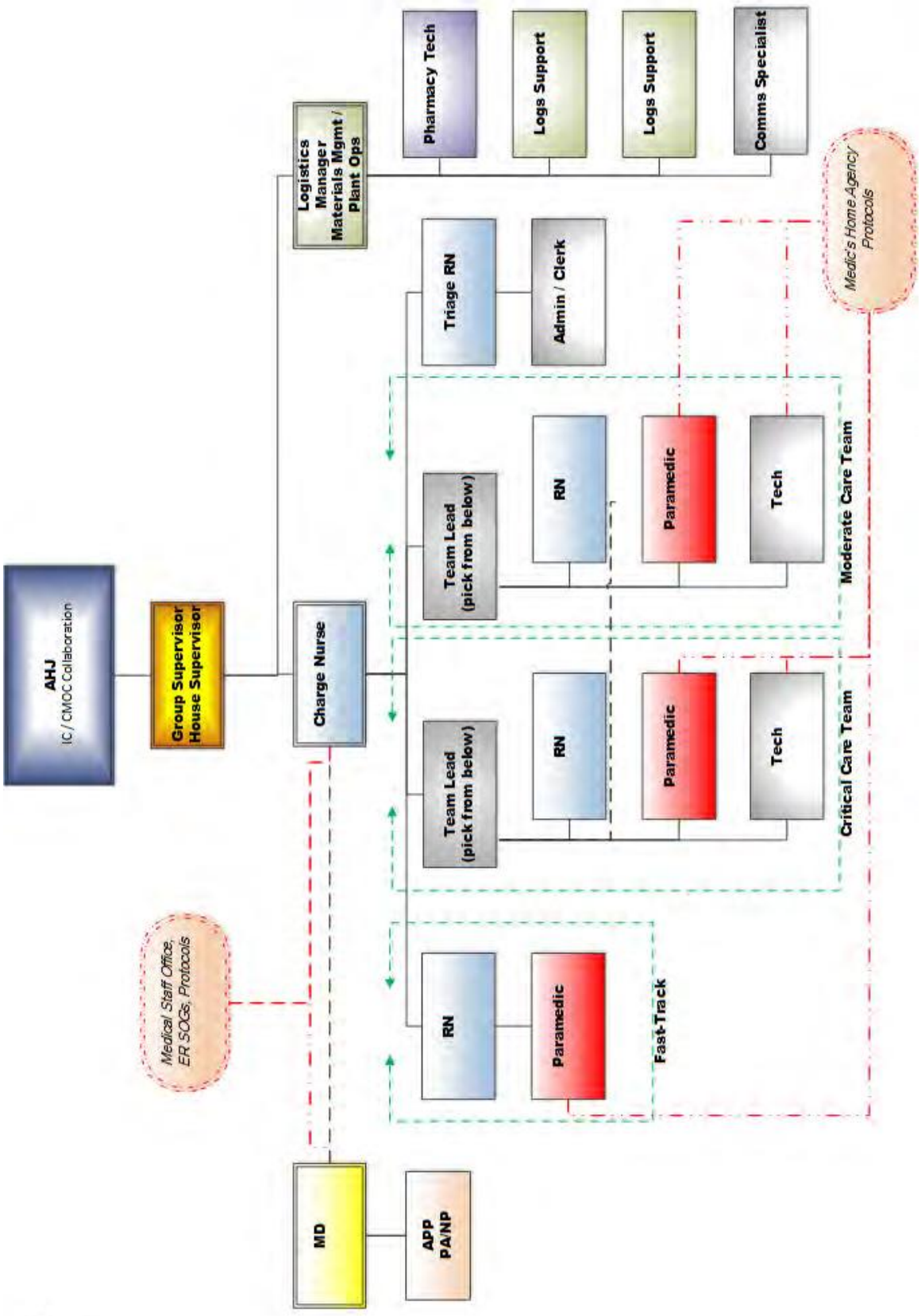
- Southeast Texas Regional Advisory Council (SETRAC) maintains protocols and guidelines for triage, stabilization and transport activities in RAC-Q
- National Disaster Medical System (NDMS) - Federal resource from the Federal Emergency Management Agency (FEMA)
- Houston Metropolitan Medical Response System (HMMRS) - Mass casualty response system for the City of Houston
- Local EMS agencies/jurisdictions - Agencies are responsible for maintaining plans or procedures for response to mass casualty incidents in their jurisdictions.
- Local Treatment Centers - Mass casualty and surge planning is part of each hospital's Joint Commission on Accreditation of Hospitals review process.

Appendix 2-C – Deployment Equipment Guidelines (Go-Bag)

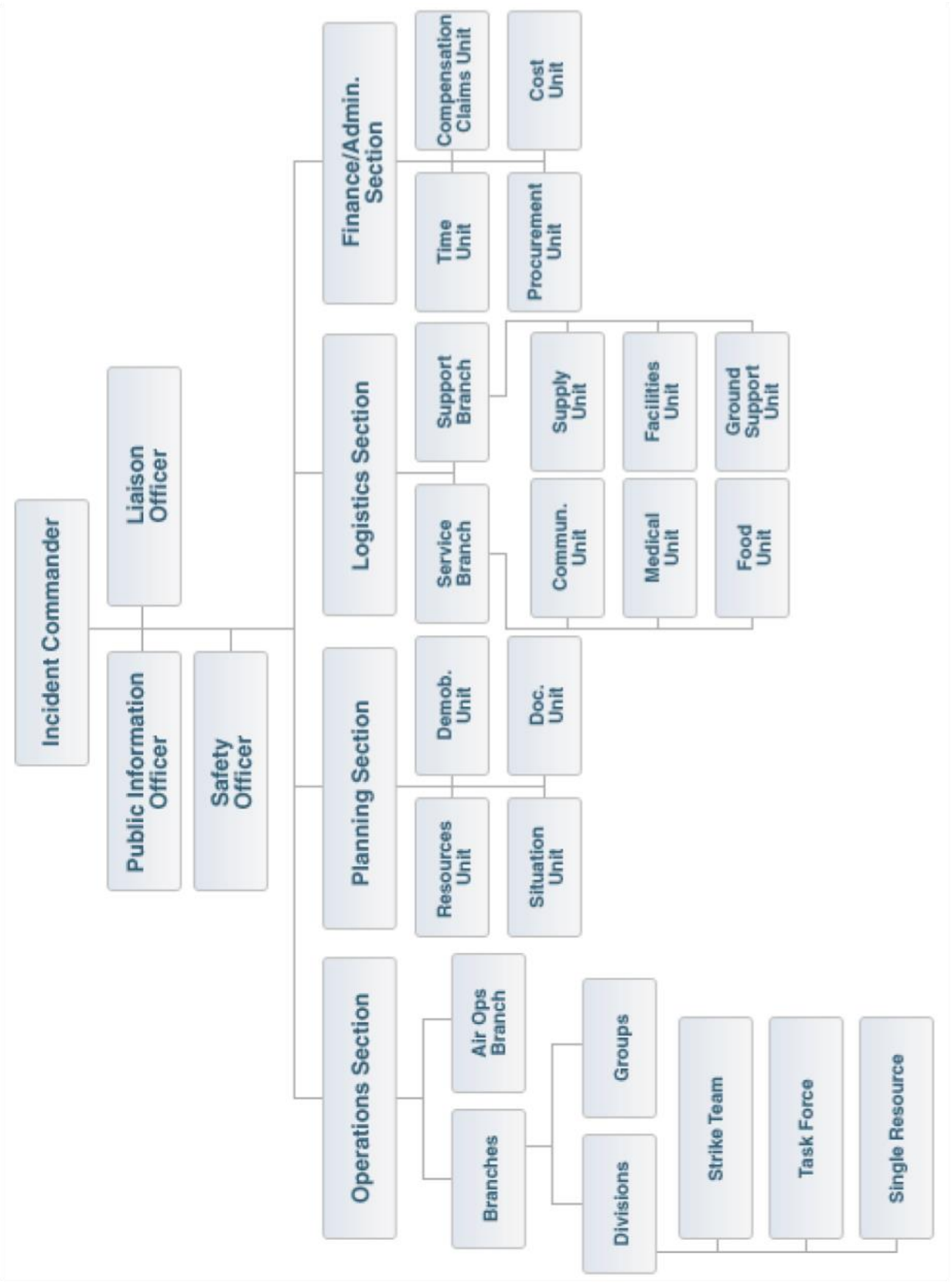
Item Description	Qty
Uniform/Scrub Shirts	5
Uniform/Scrub Pants	5
Undergarments	5
Work Shoes	1
Socks (pair)	7
Athletic Shoes	1
Mesh Laundry Bag	1
Parka / Rain Gear	1-2
Towel	1-2
Toiletries (keep in portable bag)	
T-Shirts	2
Cold Weather Gear	as needed
Large Ziplock Bags	Assorted
Baby Wipes	
Hand Sanitizer	
Woolite	
Snacks/Drink Mix/MREs	
Cards/Games	
Extra pair of glasses or extra contact lenses	
Sunscreen	
Lip balm with sunscreen	
Texas road map and map of deployment area	
Field guides (NIMS, ICS, public health emergencies, emergency response	
Feminine items (tampons, makeup etc.)	
Cash	$100.00
Prescription Medications	

*****All clothes should have name and/or initials in at least two places**

Appendix 2-D: Sample EMTF-6 Organizational Chart



Sample ICS organization chart showing all parts of the Command and General Staffs. <emilms.fema.gov>



Appendix 2-E: Texas Statewide Interoperability Channel Plan

Revised January 25, 2013 – page 19 and 31

VHF 150 MHz Narrowband Interoperability Channels (12.5 kHz)**

Emission Designators 11K2F3E, 11K3F3E, 11K2G2E

Mobile and Portable Configuration*					
Label	**Receive**	**Transmit**	**Station Class**	**CTCSS RX /TX**	**Use**
VCALL10	155.7525	155.7525	FBT / MO	CSQ / 156.7	Calling Channel
VTAC11	151.1375	151.1375	FBT / MO	CSQ / 156.7	Tactical Channel
VTAC12	154.4525	154.4525	FBT / MO	CSQ / 156.7	Tactical Channel
VTAC13	158.7375	158.7375	FBT / MO	CSQ / 156.7	Tactical Channel
VTAC14	159.4725	159.4725	FBT / MO	CSQ / 156.7	Tactical Channel
VFIRE21	154.2800	154.2800	FBT / MO	CSQ / 156.7	Tactical Channel
VFIRE22	154.2650	154.2650	FBT / MO	CSQ / 156.7	Tactical Channel
VFIRE23	154.2950	154.2950	FBT / MO	CSQ / 156.7	Tactical Channel
VFIRE24	154.2725	154.2725	FBT / MO	CSQ / 156.7	Tactical Channel
VFIRE25	154.2875	154.2875	FBT / MO	CSQ / 156.7	Tactical Channel
VFIRE26	154.3025	154.3025	FBT / MO	CSQ / 156.7	Tactical Channel (for Air-to-Ground with State/Federal Aircraft ONLY)
VMED28	155.3400	155.3400	FBT / MO	CSQ / 156.7	Tactical Channel (and for Air-to-Ground use)
VMED29	155.3475	155.3475	FBT / MO	CSQ / 156.7	Tactical Channel
VLAW31	155.4750	155.4750	FBT / MO	CSQ / 156.7	Tactical Channel
VLAW32	155.4825	155.4825	FBT / MO	CSQ / 156.7	Tactical Channel
TXCALL1D	154.9500	154.9500	FBT / MO	**156.7 / 156.7**	Mobile-to-Mobile Calling Channel
TXCALL2D	155.3700	155.3700	FBT / MO	**156.7 / 156.7**	PRI: Calling Channel for State/Federal Aircraft to/from a Base and SEC: VCALL10 backup

800 NPSPAC Interoperability Channels (20 kHz)

Emission Designator 20K0F3E

Label	**Receive**	**Transmit**	**Station Class**	**CTCSS RX/TX**	**Use**
8CALL90	851.0125	806.0125	FX1T / MO	CSQ / 156.7	Calling Channel (Repeater)
8CALL90D	851.0125	851.0125	FX1T / MO	CSQ / 156.7	Calling Channel (Direct)
8TAC91	851.5125	806.5125	FX1T / MO	CSQ / 156.7	Incident Temporary Repeater Channel
8TAC91D	851.5125	851.5125	FX1T / MO	CSQ / 156.7	Tactical Channel (Direct)
8TAC92	852.0125	807.0125	FX1T / MO	CSQ / 156.7	Incident Temporary Repeater Channel
8TAC92D	852.0125	852.0125	FX1T / MO	CSQ / 156.7	Tactical Channel (Direct)
8TAC93	852.5125	807.5125	FX1T / MO	CSQ / 156.7	Incident Temporary Repeater Channel
8TAC93D	852.5125	852.5125	FX1T / MO	CSQ / 156.7	Tactical Channel (Direct)
8TAC94	853.0125	808.0125	FX1T / MO	CSQ / 156.7	Incident Temporary Repeater Channel
8TAC94D	853.0125	853.0125	FX1T / MO	CSQ / 156.7	Tactical Channel (Direct)
8TAC95D ***	851.5500	851.5500	MO	CSQ / 156.7	Incident Control Channel (Direct)
8TAC96D ***	853.0500	853.0500	MO	CSQ / 156.7	Incident Control Channel (Direct)
8TAC97D ***	853.3500	853.3500	MO	CSQ / 156.7	Incident Control Channel (Direct)

Appendix 2-F – SmartNotice Directions

Go to https://login.smartnotice.net and log into the system with your assigned username and password.

From your Dashboard click **BUILD** to start the launch process.

Click **CONTACT** to add your group(s).

Double click in the Contact Group box to add the group(s) you need to add. Then click **DONE** when completed.

Click **Continue to Messages** to proceed after selecting your group(s)

Appendix 2-G – RNST Checklist

Compentency/Skill	Self Eval: (CIRCLE)	Comments
ACLS	Yes/No/See Comments	
TNCC	Yes/No/See Comments	
ENPC/PALS	Yes/No/See Comments	
NRP	Yes/No/See Comments	
Haz Mat/Decon Team	Yes/No/See Comments	
Intubation/LMA	Yes/No/See Comments	
Arterial Blood Gases	Yes/No/See Comments	
Suturing	Yes/No/See Comments	
Blood Product Administration	Yes/No/See Comments	
Rapid Infusion	Yes/No/See Comments	
Chest Tubes	Yes/No/See Comments	
Thoracotomy Procedures	Yes/No/See Comments	
Cut Downs	Yes/No/See Comments	
Psychiatric (Close Obs) Care	Yes/No/See Comments	
Paracentesis	Yes/No/See Comments	
Biphasic Defibrillator	Yes/No/See Comments	
NGT/OGT/Lavage	Yes/No/See Comments	
Restraints	Yes/No/See Comments	
SANE trained	Yes/No/See Comments	
Core Measures (knowledge)	Yes/No/See Comments	
G-Tube/PEG/feedings & meds	Yes/No/See Comments	
Art Lines (placement and monitoring)	Yes/No/See Comments	
Central Lines (placement and care)	Yes/No/See Comments	
ICP Monitoring	Yes/No/See Comments	
Thrombolytics (Stroke and STEMI)	Yes/No/See Comments	
Immobilization/Splinting Procedures	Yes/No/See Comments	

NOTE: The intent of this skills checklist is to rapidly verify that the RN serving in a disaster scenario is aware of the skills allowed while serving in the assigned setting, during a disaster assignment.

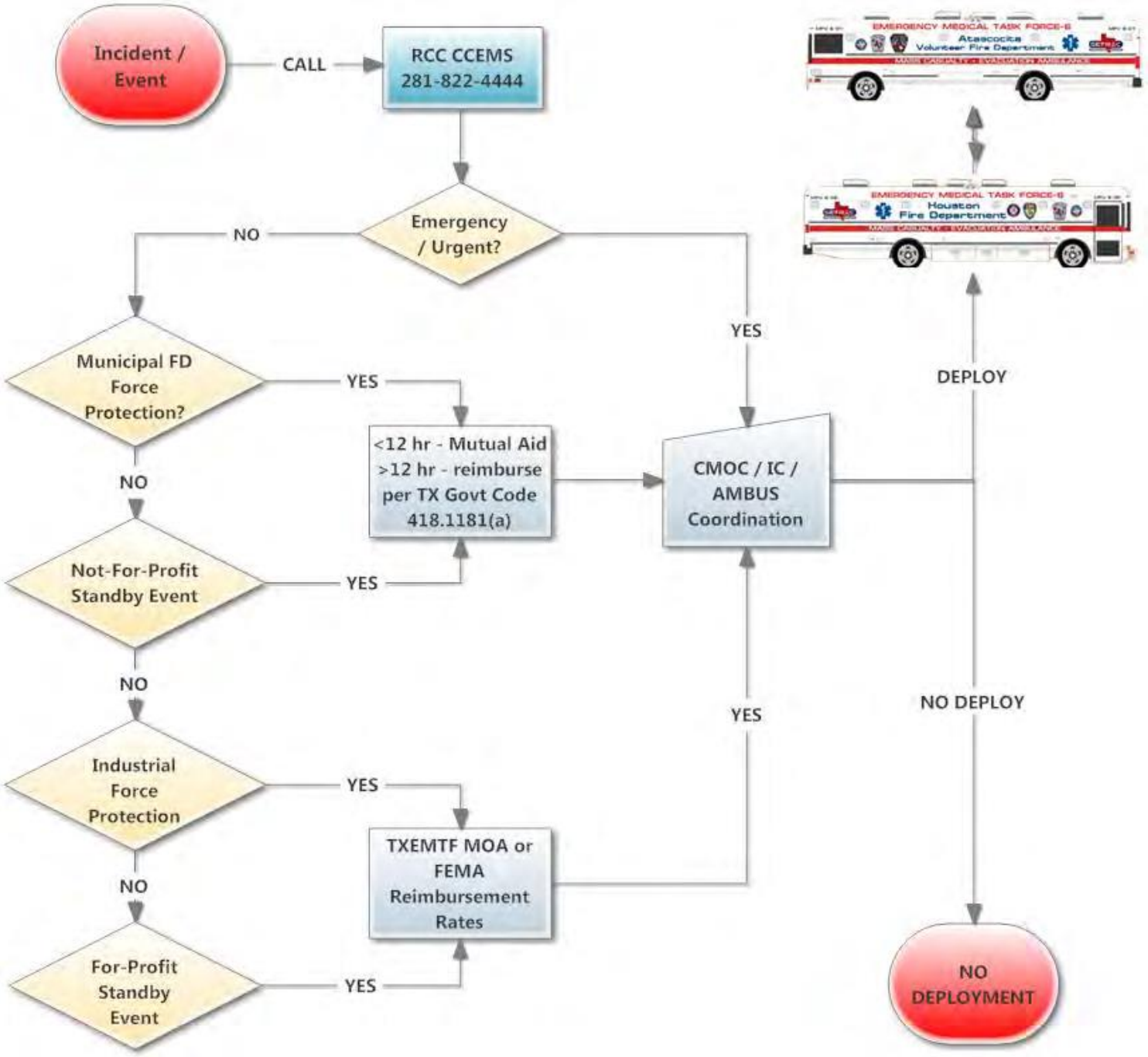
RESOURCE: Mobile Medical Unit - Sustained Operations (> 24 hours)						
CATEGORY:		Emergency Medical Services (ESF #8); Command and Control				
MINIMUM CAPABILITIES:		Type I	Type II	Type III	Type IV	Type V
Component	Metric	(32+ Beds 24/7)	(16-32 beds max)	(8-12 Beds)	(6-8 Beds)	Type IV w/o equipment
Operational Usage		Replacement of ER that is Off-Line Anticipated Significant Patient Surge Large Scale Community Disaster	Replacement of ER that is Off-Line Anticipated Significant Patient Surge Large Scale Community Disaster	Alternate Care Center Special Events Medical Operations	Innoculation Clinic Minor Care Clinic First Responder Force Protection	Roving Shelter Support Force Protection
	Example	*Joplin Tornado*	*Joplin Tornado*	*Planned Community Events -*	*Bastrop Wild Fire*	FLDS in San Angelo
Personnel	Number of Personnel	35-person response	19-person response	10-person response	7-person response	7-person responseR
	Sustained Operations	(2) Operations Manager (1) Logistic Manager (1) Group Supervisor (2) MD (2) APP(Adv.Practice Professional) (10) Registered Nurse (2-Charge) (6) Paramedic (2) Pharmacy Tech (4) Tech (2) Admin/Clerk (3) Logistical Support ~~(1) Comm Tech~~	(1) Operations Manager (1) Logistic Manager (1) Group Supervisor (1) MD (1) APP(Adv.Practice Professional) (5) Registered Nurse (1-Charge) (3) Paramedic (1) Pharmacy Tech (2) Tech (1) Admin/Clerk (2) Logistical Support ~~(1) Comm Tech~~	(1) Operations Manager (1) Group Supervisor (1) MD (2) Registered Nurse (2) Paramedic (1) Tech (1) Admin/Clerk (1) Logistical Support	(1) Group Supervisor (2) APP(Adv.Practice Professional) (2) Registered Nurse (2) Paramedic	(1) Group Supervisor (2) APP(Adv.Practice Professional) (2) Registered Nurse (2) Paramedic
Operational Area	Parking and Support	40,000 sq ft Operations Area (200' x 200')	40,000 sq ft Operations Area (200' x 200')	22,500 sq ft Operations Area (150' x 150')	15,625+ sq ft Operations Area (125' x 125')	225+ sq ft Medical Eval Area (15' x 15')
Air Operations	Landing Zone	10,000 sq ft Operations Area (100' x 100')	10,000 sq ft Operations Area (100' x 100')	10,000 sq ft Operations Area (100' x 100')	None	None
	Sleeping Area	860 sq ft	860 sq ft	860 sq ft	175 sq ft	175 sq ft
Equipment	Support Trailer/Command Vehicles	(1) 53' MMU Trailer with Power, Internal Command Center and Climate Controlled with: (2) Awning(s) (2) 36' MMU Trailer with Power and Climate Control with: (2) 860 (2) Quad or Awning (or equivalent)	(1) 53' MMU Trailer with Power, Internal Command Center and Climate Controlled with: (2) Awning(s) (2) 36' MMU Trailer with Power and Climate Control with: (2) 860 (2) Quad or Awning (or equivalent)	(1) Type II or Type III "Mobile EOC" (2) 36' MMU Trailer with Power and Climate Control with: (2) 860s (1) Quad (1) Awning (or equivalent)	(1) 36' MMU Trailer with Power and climate Control with: (1) 860 (1) Quad or Awning (or equivalent)	None
	Tow Vehicles	(1) Semi/Tractor (with Driver){1}[1] (4) 1-Ton Truck {4}[16] (3) 3/4 Ton Crew Cab Truck/Suburban {5}[15] (2) Supply Truck {2}[4]	(1) Semi/Tractor (with Driver){1}[1] (4) 1-Ton Truck {4}[16] (2) 3/4 Ton Crew Cab Truck/Suburban {5}[10] (2) Supply Truck {2}[4]	(3) 1-ton Truck {4}[12] (2) 3/4 Ton Crew Cab Trucks / Suburban {5}[10] (1-2) Supply Truck{2} [2]-[4]	(1) 1-ton Truck {4}[4] (1) 3/4 Ton Crew Cab Trucks / Suburban {5}[5] (1) Supply Truck{2} [2]	(2) Suburban {5} [10]
	Travel Package	Minimum of: (3) Credit Card (10) GPS Units and area maps (10) Radio (pull from Comm pkg) (10) D/C - A/C Power Invertor (10) Cases of Water (3) Case of MREs	Minimum of: (3) Credit Card (10) GPS Units and area maps (10) Radio (pull from Comm pkg) (10) D/C - A/C Power Invertor (10) Cases of Water (3) Case of MREs	Minimum of: (2) Credit Card (7) GPS Units and area maps (7) Radio (pull from Comm pkg) (7) D/C - A/C Power Invertor (6) Cases of Water (2) Case of MREs	Minimum of: (1) Credit Card (3) GPS Units and area maps (3) Radio (pull from Comm pkg) (3) D/C - A/C Power Invertor (2) Cases of Water (1) Case of MREs	Minimum of: (1) Credit Card (2) GPS Units and area maps (2) Radio (pull from Comm pkg) (2) D/C - A/C Power Invertor (1) Cases of Water (1) Case of MREs
	Power Generation	(1) 125kw Generator (Type VI) (1) 60kw Generator (1) 6.5 kw Generator Capability to Provide Shoreline Power	(1) 125kw Generator (Type VI) (1) 60kw Generator (1) 6.5 kw Generator Capability to Provide Shoreline Power	(1) 60kw Generator (1) 6.5 kw Generator	(1) 60kw Generator (1) 6.5 kw Generator	(1) Honda 1000 watt Generator (1) Gas Can, 2 gallon
	All Terrain Mobility	(1) All Terrain Utility Vehicle	(1) All Terrain Utility Vehicle	(1) All Terrain Utility Vehicle	None	None

Appendix 2-I: TDMS AMBUS Typing Document

Resource:		Medical Ambulance Bus				
Category:	Emergency Medical Services (ESF #8); Transportation		Kind:	Vehicle		
Minimum Capabilities:		Type I	Type II	Type III	Type IV	Type V
Component	Metric					
Overall Function	Primary Mission	Capable of providing advanced medical transportation services during a large scale disaster	Capable of providing advanced medical transportation services during a large scale disaster	Capable of providing advanced medical transportation services during a large scale disaster	Capable of providing basic medical transportation services during a large scale disaster	
	Alternate Mission	Capable of response to Mass Casualty Incidents utilizing Regional agreements	Capable of response to Mass Casualty Incidents utilizing Regional agreements	Additional capabilities for Incident Rehabilitation, Point of Dispensing and other Appropriate Missions		
	Alternate Mission	Additional capabilities for Incident Rehabilitation, Point of Dispensing and other Appropriate Missions	Additional capabilities for Incident Rehabilitation, Point of Dispensing and other Appropriate Missions			
Readiness	Dispatch Time*	Response Capable in < 10 minutes.	Response Capable in < 10 minutes.	Response Capable in < 2 hours.	Response Capable in < 6 hours.	
Capacity	Number of Patients	20 Litter Patients or 12 Seated Patients	12 Litter Patients	6 Litter Patients	25 Seated Patients	
	Number of Crew**	(1) Apparatus Operator (1) Command Position*** (4) Care Providers	(1) Apparatus Operator (4) Care Providers	(1) Apparatus Operator (2) Care Providers	(1) Apparatus Operator (2) Care Providers	
	Number of Accompanying Care Givers**	(4) Additional Passengers	(4) Additional Passengers	(4) Additional Passengers	(4) Additional Passengers	
Equipment	Vehicle Production	Custom vehicle with integrated electrical, oxygen and communication systems	Custom vehicle with after market electrical, oxygen and communication systems	Vehicle of opportunity that is augmented with bolt-on equipment and carry-on supplies	Vehicle of opportunity that is augmented with carry-on equipment and supplies	
	Emergency Warning Systems	Lighting and Audible warning system compliant with NFPA and KKK specifications	Lighting and Audible warning system compliant with NFPA and KKK specifications	No lighting or warning systems required.	No lighting or warning systems required.	
	On-board Power Generation	On-board generator capable of running all on-board equipment.	On-board generator capable of running critical equipment.	12V power system only	12V power system only	
	Oxygen Supply Systems	Integrated system capable of providing oxygen to all patients, including ventilator patients.	Aftermarket system capable of providing oxygen to all patients.	Portable bottles secured on the unit to provide low-flow oxygen for all occupants.		
	Climate Control Systems	A/C and Heat system capable of operation off on-board generator	A/C and Heat system capable of operation off on-board generator	On-Board Heat and A/C system available while unit is running.	On-Board Heat and A/C system available while unit is running.	
	Interior Storage	Integrated Equipment and Supply storage units to include refrigerated medications	Aftermarket Equipment and Supply storage units	Portable Equipment and Supply storage, to include hard cases, bags and shelving.	Carry-on Bags containing all patient care equipment and supplies.	
	Mounting Systems	At least two Stretcher Mounts Wheelchair mounting system	No rolling stretcher mounts Wheelchair mounting system	No rolling stretcher or wheelchair mounting systems	No rolling stretcher or wheelchair mounting systems	
Equipment	Operational Fuel Load	8 hours of Fuel	8 hours of Fuel	4 hours of Fuel	8 hours of Fuel	
	Deployment Duration	24 hour Operation*****	24 hour Operation*****	24 hour Operation*****	12 hour Operation	

Resource:		Medical Ambulance Bus				
Category:	Emergency Medical Services (ESF #8); Transportation		Kind:	Vehicle		
Minimum Capabilities:		Type I	Type II	Type III	Type IV	Type V
Component	Metric					
Communications	Radio Systems****	Integrated with Local and Regional EMS and Fire Radio Systems (VHF, UHF, 700, 800 and/or 900)	Integrated with Local and Regional EMS and Fire Radio Systems (VHF, UHF, 700, 800 and/or 900)	Portable Radio on-board capable of integration with local and regional radio systems	Portable Radio on-board capable of integration with local and regional radio systems	
	Satellite Systems	Satellite Radio and Telephone System	Satellite Radio and Telephone System	Portable Satellite Radio and Telephone Package, if available.	Portable Satellite Radio and Telephone Package, if available.	
	Internet Connectivity	4G/3G Wireless Internet on board with wireless router.	4G/3G Wireless Internet on board with wireless router.	None required.	None required.	
	AVL/GPS Tracking	Active AVL and GPS Tracking	Active AVL and GPS Tracking	None required.	None required.	
Supplies	Level of Care	Critical Care Transport capable	Mobile Intensive Care capable	Advanced Life Support capable	Basic Life Support capable	
	Patient Monitoring	Patient Monitoring (NIBP, SPO2, EKG) for at least (12) patients with Central Monitoring Station.	Patient Monitoring (NIBP, SPO2, EKG) for at least (12) patients with Central Monitoring Station.	Patient Monitoring for at least (2) patients using portable monitors.	(1) Automated external defibrillator on board only	
	Medical Equipment Requirements (beyond ambulance licensure requirements)	Monitor/Defibrillator/Pacer (1) Medication Infusion Pumps (8) Transport Ventilator (4) End-Tidal CO2 detector (4) Immobilization Equipment (12) Traction Splints (2) Intubation / Medication Kits (2)	Monitor/Defibrillator/Pacer (1) Medication Infusion Pumps (8) Transport Ventilator (4) End-Tidal CO2 detector (4) Immobilization Equipment (12) Traction Splints (2) Intubation / Medication Kits (2)	Immobilization Equipment (4)	None required.	
Safety	Gas Monitoring	Four gas detector for oxygen, carbon monoxide, combustibles (LEL) and hydrogen sulfide.	Four gas detector for oxygen, carbon monoxide, combustibles (LEL) and hydrogen sulfide.	Carbon Monoxide detector minimum.	Monitoring organic to the bus.	
	PPE	Protective Equipment Carried on board for Each Crewmember******	Protective Equipment Carried on board for Each Crewmember*****	Protective Equipment Carried on board for Each Crewmember*****	Protective Equipment Carried on board for Each Crewmember*****	
	Vehicle Marking	Reflective Vehicle Markings per NFPA specifications.	Reflective Vehicle Markings per NFPA specifications.	None required.	None required.	
	Lighting	Scene lighting on all sides of the vehicle with additional lighting available at the loading/unloading area to the rear of the unit	Scene lighting on all sides of the vehicle with additional lighting available at the loading/unloading area to the rear of the unit	None required.	None required.	
Comments:	* - Includes time required for vehicle configuration, personnel response, supply/equipment loading and pre-movement inspection ** - Number of Crew and Number of Accompanying Care Givers is based on the number of physical seats with NFPA/KKK compliant restraint systems. *** - A dedicated seat/workstation for a team leader or communications technician.					

Appendix 2-J: EMTF-6 AMBUS Request Flow



Appendix 2-K: Available Regional Assets

Regional Medical Assets	
The following are regionally-owned assets that may be deployed in response to a mass-incident in the CMOC region. Though they are stored throughout the region, the assets are SETRAC who provides for maintenance, fuel, licensing, and requests reimbursement for asset when they are deployed to state and federally declared emergencies.	
Regional Communication s Vehicle (RCVQ)	RCVQ is a 48ft Frontline Command Vehicle. The truck provides a mobile solution for interoperable communications and redundant, load-balancing wired & wireless connectivity. Purchased and maintained by SETRAC; SETRAC is responsible for its maintenance, mobilization, and
MCC-602 & MCC-603	MCC-602 & MCC-603 are 20ft enclosed trailers designed as a rapid-response unit for incidents requiring communication and technological interoperability. MCC-602 & MCC-603 are small but versatile and are equipped with phones, computers, internet, and radios. They can be used as a free-standing ICP or EOC or provide support to existing facilities. MCC-602 is housed, maintained, mobilized, and deployed by SETRAC; MCC-603 is housed, maintained, mobilized, and deployed by
Billeting Trailer (BLT – 1)	The Billeting Trailer provides response personnel a place to rest during deployments. Capable of supporting twelve (12) personnel, it has bunks, a kitchenette, laundry facilities, and a restroom/shower facility. It may also serve as a cargo hauler for ambulance staging equipment or other items needed for operations. BLT-1 is housed, maintained, mobilized, and deployed by the SETRAC.
International Navistar 8600 6x4 (HST-1)	HST-1 is a tractor capable of towing via bumper, gooseneck or fifth-wheel. The International is housed, maintained, mobilized, and deployed by the SETRAC.
GMC 5500 Tow Vehicle (PST-1)	PST-1 is a flatbed, bumper and gooseneck pulling truck with a 90-gallon supplemental fuel tank & pump. The GMC is housed, maintained, mobilized, and deployed by the SETRAC.
Ford F450 Tow Vehicle (PST-2 / PST-4)	The F450 is a flatbed, bumper and gooseneck pulling truck. The Ford F450 is housed, maintained, mobilized, and deployed by the SETRAC. SETRAC has two of these vehicles available.
Ford F-750 Crew Cab 4x2 Tow Vehicle (PST-3)	The F750 is a flatbed, bumper and gooseneck pulling truck. The Ford F450 is housed, maintained, mobilized, and deployed by the SETRAC.
DPMU1	Disaster Portable Morgue Unit: 53’ refrigerated trailer with various
DPMU2, 3, & 4	Disaster Portable Morgue Unit: 24’ refrigerated trailer for temporary decedent storage
Water Purification Trailer	Deployable water purification system capable of purifying 3100 Gph of water. The water purification system MCC-603 is housed, maintained, mobilized, and by Harris County Emergency Corps.
Decon Trailer	Enclosed trailer capable of two-lanes, hot/cold water mass

Appendix 2-L: EMTF-6 Team Application

EMTF Application - Please Print

NAME:
Last: _____ First: _____ Middle: _____

HOME ADDRESS:
Street: _____

City: _____ State: _____ ZIP: _____

PRIMARY CONTACT INFORMATION:
Mobile Phone: _____ Email 1: _____

Home Phone: _____ Email 2: _____

Work Phone: _____ Other: _____

SPONSORING ENTITY:
Agency Name:

_____

_____

Address:

_____

City: _____ State: _____ ZIP: _____

Current Position: _____ Years of Experience: _____

Current Duties:

_____

_____

_____

___

SPONSORING AGENCY AUTHORIZATION
Department Head / Supervisor Name:

_____

Office Phone: _____Email:

_____

As an official representative of the sponsoring agency, I support the candidate becoming a member of the Texas Emergency Medical Task Force. I understand that, if selected, the candidate will represent their home agency
during team trainings and meetings along with any local, regional or state deployments.
Signature: _____ Date:

_____

Please notify me of: Team Training / Meetings: *YesNo* Deployments: *Yes*

No

POSITION REQUEST

Mobile Medical Unit Team:

____ MD
____ PA
____ Paramedic
____ Pharmacy Tech
____ Nurse Practitioner
____ RN
____ Tech / Clerk
____ Logistics Specialist
____ Other

RN STRIKE TEAM:RN Strike Team Leader

____ ICU RN
____ OR RN
____ MED SURG RN
____ ED RN
____ NICU RN
____ PEDI RN
____ Other _____

REFERENCES:

1. Name	**2. Phone**
3. Relationship	**4. Years Known**
5. Name	**6. Phone**
7. Relationship	**8. Years Known**
9. Name	**10. Phone**
11. Relationship	**12. Years Known**

Has your employer agreed to support your membership with the Texas Emergency Medical Task Force?

___ YES

___ NO

___ NOT YET

Do you have prior emergency response experience?

___ YES

___ NO

If yes, explain your experience:

_____
_____
_____
_____

Do you understand that team trainings, as well as occasional work details, mobilization drills and quarterly meetings are required, and are you willing and able to attend these trainings?

___ YES

___ Occasionally

___ NO

If yes, explain:

_____
_____
_____
_____

Do you have employment responsibilities or other commitments that will hinder your ability to deploy without notice?

___ YES

___ NO

Are you willing to receive any and all immunizations?

___ YES

___ NO

If no, please explain:

_____
_____
_____
_____

What knowledge, skills, abilities or experience do you have that you would like to have considered in the review of your initial membership application?

I attest that my answers are true and complete to the best of my knowledge.

If accepted as a member of the Texas Emergency Medical Task Force, I understand that any false or misleading information in my application or interview may result in my membership being terminated.

Signed: _____ Date: _____

Mail completed form to:
Southeast Texas Regional Advisory Council (SETRAC)
Attn: Mikal Orr, EMTF 6 Coordinator
1111 North Loop West Suite 200
Houston, Texas 77008
Fax: (281)822-4668
Email: mikal.orr@setrac.org

Please complete the check-list on the back page prior to turning in this form.

Please submit this completed membership form as well as the other requested supporting documentation listed below. Any information that is omitted or incomplete will prevent formal membership processing.

____ Department Head or Supervisor signature
____ Resume (include a copy of your license / certification and certification cards)
____ Create an account at https://www.texasdisastervolunteerregistry.org (select the organization "Emergency Medical ____ Task Force -6", populate your license information)
____ Current Immunization Records
____ NIMS 700 & 200 Recommended (online training https://training.fema.gov/IS/NIMS.aspx)
____ Other NIMS certificates

Requirements for selected members

First 90 days:
____ Complete NIMS 700.a & 200.HCa (https://training.fema.gov/IS/NIMS.aspx)
____ Obtain WebEOC log-in on local server (https://houston.webeocasp.com)
____ Complete online T-Sheet course (http://www.tsystem.com/ Customer Number EP9996)

First Year:
____ Attended 50% of team meetings / trainings
____ Attended all mandatory meetings / trainings
____ Successful completion of Emergency Response to Terrorism (classroom or online) or equivalent (http://www.usfa.fema.gov/nfa/nfaonline/browse/terrorism.shtm)
____ Completes the Physical Agility Test

Continued Team Membership:
____ Continued employment within the ED or EMS
____ Attended 50% of yearly team meetings / trainings
____ Attended all mandatory trainings
____ Complete First Receiver DECON Course

Emergency Medical Task Force Region 6

Mikal Orr
EMTF-6 Coordinator
SETRAC
(281)822-4462
Mikal.Orr@setrac.org
www.setrac.org/emtf6

To get started with EMTF6, create an account at:
www.texasdisastervolunteerregistry.org

@EMTF6

Attachment 3: Regional Emergency Medical Response ConOps

HOUSTON REGIONAL CATASTROPHIC PREPAREDNESS INITIATIVE

Attachment 3 Contents

Foreword

WARNING: This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with U.S. Department of Homeland Security policy relating to FOUO information and is not to be released to the public or other personnel who do not have a valid "need-to-know" without prior approval of an authorized official.

Original development of this document and costs for its printing and distribution were supported by Grant Number 2008-CP-T8-0023 to the State of Texas through the Regional Catastrophic Preparedness Initiative (RCPI) Grant Program, as awarded by the National Preparedness Directorate, U.S. Department of Homeland Security. This grant was subsequently conveyed to the City of Houston, as fiscal agent for the broader region, by the Texas Division of Emergency Management through SAA Award Number 08-35000-01.

Initial development of this ConOps was based on a scenario with several mass casualty incidents (MCI) caused by the detonation of multiple IEDs in the 13-county Houston-Galveston Area Council (H-GAC) region that would significantly challenge the emergency response forces within the region requiring the activation of the Catastrophic Medical Operations Center (CMOC) and related plans. This ConOps was expanded to include the 25-county Southeast Texas Regional Advisory Council (SETRAC) area and it is scalable for implementation in response to any emergency medical response for mass casualty incidents.

The opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the U.S. Department of Homeland Security, the Texas Division of Emergency Management, or any individual jurisdiction within the 25-county Southeast Texas Regional Advisory Council (SETRAC) region.

Implementation and maintenance of this Regional Emergency Medical Response Concept of Operations (ConOps) is coordinated by SETRAC or the Regional Healthcare Preparedness Coalition (RHPC), a SETRAC committee. For more information, call 281-822-4444. The RHPC and/or SETRAC will review and update this ConOps every five years, or when:

- Ongoing regional planning efforts affect or change this document
- There are lessons learned or best practices from exercises and real-world incidents that should be incorporated; or
- There are changes in regional structures or processes that render parts of the document inaccurate.

Table of Contents

Record of Changes

	Change Description	Change Made By	Date
1	Original document creation	RCPI Consultants	August 2010
2	Document updates	RCPI Consultants	December 2012
3	Entire document update. Attachments merged into document content, re-formatting, operational considerations added for all-hazard incident response.	Tina Rose on behalf of multiple Red Team Review meetings	November 2018 – February 2019

Introduction

The intent of coordinating a regional emergency medical response to an incident or natural disaster with mass casualties is to provide coordinated efficient medical care to survivors and other impacted individuals. This ConOps places relevant plans in the context of an emergency medical response to an incident or natural disaster within the CMOC 25-county region.

Purpose

The purpose of this Regional Emergency Medical Response (EMR) Concept of Operations (ConOps) is to provide a coordination framework of emergency medical response resources for large-scale, catastrophic incidents that result in mass casualties. This ConOps includes the activation, notification, identification, and integration of medical resources into the incident as well as the evacuation or transfer of patients in preparation for impending natural disasters or from incident site(s) that affects one or more jurisdictions. This document is an attachment to the Catastrophic Medical Operations Center (CMOC) Plan.

Scope

This ConOps includes the coordination of emergency medical response partners for incidents from on-scene management to hospital receipt or transfer of patients. This ConOps focuses on regional support and resource coordination for emergency medical response operations.

The intended audience for this ConOps includes local, regional, state, and federal governmental, non-governmental, private sector, and emergency medical response representatives from jurisdictions in the 25- county CMOC region.

Regional EMR Objectives May Include:

- Obtaining situational awareness of the incident to deploy resources into the affected area, including activation of the CMOC plan or associated attachments.
- Actions to transport all patients from the scene within 60 minutes.
- Initiating a standardized triage system.
- Identifying medical surge capacity and capability throughout the region.
- Implementing the regional patient tracking system using appropriate technologies throughout the disaster continuum.
- Integrating with established family reception or assistance centers.
- Transferring survivors from triage collection points to area healthcare facilities.
- Establishing staging areas for ambulances.
- Coordinating patient transfer from facilities to an appropriate health care facility based on capability and capacity.
- Coordinating redundant communications.
- Maintaining awareness of decedents and morgue capacity in healthcare facilities

Critical Assumptions

- Regional health and medical plans will be activated.
- Local and regional resources will be exhausted or anticipated to be exhausted before requesting state and/or federal assistance.
- The incident may cause widespread disruption in normal traffic flow with limited access to the incident site and/or transport to the medical facilities.
- Timely incident notification is critical to ensure resource deployment (i.e., local resources should be available within minutes to 2 hours of the incident; regional resources may be available within 2-24 hours; state and federal resources may be available in 48+ hours).
- The CMOC will be activated at the appropriate level to assist with identification, notification, activation, and mobilization of regional medical resources, whereas single resource requests may be handled by the on-call SETRAC duty officer (refer to the Regional CMOC Plan).
- Responders and survivors may require decontamination, post-exposure prophylaxis, or alternate forms of medical treatment.
- A Unified Command (UC) will be established, including a medical branch, as soon as possible to provide a coordinated response and avoid duplication of effort.
- Depending on the nature of the incident, law enforcement investigations at multiple scenes and increase scene security of the incident may be triggered.
- Local hospitals could see an influx of self-presenting survivors, which could impact emergency resources.
- Spontaneous unaffiliated bystanders, volunteers, or Good Samaritans will be involved and should be managed and integrated into the response to prevent confusion and redundancy. Procedures should be established to manage them on-scene as they present.
- All assets may not be deployed to a catastrophic incident as each jurisdiction may keep an amount of assets in service for their own needs to respond to routine emergency calls locally.
- The primary role of the Emergency Medical Services (EMS) system during an incident is the triage, treatment, and transportation of patients to definitive care facilities. At any point of an incident, there could be spikes or reductions in pre-hospital needs.
- Increased EMS demand may result in alternate standards of care for transporting and treating patients, including ADA accommodations and access and functional needs.
- Procedures should be established to manage ADA service animals on-scene as they present.
- Receiving facilities will track all incoming patients from the incident(s) utilizing the regional tracking system (e.g., EMTrack).
- Unified Command and/or hospitals may establish one or more family reunification areas

depending on the size and scope of the incident.

- On-scene collection points may be established for initial triage and transport to hospitals.
- Hospitals may need to establish triage collection points for triage and possible re-distribution.
- The EMTF 6 Standard Operating Guide (SOG) may be implemented to activate, notify, and mobilize a large EMS response to assist Unified Command under the CMOC plan.
- The regional emergency medical response will be managed by local responders and assisted by CMOC and Emergency Medical Task Force (EMTF) personnel.

Regional Medical Coordination

Incident operations continue until all survivors are transported to a facility for definitive care and all resources are returned to their home base. This includes identifying hospital surge and morgue capacity, as well as managing the supplemental resources arriving at the scene(s). The Catastrophic Medical Operation Center (CMOC) recognizes its unique role and responsibilities to the medical community and may respond to local, regional, state, and national medical emergencies by providing the coordination of medical regional assets, including, but not limited to transportation, surge capacity, patient tracking, and facility requests for resources.

Catastrophic Medical Operation Center (CMOC) Operations

The CMOC will notify health care facilities throughout the region that the CMOC is beginning operations. Health providers may coordinate with the CMOC for patient transfer from the on-scene treatment area to an appropriate healthcare facility based on its capacity and specialized capabilities. The CMOC anticipates unmet needs of personnel, bed space, pharmaceuticals, and supplies in health care facilities. If the scope of the emergency expands to the point that facilities within the region have exhausted or are depleting internal response assets, the CMOC will assist with the coordination of requests with the following agencies: local fire, police, EMS, city and/or county emergency management office, Texas Department of State Health Services (DSHS), Texas Department of Public Safety (DPS), Texas Disaster District Committee (DDC), and/or Federal Emergency Management Agency (FEMA), and any other applicable agency.

Healthcare Facility Operations

Healthcare facilities involved in the response are expected to activate their emergency operations plan and incident command structures based on the type of incident and/or proximity of an impending disaster. They should plan to communicate patient tracking and plan for additional surge, resources, personnel, equipment and/or supply needs. Primary means of notification and bed availability reporting will be through EMResource. Patient tracking will be reported through EMTrack. Resource requests and situational awareness is shared with CMOC through WebEOC.

EMS Agency Operations

The primary EMS agency and/or medical command should utilize EMResource for emergency room and hospital capacities and should notify receiving hospitals of incoming patients. In a pre- planned event or facility evacuations, the CMOC may coordinate and notify receiving facilities of in-coming patients (see the CMOC plan). EMS maintains patient accountability in the form of documenting where patients were transported from (the various scene locations) and which facility they were transported to via their agency patient tracking method (e.g., manual forms, electronic patient tracking). Activation and notification of additional EMS resources will follow the Regional EMTF 6 Standard Operating Guide.

Operational Considerations

The safety of response personnel will not be compromised and will be factored into all decision making for response operational considerations. Integration with the medical branch established under the Incident Command System (ICS) will be consistent with the National Incident Management System (NIMS) and response priorities will be considered in the following order:

1. Saving and sustaining lives
2. Protecting/preserving public health and safety
3. Mitigating healthcare infrastructure damage
4. Restoring critical healthcare services and infrastructure

Scene Management

Transferring patients from the incident to the EMS triage area should be conducted as rapidly as possible. The triage and movement of patients from the incident sites to appropriate treatment facilities requires coordination at multiple levels. Evidence based practices have demonstrated that transportation of injured individuals to definitive medical care within 60 minutes improves patient outcomes (decreases morbidity and mortality rates). It should be the goal of all scene management personnel/responders to rapidly assess and transport all affected individuals from the scene to a hospital for definitive care within 60 minutes. Protocols will be established by the UC to address the return of transport vehicles to staging (e.g., decontamination, stocking, and personnel). UC should coordinate with CMOC to locate alternative modes of transport should air or other operations be necessary.

Medical Branch

The UC at each incident site will coordinate and communicate their operations with the medical branch. The medical branch will maintain visibility of current ambulance assets and request additional resources before current resources become overwhelmed. Ambulances dispatched to the medical branch remain under the control of the medical branch until they are no longer needed on- scene, at which time they will be demobilized back to the dispatching entity.

Ambulance Staging

Unified Command (UC) will determine the best location for ambulances to stage when they arrive on scene. Should additional regional resources be required, the UC, with CMOC, will identify additional staging locations as needed. This information will be communicated to First Responders (fire and law enforcement) and the CMOC as soon as possible.

Mass Casualty Incident Alerts

Mass Casualty Incident (MCI) alerts have two parts. The initial alert notifies hospitals via EMResource that an incident has occurred and asks how many critical, delayed, and

minor patients each facility can take. The second part provides additional information such as location, contamination, potential victim count, and any other pertinent information gathered from the scene. Bed Reports are utilized when the need arises to move inpatients from one facility to another; receive patients expected to require admission to the hospital; or to gather current surge capabilities for inpatient beds, ICU, ED, and OR capacity from all hospitals in the region.

Communications

The management of internal incident and external public communications may be different based on the jurisdictions impacted. Communications must be established between Unified/Incident Command and the CMOC. Communication strategies have been developed to allow health care facilities' emergency operations centers (EOCs) to communicate with each other and each facility's local city and/or county EOC, as applicable. The medical branch should establish the radio TACC channel and distribute the channels to deployed EMS resources. The medical branch maintains the lines of communication and will report through their assigned chain of command.

Responder Safety and Health

Responders arriving on scene are not likely to know the extent of damage, cause of the incident (e.g., accidental, intentional), potential for secondary devices, and/or environmental exposures. Law enforcement, HazMat, or response teams may be required to secure the scene. Site-specific safety and health plans with work/rest cycles, scene exposures, and personal protective equipment (PPE) recommendations for on-scene personnel should be implemented immediately. Monitoring the health and welfare of personnel is a priority, as fatigue and stress can compromise the effectiveness of operations. Any safety and health resources that are needed will be requested through the normal resource request process.

Site Access

Hospital personnel should have "essential personnel" designation on their facility ID badge. Law enforcement have been made aware of this designation. Currently there is no regional designation for responder credentialing. Planning is underway to develop a regional responder identity credentialing and access management (ICAM) system. During planned events or anticipated natural disasters, a placarding system should be in place designating those EMS agencies that are part of the response.

Patient Tracking

The purpose of patient tracking is to ensure that all patients will be readily located or reunified with family in accordance with the CMOC Plan. Personal belongings that arrive with the patient should be inventoried and tracked according to internal policies. Patient movement will be tracked by the CMOC and receiving facilities upon arrival. Patient tracking information will be reconciled between receiving facilities, CMOC, and the jurisdictional EMS agency in charge. This information will be held confidential under the federal Health Insurance Portability and Accountability Act (HIPAA) and released only to

individuals determined as eligible to receive this information.[7] Patients may be transported to the hospital by good Samaritans or private vehicle; therefore, facilities may need to enter them into a tracking system once they arrive.

Civilian Responders

This ConOps does not utilize spontaneous unaffiliated civilian responders, however it is recognized that by-standers, volunteers, or Good Samaritans will show up to assist at the scene, shelters, and hospitals in the minutes, hours, days, or weeks after an incident or natural disaster. Each individual agency/facility/jurisdiction should have plans in place to address these medical and non-medical civilian responders often referred to as spontaneous unaffiliated volunteers.

[7] Catastrophic Medical Operations Center Plan, January 2019

Roles and Responsibilities

Some responsibilities that may be required in a mass casualty incident are suggested below.

Agency	Roles and Responsibilities
Unified Command	• Authorizes the commitment of community medical and non-medical resources. • Supports the emergency management of medical operations.
Medical Branch	• Provides emergency medical treatment and pre-hospital care to the injured. • Coordinates initial triage and transportation to local medical facilities. • Establishes EMS staging locations and radio use channels. • Assesses need for additional regional medical resources and scene management expertise.
Public Health	• Coordinates behavioral and mental health services with community providers. • Coordinates public health messaging (e.g., contamination, safety messaging). • Determines the need for long-term epidemiological tracking of affected individuals (e.g., radiological exposure and infection control).
Fire Branch	• Ensure structural integrity; identifies contamination and coordinate decontamination operations. • Set up rehab operations for on-scene responder personnel. • Conducts site assessment(s) with medical operations (e.g., triage and pre-hospital care)
Law Enforcement Branch	• Provides security at the scene, staging areas, and triage/transportation sites. • Coordinates with EMS in an IED incident to ensure that secondary devices are not present, including ambulances as they leave the area. • Provides detection capability in areas with medical operations.
Jurisdiction(s) OEM	• Supports IC/UC and requests additional resources from CMOC, MACC, DDC, & EOCs, as needed. • Establish Family Assistance Center, Community Resiliency Center, and/or Joint Information Center.
Catastrophic Medical Operations Center	• Responds to local, regional, state, or national medical emergencies by providing the coordination of ESF-8 medical response efforts, including, but not limited to, regional assets, subject matter experts, transportation, medical surge capacity, notifications, updates, patient movement and tracking, and facility requests for resources as outlined in the CMOC Plan and associated attachments. • Provides unified command with mass casualty subject matter expertise, resource recommendations, and identification of additional response resources available. • Coordinates the transportation and assignment of patients into health care facilities based on the capacity and capability of the facilities. • Works with governing entities in the coordination of response to ensure that emergency incidents do not adversely affect the quality, capacity, and continuity of health care operations for the region. • Maintains a common operating picture of real-time information that could be important to responders across disciplines in a timely and effective manner. • Maintains patient tracking information for family reunification.
Multi-Agency Coordination	• Facilitate situational awareness across affected jurisdictions. • Collect unmet non-medical regional resource need requests.

TX DSHS	• Supports regional response efforts by providing personnel/resource support to the CMOC. • Coordinates behavioral and mental health services with community mental health providers. • Coordinates public health messaging (e.g., contamination issues and safety-related messaging).
TDEM/DPS	• Identifies and provides resources in support of the incident, as requested. • Is available to the region for emergency public safety and/or investigation support.

Situational Awareness

Situational awareness is the continuous process of collecting, analyzing, and disseminating information to allow agencies/organizations to proactively anticipate requirements. The need for reliable updates from the scene and receiving facilities is essential to determine:

- Additional staging locations for one or more incident sites;
  When to establish secondary triage at the hospitals;
- The need for medical or specialized treatments due to: exposures (e.g. chemical, biological, radiological, food borne illness, gas leak); or trauma (e.g. building collapse, shooting, explosion, vehicular attack).

During any incident, it is critical to obtain reliable situational awareness of the hazard, critical infrastructure, and transportation routes to identify and deploy needed resources efficiently into the affected area. The essential elements of information (EEI) described below are important components to gaining situational awareness.

Essential Elements of Information

It is critical to deliver appropriate levels of information in a timely manner to all stakeholders during a regional emergency medical response. Essential elements of information (EEI) are used by Unified Command (UC) during response operations to collect data for necessary situational awareness and reports (e.g., SitReps, incident action plans). The EEI examples below provide a starting point for information collection and will likely be expanded when mitigation and recovery statistics are of greater importance in later stages or post-incident.

Critical Infrastructure and Facilities	• What is the status of the critical infrastructure in the affected area(s) (e.g., hospitals, urgent care facilities, EMS, local/state public health departments, mental health clinics, and social service agencies)? • What is the status of transportation routes? • What damage has occurred in the affected area (including injuries and fatalities)?
Public Health & Medical	• Are there reported or suspected hazardous materials and/or a toxic release? • What are the safety hazards in conducting operations? • Is there a need for personnel protection equipment? • What are the priorities and projected requirements for medical resources/services? • Is assistance available to provide bulk transport support for medical • supplies/equipment/personnel? • What are the actual or potential medical resource shortfalls of the affected area?
Communications	• Status of telecommunication infrastructure (e.g. Internet, towers) • Reliability of cellular service in affected areas • Status of emergency broadcast system (TV, radio, and cable) and the ability to • disseminate information

Pre-Hospital Triage

First responders will conduct initial and ongoing pre-hospital triage at the scene(s) to expedite treatment of those most seriously injured. Rapid triage will allow survivors to be evaluated quickly by emergency medical personnel and moved to an appropriate level of care. At hospitals, additional triage screening will occur to determine change in patient status and appropriate treatment location assignment and priority.

Surge Triage

When self-presenting patients arrive at a facility (not arriving via EMS) and overwhelms the ability of that facility to provide treatment, an alternate triage area may need to be established by the facility (e.g., external, alternate location). CMOC may assign EMS units to the overwhelmed facility to assist in triage and hospital decompression by reassigning and transporting patients to an alternate care facility.

Air Operations

Due to the high-risk associated with air operations, coordination may include the following:

- Mission priorities
- Patient movement
- Fuel consumption
- Flight time
- Air resource staging
- Helipads locations
- Landing zones
- Fly zones
- Air space utilization

Special Situations

When the electrical grid sustains damage, EMPOWER data can be utilized to help identify those that have medically necessary devices dependent on electricity in the community. EMPOWER data is gathered from Medicaid/Medicare records by ASPR and requested through the Texas Department of State Health Services.

Reunification and Reception Centers

Friends and family will require a process to receive information regarding the incident actions and be reunified with their loved ones. Hospitals may establish family reunification/reception centers within the hospital or work with jurisdictional stakeholders for a location within the community. Engaging community stakeholders for volunteer management, call centers, and maintaining accurate communication with family and friends may be critical to successful incident messaging and reunification operations.

Demobilization

Field response operations will continue until all the survivors are transported to a facility for definitive care and all resources are returned to their home base. During demobilization the operations will continue to receive support from unified command and other coordinating entities.

Personnel deployed will demobilize under the local/requestors' plans. CMOC and any personnel deployed under the CMOC will demobilize according to the CMOC demobilization plan (see the CMOC Plan Demobilization Standard Operating Procedures).

Fatality Management Overview

All on-scene operations pertaining to fatalities should be directed by the local medicolegal authority. The CMOC will maintain awareness of decedents in healthcare facilities and coordinate resource needs with jurisdictional authorities in the search for surge morgue space. The following considerations may be necessary in an incident with casualties and/or fatalities:

- Type and number of resources (i.e., personnel and equipment) needed for search and rescue of
  survivors and the decedent recovery or transportation of human remains.
- Location of morgue if a temporary Disaster Portable Morgue Unit (DPMU) and associated resources should be requested for processing and identification of human remains.
- A site location and personnel staffing where family and friends are reunified with survivors, receive available services, obtain information on the incident, and/or provide DNA samples for the identification of human remains, such as the following types of centers:
  - Family Reception Center (FRC) for an immediate safe and secure location to reunite survivors and/or gather family and friends of missing persons away from the incident site and media to receive updates (e.g. hospitals, airports, and other venues).
  - Family Assistance Center (FAC) that provides a safe and secure location with a variety of services for family and friends of the missing while simultaneously managing the exchange of accurate, timely, and consistent information for decedent identification. This is usually established by the jurisdiction.
  - Community Resiliency Center (CRC) that provides referrals or services for the long-term recovery of the family, friends, and community affected by the MCI or MFI. This is usually established by one or more jurisdictions.

The CMOC will designate a liaison position for sitting in the jurisdictional family assistance center to assist with surviving patient identification and family reunification actions. Refer to the Regional Mass Fatality Management (MFM) Concept of Operations (ConOps) for detailed information and examples of jurisdictional FAC operations and personnel recommendations.

This page intentionally left blank.

Attachment 4: Regional Information Sharing Protocols

Attachment 4 Contents

INFORMATION SHARING

SOUTHEAST TEXAS REGIONAL ADVISORY COUNCIL

REGIONAL HEALTHCARE PREPAREDNESS COALITION

Purpose

To establish the protocols for healthcare organizations within the TSA R, H and Q regions to provide and receive timely, relevant, and actionable information that can be used to:

- Assist with the creation of an incident common operating picture that provides information about the operating status of healthcare organizations and their immediate resource needs
- Inform local, state and/or the Federal incident management and other relevant response partners about healthcare organization resource needs to assist with the decisions regarding resource allocation
- Inform healthcare organizations with relevant incident information and status of healthcare delivery operations within the community (e.g., available resources)

Protocols for Healthcare Essential Elements of Information

Minimal information requirements for the SETRAC Regional Healthcare Preparedness Coalition include but are not limited to the following elements:

- Facility operating status: This information is provided daily and as requested during an incident via EMResource
- Facility structural integrity: This information is provided during a facility specific event (internal disaster) as well as when requested following an incident via EMResource
- The status of evacuations/shelter in-place operations: This information is provided during an incident – either facility specific or regionally significant incident via EMResource and WebEOC
- Critical medical services (e.g., trauma, critical care): This information is provided daily and as requested during an incident via EMResource
- Critical service status (e.g., electric, water, sanitation, heating, ventilation, and air conditioning): This information is provided during a facility specific event (internal disaster) as well as when requested following a regional/local incident via EMResource and WebEOC
- Critical healthcare delivery status (e.g., surge status, bed status, deaths, medical and pharmaceutical supplies, and medical equipment): This information is requested/reported during a regional or local incident as needed via EMResource. Resource requests are transmitted via WebEOC during an incident.
- Staffing status/needs: This information is requested/reported during a regional or local incident as needed via EMResource and WebEOC
- Patient transfer/transport information to include at a minimum:
    - Last name, First Name, Age, Sex,
    - Chief Complaint/Diagnosis
    - Triage Status
    - Originating facility and Receiving facility (if known).
    - Additional information may be requested to locate an acceptable receiving facility. This may include: Special equipment needs, Isolation requirements, Special Medical needs (ie: transplant services, NICU, bariatric).
- Emergency Medical Services (EMS) status involving patient transport, tracking, and availability: During a regional event, this information is coordinated via Transportation Sector of CMOC and reported in WebEOC and EMTrack.
- Other information as applicable or identified during a response or recovery from an incident utilizing current technology adjunct including EMResource, WebEOC and EMTrack.

Healthcare Incident Information Validation

During daily operations, validation procedures occur via the SETRAC Duty Officer. If a significant change in facility status occurs, internal disaster is declared, or evacuation of a facility is requested, the SETRAC Duty Officer makes immediate contacts the facility POC to determine correct status and any unmet needs. When requested reporting requirements are not submitted within the timeframe requested, a validation process exists for daily utilization as well as disaster activation. In daily utilization, failure to comply with requested information (ie: bed reporting) the SETRAC TSA Coordinators contact the facility POC to encourage them to complete the requested reported. Following the monthly or DSHS requested bed report, letters are sent to all hospital CEOs thanking them for their compliance and listing all compliant facilities. During disaster activation, information is validated via telephone calls by the CMOC Corridor Representatives, EMS/Transport Sector, and Clinical Director.

Healthcare Information Sharing with the Public

During disaster activation, information is shared from the CMOC with HSR 6/5S or HSR 4/5N, DSHS, and the Joint Information Center. This information includes but is not limited to the following elements:

- The effects of the incident on the healthcare delivery system and the current status of the healthcare infrastructure throughout the region.
- Alternate care site locations, medical support facilities, temporary emergency services locations, and health-related patient care information.

Healthcare Information Systems

The SETRAC Regional Healthcare Preparedness Coalition has systems that are fully integrated across all three HPP TSA regions. These systems include: EMResource and EMTrack. The WebEOC integration is fully capable across TSA Q, TSA R and TSA H. We are current administrators of the Texas Volunteer Disaster Registry for the TSA Q and R regions and have several groups that are active. Our Regional Call Center is manned 24/7 with one central number to request emergency assistance. The CMOC also has one central number that is monitored 24/7 and an on call CMOC Chief is readily available. The regional systems (EMResource., EMTrack, WebEOC and Everbridge have the ability to:

- Integrate with local, regional, and state emergency operations information systems used for response.
- Provide timely, relevant, and actionable healthcare information to the incident common operating picture.
- Provide multi-jurisdictional and multi-disciplinary incident related information to healthcare organizations.
- Adhere to HIPAA regulations regarding the receipt and transmittal of personal health information.

Bed Tracking

The SETRAC Regional Healthcare Preparedness Coalition maintains and monitors the bed tracking system through EMResource. Our regions subscribe to the state adopted Whole-Bed reporting criteria for regular and emergency bed reporting. Response stakeholders such as EMS, Public Health and Offices of Emergency Management all have "view only" access to the EMResource system for coordinated situational awareness. Monthly EMResource drills are conducted for all three regions.

Patient Tracking

The TSA R, Q, and H regions all have access to EMTrack for electronic patient tracking during an incident. The system allows for user permissions to ensure protected health information is shared with only those entities that have legal rights to view the information, while still maintaining the ability to have an overall picture of patient movement throughout the regions. Exchange of medical records between facilities during an incident is still manual and requires printing of patient care records for transport to another facility. Regional administrators, have access to all users' accounts, establish users and permissions and monitor patient movement. Regional Administrators are SETRAC employees. The general evacuation population of the region is incorporated into the tracking system in the event an evacuee becomes a medical patient during their evacuation or sheltering period. This integration of all populations across the three regions allows for tracking of an individual from entry into the healthcare system through discharge.

Interoperable Communication System

The SETRAC Regional Healthcare Preparedness Coalition has in place redundant communication systems with our healthcare facilities, EMS agencies, local law enforcement, Offices of Emergency Management and Public Health officials. These systems include:

- Landline and cellular telephones
- Two-way VHF/UHF radio
- Amateur (HAM) radio
- Satellite telephones
- VOIP

Additionally, in the event of internet or phone outages, SETRAC has the capability to deploy two fully equipped communications trailers as well as two independent satellite dishes.

Communication Training/Exercise

Regular communication drills are held monthly for EMResource and WebEOC. Radio checks are done monthly as well. Quarterly, EMResource, WebEOC and CMOC trainings are held. EMTrack training is held as requested or when new updates have been made to the system.

This page intentionally left blank.

Attachment 5: Healthcare Recovery Assessment

Recovery Process Report

1. Incident Name	2. Date Prepared	3. Time Prepared
4. Prepared by (Name and Position)	5. Report To: (Name and Position)	

I. Summary of Current Status/Actions		
1. Staffing	**Assigned To:**	**Follow-up**
a. Current Levels:		
b. Anticipated Shortfalls this Operational Period:		
c. Anticipated Shortfalls next Operational Period:		
d. Staffing Support Areas:		
e. Areas of Concern:		

2. Supplies/Equipment	Assigned To	Follow-up
a. Current Unmet Needs:		
b. Utilization/Burn rate:		
c. On Hand:		
d. Location:		
e. Areas of Concern:		

3. Patient Care Issues	Assigned To	Follow-up
a. In House:		
b. Transferred Out/Evacuated:		
c. Incoming Patients:		
d. Number Arrived:		
e. Deaths:		
f. Areas of Concern:		

4. Facility Issues	Assigned To	Follow-up
a. Electrical Power:		
b. Water:		
c. Sewer:		
d. HVAC:		
e. Phone Lines 1. Internal 2. External		
f. Internet:		
g. IT Computer Systems:		
h. Areas of Concern:		

5. Safety	Assigned To	Follow-up
a. Facility Integrity:		
b. Weather:		
c. Hazardous Materials:		
d. Infectious Agents:		
e. General Conditions:		
f. Areas of Concern:		

6. Security	Assigned To	Follow-up
a. Current Access Control Status:		
b. Visitor Policy in Place:		
c. Check Points:		
d. Areas of Concern:		

II. Summary of Outstanding Issues		
1. Staffing:	**Assigned To**	**Follow-up**
2. Supplies/Equipment:		
3. Patient Care:		
4. Facility:		
5. Safety:		
6. Security:		
7. Unmet Resource Needs:		

8. Outside Resource Requests:		
9. Other:		

III. Current Organizational Structure (Name and Contact Number)		
1. Incident Commander		
2. Liaison Officer		
3. Logistics Chief		
4. Planning Chief		
5. Operations Chief		
6. Finance Chief		

IV. Resources Summary				
Resources Ordered	**Source Identification**	**ETA**	**Arrived**	**Location/Assignment**
IS 201	**Recovery Process Report**			

This page intentionally left blank.

Attachment 6: Hospital MCM Distribution Plan

Medical Counter Measure (MCM) Distribution Plan for Participating Hospitals

November 19, 2018

TABLE OF CONTENTS

Introduction

Purpose

The purpose of this plan is to establish standards and practices for the rapid and efficient delivery of medical countermeasures (MCM) to participating hospitals within the 25-county SETRAC region for dispensing to their staff, families, and current patients.

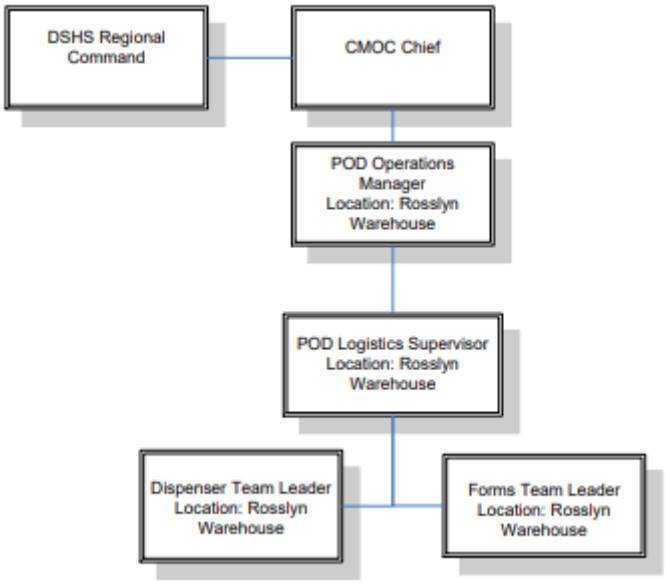
Critical Assumptions

- This plan covers the initial push of medical countermeasures and does not cover the 60-day re-supply medications or vaccinations.
- This plan only applies to acute care facilities with a participating agreement signed with SETRAC and has affirmatively identified SETRAC as their dispensing site.
- The Texas Department of State Health Services (DSHS) will provide adequate medical countermeasures within a short time frame.

Concept of Operations

To provide coordination and rapid dispensing of medical countermeasures after a biological incident, DSHS Public Health Region (PHR) 6/5 South has requested SETRAC establish a MCM Distribution Center to receive, process, and dispense antibiotic caches to hospitals within the region. This document delineates the process to dispense antibiotic caches to participating hospitals through the SETRAC MCM Distribution Center.

Organization Chart



Activation

Upon receipt of mission tasking from public health officials who have determined the need to activate the state and local strategic national stockpile (SNS) plans, SETRAC will notify and mobilize personnel to according to the **MCM Distribution Center Activation Checklist** below.

MCM Distribution Center Activation Checklist	
	SETRAC is notified of MCM activation for the region.
	Receive notification to activate MCM Distribution Plan including: • Timeframe to provide prophylaxis (e.g., 48 hours, 6–10 days) _____ • Hours of MCM Distribution Center operation (e.g., 12 hours, 24 hours) _____
	Contact SETRAC staff to activate MCM Distribution Plan.
	Identify MCM Distribution Center Operations Manager
	Assign SETRAC staff to the Rosslyn Warehouse, as needed. • Identify needs for additional outside personnel. • Prepare to receive supplies and pharmaceuticals from DSHS PHR 6/5 South
	Upon receipt of cache, break down cache according to Participating Hospital requirements
	Notify participating hospitals of scheduled time for their pick-up of medications
	Troubleshoot all problems as they arise.
	Deactivate the site and all operations.

Staffing Matrix

MCM Distribution Center Position	No. of Staff Needed Per Shift	No. Needed to Staff Two Shifts	No. Needed to Staff Three 8-hr Shifts
MCM Distribution Center Operations Manager	1	2	3
MCM Distribution Center Logistics Supervisor	1	2	3
Forms Team Leader	2	4	6
Distribution Team Leader	2	4	6
Security (will be furnished by DPS, coordinated through PHR 6/5s)	2	4	6

Signage

SIGN	NUMBER	LOCATION POSTED
ENTER HERE	2	Center Bay & Gate 2
STEP 1 – PICK UP TRANSFER FORM HERE	2	By Table
STEP 2 – FILL OUT FORM	2	In queue
STEP 3 – PICK UP CACHE HERE	2	Center Bay
STEP 4 – EXIT	2	Gate 1
RE-SUPPLY	2	Main Road & Gate 3

Supply List

Item Description	Quantity on Hand	Location(s)	Additional Needed
Chairs	20	POD Box	
Clipboards		POD Box	
MCM Distribution Center Organization Chart		POD Box	
Floor Plan Map	1 map	POD Box	
Job Action Sheets – Annex A		POD Box	
Masking Tape		POD Box	
Closed POD Distribution Plan (hard copy)	1 binder	POD Box	
Attachment A – Screening Form	200 copies	POD Box	
Attachment B – Dispensing Decision Guide	200 copies	POD Box	
Attachment C – Anthrax Fact Sheet	200 copies	POD Box	
Attachment D – Doxycycline	200 copies	POD Box	
Attachment E – Levofloxacin	200 copies	POD Box	
Attachment F – Amoxicillin	200 copies	POD Box	
Attachment G – Ciprofloxacin	200 copies	POD Box	
Pens	2 boxes	POD Box	
Phone Numbers	1 phone list	POD Box	
Queue Control Devices		Warehouse	
Transfer Forms	200 copies	POD Box	
Signage		POD Box	
Tables	5	Warehouse	
Pallet Jacks	2	Warehouse	
Safety Gloves	10 pr	Warehouse	

MCM Distribution

Once DSHS has requested Medical Countermeasures will be delivered to this region, then the following response actions will be taken by SETRAC (see the Appendix B for Job Action Sheets):

MCM Distribution Checklist	
	Notify SETRAC personnel and assign roles
	Set up warehouse
	Communicate with healthcare agencies and public health
	Validate number of MCM needed at each participating hospital
	Determine number of MCM needed at each facility – or verify at time of incident if you have the numbers already (Employees x4 + bed count x2 = number of people needing medication
	Request MCM from DSHS 6/5s
	Create hospital POD packets based on the type of medication received (see Attachments A-G)
	Receive medications from the RSS site
	Dispense to SETRAC staff and families
	Pick, pack the amount necessary based on participating hospital requests
	Determine method of pick up – type of vehicle and determine pick-up time
	Provide all medications requested to the participating hospitals.
	Distribute to participating hospitals
	Hospitals sign-off on transfer forms when picking up medication.
	Status Updates
	Collection of screening forms and returning them to 6/5s
	Request Re-Supply

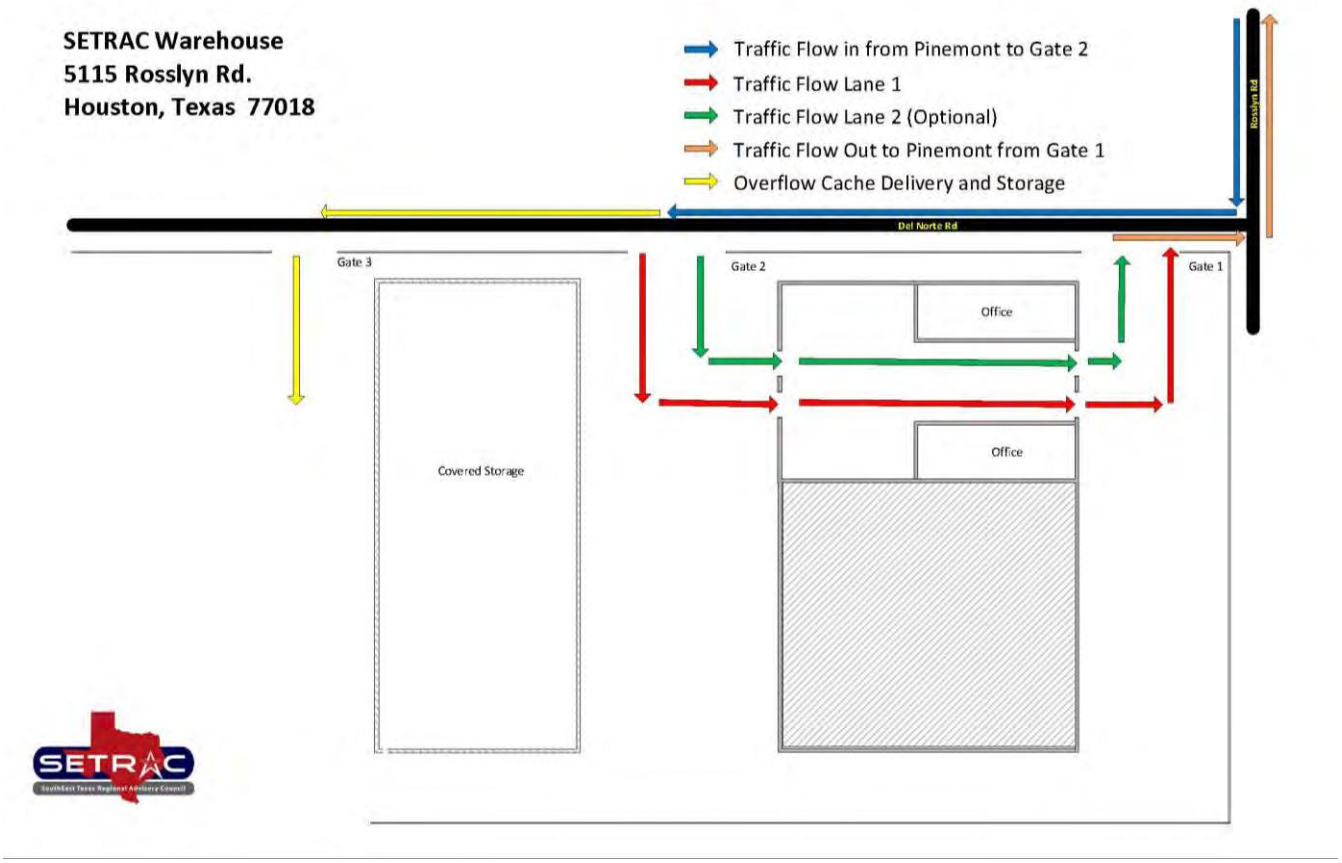
Demobilization

If the Assistant Secretary for Preparedness and Response (ASPR) or the Texas DSHS determines that unused SNS materiel should be returned, all unused portions of the medical countermeasure cache will be returned to DSHS PHR 6/5 South after the dispensing period. SETRAC will work with the DSHS PHR 6/5 South SNS Coordinator to determine the best method for returning unused SNS material.

SETRAC will maintain the transfer forms and collect the dispensing logs from the participating hospitals for submission to DSHS PHR 6/5s. SETRAC will work with DSHS PHR 6/5s to coordinate the best method to return these documents.

Appendix D: Rosslyn Warehouse Traffic Plan

SETRAC / CMOC MCM Distribution Traffic Flow Plan:



Appendix E: MCM Distribution Center Job Action Sheets

MCM Distribution Center Operations Manager	
You Report to:	The CMOC Operations Chief
Qualifications:	General knowledge of MCM Distribution Center Operations.
Mission:	Provide overall site management for MCM Distribution Center facility; assure communication is maintained with public health.
Immediate Actions:	Site Activation
	Receive notification from Regional Preparedness Director or CMOC Operations Chief to activate MCM Distribution Plan.
	Contact staff and: • Assign staff to Rosslyn Warehouse • Prepare to receive supplies and antibiotics from DSHS PHR 6/5 South
	Set up the MCM Distribution Center layout per the Rosslyn Warehouse floorplan.
	Select a spot to establish a MCM Distribution Center Command Post.
	As personnel arrive, brief employees on • Latest event information • Safety and security information • Media rules and procedures • Hours of operation • Badge requirements • Instructions for receiving prophylaxis before first shift
	Make assignments and handout JAS (See Staffing Matrix Table on Page 3) • MCM Distribution Center Logistics Supervisor • Distribution Team Leader • Forms Team Leader
	Display signage according to the MCM Distribution Center flow (See Appendix A).
	Contact DSHS 6/5s to review security plan and ensure security is in place.
	Secure areas or rooms that are to be closed. Post facility rules and signs.
	Refer all media requests to joint information center or DSHS SMOC.
	Troubleshoot all problems as they arise.
	Deactivate the site and all operations.

MCM Distribution Center Logistics Supervisor	
You Report to:	The MCM Distribution Center Operations Manager
Qualifications:	General knowledge of MCM Distribution Center Operations.
Mission:	Provide overall supply support and documentation.
Immediate Actions:	Set up MCM Distribution Center according to floor plan.
	Upon notification, set up the facility according to the floor plan (include signage).
	Ensure Security Officers are stationed at appropriate locations.
	Provide information during briefings regarding hazards in the facility, rooms, or areas off limits, locations of restrooms, and evacuation exits and procedures.
	Assign Forms Team Leader to make additional copies of: • Screening Form (Attachment 1) • Dispensing Decision Guide (Attachment 2) • Anthrax information (Attachment 3) • Doxycycline (Attachment 4) • Levofloxacin (Attachment 5) • Amoxicillin (Attachment 6) • Ciprofloxacin (Attachment 7) • Transfer Form (Attachment 8)
	Make arrangements for receipt of antibiotics/vaccine and other medical supplies.
	Make sure all supply requests are sent to the Operations Manager and then to the CMOC.
	Make sure Forms Team Leader collects the completed Transfer Forms.
	Troubleshoot all problems as they arise.
	Deactivate the site and all operations.

MCM Distribution Center Distribution Team Leader	
You Report to:	The MCM Distribution Center Logistics Manager
Qualifications:	General knowledge of MCM Distribution Center Operations
Mission:	Direct and coordinate the reception and dispensing of the prophylaxis cache.
Immediate Actions:	Set up route, schedule, and process for dispensing to facilities.
	Accept all medications/vaccines and other medical supplies from the DSHS PHR 6/5 South.
	Ensure all Dispensers complete training process specific for their position. • Review the Transfer Form • Review procedure for requesting additional help or supplies
	Work with Logistics Supervisor to ensure that all equipment and supplies are available.
	Ensure that all patient information forms are available for dissemination.
	Brief all staff on procedures for additional supplies, security problems, or other problems.
	Supervise Dispensers.
	Collaborate with the MCM Distribution Center Operations Manager to provide an appropriate number of staff.
	Ensure all paperwork is collected and turned in to the Forms Team Leader.
	Troubleshoot all problems as they arise.
	Report any problems to the MCM Distribution Center Operations Manager.

Forms Team Leader	
You Report to:	MCM Distribution Center Logistics Manager
Qualifications:	Administrative Assistant, Clerk
Mission:	Make additional copies of forms and collect all completed Transfer Forms.
Immediate Actions:	Make copies of Transfer Forms from POD Box.
	Get Transfer Form from POD Box
	Begin to copy one for each Participating facility • Screening Form (Attachment 1) • Dispensing Decision Guide (Attachment 2) • Anthrax information (Attachment 3) • Doxycycline (Attachment 4) • Levofloxacin (Attachment 5) • Amoxicillin (Attachment 6) • Ciprofloxacin (Attachment 7) • Transfer Form (Attachment 8)
	As copies are finished, take Transfer Forms and information sheets to Dispenser location.
	Collect completed forms periodically from Dispenser and turn in to MCM Distribution Center Logistics Supervisor.
	Await additional instructions.
	Address any questions to MCM Distribution Center Logistics Supervisor.

Appendix F: Acronyms

CMOC	Catastrophic Medical Operations Center
DPS	Department of Public Safety
DSHS	Department of State Health Services
MCM	Medical Countermeasure
PHR	Public Health Region
POD	Points of Dispensing
SETRAC	Southeast Texas Regional Advisory Council
SMOC	State Medical Operation Center
SNS	Strategic National Stockpile

Appendix G: Placeholder

Southeast Texas Regional Advisory Council Closed POD Distribution Plan

Provide Attachments 1-7 to Participating Hospitals
Complete attachment 8 and return to SETRAC

Attachment 1: Screening Form

Receiving Medication: (write full names and include yourself)	Age	M/F	Under 12?	Pregnant?	Breastfeeding?	Allergic to Doxycycline?	Allergic to Ciprofloxacin?	Allergic to Amoxicillin?
Your Phone Number:		**Your Address:**						

Check box ☐ for YES, leave blank for NO or DON'T KNOW

FOR OFFICE USE ONLY FOR OFFICE USE ONLY FOR OFFICE USE ONLY

FOR OFFICE USE ONLY			
Date and Time:			
POD:			
Circle correct medication.			Place sticker label here.
DOXY	CIPRO	AMOXI	
DOXY	CIPRO	AMOXI	
DOXY	CIPRO	AMOXI	
DOXY	CIPRO	AMOXI	
DOXY	CIPRO	AMOXI	
DOXY	CIPRO	AMOXI	
DOXY	CIPRO	AMOXI	
DOXY	CIPRO	AMOXI	
Total:	**Total:**	**Total:**	**Total Dispensed:**

Attachment 8: Transfer Forms

SETRAC Closed POD Transfer Form

Page:_____

Transfer From:

SETRAC

5115 Rosslyn

Houston, Texas 77008

Transfer To:

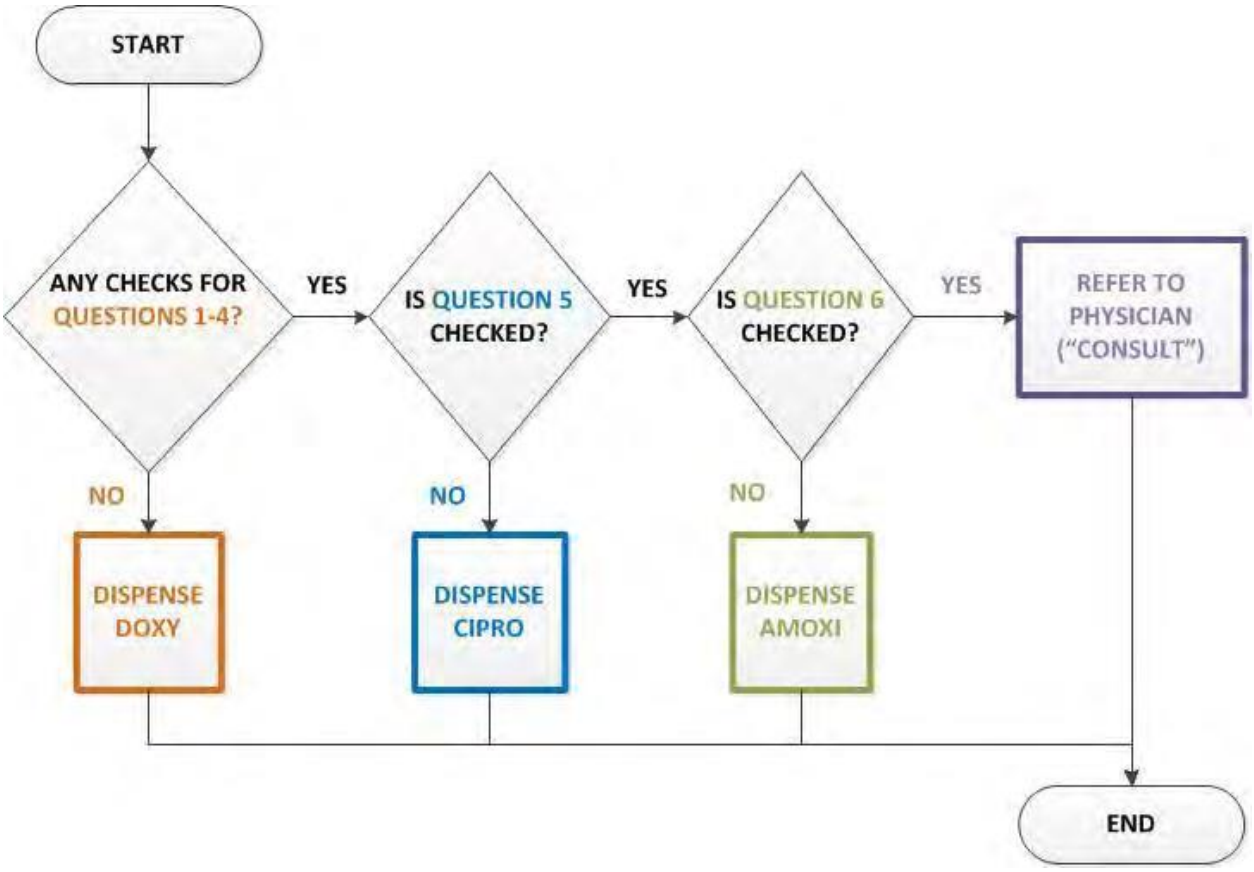
Line #	Item #	NDC Supplier Number	Location	Description	Lot #	Expiration Date	Quantity to Pick	Unit of Measure	Quantity Picked
1			SETRAC Closed POD	Ciprofloxacin 500 mg, 20				CS	
2			SETRAC Closed POD	Doxycycline 100 MG 20s				CS	

Distributed By: _____ Print Name **Received By:**_____ Print Name

Signature: _____ **Signature:** _____

Date: _____ Time: _____ Date: _____ Time: _____

Attachment 2: Dispensing Decision Guide



Attachment 3: Anthrax Information Sheet Anthrax

WHAT YOU NEED TO KNOW

What is Anthrax?

Anthrax is a serious disease caused by Bacillus Anthracis, a bacterium that forms spores. A bacterium is a very small organism made up of one cell. Many bacteria can cause disease. A spore is a cell that is dormant (asleep) but may come to life with the right conditions.

Anthrax Type	Symptoms	Time Frame	Treatment	Additional Information
Skin (Cutaneous)	• Small sore develops into a blister. • Blister develops into a skin ulcer with a black center. • None of these hurt	Within 7 days of exposure	Antibiotics (60-day course)	• In most cases, early treatment with antibiotics can cure cutaneous anthrax. • Even untreated, 80% of those infected do not die.
Lungs (Inhalational)	• Cold or flu-like symptoms • (sore throat, mild fever, etc.) • Cough, chest discomfort, • shortness of breath.	Between 7 and 42 days of exposure.	Antibiotics (60-day course)	• The most severe type of infection. • In 2001, about half the cases ended in death.
Digestive (Gastrointestinal)	• Nausea, loss of appetite, bloody diarrhea, and fever. • Bad stomach pain.	Within 7 days of exposure.	Antibiotics (60-day course)	• Between one-fourth and one-half of cases end in death.

How Do You Get It?

Anthrax is not known to spread from person to person.
Anthrax from animals. Humans can become infected with anthrax by handling products from infected animals or by breathing in anthrax spores from infected animal products (like wool, for example). People also can become infected with gastrointestinal anthrax by eating undercooked meat from infected animals.

Anthrax as a weapon

Anthrax can also be used as a weapon. This happened in the United States in 2001. Anthrax was deliberately spread through the postal system by sending letters with powder containing anthrax. This caused 22 cases of anthrax infection.

How Dangerous Is Anthrax?

The Center for Disease Control and Prevention (CDC) has classified Anthrax and a Category A agent, which means:

- There is a great threat for a bad effect on public health.
- Anthrax may spread across a large area or need public awareness.
- Anthrax requires a great deal of planning to protect the public's health.

For additional information, visit the Centers for Disease Control and Prevention (CDC) at www.bt.cdc.gov/agent/anthrax**.**

Attachment 4: Doxycycline

Patient Information: Doxycycline

Doxycycline 100-mg Oral Tablet or Doxycycline Oral Suspension

Take this medicine only as prescribed.
Doxycycline belongs to a class of drugs called tetracycline antibiotics. It is approved by the Food and Drug Administration (FDA) to treat and protect people who have been exposed to anthrax spores.

How to take Doxycycline

ADULTS: Take 1 tablet every 12 hours as directed.

CHILDREN: A child's dose depends on body weight. Give the medicine to your child as directed by the doctor.

Take Doxycycline with food and least one full glass of water. Avoid taking antacids (like Tums or Maalox), cholestyramine (Questran), colestipol (Colestid), dairy products (like milk or yogurt) or vitamins 3 hours before or after taking Doxycycline.
If you miss a dose, start again taking 1 pill every 12 hours. Do not take 2 pills to make up for the missed dose. Finish all your pills, even if you feel okay, unless your doctor tells you to stop. If you stop this medication too soon, you may become ill.

Side effects
Common side effects of Doxycycline include an upset stomach, vomiting, or diarrhea. If you have problems with any of these symptoms, tell your doctor. Less common side effects include dark urine, yellowing of the eyes or skin, sore throat, fever, unusual bleeding or bruising, fatigue, white patches in the mouth. If any of these symptoms occur, call your doctor right away.
Allergic reactions are rare. Signs of an allergic reaction are rash, itching, swelling of the tongue, hands or feet, fever, and trouble breathing. If any of these symptoms occur, call you doctor right away.

***SPECIAL NOTE FOR CHILDREN*:** This medicine may cause staining of the teeth in children younger than 8 years old. This means that their teeth can become grayish in color and this color does not go away. This medicine can also cause bone growth delay in premature infants, but this side effect goes away after the medicine is finished.
***SPECIAL NOTE FOR PREGNANT WOMEN*:** There is little data about side effects from the use of this drug during pregnancy. If the mother of an unborn baby takes Doxycycline, staining of baby teeth or poor bone development can result. There is a remote chance of severe liver disease in some pregnant women.

Precautions

- Be sure to tell the doctor if you are allergic to any medicine.
- It is very important to tell the doctor the names of ALL medicines that you are currently taking even pills bought at the store such as vitamins and antacids.
- Doxycycline can make skin very sensitive to the sun which increases the chance of getting severe sunburn. Avoid the sun as much as possible. When outside, wear a long sleeve shirt and hat and always apply sunscreen (30 SPF).
- Birth control pills may not work as well when taking this medication. Be sure to use condoms or another form of birth control until you are finished the entire course of treatment. If you are pregnant or breastfeeding, tell your doctor.
- In women, Doxycycline can cause vaginal itching and discharge commonly known as a yeast infection. Tell your doctor if this happens.
- Tell the doctor if you have ever had problems with your liver or kidneys, or if you have frequent heartburn.

For additional information, visit the Centers for Disease Control and Prevention (CDC) at www.bt.cdc.gov/agent/anthrax**.**

Doxycycline Solution Instructions

Liquid Doxycycline *For infants and children exposed to bioterrorism*

How to Make Liquid Doxycycline
25 mg per 5 mL (teaspoon)

You will need:

- One (1) 100-mg doxycycline tablet.
- Something heavy to crush the tablet, such as a metal spoon, the bottom of a cup or glass or a hammer.
- Measuring teaspoon(s) or regular eating teaspoon.
- One small bowl
- These directions.

Please read all instructions before you begin.

Step 1

Put one (1) 100 mg doxycycline tablet into a small bowl.

Crush into powder using the back of the metal teaspoon or the bottom of a cup or glass.

You can also place the tablet in a plastic bag and crush it with something heavy like a hammer or rolling pin. The powder should not have any large pieces of medicine.

Add four (4) teaspoons of water into the medicine powder.

Mix well until the powder dissolves and there is no more powder left at the bottom of the bowl.

Step 2

Weigh your child. Use your child's weight to find the correct dosage on the chart below.

Weight: _____ lbs.

Dosage Chart

You can find out how much medicine to give your child based on your child's weight. Use this chart to find the amount for one (1) dose.

Give this dose two (2) times a day – once in the morning and once in the evening – for as many days as you were told to give this medicine.

Doxycycline oral liquid 25 mg per 5 mL (per teaspoon)	
Weight	**Dose**
Less than 7 lbs	**¼ teaspoon**
7 lbs to 12 lbs	**½ teaspoon**
over 12 lbs to 19 lbs	**¾ teaspoon**
over 19 lbs to 25 lbs	**1 teaspoon**
over 25 lbs to 37 lbs	**1½ teaspoon**
over 37 lbs to 50 lbs	**2 teaspoons**
over 50 lbs to 62 lbs	**2½ teaspoons**
over 62 lbs to 75 lbs	**3 teaspoons**
over 75 lbs to 87 lbs	**3½ teaspoons**
More than 87 lbs	**1 whole tablet (100 mg**

My child's name

_____

My child's dose is

_____

If you do not have a measuring teaspoon then use a regular teaspoon. It is hard to measure one half teaspoon with a regular teaspoon. Do the best you can. It is better to give a little more medicine than not enough.

See Page 2 for more directions.

How to Make Liquid Doxycycline

Continued from previous page

My child's name

_____

My child's dose is

_____

Mix this amount with food or liquid see below.

Step 3

This medication tastes better mixed with a little milk, table sugar or any other sweet food or drink.

One (1) dose of doxycycline liquid.

Mix with:

Chocolate foods or drinks like chocolate syrup, chocolate milk or chocolate pudding are best.

Apple juice or apple sauce sweetened with extra table sugar.

Mix well before using.

You may use this medication for up to 24 hours if it is kept covered and stored at room temperature or in the refrigerator. Throw away any unused liquid after 24 hours and mix fresh every day.

Step 4

How to give the medication to an infant:

Mix medicine with one or two teaspoons of formula or breast milk inside the nipple of the bottle. Let your infant suck on the nipple until all the medicine is gone.

For older children:

Make sure child eats or drinks all of the food or drink that is mixed with medicine. It may be helpful to have the child suck on an ice cube or fruit flavored popsicle before and after giving the medicine. This may help cover up the bad taste. I

Important Information

Mix well before using.

Give this medicine one hour before or two hours after the child takes any:

- Vitamins
- Iron
- Antacids
- Sucralfate (a medicine)

Possible side effects of liquid Doxycycline

- Upset stomach, throwing up and diarrhea.
- Sunburn-use sunscreen on your child before going out in the sun.
- Possible permanent staining of teeth.

Warnings

Stop use and seek medical help if your child develops any of these rare but dangerous symptoms:

- Allergic effects such as: trouble breathing: closing of the throat; swelling of lips, tongue or face; hives.
- Painful swallowing
- Yellowing of skin or eyes, dark urine, stomach pain, throwing up and loss of appetite.
- Bulging soft spot in infants.

Go to:
www.fda.gov/cder/drug/infopage/penG_do xy
for more information about doxycycline.

If you have further questions, contact your physician or pharmacist

Adopted for SETRAC from the Illinois Department of Public Health. July 2008.

Attachment 5: Levofloxacin

Patient Information: Levofloxacin
Levofloxacin 500 mg Oral Tablets or Liquid Suspension

Take this medication only as prescribed.
Levofloxacin is an antibiotic that belongs to the antibiotic group call quinolones. It used to kill many types of bacteria that can infect the lungs, sinuses, skin, and urinary tract.

How to take Levofloxacin

ADULTS: Take 1 tablet once a day.

CHILDREN: A child's dose depends on body weight. Give the medication to your child as directed by your doctor.

Take Levofloxacin with or without food. Try to take the tablet at the same time each day and drink fluids liberally.

If you miss a dose, start again taking your dose at the regular time. Do not take 2 pills to make up for the missed dose. Finish all your pills, even if you feel okay, unless your doctor tells you to stop. If you stop this medication too soon, you may become ill.

Side Effects

Levofloxacin is generally well tolerated. The most common side effects caused by Levofloxacin are mild. They can include the following: nausea, diarrhea, itching, abdominal pain, dizziness, flatulence (gas), rash and vaginitis in women.

Allergic reactions are rare. Signs of an allergic reaction include hives; skin rash; swelling of the tongue, hands, or feet; fever; or trouble breathing. If any of these symptoms occur, contact your doctor right away.

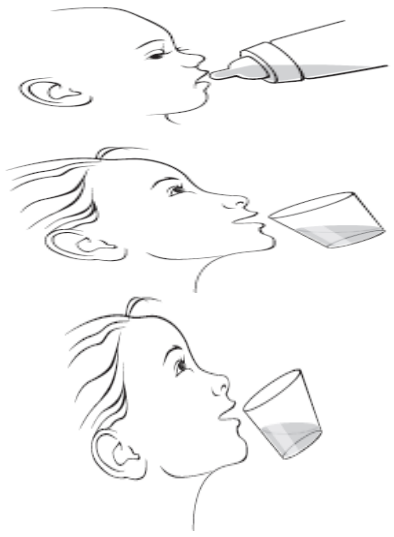
SPECIAL NOTE FOR PREGNANT WOMEN: If you are pregnant or are planning to become pregnant while taking Levofloxacin, talk to your health care professional before taking this medication. It is recommended for use during pregnancy or nursing.

Precautions:

- Be sure to tell your doctor if you are allergic to any medicine.
- It is very important to tell your doctor the name of ALL medicines that you are currently taking even pills bought.
  at the store such as vitamins and antacids.
- Taking warfarin (Coumadin) and Levofloxacin together can further predispose you to the development of bleeding problems. If you take warfarin, be sure to tell your health care professional.
- Do not drive or operate machinery until you are sure Levofloxacin is not causing dizziness.
- Levofloxacin can make skin sensitive to light. Avoid excessive exposure to sunlight or artificial violet light. When outside, wear a long sleeve shirt and hat and always apply sunscreen (SPF 30).
- Levofloxacin may produce false-positive urine screening results for opiates using commercially available immunoassay kits. Confirmation of positive opiate screens by more specific methods may be necessary.

For additional information, visit the Centers for Disease Control and Prevention (CDC) at www.bt.cdc.gov/agent/anthrax**.**

Levofloxacin Solution Instructions



Liquid Levofloxacin *For infants and children exposed to bioterrorism*

How to Make Liquid Levofloxacin
125 mg per 5 ml (teaspoon)

You will need:

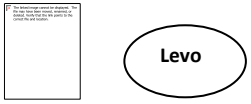
- One (1) 500-mg Levofloxacin tablet
- Measuring teaspoon(s) or regular eating teaspoon.
- One (1) small glass, cup or bowl
- These directions.

Please read all instructions before you begin.

Step 1

- Pour four (4) teaspoons of room temperature water into a small glass or bowl.

- Put one (1) 500 mg Levofloxacin tablet into the water and let it sit for five (5) minutes until the tablet breaks apart.



- Mix well until the powder dissolves and there is no more powder left at the bottom.

Step 2

Weigh your child.

Weight: _____ lbs.

Use your child's weight to find the correct dosage on the chart below.

Dosage Chart

How much medicine to give your child is based on your child's weight.
Use this chart to find the amount for one (1) dose.

Give this dose two (2) times a day – once in the morning and once in the evening .

Weight (lb)	Dose
Less than 8 lbs	¼ teaspoon
8 to 16 lbs	½ teaspoon
Over 16 lbs to 26 lbs	1 teaspoon
Over 26 lbs to 40 lbs	1 ½ teaspoon
Over 40 lbs to 55 lbs	2 teaspoons
Over 55 lbs to 75 lbs	3 teaspoons
Over 75 lbs	1 whole tablet (500 mg)

My child's name

_____

My child's dose is

_____

If you do not have a measuring teaspoon then use a regular teaspoon. It is hard to measure one-half teaspoon with a regular teaspoon. Do the best you can. It is better to give a little more medication than not enough.

See Page 2 for more directions.

How to Make Liquid Levofloxacin

Continued from previous page

My child's name

_____

My child's dose is

_____

Mix this amount with food or liquid see below.

Step 3

This medication is very bitter. Mix the liquid with food or drink before giving it to your child.

One (1) dose Levofloxacin liquid.

Mix with:

- Chocolate syrup
- Table sugar
- Apple juice or apple sauce
- Sweetened with extra table sugar

Do not mix with:

- Calcium-fortified juice
- Infant Formula
- Breastmilk

Mix well before using.

You may use this medication for up to 24 hours if it is kept covered and stored at room temperature or in the refrigerator. Throw sway any unused liquid after 24 hours and mix fresh every day.

Step 4

How to give the medication to an infant:

Mix medicine with one or two teaspoons of water inside the nipple of the bottle. Let your infant suck on the nipple until all the medicine is gone.

For older children:

Make sure child eats or drinks all of the food or drink that is mixed with medicine.

Important Information

Mix well before using.

Give this medicine one hour before or two hours after your child takes any of these:

- Infant formula, breastmilk, milk or milk-products such as yogurt or ice cream.
- Calcium-fortified juice, vitamins, iron, antacids or sucralfate (a medicine)

Possible Side Effects of Liquid Levofloxacin

- Dizziness lightheadedness
- Upset stomach, throwing up and diarrhea
- Sunburn-use sunscreen on your child before going out in the sun

Warnings

Do not give this medicine before talking to your doctor if your child is taking any of these medicines:

Theophylline, Caffeine, Warfin, or Cyclosporine.

Stop use and seek medical help if your child develops any of these rare but dangerous symptoms:

- Allergic effects such as: trouble breathing: closing of the throat; swelling of lips, tongue or face; hives.
- Pain, burning, tingling, numbness, weakness of hands or feet
- Bone or tendon pain
- Hallucinations, severe confusion, convulsions.

If you have further questions, contact your physician or pharmacist

Adopted for SETRAC from the Illinois Department of Public Health. July 2008.

Attachment 6: Amoxicillin Instructions

Patient Information: Amoxicillin

Amoxicillin 250mg Oral Tablets or 250mg/5ml Liquid Suspension

Take this medication only as prescribed.

Amoxicillin is an antibiotic that belongs to the antibiotic group called penicillin. You have been given this drug for protection against possible exposure to an infection-causing bacteria.

How to take Amoxicillin

ADULTS: Take 2 tablet three times a day.

CHILDREN: A child's dose depends on body weight. Give the medication to your child as directed by your doctor.

Take Amoxicillin with or without food. Taking Amoxicillin with food or milk may help prevent some stomach upset. Try to take the tablet at the same times each day (every 8 hours) and drink plenty of fluids.

If you miss a dose, start again taking your dose at the regular time. Do not take 2 pills to make up for the missed dose. Finish all your pills, even if you feel okay, unless your doctor tells you to stop. If you stop this medication too soon, you may become ill.

Side Effects

Amoxicillin is generally well tolerated. The most common side effects caused by Amoxicillin are mild. They can include the following: nausea, diarrhea, itching, abdominal pain, dizziness, flatulence (gas), rash and vaginitis in women.

Allergic reactions are rare. Signs of an allergic reaction include hives; skin rash; swelling of the tongue, hands or feet; fever; or trouble breathing. If any of these symptoms occur, contact your doctor right away.

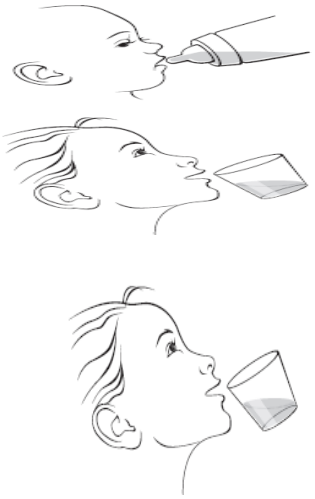
SPECIAL NOTE FOR PREGNANT WOMEN: If you are pregnant or are planning to become pregnant while taking Amoxicillin, talk to your health care professional before taking this medication. Amoxicillin passes through breastmilk, so speak with your physician if you are nursing.

Precautions:

- Be sure to tell your doctor if you are allergic to any medicine.
- Do not take this medicine if you have had an allergic reaction to amoxicillin, penicillin, or cephalosporins such as Keflex or Ceclor.
- Make sure your doctor knows if you are taking gout medicine like probenecid (Benemid) as this may cause higher levels of amoxicillin in your blood increasing your side effects.
- While you are taking Amoxicillin, birth control pills may not work as well; make sure you use another form of birth control.

For additional information, visit the Centers for Disease Control and Prevention (CDC) at www.bt.cdc.gov/agent/anthrax**.**

Amoxicillin Instructions



Liquid Amoxicillin *For infants and children exposed to bioterrorism*

How to Take Liquid Amoxicillin
125 mg per 5 ml (teaspoon)

You will need:

- Amoxicillin oral suspension – reconstituted
- Medicine dosing spoon.

Please read all instructions before you begin.

Step 1

Weigh your child.

Weight: _____ lbs.

Use your child's weight to find the correct dosage on the chart below.

Step 2

Normal pediatric dose: 80 mg/kg/day divided into equal doses administered orally every 8 hours Maximum dose: 500 mg/dose

5-6 lbs	1.5cc	26-27 lbs	6.5cc
7-9 lbs	2cc	28-30 lbs	7cc
10 lbs	2.5cc	31 lbs	7.5cc
11-13 lbs	3cc	32-33 lbs	8cc
14 lbs	3.5cc	34-35 lbs	8.5cc
15-17 lbs	4cc	36-38 lbs	9cc
18 lbs	4.5cc	39-40 lbs	9.5cc
19-22 lbs	5cc	41 lbs	10cc
23-25 lbs	6cc		

Give this dose three (3) times a day

Possible Side Effects of Liquid Amoxicillin

- Upset stomach, abdominal pain.
- Seek medical attention or contact your physician if diarrhea, vomiting, dizziness, rash or difficulty breathing occurs.

Warnings
Do NOT take liquid Amoxicillin if:

- You are allergic to any ingredient in amoxicillin suspension or another penicillin antibiotic (eg, ampicillin)
- You have infectious mononucleosis. (mono)
- You are taking a tetracycline antibiotic (eg, doxycycline)
- You are on probenecid (Benemid);
- You take a blood thinner such as warfarin (Coumadin);
- You are taking an antibiotic such as: azithromycin, clarithromycin, or telithromycin; or sulfa drugs

If you have further questions, contact your healthcare provider.

Adopted for SETRAC from the Illinois Department of Public Health. July 2008.

pharmacist for one.

Keep refrigerated.
The suspension should be discarded 14 days after reconstitution. Throw away any unused liquid after 14 days.

How to Take Liquid Amoxicillin
Continued from previous page

My child's name

_____

My child's dose is

_____

Give this dose three (3) times a day.

Mix this amount with food or liquid see below.

Step 3

You may take amoxicillin with or without food.

Mix well before using.

Shake the oral suspension (liquid) well just before you measure a dose.

Measure the liquid with a special dose-measuring spoon or medicine cup, not with a regular tablespoon.

If you do not have a dose-measuring device, ask your

Step 4

How to give the medication to an infant:
Mix medicine with one or two teaspoons of water, breast milk, or formula inside the nipple of the bottle. Let your infant suck on the nipple until all the medicine is gone.

For older children:
You may place the liquid directly on the tongue, or you may mix it with water, milk, baby formula, fruit juice, or ginger ale.

Drink all of the mixture right away. Do not save any for later use.

Stop use and seek medical help if your child develops any of these rare but dangerous symptoms:

- white patches or sores inside your mouth or on your lips;
- fever, swollen glands, rash or itching, joint pain, or general ill feeling;
- severe blistering, peeling, and red skin rash;
- pale or yellowed skin, yellowing of the eyes, dark colored urine, fever, confusion or weakness;
- severe tingling, numbness, pain, muscle weakness; or
- easy bruising, unusual bleeding (nose, mouth, vagina, or rectum), purple or red pinpoint spots under your skin.

If you have further questions, contact your healthcare provider.

Attachment 7: Cipro Instructions

Patient Information: Ciprofloxacin

Cipro 500 mg Oral Tablets or Liquid Suspension

Take this medication only as prescribed.
Cipro is an antibiotic that belongs to the antibiotic group call quinolones. It used to kill many types of bacteria that can infect the lungs, sinuses, skin, and urinary tract.

How to take Cipro

ADULTS: Take 1 tablet two times a day.

CHILDREN: A child's dose depends on body weight. Give the medication to your child as directed by your doctor.

Take Cipro with or without food. It is best to take Cipro two hours after a meal. Try to take the tablet at the same time each day and drink plenty of fluids.
If you miss a dose, start again taking your dose at the regular time. Do not take 2 pills to make up for the missed dose. Finish all your pills, even if you feel okay, unless your doctor tells you to stop. If you stop this medication too soon, you may become ill.

Side Effects

Cipro is generally well tolerated. The most common side effects caused by Cipro are mild. They can include the following: nausea, diarrhea, itching, abdominal pain, dizziness, flatulence (gas), rash and vaginitis in women.

Allergic reactions are rare. Signs of an allergic reaction include hives; skin rash; swelling of the tongue, hands or feet; fever; or trouble breathing. If any of these symptoms occur, contact your doctor right away.

SPECIAL NOTE FOR PREGNANT WOMEN: If you are pregnant or are planning to become pregnant while taking Cipro, talk to your health care professional before taking this medication.

Precautions:

- Be sure to tell your doctor if you are allergic to any medicine.
- It is very important to tell your doctor the name of ALL medicines that you are currently taking even pills bought at the store such as vitamins and antacids.
- Make sure your doctor knows if you are taking asthma medicines like theophylline, gout medicine like probenecid (Benemid) or a blood thinner like warfarin (Coumadin).
- Do not drive or operate machinery until you are sure Cipro is not causing dizziness.
- Cipro can make skin sensitive to light. Avoid excessive exposure to sunlight or artificial violet light. When outside, wear a long sleeve shirt and hat and always apply sunscreen (SPF 30).
- Do not take the following drugs within two hours of taking Cipro: antacids such as Maalox or Mylanta, vitamins, iron supplements, zinc, sucralfate (Carafate).

For additional information, visit the Centers for Disease Control and Prevention (CDC) at www.bt.cdc.gov/agent/anthrax**.**

SETRAC
SouthEast Texas Regional Advisory Council

Liquid Cipro

For infants and children exposed to bioterrorism

How to Make Liquid Cipro
125 mg per 5 ml (teaspoon)

You will need:
- One (1) 500-mg Cipro tablet
- Measuring teaspoon(s) or regular eating teaspoon.
- One (1) small glass, cup or bowl
- These directions.

Please read all instructions before you begin.

Step 1

- Pour four (4) teaspoons of room temperature water into a small glass or bowl.

- Put one (1) 500 mg Cipro tablet into the water and let it sit for five (5) minutes until the tablet breaks apart.

- Mix well until the powder dissolves and there is no more powder left at the bottom.

Step 2

Weigh your child.

Weight: _____ lbs.

Use your child's weight to find the correct dosage on the chart below.

Dosage Chart
How much medicine to give your child is based on your child's weight.
Use this chart to find the amount for one (1) dose.

Give this dose two (2) times a day – once in the morning and once in the evening .

Weight (lb)	Dose
Less than 8 lbs	¼ teaspoon
8 to 16 lbs	½ teaspoon
Over 16 lbs to 26 lbs	1 teaspoon
Over 26 lbs to 40 lbs	1 ½ teaspoon
Over 40 lbs to 55 lbs	2 teaspoons
Over 55 lbs to 75 lbs	3 teaspoons
Over 75 lbs	1 whole tablet (500 mg)

My child's name _____

My child's dose is _____

If you do not have a measuring teaspoon then use a regular teaspoon. It is hard to measure one-half teaspoon with a regular teaspoon. Do the best you can. It is better to give a little more medication than not enough.

See Page 2 for more directions.

How to Make Liquid Cipro

Continued from previous page

My child's name _____

My child's dose is _____

Mix this amount with food or liquid see below.

Step 3

This medication is very bitter. Mix the liquid with food or drink before giving it to your child.

One (1) dose Cipro liquid.

Mix with:

- Chocolate syrup
- Table sugar
- Apple juice or apple sauce
- Sweetened with extra table sugar

Do not mix with:

- Calcium-fortified juice
- Infant Formula
- Breastmilk

Mix well before using.

You may use this medication for up to 24 hours if it is kept covered and stored at room temperature or in the refrigerator. Throw sway any unused liquid after 24 hours and mix fresh every day.

Step 4

How to give the medication to an infant:
Mix medicine with one or two teaspoons of water inside the nipple of the bottle. Let your infant suck on the nipple until all the medicine is gone.

For older children:
Make sure child eats or drinks all of the food or drink that is mixed with medicine.

Important Information
Mix well before using.

Give this medicine one hour before or two hours after your child takes any milk or milk products.

Possible Side Effects of Liquid Cipro

- Dizziness lightheadedness
- Upset stomach, throwing up and diarrhea
- Sunburn-use sunscreen on your child before going out in the sun

Warnings

Do not give this medicine before talking to your doctor if your child is taking any of these medicines:

Theophylline, Caffeine, Warfin, or Cyclosporine.

Stop use and seek medical help if your child develops any of these rare but dangerous symptoms:

- Allergic effects such as: trouble breathing:
  closing of the throat; swelling of lips, tongue or face; hives.
- Pain, burning, tingling, numbness, weakness of hands or feet
- Bone or tendon pain
- Hallucinations, severe confusion, convulsions.

If you have further questions, contact your physician or pharmacist

Adopted for SETRAC from the Illinois Department of Public Health. July 2008

Attachment 7: Regional Infectious Transportation Ambulance Plan

Regional Infectious Transportation Ambulance (RITA) Plan

March 31, 2022

FOREWARD

WARNING: This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with U.S. Department of Homeland Security policy relating to FOUO information and is not to be released to the public or other personnel who do not have a valid "need-to-know" without prior approval of an authorized official.

Development of this document and costs for its printing and distribution were supported by Grant Number CPS/HOSP 2013-043762 to Southeast Texas Regional Advisory Council (SETRAC) via the State of Texas as a contractor for the Healthcare Preparedness Program (HPP) grant, as awarded by the Assistant Secretary for Preparedness and Response (ASPR), Centers for Disease Control and Prevention (CDC).

The opinions, findings, and conclusions or recommendations expressed in this publication are a compilation of guidance from the CDC, World Health Organization (WHO), Department of State Health Services, and regional subject matter experts.

The Regional Infectious Transportation Ambulance Plan focuses exclusively on regional support and coordination for screening, isolation, identification, activation, notification, and mobilization. Implementation of this Regional Infectious Transportation Ambulance Plan is coordinated by the Regional Healthcare Preparedness Coalition (RHPC), a committee of regional stakeholders managed by SETRAC. For more information, call 281-822-4444.

This document and its appendices will be maintained by the RHPC and will be reviewed and updated every five years, or when:

- Ongoing regional planning efforts affect or change this document;
- There are lessons learned and best practices from exercises and real-world events that should be incorporated; or
- There are changes in regional structures or processes that render parts of the document inadequate.

Record of Changes:

.

Change #	Change Description:	Change Made By:	Date
1	Changes made throughout document to reflect a High Consequence Infectious Disease from Ebola Virus Disease. Updated flow charts in document	C. Ehrlich on behalf of RITA Review Team	March 2022

Attachment 7 Contents

Introduction

The Regional Infectious Transportation Ambulance (RITA) plan was developed based on current literature regarding High Consequence Infectious Disease (HCID), transmission and mortality rates, the Centers for Disease Control (CDC) guidance, the World Health Organization (WHO) precautions, and The Texas Governor's Task Force on Infectious Disease Preparedness and Response. An outbreak of an HCID disease would significantly challenge the healthcare, public health, and emergency medical service (EMS) response within the region, resulting in the activation of the Catastrophic Medical Operations Center (CMOC). This plan is an attachment to the existing CMOC Plan, and it is intended to be adaptable to most High Consequence Infectious Diseases (HCID).

The RITA plan does not supersede or exclude any existing jurisdictional or regional plans; rather, it provides context for a coordinated regional response for identifying and transporting highly contagious infected patients with the region. Regional guidance, based on CDC guidelines for proper screening of potential HCID suspicious patients, has been distributed throughout the region. The immediate isolation of the suspected patient and prompt notification to the appropriate public health department is the cornerstone to successful implementation of this plan.

Purpose

The purpose of this Regional Infectious Transportation Ambulance (RITA) Plan is to describe a regional approach for emergency medical services, public health, and healthcare to transport patients in a coordinated fashion during an HCID outbreak. This plan provides a process for isolation and transportation of confirmed HCID infected patients throughout the region.

The intended audience for this plan includes local, regional, state, and federal government, nongovernmental, private sector, and other emergency response representatives within twenty-five (25) counties and cities within the three Trauma Service Areas (TSAs) that comprise the Southeast Texas Regional Advisory Council (SETRAC) and Regional Healthcare Preparedness Coalition (RHPC) region.

Actions described in this plan are intended to function in coordination with local government, public health, emergency management, and other public safety entities and are not meant to supersede, replace, or compete with other regional or local plans. This plan is an attachment to the Catastrophic Medical Operation Center (CMOC) plan and is scalable, flexible, and adaptable to address other highly infectious disease characteristics. This plan will be used in conjunction with any transportation mission by DSHS and HHS Region 6.

Scope

The Regional Infectious Transportation Ambulance (RITA) Plan includes considerations for patient triage/screening, pre-hospital treatment/transport, decontamination, personal protective equipment (PPE), and waste management as it relates to the ambulance transport of the patient. This plan outlines suspect patient procedures, notification procedures, confirmed positive patient transportation to the designated HCID Treatment Center, the transport vehicle and sending facility decontamination and resupply protocols, and the proper disposal of infected waste. This Plan is scalable, flexible, and designed to be adaptable for other highly infectious diseases.

The geographical footprint supported by this plan includes 25 counties, within the Department of State Health Services Public Health Regions 6/5 South and 4/5 North. The map in Figure 1 shows an overlay of the Trauma Service Areas (TSA) and Public Health

with 24-hour reporting numbers.

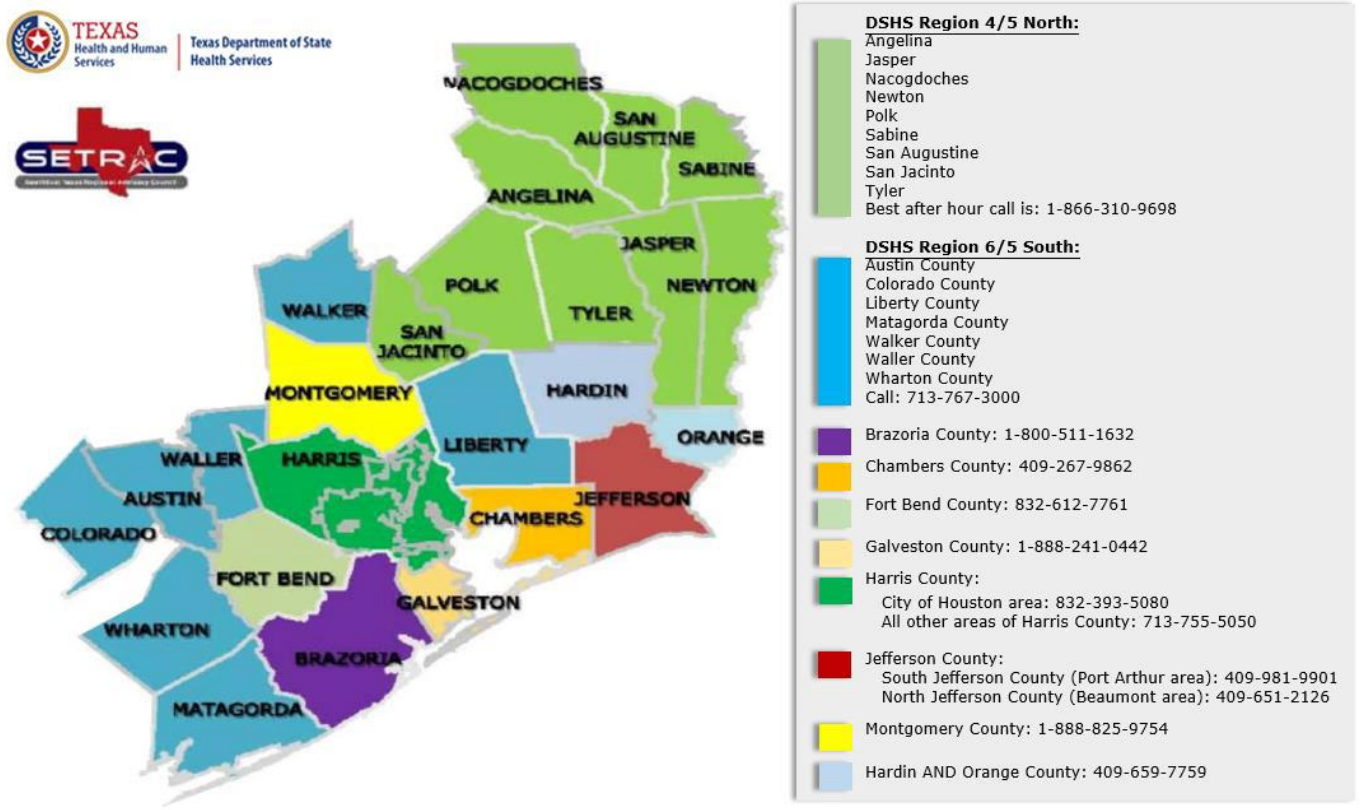


Figure 3: TSA-Q, TSA-R, TSA H and CMOC Regions

Critical Assumptions

- This plan is written for *most* High Consequence Infectious Diseases (HCID).
- Local and regional health and medical plans will be implemented along with this RITA plan.
- The Catastrophic Medical Operations Center (CMOC) will raise its level of activation to meet the needs of the incident.[8]
- All confirmed high consequence infectious disease (HCID) patients are transported in

[8] See CMOC Plan, Appendix A: Catastrophic Medical Operations Center Activation

accordance with CDC guidelines. Some procedures and methods may be modified based on the individual case (contact vs respiratory).

- Hospitals and other healthcare facilities are responsible for screening, isolating, and calling
  their public health official in accordance with the RHPC regional guidance for HCID triage.

- Hospitals and other healthcare facilities will be responsible for laboratory sampling as outlined in the RHPC regional guidance, and proper packaging and transportation of the specimen to an approved Laboratory Response Network (LRN) laboratory.

- State medical response and support may be available within six hours after the confirmed positive laboratory test.

- Federal medical emergency response support and resources may be available approximately 72 hours after the confirmed positive laboratory test.

- A primary and back-up regional response asset such as the Regional Infectious Transport

    - Ambulance (RITA) will be available within approximately 3-4 hrs. Scene reporting times will vary depending upon location.

- SETRAC has pre-identified EMS agencies familiar with the region that have:

- completed special standardized training and possesses standardized equipment; and

- a current, fully executed Emergency Medical Task Force (EMTF) MOA with SETRAC.

- For HCID, only Polymerase Chain Reaction (PCR) confirmed patients will be transported to one of the State designated Ebola Treatment Centers, or a federally identified Treatment Center.

- Although not necessarily a part of this plan, a State Mission Assignment from the State to SETRAC will cover all costs associated with the care and transportation of:

    - A confirmed (via PCR) HCID case to an identified state facility.

    - Some-Risk or High-Risk individual from home to hospital (9-1-1 support).

    - Moderate or highly suspected HCID death from home to Medical Examiner/funeral home.

    - The re-supply of PPE and medical supplies for regional ambulances and initial healthcare facility

    - The decontamination/cleaning of ambulances, uniforms, and initial healthcare facility.
    - The disposal of waste identified as a Category A Infectious Substance (49 CFR 172.134 and 172.323) associated with the care and transportation of an HCID patient.
- If the RITA asset is dispatched without a state mission assignment, the requesting entity or patient may be responsible for the costs incurred.
- The RITA may be activated without a confirmed case for decedent pick-up and/or suspect case from a physician's office.
- A high consequence infectious disease (HCID) will cause widespread media attention.

Concept of Operations

The intent of coordinating a Regional Infectious Transportation Ambulance (RITA) is to quickly and robustly provide guidance, support, and transportation of laboratory confirmed positive patients to the appropriate care facility. The safety of healthcare and response personnel will not be compromised, especially due to the potential for secondary transmission and should be factored into all decision making. Response agencies and healthcare facilities should prepare and train their staff in proper use of personal protective equipment (PPE), including donning and doffing, utilization of regional screening guidance, and the identification of isolation locations that follow the Center for Disease Control (CDC) guidance and procedures for identifying and monitoring workers who had exposure to the infected patient.

RITA Activation

The Regional Infectious Transportation Ambulance (RITA) will be dispatched via SETRAC Regional Communications Center (RCC) that operates 24 hours per day, 365 days per year. All employees of the RCC will receive training on the RITA Plan, and at least one employee working every shift should be prepared to activate RITA at any time.

Upon request for activation, the Regional Infectious Transportation Ambulance Plan trained RCC dispatcher will notify the RITA on call. The Public Health individual contacting the Southeast Texas Regional Advisory Council (SETRAC) or the Catastrophic Medical Operation Center (CMOC) to request the ambulance should be prepared to provide the following information:

- Pick up location
- Number of patients
- General physiological status of the patient(s)
- Complicating factors – ie: extensive diarrhea, vomiting, bleeding, or other body fluids
- Ambulance access and/or parking for EVD patient transport
- Additional precautionary requirements

Having this information will allow SETRAC and/or any activated CMOC personnel to determine which asset to deploy, what level of response is required, and which receiving location is appropriate for the patient.

Table 5: Summary of Critical Tasks for RITA Notification

Tasks	Agency
Patient identified as some to high suspicion based on screening criteria per public health	All healthcare, EMS, Dispatch Centers, public health
Notification of RITA request made to SETRAC/CMOC	Public Health
SETRAC/CMOC notifies RCC for RITA transport	SETRAC, RCC dispatch
RCC Dispatch notifies on-call RITA of transport request	RCC
RITA prepares crew and identified vehicle and provides ETA	RITA identified EMS

High Consequence Infectious Disease Presentation

When an incident of this magnitude occurs in the CMOC region, certain protective action plans and procedures will be activated. This includes increasing the Catastrophic Medical Operations Center (CMOC) activation level and implementing notification to the health care facilities throughout the region. Processes for reporting and monitoring events, matching needs and resources, and deployment of assets are detailed in the regional CMOC Plan.[9]

This plan outlines four scenarios in which a suspected HCID patient could enter the healthcare system. While not all inclusive, the most likely presentations into the healthcare system are outlined in the four plausible scenarios described below:

- Self-presentation to an acute care facility or Free-Standing Emergency Department (FSED)
- Self-presentation to a clinic or physician office
- 9-1-1 call for assistance
- Public Health request for home monitoring individual

[9] See the Catastrophic Medical Operations Center (CMOC) Plan, 2018.

Self-Presentation at Acute Care Facility or FSED

Local healthcare facilities should establish internal procedures for Screening, Isolating, and Notifying Public Health for any patient that meets the criteria as established in the Regional Triage Guidance and in accordance with current CDC guidelines. Once a determination has been made that the presenting patient meets the screening criteria for suspicion of HCID, the patient should be immediately isolated, proper PPE donned by the healthcare workers assigned to that patient, contact kept to a minimum and local public health notified.

A. If the patient meets the CDC specified criteria for testing, public health may request a PCR, specific to the HCID in question, to be drawn and will provide instructions on which laboratory to use. The blood sample should be double bagged, labelled, and hand carried to the laboratory for appropriate packaging and shipment to an identified laboratory capable of testing as outlined in 49 CFR 172.323.

B. The patient should remain in isolation until the preliminary PCR results are communicated back to the facility. If a positive PCR result comes back on the patient, local public health will immediately request SETRAC/CMOC for a RITA transport to a Treatment Center. Upon determination of approved transfer, CMOC will notify the Treatment Center of an impending transfer.

C. The CMOC will activate the RITA when requested by the Authority Having Jurisdiction (i.e., local public health authority or their designee). Planning assumptions acknowledge that the RITA could be activated unnecessarily, but this is preferable to inaction that could lead to a delayed response and further loss of life.

D. The transferring facility is responsible for compliance with all Emergency Medical Treatment Active Labor Act (EMTALA) requirements for a transfer to a higher level of care. Report will be called to the accepting Treatment Center by the transferring facility and CMOC will provide an ETA to the transferring facility to facilitate a smooth transfer. CMOC will communicate regularly with local public health on status of transport.

E. The transferring facility should have a place for the RITA team to don and doff PPE, to coordinate care, and to discuss the transition process for the patient to move from the patient room through the hospital to the RITA for transport. The RITA team will notify CMOC once patient has been transferred to the ambulance and provide an ETA to the Treatment Center. This information will be relayed to the Treatment Center by CMOC.

F. The local Public Health Department will work with the healthcare facility's Infection Control Professional to conduct epidemiological surveillance of healthcare workers involved in care as well as contacts of the patient.

Self-Presentation at Clinic or Physician Office[10]

Local health clinics and physician offices should establish internal procedures for Screening, Isolating, and Notifying Local Public Health for any patient that meets the criteria as established in the Regional Triage Guidance and in accordance with current CDC guidelines. Once a determination has been made that the presenting patient meets the screening criteria for suspicion of HCID, the patient should be immediately isolated, proper PPE donned by the healthcare workers assigned to that patient, contact kept to a minimum and public health notified.

A. If the patient meets the CDC specified criteria for testing, public health will arrange transport to an acute care facility capable of isolation and blood draw.

B. The patient should remain in isolation until public health/DSHS requests SETRAC/CMOC for a RITA transport to an acute care facility. Upon determination of the need to transport, CMOC will notify the acute care facility of an impending patient.

C. The CMOC will activate the RITA when requested by local public health authority or designee and is not responsible for verifying the validity of the request. Planning assumptions acknowledge that the RITA could be activated unnecessarily, but this is preferable to inaction that could lead to a delayed response and further loss of life.

D. The transferring clinic/physician's office call report to the accepting acute care facility and CMOC will provide an ETA to the clinic/physician's office to facilitate a smooth transfer.

E. Upon arrival of RITA to the clinic/physician office, the staff will clear hallways and transport the patient to the ambulance; at which time a hand-off will occur with RITA.

F. RITA will notify CMOC once patient is in the ambulance and provide an ETA to the acute care facility. This information will be relayed to the acute care facility by CMOC.

G. CMOC will communicate regularly with local public health on status of transport.

H. Public Health will begin epidemiological surveillance of healthcare workers involved in care as well as contacts of the patient.

[10] In this case, the state mission order may not be issued, and the patient may not be a confirmed case.

Call 9-1-1 for Assistance

When local 9-1-1 receives a call and dispatch performs screening criteria on the caller, information is relayed to the EMS crew. Following regional EMS guidance, in accordance with CDC recommendations, the dispatched ambulance arrives on scene, dons PPE appropriate for universal precautions, and surveys the scene/patient status.

I. If patient meets screening criteria, the crew will exit the premises, don appropriate PPE per CDC guidance, and call their Medical Control with assessment.

II. Medical Control will confer with local public health on the degree of suspicion for HCID. If patient determined as low risk of HCID, the crew will transport with normal protocols.

III. If it is determined that the patient is some or high risk for HCID or there is evidence of gross body fluids at scene and history is indeterminate, the 9-1-1 service will remain on the scene to secure the safety of the patient and public health may notify SETRAC/CMOC of the need for a RITA.

IV. SETRAC/CMOC will deploy RITA to the scene for transfer of care. RITA will provide an ETA to the location and to SETRAC/CMOC and this information will be passed on to the 9-1-1 Medical Control.

V. Upon arrival on-scene, 9-1-1 will provide report and formal hand-off of the patient, sharing assessment, history, precautions, physiological status of patient to the RITA.

VI. Receiving acute care facility will be notified of an incoming RITA that will coordinate with the receiving facility ETA, patient status, and any additional precautions necessary.

VII. Hand-off of the patient at the receiving acute care facility will occur at the back of the ambulance per regional guidance.

VIII. Public Health will begin epidemiological surveillance of healthcare and EMS workers involved in care as well as contacts of the patient.

Public Health/State Department (Transfer Request)

For individuals in the community currently under public health surveillance for HCID exposure and become symptomatic or it is determined by the monitoring public health department that the individual should be transferred to a hospital for further evaluation, the monitoring public health official may notify SETRAC/CMOC of the need for a RITA if the individual is unable to transport themselves to the hospital.

A. SETRAC/CMOC will deploy RITA to the scene for transfer of care. RITA will provide an ETA to the location and to SETRAC/CMOC and this information will be passed on to the requesting public health official.

B. Receiving acute care facility will be notified of incoming RITA that will coordinate with the receiving facility ETA, patient status, and any additional precautions necessary.

C. Hand-off of the patient at the receiving acute care facility will occur at the back of the ambulance per regional guidance.

D. CMOC will communicate regularly with local public health on status of transport.

E. Public Health will begin epidemiological surveillance of healthcare and EMS workers involved in care as well as contacts of the patient.

Table 6: Summary of Critical Tasks

Tasks	Agency
Screen, Isolate, Notify Public Health for consult	All healthcare, EMS, Dispatch Centers
Institute PPE for contact and droplet precautions	All healthcare and EMS
Obtain, package and transport requested blood sample	Acute care facilities and freestanding ER
Request transport through public health to CMOC to acute care facility	Clinics and physician offices
Request transport through public health to CMOC for PCR confirmed cases to designated Treatment Centers	Acute care facilities and freestanding ER

Appendix A: RITA Activation Protocol

1. Upon notification of suspected case with laboratory testing to be done, notify Supervisor.

2. Arrange conference call to include the RITA ambulance services and Supervisor.

3. Ensure “first-up” ambulance service is on standby with wrapped unit. Ensure “back-up” ambulance service can be ready to support.

4. Notify SMOC and request State Mission for transport to Galveston UTMB IF test is positive.

   Mission to include:

   - Cost of wrapping, staffing (3 personnel), PPE, transport fee, supplies, equipment Cost of chase vehicle with personnel
   - Cost of decontamination of ambulance
   - Cost of waste incineration
   - Request for DPS escort with lights and siren on through traffic as needed

5. Notify District Chair for “head’s up” of STAR request coming via WebEOC

6. Notify SETRAC Warehouse of possibility of need for PPE cache to initial hospital for support.

7. Maintain communication with sending/receiving facilities and public health officials.

8. If test result is negative, notify all previously mentioned (SMOC, District Chair, Supervisor, Warehouse, Ambulance Services, DPS) of stand down.

9. If test is positive, coordinate with sending and receiving facility for transfer time (provide a 2-hour prep time and calculated travel time). Notify on-call RITA 24/7 dispatch number-0.

10. Sending facility is responsible for obtaining transfer approval from UTMB, completing MOT, report and providing copies of medical records. All forms for transfer should be placed in a decontaminated, watertight sealed clear plastic bag for transport and given to the EMS supervisor/driver, and not handled by crews providing patient care due to contamination (if able to obtain electronic medical records please do so).

11. Maintain communications with sending facility, receiving facility, and chase vehicle regarding progress points on pre-identified TAC channel:

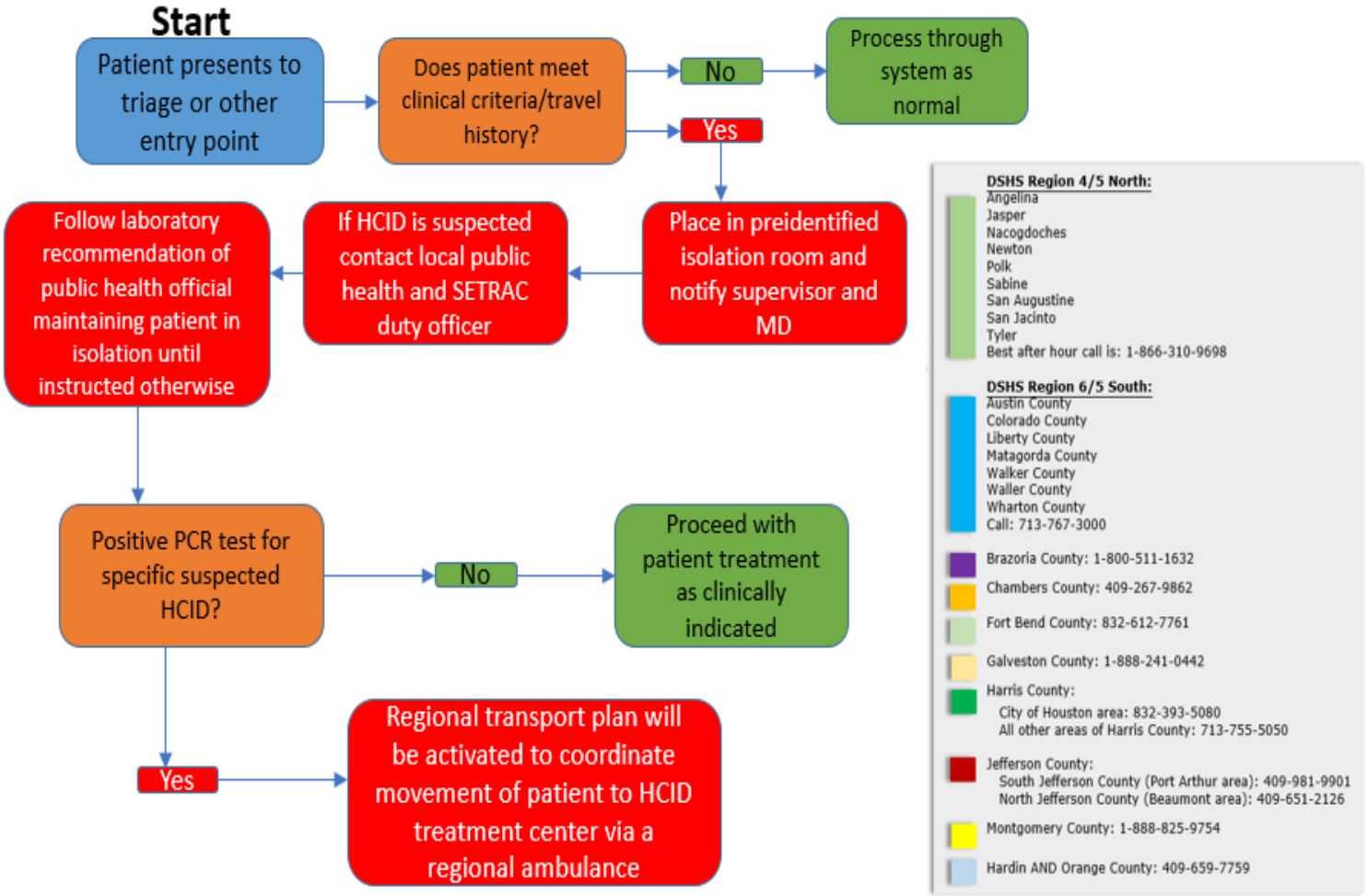
- Leaving home base
- Arrival at sending facility
- Leaving sending facility
- Progress en route to receiving
- Arrival to receiving facility
- Decontamination of personnel
- Leaving receiving facility
- Decontamination of vehicle
- Disposal of waste
- Completion of mission & notification of when return to base station/home.

12. Document all costs associated with Mission with SETRAC finance and submit to SMOC for reimbursement.

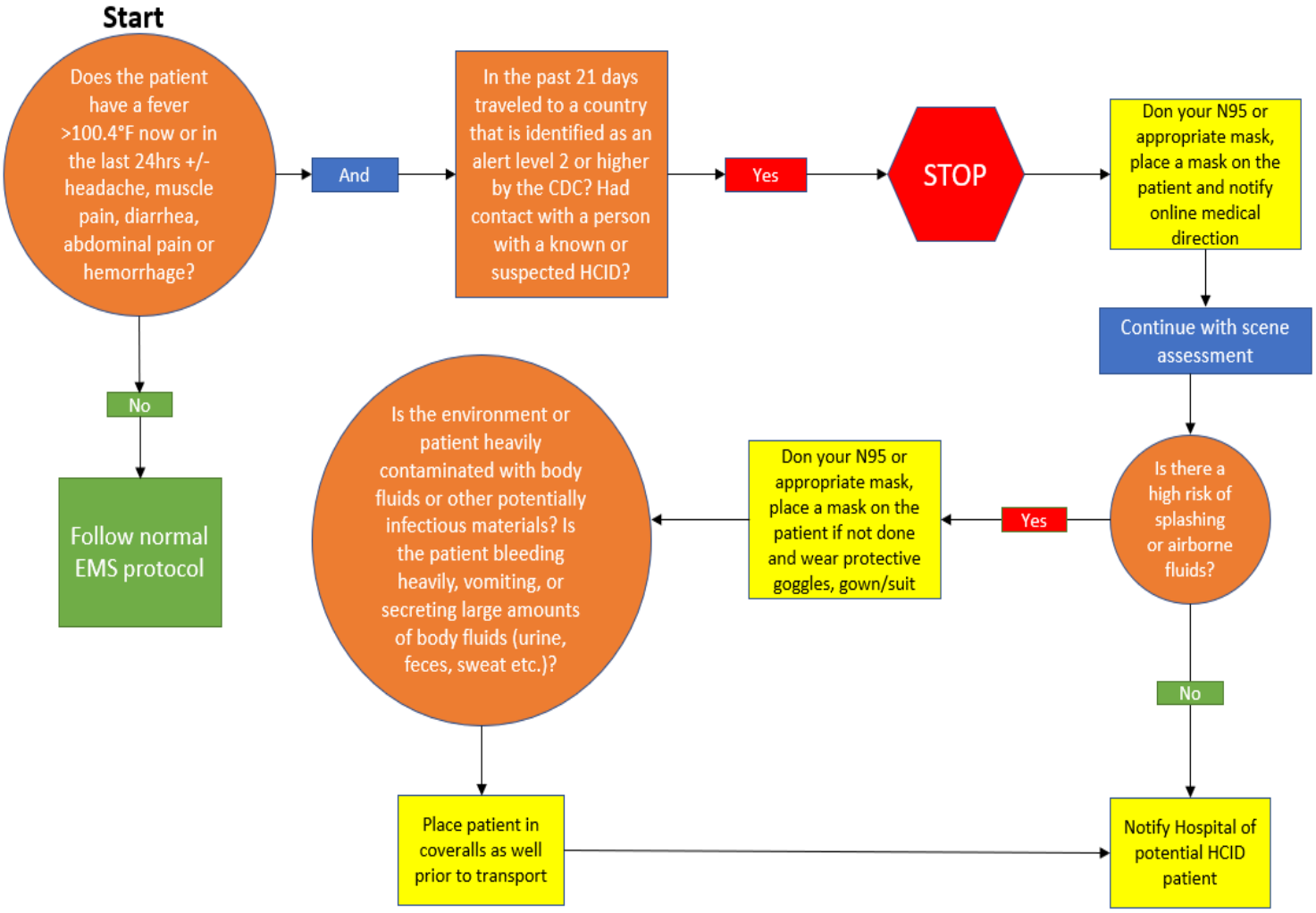
13. Document issues, concerns, best practices and convene post transport conference call with individuals identified in #2 above as well as sending/receiving facilities, and public health official, if possible.

Appendix B: Regional Triage Guide

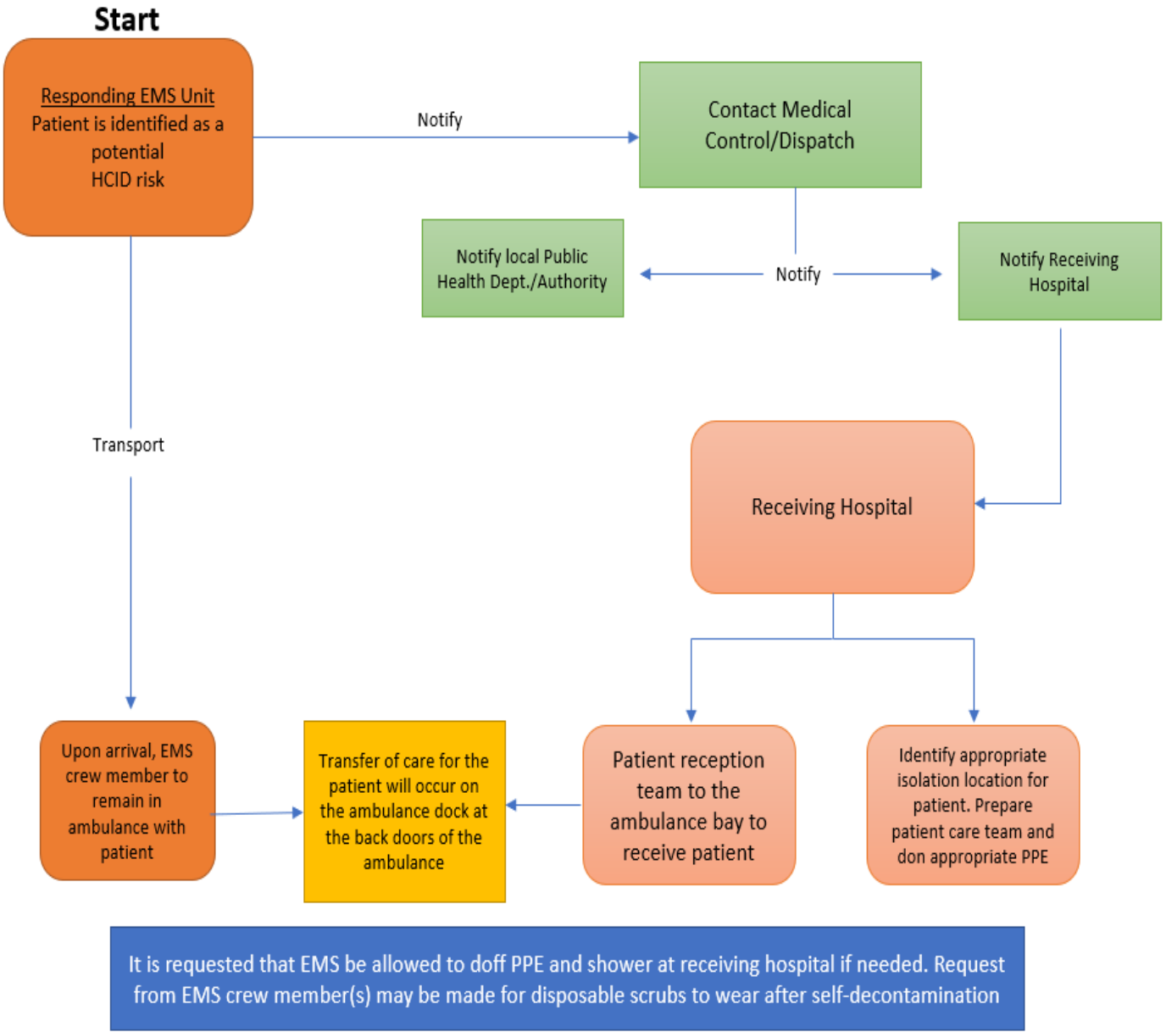
Regional Triage Guidance



Appendix C: EMS Decision Tree Guidance



Appendix D: EMS-Hospital Hand-off



Appendix E: EMS Special Considerations

Note: these EMS special considerations are specific for a High Consequence Infectious Disease (HCID) and can be adapted for other infectious diseases.

I. Infection Control/Personal Protective Equipment (PPE)

a) Every effort should be made to contain potentially infectious body fluids by use of emesis bags, biohazard bags, and yellow sheets or other barriers to collect large volumes of diarrhea or other potentially infectious materials.
b) If performing intubation, nebulizer treatment, CPR, open suctioning, or any procedure that may result in aerosolized body fluids, respiratory protection that is at least a NIOSH certified, fit tested, N95 filtering face piece respirator shall be used.
c) PPE shall be worn upon entry or put on as soon as the risk is identified and continue to be worn until the member is no longer in contact with the patient or potentially infectious materials.
d) PPE shall be carefully removed without contaminating one's eyes, mucous membranes, or clothing.
e) PPE shall be placed into a medical waste container at the hospital or double bagged and held in a secure location until it can be properly disposed of.
f) Hand hygiene shall be performed immediately after the removal of PPE.
g) Members should decontaminate to include showering at the hospital if possible.
h) Any airborne pathogens should be suspected to be contagious, and a high possibility of transmission of the pathogen is understood.

II. Patient Care Equipment

a) Dedicated medical equipment (preferably disposable) should be used for the provision of patient care.
b) All reusable equipment should be cleaned and disinfected according to manufacturer's instructions. The CDC advises that when used according to the manufacturer's instructions, Environmental Protection Agency (EPA)-registered disinfectants are sufficient to inactivate suspected HCID.

III. Patient Care Considerations

a) Limit procedures, especially those that will increase the risk of exposure to infectious material, to only those which are absolutely necessary prior to arrival at the hospital.
b) Limit or avoid use of needles and other sharps, as much as possible, in a moving vehicle.
c) Needles and sharps should be handled with extreme care and disposed of **immediately** in puncture-proof, sealed containers
d) Hand hygiene should be performed frequently, including before and after all patient contact, contact with potentially infectious material, and before putting on and upon removal of PPE, including gloves.
e) Pre-hospital resuscitation procedures such as endotracheal intubation, open suctioning of airways, and cardiopulmonary

resuscitation frequently result in body fluids, such as saliva and vomit. Performing these procedures in a less controlled environment (e.g., moving vehicle) increases risk of exposure of EMS personnel. If conducted, perform these procedures under safer circumstances (e.g., stopped vehicle, hospital destination.)

IV. Patient Transport into Hospital

a) Contact the Medical Control/Dispatch as soon as the patient has been identified as a potential HCID risk. The Medical Control/Dispatch shall immediately notify the receiving hospital to prepare for patient arrival. Any hospital that is following CDC's infection control recommendations and can isolate a patient in a private room is capable
of safely managing a patient with HCID.

b) Medical Control/Dispatch shall contact the local health department/health authority.
Upon arrival at the receiving facility, transporting crew members shall remain inside the vehicle with the patient, until directed to unload by hospital receiving staff.

c) The transfer of patient care will occur at the back doors of the ambulance. This will allow the hospital to control the movement of suspect HCID patients into hospitals or
healthcare facilities. Potential HCID patients should be restricted to entrances away from public waiting areas.

d) Suspected HCID patients should not be moved through, or temporarily left in, waiting rooms.

e) If the patient, stretcher, members' PPE, or other items or equipment is contaminated with potentially infectious material, members shall take care to minimize the transfer of potentially infectious material to hospital surfaces.

V. Environmental Cleaning

a) Diligent environmental cleaning and disinfection and safe handling of potentially contaminated materials is extremely important, as blood, sweat, emesis, feces, and other body secretions represent potentially infectious materials.

b) Persons performing environmental cleaning and disinfection shall wear recommended PPE to protect against exposure through contact and/or splashes during clean-up:
    - Gloves
    - Gown (fluid-resistant or impermeable)
    - Goggles
    - An appropriate respirator for airborne pathogens

c) Additional PPE may be required in certain situations, including the presence of copious amounts of blood, other body fluids, vomit, or feces on the patient, or airborne in the environment. In these cases, member shall use the following additional PPE as needed **to ensure no skin is exposed**:
    - Double gloving

- Disposable shoe covers
- Leg coverings
- Protective body suit- This is not essential to provide care to suspected HCID patients, but it may be more practical than using a gown with separate coverings for the legs and shoes.

d) Patient-care surfaces (stretchers, railings, medical equipment control panels, and adjacent flooring, walls, and work surfaces) are likely to become contaminated and shall be cleaned and disinfected immediately after transport. Hospital-grade agency supplied disinfectants, when used according to the label, are sufficient to kill HCID.

e) A blood spill or spill of other body fluid or substance should be managed according to agency's Infection Control Guidelines.

f) Contaminated reusable patient care equipment shall be placed in biohazard bags and labeled for cleaning and disinfection according to agency policies. Reusable equipment should be cleaned and disinfected according to manufacturer's instruction by trained personnel wearing correct PPE.

g) To reduce exposure among staff to potentially contaminated textiles (cloth products) while laundering, discard any *contaminated* fabrics (including uniforms), linens, and nonwaterproofed pillows or mattresses as regulated medical waste.
*If proper PPE is utilized, members' uniforms should not be contaminated with potentially infectious material.

h) Ensure that infectious waste is safely contained in clearly marked biohazard bags/containers and disposed of in compliance with agency's guidelines.

VI. Follow-Up & Reporting After Caring for Suspected or Confirmed HCID Patient

i) EMS Personnel with exposure to blood, bodily fluids, secretions, or excretions from a patient with suspected or confirmed HCID shall immediately:

- Stop working and follow standard operating procedures for post-exposures management as set by agency specific guidelines which may include washing the affected area with copious amounts of water or other appropriate solution
- Contact the supervisor for assessment and access to post-exposure management services; and
- Receive medical evaluation and follow-up care after the last known exposure as recommended by the CDC, local, state, and federal public health authorities specific for the HCID in question.

j) EMS personnel who develop sudden onset of fever, intense weakness, or muscle pains, vomiting, diarrhea, signs of hemorrhage, or any signs that pertain to a specific HCID in question after an unprotected exposure (i.e., not wearing recommended PPE at the time of patient contact or through direct contact to blood or body fluids) to a patient with suspected or confirmed HCID should:

- Not report to work or immediately stop working and isolate themselves.
- Notify their supervisor, who should notify local and state health departments.
- Contact physician through Workers' Compensation for assessment and access to post-exposure management services; and
- Comply with work exclusions until they are deemed no longer infectious to others.

Appendix F: Healthcare Special Considerations

I. Hospital Minimum Expectations for Interim Care

a) Routinely manage all patients using universal precautions
b) All acute care hospitals must be prepared to evaluate patients suspected of having an HCID, draw specific diagnostic specimens, and package and transport specimens for appropriate testing at a Laboratory Response Network (LRN) laboratory.
c) Include assessment of patients for the possibility of HCID in triage and evaluation processes.
    - Early symptoms of High Consequence Infectious Diseases are like other febrile illnesses. Risk posed by patients with early, limited symptoms (i.e., fever, fatigue, headache, muscle pain) is lower than that from patients with severe HCID symptoms (i.e., bleeding, vomiting, and diarrhea).
    - Take a relevant travel and exposure history of all patients. If the patient is unable to provide history due to clinical condition or other communication barriers, history should be elicited from the next most reliable source (i.e., family, friend, or EMS provider).
d) This screening should include Travel/Contact History:
    - Residence in or travel to an affected country, as advised by and in accordance with the Center for Disease Control (CDC) and the World Health Organization (WHO).
    - Contact with an individual with the confirmed HCID within the previous 21 days.
    - Health care worker in a patient care area or processing laboratory samples for patients with a specific or novel HCID in the U.S. or elsewhere.
    - On any public health monitoring list for a specific or novel HCID, including a self- monitoring list.
e) Further question patients who have a relevant travel and exposure history regarding the presence of signs or symptoms compatible with a High Consequence Infectious Disease. These may include:
    - Fever (including a history of fever in the last 24 hours, subjective feeling of fever, and the use of antipyretic drugs) ≥100.4°F or 38.0°C.
    - Headache, weakness, muscle pain, vomiting, diarrhea, abdominal pain, or hemorrhage (i.e., bleeding gums, blood in urine, nose bleeds, coffee ground emesis or melena).
    - Or any other symptoms identified by the CDC, Local, State, or Federal Health Authority regarding a HCID in question.

II. Patient Management

a) Immediately isolate patients with a relevant travel and exposure history,

and who present with fever and symptoms as defined above or with signs and symptoms of a specific HCID that is in question.

b) Place patient in a private room or area, preferably with a private bathroom or covered commode.

c) Implement administrative and environmental controls (such as a designated area for further evaluation of patients with possible HCID).
    - At an administrative level, the facility's infection prevention management system, in collaboration with the facility's occupational health department, should establish and implement triage protocols to effectively identify patients who may have HCID and institute the precautions detailed in this document.
    - Designate individuals as site managers responsible for overseeing the implementation of precautions for healthcare workers and patient safety. A site manager's sole responsibility is to ensure the safe and effective delivery of HCID treatment. These individuals are responsible for all aspects of HCID infection control including supply monitoring and evaluation with direct observation of care before, during, and after staff enter an isolation and treatment area.
    - At least one site manager should be always on-site in the location where the HCID patient is being cared for.
    - Identify critical patient care functions and essential healthcare workers for care of HCID patients, for collection of laboratory specimens, and for management of the environment and waste ahead of time.
    - Ensure healthcare workers have been trained in all recommended protocols for safe care of HCID patients before they enter the patient care area.
    - Train healthcare workers on all PPE recommended in the facility's protocols. Healthcare workers should practice donning and doffing procedures and must demonstrate during the training process competency through testing and assessment before caring for HCID patients.
    - Use trained observers to monitor for correct PPE use and adherence to protocols for donning and doffing PPE, and guide healthcare workers at each point of use using a checklist for every donning and doffing procedure.
    - Document training of observers and healthcare workers for proficiency and competency in donning and doffing PPE, and in performing all necessary care related duties while wearing PPE.
    - Designate spaces so that PPE can be donned and doffed in separate areas.

- Identify and isolate the HCID patient in a single patient room with a closed door and a private bathroom as soon as possible.
- Limit the number of healthcare workers who encounter the HCID patient (e.g., avoid short shifts), and restrict non-essential personnel and visitors from the patient care area.
- Monitor the patient care area at all times, and log at a minimum entry and exit of all healthcare workers who enter the room of an HCID patient.
- Ensure that a trained observer watches closely each donning and each doffing procedure and provides supervisory assurance that donning and doffing protocols are followed. Ensure that healthcare workers have sufficient time to don and doff PPE
- Ensure that practical precautions are taken during patient care, such as keeping hands away from the face, limiting touch of surfaces and body fluids, preventing needlestick and sharps injuries, and performing frequent disinfection of gloved hands using an alcohol-based hand rub, particularly after handling body fluids.
- Disinfect immediately any visibly contaminated PPE surfaces, equipment, or patient care area surfaces using an EPA-registered disinfectant wipe.
- Perform regular cleaning and disinfection of patient care area surfaces, even absent visible contamination. This should be performed only by caregivers that are providing patient care activities to limit the number of additional healthcare workers/staff who enter the room.
- Implement observation of healthcare workers in the patient room, if possible (e.g., glass-walled intensive care unit [ICU] room, video link).

d) Hospitals must be capable of providing supportive care, including other laboratory testing required for patient management, until receipt of laboratory test results.
e) Hospitals must be prepared to evaluate and test for alternative diagnoses that could also be the cause of the patient's signs and symptoms (such as malaria or typhoid fever) based on the areas visited.
f) Patient care decisions should be based on the patient's medical status, history, and evaluation for alternative diagnoses.
g) Avoid unnecessary direct contact. Designate staff members who have been trained in proper PPE to evaluate identified patients.
h) Proper PPE should be donned and doffed as outlined in a CDC Guidelines (link below) and/or follow any current guidance as set forth by the CDC, local, state, and federal public health authority. https://www.cdc.gov/hai/pdfs/ppe/ppe-sequence.pdf
i) Health care facilities must provide onsite management and oversight on the safe use of PPE to include continuous safety checks through direct

observation of healthcare workers during the process of putting on (donning) and taking off (doffing) PPE.

j) Notify hospital infection control staff and maintain a log of people entering the patient room.
k) Perform only urgent or emergent procedures.
l) Immediately contact appropriate local health department or health service region.

III. Laboratory Testing – Inhouse Clinical-based

a) Healthcare providers are directed to contact local health departments and DSHS/Texas Health Service Region(s) to provide awareness of any patients possibly suspected of having a HCID in their areas and to evaluate the patient symptoms and risk factors.
b) The Centers for Disease Control's (CDC) recommendations to U.S. clinical laboratories for safe management of all diagnostic specimens from persons under investigation for HCID are the same as recommendations for other known infectious diseases that are transmitted through blood or body fluids, such as HIV and hepatitis viruses.
c) Clinical laboratories in acute care facilities must also do routine laboratory testing for a person under investigation, such as traditional chemistry, hematology, or other laboratory testing used to support and treat patients.
d) Any person collecting or testing specimens from a patient with a suspected HCID should adhere to strict full PPE guidelines, as outlined by the CDC, local, state, and federal public health authority guidelines for a High Consequence Infectious Disease (HCID).
e) For transporting specimens within the facility, place them in a durable, leak-proof secondary container. Hand walk specimens to the laboratory. Do not use any pneumatic tube system for transporting suspected HCID specimens.
f) During specimen testing, a certified class II Biosafety cabinet or Plexiglass splash guard should also be used, as well as all manufacturer-installed safety features on all laboratory equipment.
g) In the case of a spill in the laboratory, the basic principles for blood or body substance spill management are outlined in the United States OSHA Blood Borne Pathogens Standards. Clean and disinfect surfaces with a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant.

IV. Laboratory Testing – High Consequence Infectious Disease (HCID) Specific

a) Upon notification and consultation, the local health department and DSHS HSR will consult with the DSHS Emerging and Acute Infectious Disease Branch (EAIDB) to determine if the patient meets the specific HCID testing criteria.
b) DSHS, in coordination with the local/regional health department, will consult with Centers for Disease Control and Prevention (CDC) for approval to test. If approved, the health department epidemiologist will

receive the CDC PUI unique number, which will be used for future communications.

c) DSHS/LRN will provide guidelines to the hospital regarding information on packaging and shipping of the specimen to the appropriate laboratory for testing.
d) Specimens from suspected HCID patients may require the packaging of a Category A specimens and shipped as "Suspect Category A Infectious Substance."
e) Laboratory individuals must be certified as a Category A shipper prior to packaging the specimen and completing the shipper's declaration forms required by commercial
shipping companies.
f) The approved LRN testing laboratory will not be responsible for providing a courier for the shipment of specimens; the hospital will need to have a plan for shipment of specimens.
g) Specimens should be transported in a timely manner to the laboratory and the laboratory will provide results as rapidly as possible.

V. Test Results and Disposition

a) If testing is **not indicated** or the result is **negative:**
    - Alert the appropriate local health department or health service region prior to discharge for appropriate discharge instructions and possible monitoring.
b) If result of testing is **positive:**
    - Continue with isolation and appropriate care and determine health care worker precautions as outlined above.
    - DSHS will determine whether to transfer a patient, with the HCID in question, to a bio- containment unit (BCU) after discussion with appropriate health care administrators and medical staff. The decision will be based on the capabilities and capacity of the facility where the patient is diagnosed, EMS capability for transportation, patient status, and patient preferences.
    - If transfer to a bio-containment unit (BCU) is approved, hospitals must be prepared to provide supportive care for 12 – 24 hours until transfer is coordinated.
    - The coordination of transportation asset between the sending facility and the receiving facility will be accomplished via SETRAC with notification/request of public health.
    - The sending and receiving facilities will follow all current EMTALA regulations regarding patient transfer to a higher level of care.
    - After patient transport, perform clean-up and disinfection according to the HCID Guidelines of Disposal, Transport, and Incineration of a HCID Waste for Health Care Facilities and EMS. Do not reuse any durable medical equipment until it has been appropriately cleaned and disinfected as outlined at CDC.

VI. Environmental Cleaning

a) There is no epidemiologic evidence of HCID transmission via either the environment or fomites that could become contaminated during patient care (e.g., bed rails, doorknobs, laundry). However, given the apparent low infectious dose, potential of high virus titers in the blood of ill patients, and disease severity, higher levels of precaution are warranted to reduce the potential risk posed by contaminated surfaces in the patient care environment.
b) Be sure staff (this should be performed only by caregivers as part of patient care activities to limit the number of additional healthcare workers/staff who enter the room) wear recommended personal protective equipment (PPE) to protect against direct skin and mucous membrane exposure of cleaning chemicals, contamination, and splashes or spatters during environmental cleaning and disinfection activities.
c) If reusable heavy-duty gloves are used for cleaning and disinfecting, they should be disinfected and kept in the room or anteroom.
d) Be sure staff are instructed in the proper use of personal protective equipment including safe removal to prevent contaminating themselves or others in the process, and that contaminated equipment is disposed of appropriately.
e) Use a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant with a label claim for a High Consequence Infectious Disease (HCID) to disinfect environmental surfaces in rooms of patients with suspected or confirmed of an HCID infection.
f) Avoid contamination of reusable porous surfaces that cannot be made single use. Use only a mattress and pillow with plastic or other covering so that fluids cannot penetrate. Do not place patients with suspected or confirmed HCID in carpeted rooms. Remove all upholstered furniture and decorative curtains from patient rooms before use.
g) Routine cleaning of the PPE doffing area should be performed at least once per day and after the doffing of grossly contaminated PPE. Cleaning should be performed by a healthcare worker (HCW) wearing clean PPE. An EPA-registered hospital disinfectant should be used for disinfection. When cleaning and disinfection are complete, the HCW should carefully doff PPE and perform proper hand hygiene.
h) To reduce exposure among staff to potentially contaminated textiles (cloth products) while laundering, discard all linens, non-fluid-impermeable pillows or mattresses, and textile privacy curtains into the waste stream and disposed of appropriately.

VII. Waste Management

a) Category A infectious substances are regulated by the U.S. Department of Transportation's (DOT) Hazardous Materials Regulations (HMR, 49 C.F.R., Parts 171- 180). Any item transported offsite for disposal that is contaminated or suspected of being contaminated with a Category A infectious substance must be packaged and transported in accordance with the regulation. This includes

medical equipment, sharps, linens, used healthcare products such as soiled absorbent pads or dressings, kidney-shaped emesis
pans, portable toilets; and used PPE (gowns, masks, gloves, goggles, face shields, respirators, booties, etc.) or byproducts of cleaning contaminated or suspected of being contaminated with a Category A infectious substance.

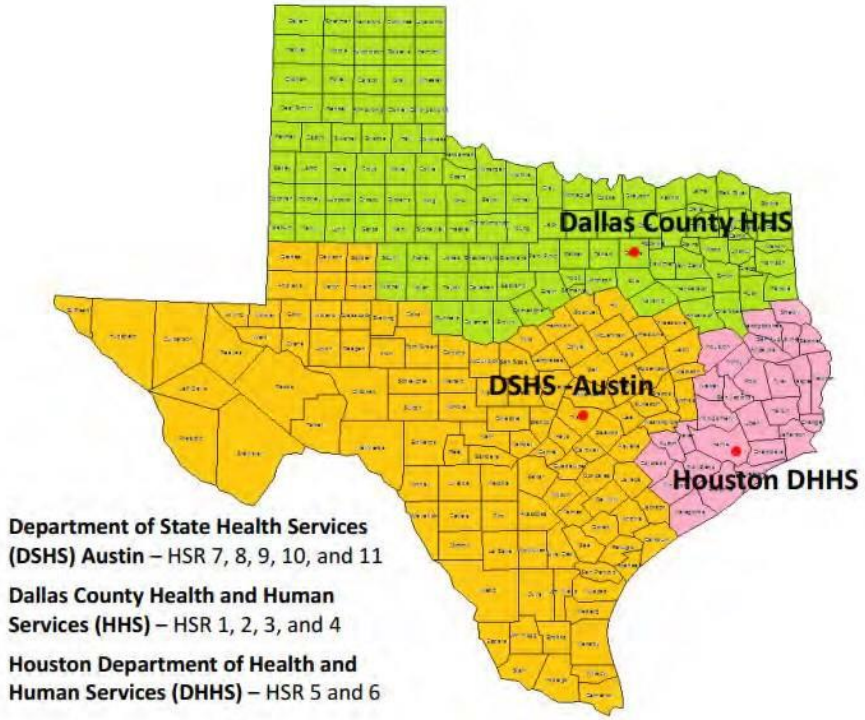
b) HCID waste can only be transported for disposal or incineration if prepared according to federal and state guidelines.
c) Layered waste packaging process:
    - Bag waste in a bag such as red biohazard bags and properly labeled.
    - Prior to closure, treat potentially contaminated waste with a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant with a label claim for a nonenveloped virus (e.g., norovirus, rotavirus, adenovirus, poliovirus).
    - Wrap objects with sharp edge to prevent tearing or puncture of the plastic bag.
    - Seal the first filled plastic film bags, with the sealed closure facing upwards, within a second container, consisting of a second approved plastic film bag. Sealing consists
      of tying the bag with a knot, heat sealing, tape, adhesive, or another method which ensures contents will not leak, but does not tear or puncture the bags.
    - Disinfect exterior of second container with an EPA-registered hospital disinfectant with a label claim for a non-enveloped virus (e.g., norovirus, rotavirus, adenovirus, poliovirus).
    - Place two-layer waste package into a properly labeled, rigid, Category A Infectious Waste container. Outer package must be either a rigid UN Standard or Department of Transportation approved non-bulk packaging, such as a polyethylene over pack drum or a minimum triple wall fiberboard containing a 6ml plastic wall liner.
    - Place absorbent material sufficient to absorb all free liquid (if any) in the bottom of the rigid outer package.
    - Seal and disinfect the exterior surface of the outer package. Before loading for transport ensure the package is not leaking and is closed and sealed as recommended.
    - Category A infectious substance must be accompanied by a shipping paper which includes all the following:
        i. UN number and proper shipping name for the applicable Category A infectious substance
        ii. The shipping name is “UN 2814, Infectious Substances, affecting humans.”
        iii. Hazard class: Division 6.2 (infectious)
        iv. Packing group: N/A
        v. Type and quantity of packaging
        vi. Emergency response information (e.g., telephone number)
    - Employees who prepare hazardous materials for transportation are hazardous materials employees and must be trained as such. The training must include all the following:
        i. General awareness

ii. Function-specific training
iii. Safety
iv. Security awareness training
v. Modal-specific training, such as driver training

VIII. Follow-Up and Reporting After Caring for Suspected or Confirmed High Consequence Infectious Disease (HCID) Patient

a) Personnel with exposure to blood, bodily fluids, secretions, or excretions from a patient with suspected or a confirmed HCID shall immediately:
- Stop working and wash the affected area with a large amount of water, eyewash solution or other appropriate solution.
- Contact the Supervisor for assessment and access to post-exposure management services; and/or follow agency specific standard operating procedures/guidelines for post-exposure management.
- Receive medical evaluation and follow-up care, including appropriate monitoring for specific HCID after the last known exposure. The member may continue to work based upon recommendations from local, state, and federal public health authorities or CDC.

b) Personnel who develop sudden onset of fever, intense weakness, or muscle pains, vomiting, diarrhea, signs of hemorrhage, or any other signs and symptoms of the suspected HCID of concern after an unprotected exposure (i.e., not wearing recommended PPE at the time of patient contact or through direct contact to blood or body fluids) to a patient with suspected or confirmed HCID should:
- Not report to work or immediately stop working and isolate themselves;
- Notify their supervisor, who should notify local and state health departments;
- Contact Employee Health for assessment and access to post-exposure management services; and
- Comply with work exclusions until they are deemed no longer infectious to others.



Regional Infectious Transportation Ambulance (RITA) Plan

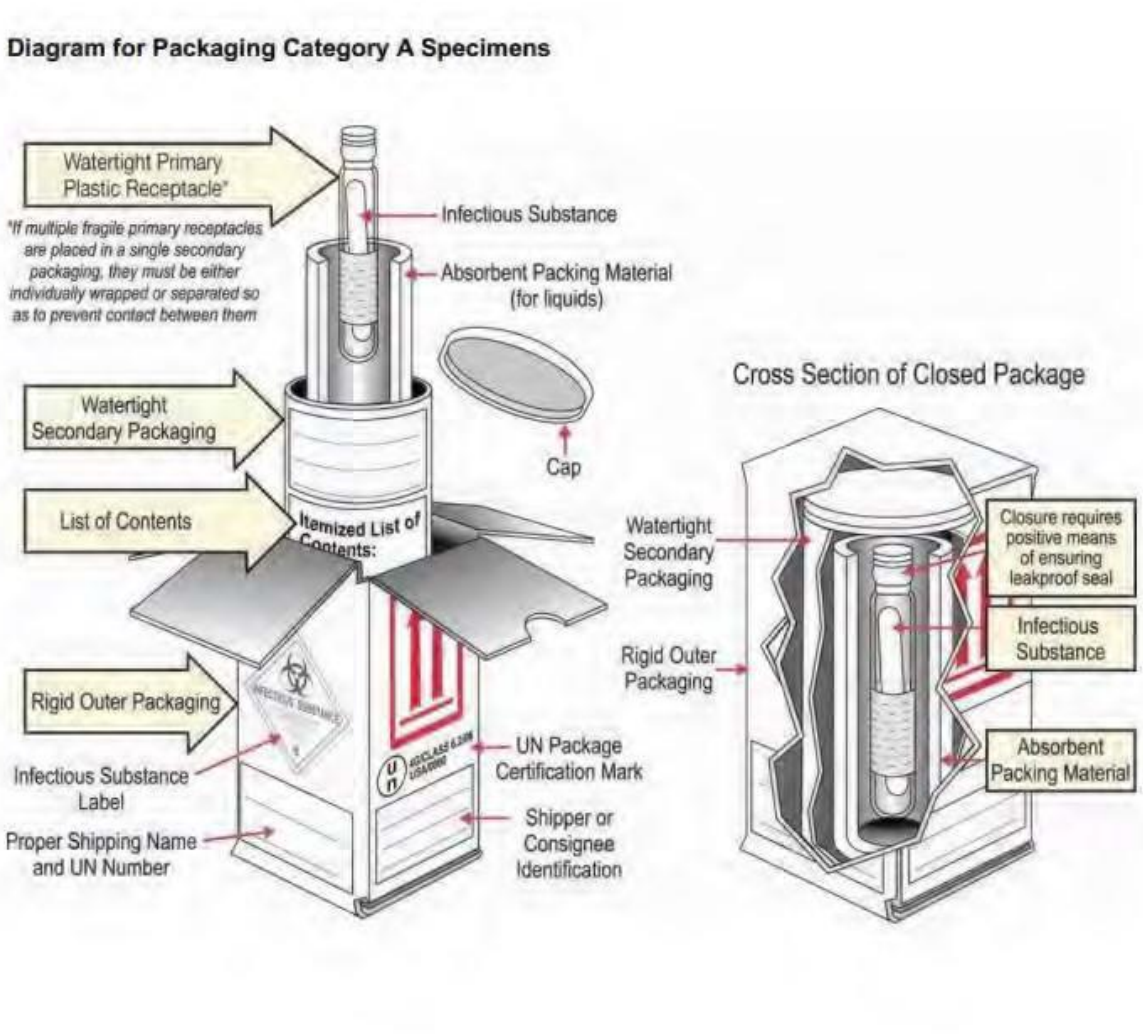


Figure 5: Category A Laboratory Specimen Packaging

Appendix G: Medical Waste Active Incinerators

Texas Authorized Medical Waste Treatment Facilities
With Active Incinerators

(Note: Only 2 of the active facilities have indicated they would accept Ebola contaminated waste. The 2 facilities that indicated that they would accept Ebola contaminated waste are highlighted below.)

1. MSW No. 1741A, (Incinerator) (1)
Sharps Environmental Service Solid Waste Incineration Facility
1544 NE Loop, Carthage, TX 75633
Panola County – Region 5
CN603013210/RN101849362

2. MSW No. 2232A, UTMB Galveston (Incinerator plus Autoclave)
301 University Blvd, Galveston, TX 77555-1108
(409) 772-6359
Galveston County – Region 12
(CN601246887)/(RN101921138)

3. MSW No. 2239A,
Waste Management Resource Recovery & Recycling Center Inc. (Incinerator)
7505 US Highway 65, Anahuac, TX 77514
Chambers County – Region 12
CN603402470/RN100922392

4. IHW No. 50212, Veolia ES Technical Solutions (Incinerator)
7665 HWY 73 Port Arthur, TX, 77640-2563
Jefferson County- Region 10
CN603069626/ RN102599719

5. IHW No., 50089, Clean Harbors Deer Park, (Incinerator)
2027 Independence Pkwy. S. La Porte, TX, 77571-9808
Harris County – Region 12
CN600322796/ RN102184173

Notes: ***(1)*** *Not able to confirm acceptance of seized drugs*

Document Updated 10/16/2014 (Chance Goodin) - DRAFT

Appendix H: References

http://www.cdc.gov/vhf/ebola/hcp/ed-management-patients-possible-ebola.html

http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html

http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html

http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-emergency-medical-services-systems-911public-safety-answering-points-management-patients-known-suspected- united-states.html

https://emergency.cdc.gov/agent/agentlist-category.asp

Appendix I: Acronyms

CDC	Centers for Disease Control and Prevention
CMOC	Catastrophic Medical Operations Center
DC	District Center
DPS	Department of Public Safety
DSHS 4/5N	Department of State Health Services Region 4 and 5 North
DSHS 6/5S	Department of State Health Services Region 6 and 5 South
EMS	Emergency Medical Services
ESF-8	Emergency Support Function 8
EOC	Emergency Operations Center
FOUO	For Official Use Only
HCID	High Consequence Infectious Disease
HICS	Hospital Incident Command System
IAP	Incident Action Planning
IC	Incident Command
JIC	Incident Command System
ICS	Joint Information Center
LRN	Joint Information System
JIS	Laboratory Response Network
MACC	Multi-Agency Coordination Center
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
PCR	Polymerase Chain Reaction
RITA	Regional Ebola Transport Ambulance
SETRAC	Regional Healthcare Preparedness Coalition
SMOC	Southeast Texas Regional Advisory Council
RHPC	State Medical Operation Center
SOC	State Operation Center
THSR	Texas Health Service Region
TSA-H	Trauma Service Area-H
TSA-Q	Trauma Service Area-Q
TSA-R	Trauma Service Area-R
WHO	World Health Organization

Attachment 8: Regional Pediatric Evacuation and Mass Surge

Attachment 8:
Regional Pediatric Evacuation and Mass Surge (PEMS) Plan

This document is Attachment 8 of the Catastrophic Medical Operation Center (CMOC) Plan.

FOR OFFICIAL USE ONLY

Foreword

WARNING: This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with U.S. Department of Homeland Security policy relating to FOUO information and is not to be released to the public or other personnel who do not have a valid "need-to-know" without prior approval of an authorized official.

The Regional Pediatric Evacuation and Mass Surge Plan focuses on regional support and coordination for the safe and effective evacuation of pediatric and neonatal inpatients in the regional hospitals associated within the boundaries of the Regional Healthcare Preparedness Coalition (RHPC) geographically defined areas of TSA Q, R and H, as well as support and coordination of a mass surge incident involving this population and affecting our healthcare and emergency services infrastructure. The opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the U.S. Department of Homeland Security (DHS), the Texas Division of Emergency Management (TDEM), or any individual jurisdiction within the 25-county Southeast Texas Regional Advisory Council (SETRAC) region.

Implementation and maintenance of this Regional Pediatric Evacuation and Mass Surge Plan is coordinated by SETRAC or the Regional Healthcare Preparedness Coalition (RHPC), a SETRAC committee. For more information, call 281-822-4444. The RHPC and/or SETRAC will review and update this ConOps every five years, or when:

- Ongoing regional planning efforts affect or change this document;
- There are lessons learned or best practices from exercises and real-world incidents that should be incorporated; or
- There are changes in regional structures or processes that render parts of the document inaccurate.

Table of Contents

Record of Changes

Change #	Change Description	Change Made By	Date
1	Original document creation during workgroup meetings via researched article reviews and expert participation from Feb2019-Jan2020 for final draft.	Tina Rose on behalf of RHPC & the Clinical Advisory Committee	January 2, 2020
2	Updates made throughout document based on expert advice from participation in the February 6, 2020 Tabletop Exercise for PEMS Plan version 1.0	Tina Rose on behalf of RHPC & the Clinical Advisory Committee	March 2020

Executive Summary

It is essential that the unique needs of children be included in planning emergency responses. Currently, 26% of the U.S. population is children with more than 20 million of those under the age of 6. Prior emergency preparedness methods mirrored military responses and, unfortunately, most of these plans were focused on adults and did not deal with children as possible victims. A relatively large proportion of the adult population uses hospital facilities compared with the relatively small percentage of the total pediatric population (<5%) that uses inpatient care. As a result, pediatric inpatient capacity and resources are more limited relative to the baseline population of children.

A report by the National Advisory Committee on Children and Terrorism revealed that only about 20% of hospitals have access to pediatric emergency physicians and most emergency practitioners have little pediatric experience or training.

Unfortunately, most disaster plans do not consider the needs of the pediatric patient, nor do they address the unique needs of the family with a technology dependent child. Additionally, there is not enough surge capacity within existing pediatric hospitals to accommodate the number of children potentially needing hospital care during a disaster.

The healthcare community in our region has recognized the need for all hospitals regardless of pediatric capability, to be prepared for the possibility of receiving an influx of injured pediatric patients and to be prepared for their unique care needs. Recent incidents across the country, including school shootings, have increased the vitality of regional pediatric mass patient surge planning and preparedness. The physiology and physical make-up of infants and children greatly differ from adults, presenting unique challenges to caring for these patients during evacuations or mass casualty incidents.

Proper pediatric emergency planning should include:

- Preparedness plans should have assessment and planning for a surge in the pediatric population following an incident.
- Appropriately sized pediatric equipment and supplies
- Trained personnel
- Weight based antibiotics and antidotes.
- Transportation considerations
- Plans to provide care for and maintain the family unit.
- Patient tracking and family reunification.
- Psychological and mental health assistance

Introduction

The Regional Pediatric Evacuation and Mass Surge Plan focuses on regional support and coordination for the safe and effective evacuation of pediatric and neonatal inpatients in the regional hospitals associated within the boundaries of the Regional Healthcare Preparedness Coalition (RHPC) geographically defined areas of TSA Q, R and H, as well as support and coordination of a mass surge incident involving this population and affecting our healthcare and emergency services.

The intended audience includes EMS providers, healthcare facilities, free standing emergency rooms, as well as local, regional, state, and federal governmental, non-governmental, private sector, and public health representatives from jurisdictions in the 25-county CMOC region.

Regional Pediatric objectives may include:

- Identification of alternate care sites specifically for pediatrics and neonates.
- Develop pediatric and neonatal training guidelines for all hospitals and non-healthcare settings.
- Identification of supply chain options to support non-pediatric care sites.
- Identify viable forms of transportation to include alternate methods and standards of care, for pediatric and neonatal patients.
- Identify and prioritize the needs of the at-risk pediatric/neonatal population, specifically in non-healthcare facility setting.
- Identify and develop recovery needs, including repopulation and reunification, for pediatric and neonatal population.

Purpose

The purpose of this Regional Pediatric Evacuation and Mass Surge (PEMS) Plan is to provide a coordination framework of emergency medical response and recovery resources specifically for pediatrics, neonates, and related maternal care during large-scale, catastrophic incidents that result in the need for evacuation and/or mass surge due to mass casualty incidents or a significant disease outbreak.

This plan provides best practices and recommendations in the context of an emergency medical response to an incident or natural disaster within the CMOC region. This document is an attachment to the Catastrophic Medical Operations Center (CMOC) Plan.

Scope

This is a regional plan that includes:

- Pediatrics
- Neonates & related maternal services
- Evacuation for pre-identified natural disasters & no-notice incidents
- Mass Surge due to mass casualty incidents or significant disease outbreaks

The plan focuses on regional support and resource coordination specifically for the needs of pediatrics, including neonates and related maternal services. It includes the activation, notification, identification, and integration of medical resources into the incident as well as the

evacuation or transfer of patients in preparation for impending natural disasters or from incident site(s) that affects one or more jurisdictions. This plan excludes Mass Fatality Management procedures & Internal Facility Plans.

Critical Assumptions

The Clinical Advisory Committee assumed the following while developing this plan:

- Activation of this plan will trigger the overall activation of the CMOC plan.
- The State of Texas has limited pediatric and neonatal surge capacity.
- Healthcare facilities have their own internal facility plans.
- Throughout the United States, including the Houston Metropolitan area, there is a limited number of pediatric hospitals/beds (e.g., Pedi ICU, Neonatal Beds, Pediatric Burn Beds) during daily operations.
- During a mass surge incident, pediatric bed availability at hospitals with pediatric programs will be overwhelmed.
- Pediatric Hospitals should plan for rapid decompression/discharge operations to open additional beds.
- Most general hospitals in the region do not have pediatric Emergency Medicine Specialists on staff.
- Pediatric patients from a Mass Casualty Incident (MCI) or suffering from a significant disease outbreak, may be transported to any operational hospital by any means available, likely without pre-hospital triage or care.
- MCI during large social gatherings may overwhelm hospital staffing and require emergency notification to call in additional personnel according to the facility's internal disaster plan.
- All hospitals may not have specific equipment to treat pediatrics, neonates, and maternal needs.

Catastrophic Medical Operation Center

The Catastrophic Medical Operation Center (CMOC) recognizes its unique role and responsibilities to the medical community and may respond to local, regional, state, and national medical emergencies by providing the coordination of medical regional assets, including, but not limited to transportation, surge capacity, patient tracking, and facility requests for resources. This is Attachment 8 of the CMOC Plan.

Notifications

The CMOC will notify health care facilities throughout the region that the CMOC is beginning operations. Health care providers may coordinate with the CMOC for patient transfer from the on-scene treatment area to an appropriate health care facility based on its capacity and specialized capabilities. The CMOC anticipates unmet needs of personnel, bed space, pharmaceuticals, and supplies in health care facilities. If the scope of the emergency expands to the point that facilities within the region have exhausted or are depleting internal response assets, the CMOC will assist with the coordination of requests with the following agencies: local fire, police, EMS, city and/or county emergency management office, Texas Department of State Health Services (DSHS), Texas Department of Public Safety (DPS), Texas Disaster District Committee (DDC), and/or Federal Emergency Management Agency (FEMA), and any other applicable agency.

EMResource

EMResource is a web-based communications and resource management system that was designed to address resource management needs across our healthcare consortium. EMResource brings situational awareness thus allowing administrators to collect information from health care resources that can be as general or specific as needed to support situational awareness, planning and response activities. EMResource supports exercise and live incident management by allowing users to create events, notify involved individuals and collect critical information necessary to effectively respond to an emergency. EMResource is utilized daily to update information in mass casualty and other urgent health care situations.

EMTrack

EMTrack supports tracking of evacuees, patients, pets, and associated property and equipment using triage tags or disposable bar-coded wristbands. The intuitive and secure design supports a common operating picture to facilitate interoperable communications among different agencies and organizations. Response and support teams can effectively track, coordinate, and manage patient movements throughout the continuum of care including at the scene, during transport, at the destination, at discharge, and during promotion of the family reunification process.

Healthcare Facility Operations

Healthcare facilities involved in the response are expected to activate their emergency operations plan and incident command structures based on the type of incident and/or proximity of an impending disaster. They should plan to communicate facility status, patient

tracking and plan for additional surge, resources, personnel, equipment and/or supply needs. Primary means of notification and bed availability reporting will be through EMResource. Patient tracking will be reported through EMTrack. Resource requests and situational awareness is shared with CMOC through WebEOC.

EMS Agency Operations

The primary EMS agency and/or medical command should utilize EMResource for emergency room and hospital capacities and should notify receiving hospitals of incoming patients. In a pre-planned event or facility evacuations, the CMOC may coordinate and notify receiving facilities of in-coming patients (see the CMOC plan). EMS maintains patient accountability in the form of documenting where patients were transported from (the various scene locations) and which facility they were transported to via their agency patient tracking method (e.g. manual forms, electronic patient tracking). Receiving hospital facilities will enter patient information into EMTrack upon arrival to their facility. Activation and notification of additional EMS resources will follow the Regional EMTF 6 Standard Operating Guide.

Pediatric and Neonatal Overview

The RHPC region encompasses the 25 counties associated with the geographical boundaries of Trauma Service Areas Q, R, and H as designated by the Texas Department of State Health Services. These counties represent urban, rural, frontier and tribal nations. The total population of the combined counties exceeds 7 million people. The largest, Harris County, has a population of nearly 4.7 million people, while one of the smallest counties has a population of only 10,000. The pediatric breakdown according to the July 2018 US Census report ranges from 4.9% under the age of 5 in Sabine County; to 7.6% in Harris County. The same disparity exists when comparing all children under the age of 18. Sabine County has an 18.7% pediatric population, while Harris County has a 26.6% population. In Harris County alone, this equates to over 1.2 million children under the age of 18, or around 357,000 under the age of five.

Levels of Care

The following levels of care are summarized from the State of Texas Administrative code Title 25, Part 1, Chapter 133, Subchapter J: Hospital Level of Care Designations for Neonatal and Maternal Care(https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=5&ti=25&pt=1&ch=133&sch=J&rl=Y).

Level I:	§133.186 Care to resuscitate and stabilize is emphasized (such as maintaining an airway. According to the Texas Administrative Code the level I is a Well Nursery.
Level II:	§133.187 Neonatal Designation includes resuscitation and additional emergency measures as needed. According to the Texas Administrative Code the level II is a Special Care Nursery.file:///C:/Users/e157550/Downloads/TAC-Neonatal-MaternalCareDesignations-Ch133-187.pdf

Level III	§133.188 Care is provided by a medical facility staffed and equipped to provide care for all categories of patients. According to the Texas Administrative Code the level III is a Neonatal Intensive Care Unit. Supportive and emergency care shall be delivered by appropriately trained personnel.
Level IV:	§133.189 Care is provided by hospitals that are staffed and equipped for general and specialized medical and surgical care of the infant. According to the Texas Administrative Code the level IV is an Advanced Neonatal Intensive Care Unit. Supportive and emergency care shall be delivered by appropriately trained personnel

Regional Bed Availability

For the SETRAC/RHPC 25-county region, the total number of licensed pediatric/neonatal beds reported for the year ending December 2019:

2019 Total Licensed Beds	21,377
Total Pedi Beds	2,048
Total NICU Beds	1,213
Total Nursery Beds	651
Total Pedi ICU Beds	451

Surge Capability

The most recent bed availability demonstrates the overall lack of pediatric and neonatal surge capacity in the 25-county region. After querying over 180 hospitals, knowing that bed counts fluctuate daily, on October 24, 2019, the total number of available pediatric and neonatal beds available broke down in the following table:

Surge Capacity 10/24/2019	
Pediatric med/surg	60 beds
Pediatric ICU	25 beds
NICU Level 1	94 beds
NICU Level 2	83 beds
NICU Level 3 & 4	45 beds

Additionally, for maternal services within the 25 counties, only 171 beds are available for Labor and Delivery and 134 are available for Recovery/Post-Partum.

Pediatric and Neonatal Evacuations

The goal of this plan is to aid in the orderly, safe and efficient means of evacuating clinical care areas before, during, or after an internal or external disaster when the facility infrastructure is lost or the risk of staying outweighs the risk of leaving the facility. This includes the following:

- Pre-identified potential or impending natural disaster (e.g. hurricanes, tornados, flooding).
- No-notice evacuations (e.g. infrastructure damage, utilities malfunction, flash flooding)
- A nearby hazard (e.g. chemical plant explosion, air plumes, building collapse)

Evacuation Types

Evacuation should not be a spontaneous decision unless there is a life safety situation present. For planned evacuations, the decision to evacuate should be made by the facility Incident Commander following a detailed assessment of the situation and conditions both internal and external to the facility. It is well documented in the medical literature that morbidity and mortality in the neonatal population is greatly increased with post-natal transportation.

Evacuation Types	In Place	In Facility	Out of Facility	Out of Region
UNPLANNED (e.g.: facility damage, fire, sudden severe weather, etc.)	Vertical/ Horizontal	Alternate Unit/ Location in facility	Transfer to like facility in region	Transfer to like facility in other parts of the state/nation
PLANNED (e.g.: construction, upcoming severe weather, etc.)	Vertical/ Horizontal	Alternate Unit/ Location in facility	Transfer to like facility in region	Transfer to like facility in other parts of the state/nation

If it is necessary to evacuate, the facility will immediately notify the SETRAC Duty Officer and change their status via EMResource. SETRAC Duty Officer will immediately contact the evacuating facility to ascertain the circumstances that forced the need to evacuate, location evacuating to, and any assistance needed from the local/regional perspective.

Weather Evacuations

Although many facilities plan based on the Emergency Management Coordinator (EMC) hurricane timeline listed below during preparedness, for impending hurricanes the tropical rains, flooding, tornadoes, and wind speed will lead to potential changes in medical evacuation operation decisions. Medical evacuation operations are anticipated to occur at 72 to 36 hours before tropical storm force winds make landfall (H-72 to H-36); however, if wind speed is above 55 MPH, then responder movement may stop in those areas.

EMC Hurricane Timeline	Planning considerations
H-120 to H-97	CMOC is standing up and sending out information
H-96 to H-73	CMOC is asking about your resources & evacuation plan
H-72 to H-49	CMOC Medical evacuation operations occur H-72 to H-36
H-48 to H-25	Contraflow may be instituted. Winds over 55 MPH will stop air & ground responder assistance
H-24 to Hurricane Landfall	Shelter in Place

Contraflow

Contraflow is managed by TXDOT for when all major highway lanes will be reversed so that all traffic will exit the area(s) in an outbound direction only. Institution of contraflow will hinder medical ground evacuations since ambulances cannot return to the area. For more information, refer to TXDOT website brochures at the following links:
https://www.txdot.gov/inside-txdot/division/traffic/safety/weather/hurricane-contraflow.html
https://www.txdot.gov/inside-txdot/division/traffic/safety/weather/hurricane-contraflow-vids.html

Evacuation Routes

Emergency Management Coordinators (EMCs) and the Texas Department of Transportation (TxDOT) have developed an evacuation plans for Southeast Texas. These routes are based on several factors and designed to get residents out of harm's way quickly. Although an evacuation is most likely to occur in this region prior to a hurricane making landfall, there are a variety of situations that may trigger local, multi-county, or regional evacuations. Healthcare facilities should have plans in place that address healthcare workers that reside in mandatory evacuation areas.

Mandatory Evacuation

Mandatory evacuation is a proactive approach to mitigating the effects of natural disasters and may be activated for a variety of incidents (e.g. flooding, factory explosion, chemical release). Hurricane evacuations are based on the damage expected from the wind or storm surge rating and may be local or regional. The Texas Gulf Coast has designated hurricane evacuation ZIP zones. Even when only one area is evacuating, there still needs to be coordination across multiple counties to assist those evacuees. Links to the map can be found on local emergency management websites and the H-GAC website (http://www.h-gac.com/hurricane-evacuation-planning/default.aspx).

Facilities facing a planned evacuation should first attempt to decompress their inpatient census through early discharge home, if feasible. They should also institute their facility plans and agreements for patient placement/transportation. When contracted services or resources cannot meet the need of the facility, or the facility plan is unable to be completed, then facilities should reach out to the CMOC for further assistance. Facilities facing mandatory evacuations should consider the following:

- Case management involvement for patient discharge and transportation.
- Discharge to safe, non-evacuation/affected zone area(s)
- Prepare facility personnel and their families
- Establish internal guidelines for when ethical dilemmas arise.

Regional Coordination and Assistance

When assistance is requested by a healthcare facility or Jurisdictional Health Authority (JHA) for evacuation of a hospital, nursing home, assisted living center, or other bedded healthcare facility, the CMOC contacts the evacuating facility's point of contact to request the following information:

1. Number of patients to be evacuated/relocated;
2. Name of facility accepting evacuated/relocated patients (if known or obtained); and
3. Environmental or other hazards associated with the need for evacuation.

The CMOC will assign the evacuating facility to one of the Corridor Coordinators as primary lead for the evacuation. The Coordinator will request a patient manifest from the evacuating facility. At a minimum, the manifest should include the patients':

1. First and last name(s);
2. Age and/or Date of Birth;
3. Chief complaint/diagnosis;
4. Supportive medical equipment/personnel to accompany the patient;
5. Other medical or physical considerations (e.g. infectious disease, immobility, orthopedic traction, IV medications for hemodynamic stability, O2, bariatric, etc.).

The Corridor Coordinators will take the additional steps outlined below, depending on if the evacuating facility has already designated a receiving facility to accept their patients or if the evacuating facility needs assistance identifying a designated receiving facility.

A. If the evacuating facility <u>does not have a receiving facility accepting their patients</u>, then the Corridor Coordinator will:

1. Review the patient manifest and identify receiving facilities based on bed availability, capability and capacity for the patient's needs.
2. Make telephone contact with the receiving hospital for patient manifest acceptance.
3. Obtain a point of contact from the receiving hospital and provide it to the evacuating hospital to call for formal transfer approval and the patient care report.
4. Once the receiving facility is confirmed for accepting the evacuating facility patients, then all steps below can be followed by the Corridor Coordinator.

B. If the evacuating facility <u>has a receiving facility already accepting their patients</u>, then the Corridor Coordinator will:

1. Review the patient manifest for
   a. transportation needs (e.g. paratransit vehicle, helicopter, Ambulance Bus (AmBus) ALS/BLS ambulance, neonatal transport teams), and
   b. number of each asset needed to safely transport the patient(s).
   Note: For evacuations, patients may be "double loaded" in ambulances if safety and infectious disease considerations are ruled out.
2. Complete a <u>CMOC 213 General Message</u> form (see example 213s in Appendix C) then
   a. attach the form to the top of the patient manifest, and

b. submit the evacuation packet to the Clinical Director for approval/review.

3. Upon approval, the Clinical Director will
   a. Input the evacuation mission into the CMOC Mission Task Board in WEBEOC and
   b. Route the request to the Transportation Sector of CMOC.
4. The Transportation Sector will
   a. determine the appropriate staging area and assets for the mission and
   b. assign the mission to the Staging Manager who will then assign the individual asset and update the Mission Task as “in-progress.”
5. Upon successful transportation and care of the evacuated patient has been turned over to the receiving hospital, the transporting unit will notify the ambulance staging manager who will mark the Mission as “Complete.”

Pediatric and Neonatal Mass Surge

Recent incidents across the country (e.g. disease outbreaks, shootings at family events, stores, and schools), have increased regional pediatric mass patient surge preparedness. The physiology and physical make-up of infants and children greatly differ from adults, presenting unique challenges to caring for these patients during a mass casualty incident. The healthcare community in our region has recognized the need for all hospitals, regardless of pediatric capability, to prepare for the possibility of receiving an influx of injured pediatric patients and preparing for their unique care needs. For more information, please see the SETRAC Regional Trauma Plan: https://www.setrac.org/wp-content/uploads/2017/09/Trauma-Plan-2018-revisions.pdf

Healthcare Facility Considerations

During an MCI or significant disease outbreak, local hospitals should be prepared for a surge of patients, ranging from infants to the elderly. Preparedness planning with knowledge of the facilities surge capability and capacity is key to patient care. All healthcare facilities should consider their capabilities and plan for a surge of pediatric patients. While reviewing a facilities disaster plan, it is important to evaluate the following questions and identify solutions if the answer is no:

1. Can your facility care for pediatric and/or neonatal patients?
2. What is the pediatric bed surge capacity of your hospital?
3. What percentage of adult beds can your facility adapt for pediatrics and/or neonates?
4. Which personnel have experience/training in pediatrics?
5. Can you mobilize additional pediatric trained personnel?
6. Is there a pediatric transfer process in place?
7. Is a pediatric transport team available?
8. Do you have telemedicine capabilities for neonatal or pediatric consult?
9. Is equipment, personnel, and/or supplies in place to facilitate a safe transport/transfer?

Triage Considerations

There are several nationally recognized mass casualty triage systems in the region. While this plan does not designate one over the other, only one addresses the unique physiology of the pediatric population. JumpSTART is the only triage tool being used in large-scale incidents for the pediatric population. Although JumpSTART may not be a component of your hospital's MCI plan, it is important to develop a systematic approach to the triage of pediatric patients.

Pre-Hospital Triage

EMS may deliver pediatric or neonatal patients to any local facility, regardless of pediatric care capabilities. Alternatively, patients may be self-transported by other means (e.g. ambulating, private vehicle, taxi, ride-sharing service). Recent incidents demonstrate that first patients arrive at hospital emergency departments within 10 minutes of the incident occurring, often before any notification of the incident has taken place. Triage/decontamination may not have been

performed by first responders or EMS, so it is imperative to maintain a high degree of suspicion of contamination until ruled out and protect the integrity of the facility to continue to accept patients.

Note: Patient status may change during transport and re-assessing/triaging may be necessary.

Personnel Considerations

A pre-selected team with skills or training in treating children should ideally be the primary caregivers to children during and after a disaster. It is important to pre-identify/train personnel with airway management, resuscitation, and pediatric critical care skills. Identifying and training pediatric care providers is more important at hospitals with few, to no, pediatric services. Additional personnel may be needed to respond to children's non-clinical needs. Children's safety in a disaster and their individual recovery is dependent on preparedness, response and recovery capabilities and resources.

Identify key pediatric disaster team members early in the planning process and include them in protocol development and all exercises. A hospital's pediatric disaster team should be as broad as possible, accounting for various staffing levels needed to care for children during a disaster. The team should include clinical staff as well as ancillary ED and inpatient personnel who will unite to provide emergency care for children.

Reunification

This section will focus on returning pediatric/neonatal patients to their home facility or close to it if their home facility was destroyed by the hazard. It will include reunification after a MCI and/or an evacuation. The CMOC region utilizes EMTrack as the primary regional patient tracking system. This system allows for the input of demographic information (e.g. name, date of birth) as well as distinguishing features and photo identification (e.g. injury severity, unable to verbalize). Every data point collected in the regional tracking system is secured in a HIPAA compliant system and brings family re-unification closer.

Children are often separated from their caregivers during the chaos of a mass casualty incident. Healthcare facilities should prepare to receive unaccompanied minors, or minors in the care of a patient who do not need care themselves. When a child is separated from their caregiver special consideration should be given to reunify the child with a caregiver from the scene or another caregiver in their life. Social Services in the hospital should assist and escalate the reunification process. The process may be completed through the Family Reception Center at the hospital or in coordination with the Family Assistance Center at the city/county level.

Pediatric Safe Area

Safety and security of pediatric patients without a present guardian is a high priority for hospitals. Children who are uninjured, displaced, or released from care and awaiting adult caregivers may be placed in the Pediatric Safe Area as designated by the healthcare facility. This is a safe area for children to await reunification with their care givers.

- The pediatric safe area should be a secured area where access in and out can be monitored
- Children should be signed-in and provided identification (e.g., badge, wrist band) upon entering the area
- Record identifying information about the children that may aid in reunification. Children and caregivers can be photographed to aid in identification
- Toys and food (if applicable) should be age appropriate, if possible have designated areas for different age levels

Conclusion

It is recognized across the 25-county RHPC/SETRAC region that there is limited PICU/NICU bed capacity, within the region and across the state. This plan provides considerations and recommendations for facility personnel to address pediatric, neonatal, and maternal services for pre-notice evacuations (e.g. anticipated severe weather) and no-notice incidents (e.g. MCI, facility infrastructure damage, infectious disease outbreaks, electrical outages, etc.).

This new regional plan provides a framework specifically relative to the coordination of care for neonates, pediatrics, and related maternal services. The appendices in this document include considerations for facility pediatric, neonatal, and maternal mass surge bed capacity management, as well as, recommendations for equipment, transportation modalities, and personnel training. This plan does not replace facility specific plans, but rather provides a guidance to facilitate a safe and efficient response to an evacuation or mass surge incident.

Future steps identified across the region include the following:

- Recommending triage training for pediatrics and neonates in adult healthcare facilities.
- Evaluation of the development of Pediatric and neonatal strike teams; which may include physicians, pediatric/neonatal trained nurses, respiratory therapist

Appendix 8-A: Mass Surge Recommendations

Upon notification of any incident resulting in mass surge (e.g. mass casualty incident (MCI), strategies may include:

Designating treatment areas according to severity of illness

- Determine areas within the Emergency Department (ED)
- Consider overflow areas (inpatient floors, PICU, ambulatory care spaces, PACU, waiting rooms, cafeteria, etc.)
- Identify staffing for each area
- Identify chain-of-command for designated areas

Determining available medical specialties within your institution

- Emergency medicine
- Pediatric emergency medicine
- Trauma surgery
- Pediatric surgery
- Pediatric critical care
- Pediatric anesthesia
- General pediatrics
- Sub-specialty pediatrics (e.g. neurology, hematology/oncology)
- Neonatologists
- Nursing and clinical staff with specific experience/training in pediatrics or neonates
- Child life/Social work

Self-Presenting Patients

Consider life-saving measures (e.g. stop-the-bleed).

Patients self-presenting without pre-hospital care	• Patients may arrive by private vehicle or ride-share (Uber, Lyft) • Anticipate pre-treatment by civilians (e.g. self-made tourniquets, pressure dressing) • Patient may not have any form of identification upon arrival
EMS Triage outside of the hospital	• EMS may use different triage and injury identification methods • EMS may transfer to a specific institution regardless of severity of injury

Facility EC, ICU, & OR Mass Surge Recommendations	
Emergency Care (EC)	• Designation of triage team (e.g. RN, medical technician, registration clerk) • Designation of pre-defined treatment areas for triaged patients (e.g. green tag zone, yellow tag zone, red tag zone). • Pre-defined documentation (e.e downtime forms, electronic medical records with pre-populated MCI documents) • Rapid discharge of current EC patients • Rapid admission and transport of current EC patients • Determine need for rapid registration/tracking of unidentified patients (e.g. use of alias, photos, tattoos/scars) • Inputting patient information into EMTrack
Intensive Care Unit (ICU)	• Downgrade any current patient in anticipation of multiple ICU admissions from MCI • Designation of overflow patient treatment areas • Need for additional staff, equipment (ventilators, medication pumps, beds), medications • Need for additional respiratory support
Operation Room (OR)	• Cancellation of non-emergent surgical cases • Designation of additional staff for multiple operating rooms (ORs) • Need for additional surgical equipment and surgical supplies • Need for rapid room turnover • Need for additional post-anesthesia care unit (PACU) staff

Appendix 8-B: Acuity Transport Recommendations

Facilities should consider the following NICU/PICU personnel, transport assets, and equipment to safely transport pediatric or neonatal patients. The patient to personnel ratio may be determined based on acuity scale and levels of care with the following recommendations:

	Preterm, term up to 30 days	**Term neonate up to 30 days**	**Term infant >30 days and <1 year**	**Child 1 year – 8 years old**	**Child 8 years or greater**
Transport Asset					
BLS	w/properly secured isolette	w/properly secured isolette	w/properly secured isolette	w/properly secured Pedi-Mate or car seat	w/properly secured stretcher
ALS	w/properly secured isolette	w/properly secured isolette	w/properly secured isolette	w/properly secured Pedi-Mate or car seat	w/properly secured stretcher
Bus: School/charter				w/properly secured car seat	w/properly secured seat belts
Rotor wing	w/properly secured isolette	w/properly secured isolette	w/properly secured isolette	w/properly secured Pedi-Mate or car seat	w/properly secured stretcher
Fix wing	w/properly secured isolette	w/properly secured isolette	w/properly secured isolette	w/properly secured Pedi-Mate or car seat	w/properly secured stretcher
Facility Personnel					
	RN/MLP and RT	RN/MLP and RT	RN*/ RT*	RN*/ RT*	RN*/ RT*
Supplies/Equipment	See Appendix E for suggested supplies & equipment				

*Should be considered if on ventilatory support and/or hemodynamically unstable

This page intentionally left blank.

Appendix 8-C: Transportation Considerations

This appendix outlines Emergency Medical Service (EMS) units, state licensing requirements, and how different types of vehicles may be utilized before, during, or after an incident.

Ambulance Types/Licenses

EMS units are manufactured in 3 different types and it is important to understand these types as there can be variances in the request based on the patient(s) being transported and if there are any specific needs. All these units are required to meet the General Services Administration guidelines, which is updated annually. Along with types, Texas Administrative Code 157.11 and Texas Department of State Health Services outlines the licensing guidelines for BLS, ALS and MICU staffing configurations. It is important that personnel who will be requesting these assets are well versed in which level of staffing is necessary for the medical need of the patient(s).

EMS Units	
Type I	This EMS vehicle is built onto a chassis and routinely separated between the cab and box module with a small opening to allow for communication between the driver/medical attendant. These units routinely provide a wide body mounted modular box with spacious room for patient(s) with individual needs, such as robust medical equipment. Routinely speaking, the cab and modular space operate off 2 separate power sources, therefore if the engine fails, the patient compartment can still function, and the medical needs of the patient are not interrupted.
Type II	This type of EMS vehicle is designed as a van-style vehicle with a walk-though or window space between the cab and patient care modular space. With this set-up, the modular space is limited and in the event the patient(s) require robust medical equipment to be transported with them, space can be limited and can result in only one patient being transported, whereas a Type I is spacious enough for 2 patients and their medical equipment.
Type III	This type of EMS vehicle is designed similar to Type I EMS unit, however the space between the cab and module is designed as “walk-through”. This vehicle has mirroring capabilities as it pertains to modular space and with improvements in EMS designs, the cab and modular space may run off of different power sources.
BLS	Minimum of 2 Emergency Care Attendants (ECAs) capable of providing basic life support to include, basic airway procedures, use of bag-valve mask, oxygen therapy, bleeding control, bandaging, splinting, suctioning, vital sign assessment and use of automated external defibrillator. Depending on the scope of practice authorized by the medical director, some BLS units may have other capabilities, such as pharmaceutical administration and these details should be discussed prior to mission tasking.
ALS	ECA/Intermediate (Advanced airway with ETCO2, pharmaceuticals)
MICU	Minimum of one EMT-Paramedic, one EMT-Basic capable of providing advanced life support, which include BLS capabilities along with advanced airway practices, I.V.

	therapy and monitoring, 4-lead ECG monitoring, 12 lead ECG monitoring, ETCO2 monitoring, medication administration

BLS/ALS

The EMS Provider License is defined by Texas Administrative Code 157.11 outlined below:

Basic Life Support (BLS):	(A) Equipment required to administer the BLS scope of practice and incorporates the knowledge, competencies and basic skills of an EMT/ECA and additional skills as authorized by the EMS provider medical director. All BLS ambulances shall be able to perform treatment and transport patients receiving the following skills: (i) airway/ventilation/oxygenation; (ii) cardiovascular circulation; (iii) immobilization; (iv) medication administration - routes; and (v) single and multi-system trauma patients. (B) oropharyngeal airways; (C) portable and vehicle mounted suction; (D) bag valve mask units, oxygen capable; (E) portable and vehicle mounted oxygen; (F) oxygen delivery devices; (G) dressing and bandaging materials; (H) commercial tourniquet; (I) rigid cervical immobilization devices; (J) spinal immobilization devices; (K) extremity splints; (L) equipment to meet special patient needs; (M) equipment for determining and monitoring patient vital signs, condition or response to treatment; (N) pharmaceuticals, as required by the medical director's protocols; (O) an external cardiac defibrillator appropriate to the staffing level with two sets of adult and two sets of pediatric pads; (P) a patient-transport device capable of being secured to the vehicle, and the patient must be fully restrained per manufacturer recommendations; and (Q) an epinephrine auto injector or similar device capable of treating anaphylaxis.
Advanced Life Support (ALS):	(A) equipment required to administer the ALS scope of practice and incorporates the knowledge, competencies and basic and advanced skills of an AEMT and additional skills as authorized by the EMS provider medical director. All ALS ambulances shall be able to perform treatment and transport patients receiving the following skills, including all required BLS equipment to perform treatment and transport patients receiving the following skills: (i) airway/ventilation/oxygenation; (ii) cardiovascular circulation; (iii) immobilization;

	(iv) medication administration - routes; and (v) intravenous (IV) initiation/maintenance fluids. (B) all required BLS equipment; (C) advanced airway equipment; (D) IV equipment and supplies; (E) pharmaceuticals as required by medical director protocols; and (F) wave form capnography or state approved carbon dioxide detection equipment must be used after January 1, 2018, when performing or monitoring endotracheal intubation.
MICU:	(A) equipment required to administer the knowledge, competencies and advanced skills of a paramedic, and additional skills as authorized by the EMS provider medical director. All MICU ambulances shall be able to perform treatment and transport patients receiving the following skills: (i) airway/ventilation/oxygenation; (ii) cardiovascular circulation; (iii) immobilization; (iv) medication administration - routes; and (v) intravenous (IV) initiation/maintenance fluids. (B) all required BLS and ALS equipment; (C) with transmitting 12-lead capability cardiac monitor/defibrillator by January 1, 2020; and (D) pharmaceuticals as required by medical director protocols.

Multi-Vehicle Types

The information in this section delineates different vehicles and their potential capabilities, which may vary widely depending on a variety of factors.

Bus Types and their Transportation Criteria	
AMBUS 1.0	Capable of accommodating (24) seated patients, (25) stretcher-bound patients, and may accommodate up to (6-8) isolettes – Crew is (6) personnel, minimum of 4 Paramedic care givers for State mission assignments. Staff configuration can be adjusted based on needs of assignment with DSHS approval. Crew compliment can vary by host agency for local and regional responses.
AMBUS 2.0	Capable of accommodating (24) seated patients, (25) stretcher-bound patient, and may accommodate up to (6-8) isolettes – Crew (6) personnel, minimum of 4 Paramedic care givers for State mission assignments. Staff configuration can be adjusted based on needs of assignment with DSHS approval. Crew compliment can vary by host agency for local and regional responses.
School Bus/ Paratransit Bus	This type of bus may or may not include cooling and heating systems, interior water supply, and/or integrated electrical system and safety devices. Patients who do not requiring continuous monitoring through equipment or on-going, invasive treatment during transport could be placed on this type of response asset. Prior to mission tasking, it should be determined if medical staff from the

	sending facility should be required to accompany the evacuating pediatric/neonatal population, as this resource will not come staffed medically.
Event/Tour Bus	This type of bus may or may not include minimal integrated electrical components, interior water supply or plumbing, and/or proper safety devices. Patients that require continuous monitoring through equipment or treatment during transport, could be placed on a tour bus with individual bed section. Prior to mission tasking, it should be determined if medical staff from the sending facility should be required to accompany the evacuating pediatric population, as this resource will not come staffed medically.

Air Operations

Due to the potential need to transport the neonatal/pediatric population outside the region, and possibly outside the State of Texas, and the high-risk associated with air operations, careful coordination between the sending facility, CMOC, and the receiving team should include the following considerations:

- Mission priorities
- Fuel consumption
- Flight time
- Communications
- Air resource staging
- Helipads locations
- Landing zones
- Fly zones
- Air space utilization
- Fixed vs rotor wing
- Flight Teams
- Receiving Teams
- Ground movement

While not a routine mission or consideration, it may become necessary to reach out to federal/military air assets to assist in transportation of the neonatal/pediatric population. NDMS and Texas Military typically utilize a C-130 cargo plane for mass evacuation of populations. The neonatal and pediatric population is not best suited for transport in these aircraft.

During inclement weather conditions when civilian aircraft cannot fly, the US Coast Guard helicopters may serve as an alternate method for transportation when life safety or immediate requirements for transfer to higher levels of care are required. Drawbacks to this method of transportation include the need to provide medical personnel on board the aircraft to care for the patient. The onboard medical personnel will not be returned to the facility and will need to identify an alternate means of transportation back to their home facility.

Facilities should not reach out independently to either state or federal air assets for assistance. If assistance is needed, the CMOC will work with the state/federal representatives to determine the most appropriate method and coordinate the on the ground logistics.

Additional Considerations

When transferring patients across state lines it is often required that an 1135 waiver for hospital reimbursement is obtained from the federal government. In the case of a region-wide evacuation where a state and federal disaster declaration has been approved, the CMOC submits an 1135 Waiver request on behalf of all healthcare facilities in the affected areas.
https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertEmergPrep/1135-Waivers.html

Additionally, when ground transportation is required across state lines, state to state license reciprocity must be obtained for both the ambulance as well as the personnel on board. CMOC will work with the Texas Department of State Health Services and the receiving state health department to obtain these approvals.

Appendix 8-E: Transportation Equipment Considerations

Pediatric facilities that may need to evacuate may consider maintaining emergency equipment boxes/kits for transport based on acuity and level of care. The evacuating facility may consider providing or ensuring the following equipment is on the various transportation assets being utilized:

Equipment	**Transportation Asset**				
	Car	Charter/ Metro/ School Bus	Ambulance	Rotor	Fixed Wing
Blankets	✓	✓	✓	✓	✓
Car Seat	✓	✓	✓	✓	✓
Car Beds	✓	✓	✓	✓	✓
Formula	✓	✓	✓	✓	✓
PIV Kits		✓	✓	✓	✓
Stethoscope		✓	✓	✓	✓
Plain IV fluids		✓	✓	✓	✓
Emergency Medications		✓	✓	✓	✓
Ambu Bag		✓	✓	✓	✓
Intubation kit			✓	✓	✓
Chest tube kit				✓	✓
Portable Equipment Ventilators				✓	✓
Portable suction with tubing				✓	✓
Suction machine				✓	✓
Pulse oximeters				✓	✓
Medication pumps				✓	✓
PICU/Pedi Disaster box				✓	✓
NICU/ Pedi Medication Box				✓	✓

Non-Pediatric Facility Resource Considerations

All hospitals have different capacities and capabilities for treating and stabilizing pediatric patients. At a minimum, facilities licensed by the State of Texas must provide adequate age-specific supplies and equipment for the initial triage and resuscitation of pediatric patients (https://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=T&app=9&p_dir=F&p_rloc=192174&p_tloc=29362&p_ploc=14823&pg=3&p_tac=&ti=25&pt=1&ch=133&rl=41).

In a large-scale incident involving significant numbers of pediatric casualties, resources (e.g., equipment, medications, trained staff, available space) needed to care for pediatric patients may quickly be depleted.

For non-pediatric facilities, the following recommendations should be considered to accommodate pediatric surge:

- Store a constant supply of age and size-appropriate equipment (e.g. Broselow Bag)
- Recognize the need for facility MOAs to share or receive resources with other hospitals
- Consider maintaining contracts with vendors for pediatric resources
- Maintain a partnership with your regional hospital coalition
- Consider the unique nutritional support needs of neonatal and pediatric population
- Consider increasing bed capacity by converting single patient rooms to double rooms

Appendix 8-D: Training Recommendations

The National Association of Public Hospitals (NAPH) identifies that regular training is important in order to have an effective response to a disaster surge. However, there is no standard curriculum for emergency response training of health care workers, and disaster training topics and methods can vary greatly. NAPH reported that the most common training methods included table-top exercises (TTX), Workshops, on-line or in-person classes, and lectures.

Regardless of the method used by an individual facility, it is important that staff receive training on activating surge plans that include planning for the surge of pediatric and neonatal patients. Training recommendations include the following:

- Just-in-time training may be used for tasks that can be safely performed by other providers. This allows staff with lower levels of training to be assigned to provide workforce extension (e.g., serving meals, etc.).
- Training should encompass contact and communication with parents and family members.
- Training on EMResource, EMTrack, and WebEOC Technology platforms utilized by SETRAC is recommended.
- Exercises should include Seminars, Workshops, Table-Tops (TTX), Functional (FE) and Full-Scale Exercises (FSE) to evaluate, test and modify surge plans.
- Additionally; Training, drills, and Functional Exercises (FE) should be conducted in areas such as disaster communications, utilization of equipment, and procedures.

Competency Cross-Training

To ensure personnel are ready to care for pediatric or neonatal patients, facilities should establish annual competency training geared toward the population and cross-train personnel to ensure everyone can care for the potential patients. Table top exercises (TTX) followed by either a functional (FE) or full-scale exercise (FSE) should be conducted to ensure everyone understands the plan and training they received. At a minimum, cross-training should include:

- Age specific care for neonates and pediatrics
- Medication administration
- Pediatric and Neonatal Assessments
- Identifying and managing respiratory distress
- Maternal Services

Suggested Training Courses:

Federal Emergency Management Agency (FEMA) Emergency Management Institute (EMI)
Independent Study (IS-366.A): 6 hours
Planning for Needs of Children in Disaster
https://training.fema.gov/is/courseoverview.aspx?code=is-366.a

Texas A&M Engineering Extension Service (TEEX)
Pediatric Disaster Response and Emergency Preparedness
MGT 439: 16 hours
https://teex.org/Pages/Class.aspx?course=MGT439&courseTitle=Pediatric%20Disaster%20Response%20and%20Emergency%20Preparedness

Pediatric Disaster Preparedness Guidelines for Hospitals
California Hospital Association
https://www.calhospitalprepare.org/sites/main/files/file-attachments/emsapeds_2.doc

American Academy of Pediatrics
Pediatric Disaster Response and Emergency Preparedness Course
http://aapdc.org/pediatric-disaster-response-and-emergency-preparedness-course/

ATTACHMENT 9: Radiological Response Plan

Radiological Response Plan

Table of Contents

Purpose:

To provide an effective, safe, and coordinated response to a radiological agent occurrence and to provide optimal management of acute radiation sickness.

ASPR Core Elements:

According to the Hospital Preparedness Program Cooperative Agreement, Funding Opportunity Announcement (p.70) all coalitions must develop a series of specialty surge annexes to address varying emergencies. These annexes are to include the following core elements:

- Indicators/triggers and alerting/notifications of a specialty event
- Initial coordination mechanism and information gathering to determine impact and specialty needs
- Documentation of available local, state, and interstate resources that can support the specialty response and key resource gaps that may require external support (including inpatient and outpatient resources)
- Access to subject matter experts (SMEs) – local, regional, and national
- Prioritization method for specialty patient transfers (e.g. which patients are most suited for transfer to a specialty facility)
- Relevant baseline or just-in-time training to support specialty care
- Evaluation and exercise plan for the specialty function

General Assumptions:

Responding agencies will follow the Incident Command procedures/guidelines set forth in their Emergency Preparedness Plan.

Detection of Exposures:

Ionizing radiation exposures may be known and recognized or may be covert as in:

- Large radiation exposures, such as a nuclear weapon or catastrophic damage to a nuclear power plant
- Small radiation sources emitting continuous gamma radiation, producing chronic intermittent exposures, such as those found from medical treatments or industrial devices
- Skin contamination (external contamination) with radiological material
- Internal radiation (internal contamination) from absorbed, inhaled, or ingested radioactive materials.

Types of radiation injuries include damage from exposure to external radiation; internal radiation from ingested or inhaled radioactivity; and surface radioactivity contamination by liquids and dust, both with and without surface wounds.

Rapid response to a radiological-related event requires prompt identification and treatment. Because of the rapid progression to illness and potential for dissemination of some of the

contaminant's agents, it may not be practical to await definitive confirmation. Instead, it will be necessary to initiate a response based on the recognition of presenting syndromes. Each type of radiation is listed in this plan and includes a description and typical combination of clinical features that should alert healthcare practitioners to the possibility of a radiological-related event.

Hospital Preparedness:

As was demonstrated by the victims of the Tokyo Sarin gas attack, many victims of a terrorist event will arrive at area hospitals by private vehicle and therefore not be decontaminated. Coupled with this fact, the minimum time for response and set-up following a HAZMAT incident is approximately 1 hour (BDLS). Therefore, hospitals must be prepared to have the necessary equipment and trained personnel to provide gross decontamination on site. Modified Level C protection (including a full-face Powered Air Purifying Respirator (PAPR) is the PPE chosen by the Regional Healthcare Preparedness Coalition as meeting and/or exceeding hospital decontamination needs and is the PPE supplied to regional acute care hospitals via the Hospital Preparedness Program.

Hazard Assessment:

Cross-contamination of hospital staff and/or facilities may pose a threat when responding to a radiological disaster. Healthcare facilities should consider employing the following mechanisms to ensure safety of the staff and patients and preserve the structure of buildings upon recognition or alert of a potential radiological event:

a. Anticipate number, acuity, and potential needs of incoming patients (i.e.: medications, treatment modalities, fluid, oxygen, ventilators, etc).
b. Decompress current patient load in Emergency Department
c. Formulate plan for decontamination as needed.
d. Formulate plan for additional surge capacity.
e. Plan for large numbers of "self presenters"
f. Notify Security to assist in securing perimeter and access into facilities.
g. Utilize PPE if applicable.
h. Anticipate and cooperate with outside investigating agencies if event is related to an actual or perceived terror attack.
i. Ensure staff protection and safety first. Immediately report any and all adverse reactions by staff to immediate supervisor.

All patients suspected of radiation exposure will be treated appropriately with the Radiation Safety Officer (RSO) involved in the decontamination and treatment. In the event of a radiological exposure, the RSO must deem the involved individual and encountered staff "clear" or "safe" prior to them leaving the decontamination area. This may require the individual undergoing multiple passes through the decontamination area. Special attention should be paid to maintaining patients' warmth and a stable hemodynamic status.

Three basic principles allow limitation of radiation exposure to healthcare personnel, staff

members, and victims:

- Time
- Distance
- Shielding

Clinical Findings:

Acute radiation syndrome follows a predictable pattern after substantial exposure or a catastrophic event. Specific syndromes of concern, especially when presented with a 2–3-week prior history of nausea and vomiting include:

- Thermal burn-like skin lesions without documented heat exposure
- Immunological dysfunction with secondary infections
- A tendency to bleed
- Bone marrow suppression
- Hair loss

Triage:

Patients presenting to regional hospitals following a radiological-event will be categorized as follows:

Radiation exposure: The individual has been involved in a radiological incident but does not become contaminated with radiation. The individual has presented or been transported to the hospital as a precautionary measure. This individual does not require decontamination or further treatment. Collect patient data as requested by jurisdictional authorities. Collected information should include location and duration of exposure.

External contamination: The individual has been involved in a radiological incident and external contamination of the body surface and/or clothing by radioactive material is present. Decontamination is required to protect other patients, staff, and the hospital environment.
Note: Careful removal of patient's clothing will remove most of the external contamination. If clothing is grossly contaminated, moistening the clothing prior to removal will decrease the amount of possible airborne shedding of the material.

Internal contamination: The individual has been involved in a radiological incident and subsequent contamination results from inhalation or ingestion of radioactive material. While this patient is usually no hazard to personnel, other patients or the environment, external contamination of skin, hair and clothing must be considered with inhalation of radioactive material. This patient may require external decontamination.

Monitoring and Decontamination Considerations:

The exposure to a beam of radiation does not contaminate an individual. Patient contamination

results from contact with radioactive particles that may arise from an explosion or a breach of a radioactive source. Treating individuals before decontamination may result in contamination of the facility. If the patient presents with no life-threatening injuries, decontaminate before treating. If the patient presents with life-threatening injuries, treat the life-threatening injuries, then decontaminate. To minimize the spread of contamination, wrap the patient in a clean sheet prior to bringing into the facility. (Guidelines for care of the radiological contaminated patient in the Operating Room and guidelines for care of a radiological contaminated patient in the hospital are outline later in this plan.)

Evaluation of extent and degree of contamination must be done prior to and following the decontamination process. Adequate records of contamination and decontamination must be kept. In decontamination, with the exception of contaminated skin breaks, decontamination of areas with higher levels of contamination shall be performed first.

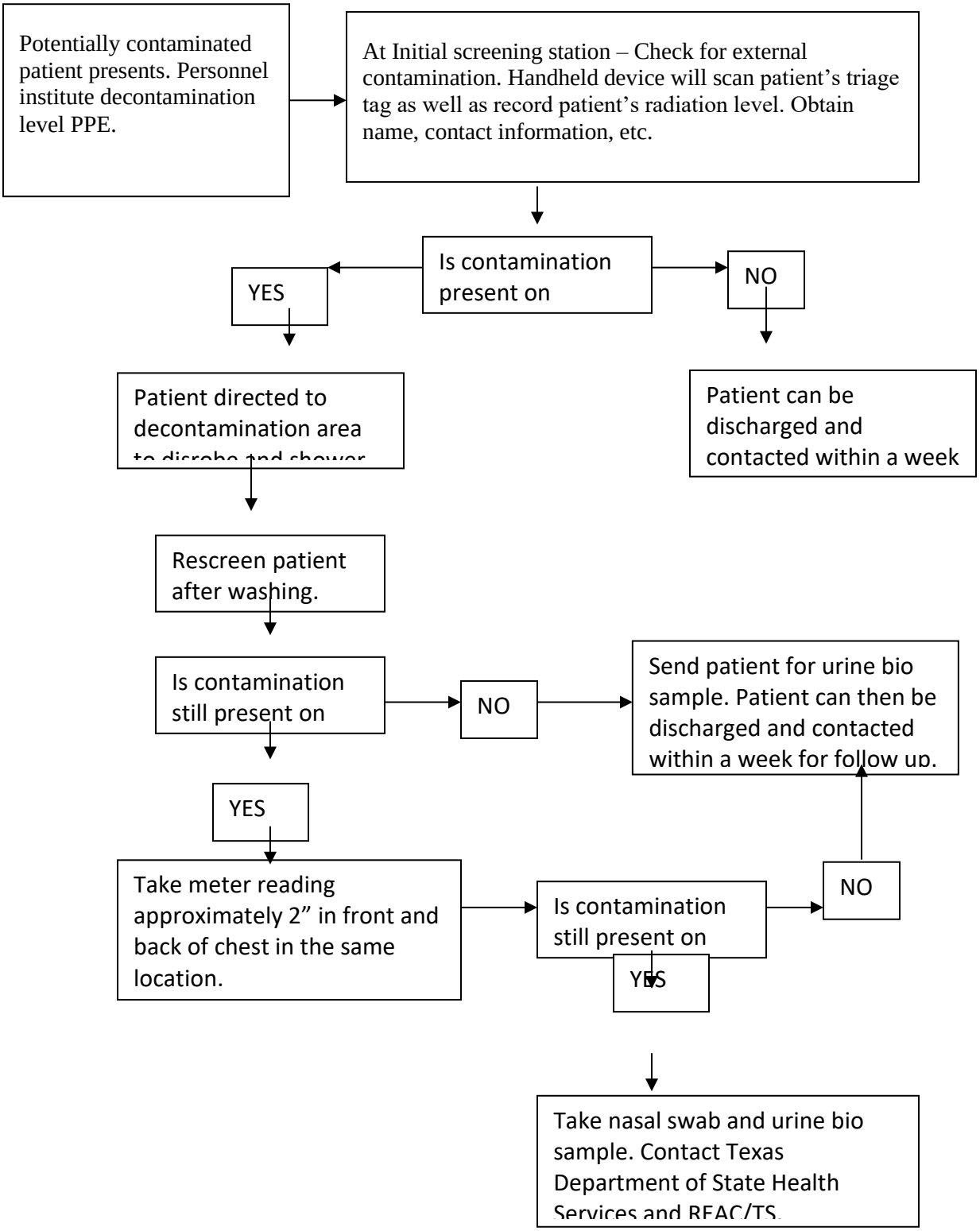
Identification and containment of contaminated areas with drapes and tape shall be done to prevent the spread of radioactive nuclides to “clean” areas or areas of lesser contamination. Areas not being immediately decontaminated should be covered and protected.

Reagents and equipment used in decontamination should be monitored closely for radioactive contamination and replaced as needed.

Hand-held Gamma radiation detection devices should be covered with a non-sterile glove which is replaced between each patient reading to avoid misleading readings due to possible accumulation or contamination of the instrument. DO NOT cover Alpha or Beta radiation detection devices.

Screening and Triage

The following algorithm should be followed at regional hospitals for the purpose of screening and triaging potential radiological exposure victims:



Contamination Control Measures

The goal of contamination control is to prevent the spread of radioactive materials from the patient, care providers, rescue/EMS crew, and/or equipment used in patient care. Contamination can be transferred to care providers as they touch or move the patient, from contaminated equipment used on the patient to provide care, or from the surrounding area.

- If possible, decontamination and triage areas should be outside the main entrance of the Emergency Department. Clear the area of visitors and patients. Remove or cover any equipment that will not be needed during emergency care of the radiation accident victim.
- Several large plastic-lined waste containers will be needed. The treatment table and stretcher should be covered with several layers of waterproof, disposable sheeting.
- Survey instruments should be checked and ready for use before the patient arrives. Background radiation levels should be documented.
- The Facility Decon team and Radiation Safety Officer should be prepared to meet the patient at the ambulance where the patient can be transferred to the prepared treatment stretcher.

Defining a Control Line

- A control line should be established at the entrance to the decontamination room. A wide strip of tape on the floor at the entrance to the room should be marked clearly to differentiate the controlled (contaminated) from the non-controlled (uncontaminated) side.
- Rolls of brown wrapping paper or butcher paper three to four feet wide can be unrolled to make a path from the ambulance entrance to the decontamination area. Ordinary cloth sheets or square absorbent pads can be used if paper is unavailable. Whatever the floor covering, it should be taped securely to the floor. This route should then be roped off and marked to prevent unauthorized entry. The floor of the decontamination room or treatment area should be covered in a similar way if time allows. This will make cleanup of the area easier.

Control Ventilation

- While it may be desirable that the room, or rooms, have either a ventilation system that is separate from the rest of the hospital or a means of preventing the unfiltered exhaust air of the radiation emergency area from mixing with the air that is distributed to the rest of the hospital, there is very little likelihood that contaminants will become suspended in air and enter the ventilation system. Hence, no special precautions are advised. (Ref.: AMA. A Guide to the Hospital Management of Injuries Arising from Exposure to or Involving Ionizing Radiation. 1984).

Techniques of Contamination Control

- Set up a controlled area large enough to hold the anticipated number of victims.
- Prevent tracking of contaminants by covering floor areas and monitoring at exits of controlled areas.
- Restrict access to the controlled area.
- Monitoring anyone or anything leaving the controlled area.
- Use strict isolation precautions, including protective clothing and double bagging.
- Use a buffer zone or secondary control line for added security.
- Control waste by using large, plastic-lined containers for clothing, linens, dressings, etc.
- Change instruments, outer gloves, drapes, etc., when they become contaminated.

Emergency Department Response:

Anticipate number, acuity, and potential needs of incoming patients (i.e.: decontamination, medications, isolation, etc). Refer to Attachment A for assistance.

- Decompress current patient load in Emergency Department
- Anticipate and plan for personal protective equipment for staff
- Notify Radiation Safety Officer (RSO) immediately
- Surgical intervention should not be delayed while awaiting/performing decontamination
- Based on the type of release, (single spill versus terrorist or explosion) anticipate associated injuries requiring additional care.
- Ensure staff protection and safety first.
- Maintain accurate records of all patient's identity, valuables, care, and disposition.
- Anticipate and cooperate with outside investigating agencies if event is related to an actual or perceived terror attack.

If possible external contamination is involved, save all clothing and bedding from ambulance, blood, urine, stool, vomit, and all metal objects (i.e., jewelry, belt buckle, dental plates, etc.). Label with name, body location, time, and date. Save each in appropriate containers marked clearly "RADIOACTIVE—DO NOT DISCARD."

Preparation for arrival of victims:

- Floors of rooms will be prepared by placing tape on the floor at the entrance to the decontamination side from the non-contaminated side.
- Route from ambulance entrance to decontamination room will be covered with a roll of plastic, paper, or with sheets. Covering will be secured to the floor with tape.
- The above route will be taped off, if necessary, and marked "Radioactive" until cleared by the RSO.
- Nonessential equipment will be removed from the room or covered with plastic.

- If outside, the decontamination corridor, from the ambulance drop-off point to the entrance to the EC will be taped off. The route will be marked “Radioactive” until cleared by the RSO.
- Large plastic or metal containers with plastic bags shall be provided to receive discarded contaminated clothes, gauze, supplies, etc.
- The RSO, along with decontamination team members, will begin setting up the decontamination corridor.

If Known Radioactive Contamination Patient Has Been Admitted Prior to Decontamination:

- Continue attending to the patient's medical needs.
- Secure the entire area where the patient will be admitted.
- Notify the Radiation Safety Officer to assist in determining transport routes, special considerations.
- Before entry into any potentially contaminated areas, personnel must don the appropriate protective clothing and wear personnel radiation monitoring devices. The purpose of protective clothing is to keep bare skin and personal clothing free of contaminants. Staff members providing direct care to the patient should dress in surgical clothing (scrub suit, gown, mask, cap, eye protection, and gloves). Waterproof shoe covers also should be used. All open seams and cuffs should be taped using masking or adhesive tape. Fold-over tabs at the end of each taped area will aid removal. Two pairs of surgical gloves should be worn. The first pair of gloves should be under the arm cuff and secured by tape. The second pair of gloves should be easily removable and replaced if they become contaminated.
- Upon exit from the decontamination area, the protective clothing must be removed and considered contaminated. It shall be placed in a plastic-lined trash container for subsequent disposal or decay. The bag should be clearly marked “Radioactive – Do Not Discard.”
- All personnel must survey their hands, feet, and clothing before leaving the area with a survey meter, ensuring that they are not contaminated
- Facilities should have an up-to-date and properly calibrated radiation detection device at their facility.
- Do not allow anyone or anything to leave the area until cleared by the Radiation Safety Officer.
- Hospitalized victims with persistent contamination should be surveyed daily and assessed for potential spread of contamination.
- Bed linen, bedclothes, and supplies will be bagged and surveyed.
- All contaminated items will be bagged, labeled, and stored in the appropriate storage area under the direction of the radiation safety staff.
- **No person or equipment shall be allowed to exit from the potentially contaminated area without appropriate monitoring or clearance from the RSO.**

If Radioactive Contamination Is Discovered After Patient Has Been Admitted

- Continue attending to the patient's medical needs.
- Secure entire area where victim and attending staff have been.
- Contact the Radiation Safety Officer
- Do not allow anyone or anything to leave area until cleared by the radiation safety officer.
- Notify the Emergency Management Department to activate Decon Team members for patient and staff decontamination.
- Completely assess patient's radiological status utilizing the screening method in the above “Screening and Triage” algorithm.
- If patient medical status permits, the hospital Decon Team should institute decontamination procedures.
- Hospital personnel should remove contaminated clothing before exiting area; they should be surveyed, shower, dress in clean clothing, and be resurveyed before leaving area.
- The contamination space and other spaces in contact with the contaminated victim will be surveyed and wipe-tested for contamination and decontaminated as needed.
- Bed linen, bedclothes, and supplies will be bagged and surveyed.
- All contaminated items will be bagged, labeled, and stored in the appropriate storage area under the direction of the radiation safety staff.
- **No person or equipment shall be allowed to exit from the potentially contaminated area without appropriate monitoring or clearance from the RSO.**

Operating Room Safety Guidelines

A victim of a radiation accident who requires either emergency surgery or surgery at a later date who has been exposed only to external radiation, but no contamination requires no special care in the operating room.

For those victims that require emergency surgery and who might be externally or internally contaminated with radioactive materials, the staff of the operating room should take the following precautions to minimize the spread of contamination:

- A conventional operating room can be used, provided that there is adequate room to accommodate additional personnel along with the standard operating room staff.
- Everything within the operating room (i.e., operating table, back tables, and floor) should be covered with disposable plastic coverings.
- Protective clothing should be instituted to ensure adequate protection of the operating room staff against contamination. The purpose of protective clothing is to keep bare skin and personal clothing free of contaminants. Staff members of the OR team should dress in surgical clothing (scrub suit, gown, mask, cap, eye protection, and

gloves). Waterproof shoe covers also should be used. All open seams and cuffs should be taped using masking or adhesive tape. Fold-over tabs at the end of each taped area will aid removal. Two pairs of surgical gloves should be worn. The first pair of gloves should be under the arm cuff and secured by tape. The second pair of gloves should be easily removable and replaced if they become contaminated.

- Unless otherwise instructed by the radiation safety officer (RSO), there is no danger of contamination to the anesthesia and breathing equipment. Other items (i.e., surgical equipment and instruments, and gloves) should be frequently changed to avoid the spread of contamination. An adequate supply of surgical equipment should be present (i.e., triplicate).
- Equipment should be monitored, surveyed, and wipe-tested by the RSO or his/her designee after use. Contaminated items should be placed in a container and stored in the nuclear medicine department. Body areas with gross contamination will be delineated and, if possible, covered with a plastic covering before surgery.
- If an area of bodily contamination is to be surgically incised, it should be washed with normal saline, Betadine, and/or hydrogen peroxide (according to preference of attending surgeon). For persistent contamination, consultation with the RSO might be appropriate regarding the use of diethylenetriaminepentaacetic acid (DTPA) (1 ampule of DTPA per 100 mL of water) or another chelating agent.
- Contaminated tissue removed from the victim should be placed in an appropriately labeled container and stored in the nuclear medicine department or other area of the hospital designated to be appropriate for storage of radioactive waste. The RSO should be notified of the location and type of stored tissue.
- Upon completion of the surgical procedure, the RSO or his/her designee will survey and wipe-test the remaining surgical equipment, surgical garb, and the plastic coverings of the operating room floor to ascertain contamination. Any items that are found to be contaminated will be placed in a container and transported to the nuclear medicine department for storage until adequately decayed. All personnel should be monitored with a standard Geiger-Mueller meter before exiting the operating room suite.

Dosage and Treatment Considerations:

Acute Radiation Syndrome (ARS):

Definitions of Lethal Doses (LD):
LD_{100} dose: The amount of dose in man to cause a 100% probability of death in those contaminated. The LD_{100} for man is approximately 800 rem (or 8 Sievert).

LD_{50} dose: The amount of dose in man that will produce an acute illness (Acute Radiation Syndrome) followed by death in 30-60 days in 50% of the people exposed.
The LD_{50} in man is approximately 400 rem (or 4 Sievert).

Assume a whole-body dose of 400 rem (or 4 Sievert or LD_{50}). This dose almost invariably would be from external radiation. Smaller doses would show an attenuated ARS both in time and severity of symptoms.

Early Phase (1 hour - 2 days)

- Nausea plus or minus vomiting
- Malaise plus or minus hyper-excitability of reflexes

Asymptomatic Phase (2 hours - 2 days)

- Patient feels well but tissue damage is progressing
- White Blood Count (WBC) drops during first day; first lymphocytes, then granulocytes, to the range of 1000 cells/cc. This is followed by a drop in RBCs and platelets.
- Internal bleeding
- Gastrointestinal (GI)
- Skin

Height of disease (2-3 weeks)

- Fever 103 - 104 degrees
- Exhaustion
- Weight loss
- Reddened skin
- Hair loss
- Hemorrhages in skin
- Ulcerated mucous membranes
- GI hemorrhages
- Infection (may be ultimate cause of death)
- Fluid imbalance

Delayed effects in survivors:

- Hair loss
- Cataracts
- Anemia
- Leucopenia may go on to leukemia
- Impaired spermatogenesis
- Premature aging, shortening of life span

Acute Radiation Syndrome Treatment Guidelines:
Evaluate as many of the 4 Acute Radiation Syndrome (ARS) sub-syndromes as you have information for, by degree of severity. (See Attachment C).

Treatment modality (RC) is assigned to patient based on highest degree of severity in any sub-syndrome. Utilizing the charts and graphs attached, patients admitted with suspected ARS will be evaluated upon arrival and daily thereafter as indicated (See attachments D-F for guidance.)

Use of Potassium Iodide:
The Food and Drug Administration has issued guidance on the use of potassium iodide (KI) to reduce the risk of thyroid cancer in children and adults in emergencies involving the release of radioactive iodine into the environment. Data clearly demonstrates the risks associated with thyroid radiation from radioiodines that are inhaled or ingested with contaminated food. When such exposures are likely, KI can be used to block thyroid uptake of radioactive iodine species and thus provide safe and effective protection against thyroid cancer caused by such irradiation when exposure cannot be prevented by other measures.

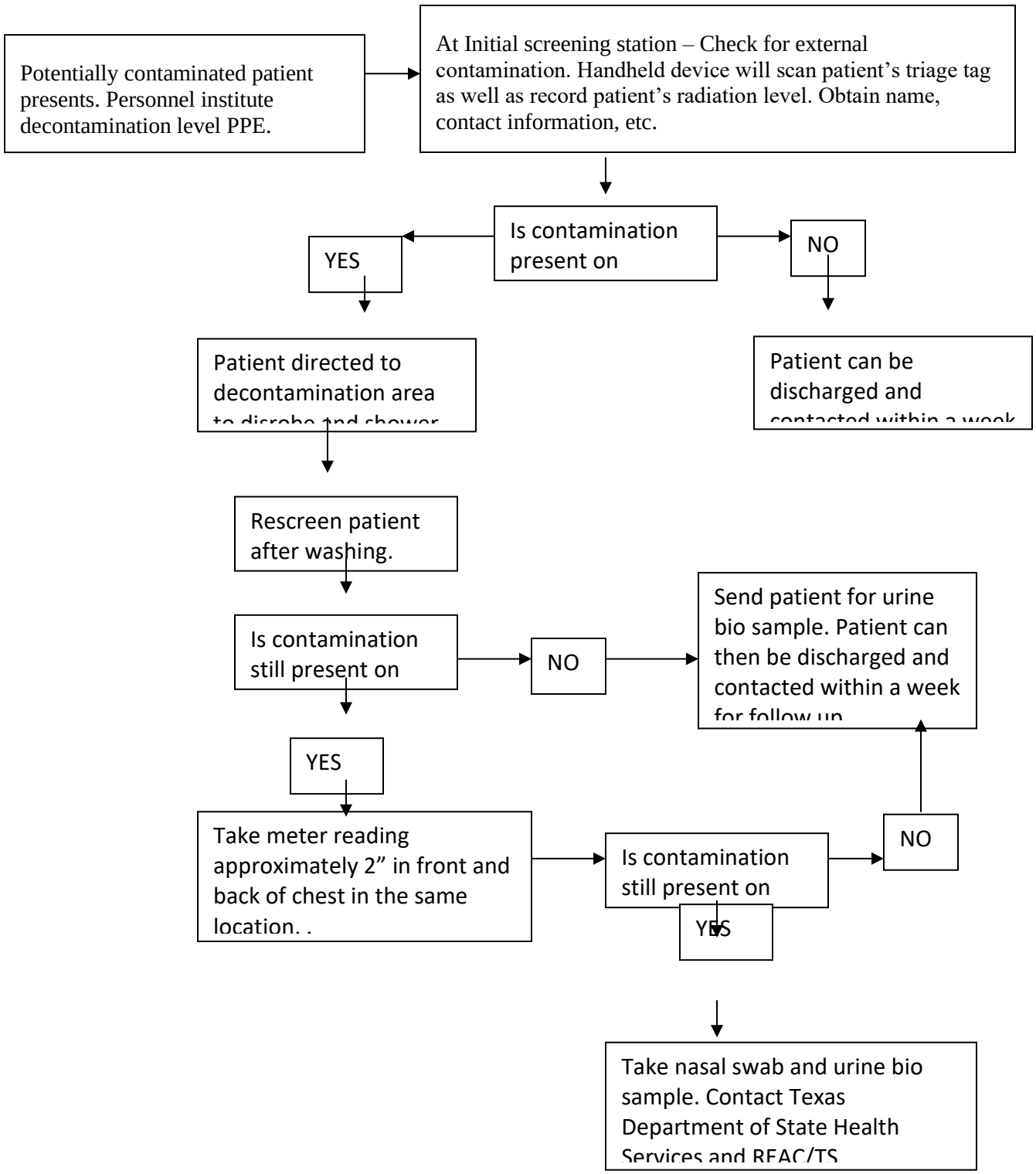
The FDA recommends a standard daily dose of:

- 16 mg of KI for infants less than one (1) month old.
- 32 mg of KI for children aged one (1) month to three (3) years.
- 65 mg of KI for children and teenagers from three (3) to 18 years old.
- 130 mg of KI for adults, including pregnant, lactating women, and adolescents over 150 lbs.

As a rule, daily dosing should continue until the risk of exposure has passed and/or until other measures (evacuation, sheltering, and control of the food and milk supply) have been successfully implemented. The increased risk of thyroid suppression in the fetus and neonate leads to a specific recommendation that newborns and pregnant women be given priority with regard to these adjunctive measures in order to obviate, as possible, the need for repeat dosing with KI. The guidance also states that the overall benefits of KI far exceed the risks of overdosing, especially in children, though particular attention should be paid to dose and duration of treatment in infants and in pregnant women.

Attachment 9-A: Screening and Triage

The following algorithm will be followed at <INSERT FACILITY NAME HERE> for the purpose of screening and triaging potential radiological exposure victims:



Attachment 9-B: Radiation Contamination

Type	Characteristics	Usual Sources	Decontamination Requirements
Alpha	• Alpha radiation is a heavy, very short-range particle. • Alpha radiation is not able to penetrate human skin or clothing. • Alpha emitting materials can be harmful to humans if the materials are inhaled, swallowed, or absorbed through open wounds. • Alpha radiation travels only a short distance (a few inches) in air but is not an external hazard.	• Radium • Radon • Uranium • Thorium	• Removal of all clothing, jewelry, etc.
Beta	• Beta radiation is a light, short range particle. • Beta radiation may travel several feet in air and is moderately penetrating. • Beta radiation can penetrate human skin to the "germinal layer," where new skin cells are produced. If high levels of beta emitting contaminants are allowed to remain on the skin for a prolonged period of time, they may cause skin injury. • Beta emitting contaminants may be harmful if deposited internally. • Clothing provides some protection against beta radiation.	• Strontium-90 • Carbon-14 • Titritium • Sulfur-35	• Removal of all clothing, jewelry, etc • Soap and water decontamination • Re-evaluate for continued contamination after initial decon. and perform secondary soap and water decontamination as needed. • Decontaminate open wounds first, then cover with clean gauze.
Gamma	• Gamma radiation or x rays are very long range, penetrating electromagnetic radiation. • Gamma radiation or x rays are able to travel many feet in air, and many inches in human tissue. It readily penetrates most materials. • Dense materials are needed for shielding from gamma radiation. • Clothing provides little shielding from penetrating radiation. • Gamma radiation and/or characteristic x rays frequently accompany the	• Iodine-131 • Cesium-137 • Cobalt-60 • Radium-226 • Technicium-99m	• Removal of all clothing, jewelry, etc. • Soap and water decontamination. • Re-evaluate for continued contamination after initial decon and perform secondary soap and water decontamination as needed. • Decontaminate open wounds first, then cover with clean gauze.

	emission of alpha and beta radiation during radioactive decay.		

Attachment 9-C: Neurovascular, Hematopoietic, Cutaneous, & Gastrointestinal Subsyndromes

NEUROVASCULAR SUBSYNDROME				
Sign/Symptom/Test	**Degree 1**	**Degree 2**	**Degree 3**	**Degree 4**
Nausea	Mild	Tolerable	Intense	Excruciating
Vomiting	Occasional:1/day Intermittent	2-5/day Persistent	6-10/day Refractory	>10/day or parenteral nutrition
Anorexia	Able to eat and drink. Reasonable intake	Significantly decreased intake but able to eat	No significant intake	Parenteral nutrition
Fatigue	Able to work or perform normal activity	Able to work or perform normal Activity	Needs assistance for self-care	Prevents daily activity
Headache	Minimal	Minimal	Intense	Intense
Vital signs	Temp < 38 degree C HR > 100 BP > 100/70	Temp 38-40 degree C BP < 100/70 unstable vital signs	Temp > 40 degree C for less than 24 hours; BP < 90/60; transient or intermittent drop or unstable	Temp > 40 degree C for more than 24 hours; hypotension: BP < 80/?
Neurological deficits	No major neurological deficit. Able to perform normal activities	Easily detectable mild neurological deficit; No significant interference with normal activity	Prominent neurological deficit. Significant interference with normal Activity	Life threatening neurological signs. Possible loss of consciousness
HEMATOPOIETIC SUBSYNDROME				
Sign/Symptom/Test	**Degree 1**	**Degree 2**	**Degree 3**	**Degree 4**
24 - 48 HOURS Serial CBCs recommended to improve estimation of severity. (Lymphocyte kinetics and dose, how frequent?)				
Lymphocyte count (109 cells/L)	≥ 1.5	1.5 - 1	1 - 0.5	< 0.5
Granulocyte count (109 cells/L)	> 2	4 - 6, mild granulocytosis	6 - 10, moderate granulocytosis	> 10, marked granulocytosis

Platelet count (109 cells/L)	≥ 100	100 - 50	100 - 50	100 - 50
3 - 7 DAYS Serial CBCs recommended to improve estimation of severity. (Lymphocyte kinetics and dose, how frequent?)				
Lymphocyte count (109 cells/L)	≥ 1	1 - 0.5	0.5 - 0.1	< 0.1
Granulocyte count (109 cells/L	> 2	> 2	> 5 *	> 5 *
Platelet count (109 cells/L)	≥ 100	100 - 50	50 – 20 *	< 20 *
CUTANEOUS SUBSYNDROME				
Sign/Symptom/Test	**Degree 1**	**Degree 2**	**Degree 3**	**Degree 4**
Erythema (Hours - 30 days)	Minimal and transient.	Moderate. isolated patches <10 cm2; not more than 10% of body surface area (BSA)	Marked. isolated patches or confluent; 10-40% of BSA	Severe. isolated patches or confluent; >40% of BSA;
Altered sensation/ Itching (Hours - 30 days)	Pruritus	Slight and intermittent pain	Moderate and persistent pain	Severe and persistent pain
Edema (5 days - 8 weeks)	Present; asymptomatic;	Symptomatic; tension	Secondary dysfunction	Total dysfunction
Blistering (5 days - 8 weeks)	Rare, with sterile fluid	Rare with hemorrhage	Bullae with sterile fluid	Bullae with hemorrhage
Desquamation (5 days - 8 weeks)	Absent	Patchy dry	Patchy moist	Confluent moist
Ulcer/necrosis (5 days - 8 weeks)	Epidermal only	Dermal	Subcutaneous	Muscle/bone involvement
Hair loss (2 - 8 weeks)	Thinning, not striking	Patchy, visible	Complete and most likely reversible	Complete and most likely irreversible
Onycholysis (2 - 8 weeks)	Absent	Partial	Partial	Complete
GASTROINTESTINAL SUBSYNDROME				
Sign/Symptom/Test	**Degree 1**	**Degree 2**	**Degree 3**	**Degree 4**
Diarrhea - frequency	2-3 stools/d	4-6 stools/d	7-9 stools/d	>= 10 stools/d Refractory diarrhea
Stool - consistency	Bulky or normal	Loose	Very lose	Watery
Blood in stool	Occult	Intermittent	Persistent	Gross hemorrhage
Abdominal cramps / pain	Minimal	Tolerable	Intense	Excruciating

Vomit	See Neurovascular System
Nausea	See Neurovascular System

* Note a high granulocyte with low platelets is a poor prognostic sign

Modified from the NIH REMM draft ARS treatment website, which created the original by modifying from Fliedner, TM, Friesecke, I, Beyrer K. Medical Management of Radiation Accidents: Manual on the Acute Radiation Syndrome. Oxford: British Institute of Radiology; 2001.

Attachment 9-D: RC Grading

RC GRADING

Organ Specific Assessment	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Neurological Assessment										
Nausea										
Vomiting										
Anorexia										
Fatigue										
Fever										
Headache										
Hypotension										
Neurological Assessment										
Neuro Grade										
Hematopoietic Assessment										
Absolute Lymphocyte Count										
Absolute Granulocyte Count										
Platelet Count (un-transfused)										
Blood Loss										
Infection										
Heme Grade										
Cutaneous Assessment										
Erythema										
Sensation										
Edema										
Blisters										
Desquamation										
Ulcer/Necrosis										
Hair Loss										
Onycholysis										
Skin Grade										
Gastrointestinal Assessment										
Diarrhea										
Abdominal Pain										
GI Grade										
Overall RC Grade										

Place patient sticker here

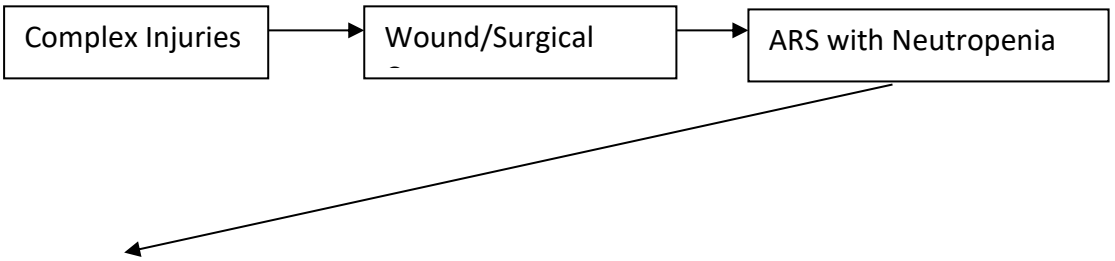
Attachment 9-E: Acute Radiation Syndrome (AR

Triaged to hospital with diagnosis of ARS	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**	**Day 8**	**Day 9**	**Day 10**
Case History	**X**									
Physical Examination	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Eval by Surgery, if applicable	**X**									
Eval by Burn, if applicable	**X**									
Appropriate Decontamination	**X**									
Diagnostics										
CBC w/diff	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Reticulocyte Count	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
PT/PTT/INR	**X**		**X**			**X**			**X**	
Type and Screen	**X**		**X**			**X**			**X**	
Chem 20	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
HLA Typing of Patient	**X**									
HLA Typing of Siblings										
Urinalysis	**X**									
Bone Marrow Aspirate and Biopsy	**??**					**??**				
Interventions										
Place Central Triple Lumen Line	**X**									
Chest X-ray	**X**									
EKG	**X**									
Echocardiogram						**X**				
Wound/Surgical care	**X**									
Reverse Isolation	**X**									
NPO	**X**									
Start Fungal Coverage	**X**									
Start Quinolone	**X**									
Start Acyclovir, for all	**X**									
Start 5Ht3 Inhibitor	**X**									
Start Proton Pump Inhibitor	**X**									
Start Imodium, if indicated	**X**									
Skin Care	**X**									
Consider KI Therapy, if indicated	**X**									
Advanced Therapeutics										

Consider Stem Cell Support						**X**				
Start Donor Search, if indicated						**X**				

Attachment 9-F: Supportive Care

Decisions are to be based on clinical parameters and estimated biological effects. As always, treat complex injuries requiring surgical or wound care first.



Hematopoietic Support

1. Start G-CSF (300 mcg/m2/d)
2. Consider PICC line
3. Blood product support: irradiated and leukoreduced (keep Hgb > 7 g/dl, platelets >10,000µL).
4. HLA type victim[11]
5. Search for donors[2]

Antimicrobial Support

1. Reverse Isolation
2. When neutropenic, start fluconazole
3. If HSV+ start Acyclovir
4. PCP prophylaxis (pentamidine)
5. Start fluoroquinolone[3]
6. Consider coverage for skin flora if burns are present

GI Support

1. 5HT3 inhibitor, lorazepam for nausea/vomiting
2. Proton pump inhibitor
3. Imodium for diarrhea

[11] If estimated whole body radiation dose 3-10 Gy
[2] If neutrophils <100/ul by Day 6
[3] Agents may vary by center depending on availability and at physician's discretion

RADIATION SAFETY OFFICE CONTACTS

Facility Radiation Safety Office
Phone

Facility Radiation Safety Technician
Phone

Facility Radiation Safety Officer (RSO)
Phone

The Texas Department of State Health Services - Radiation Control
1100 West 49th Street
Austin, TX 78756.
Emergency 24-hour telephone number: (512) 458-7460.

REAC/TS
Radiation Emergency Assistance Center/Training Site
Oak Ridge Institute
Business hours: 865-576-3131
After hours emergency contact: 865-576-1005 (Ask for REAC/TS)
For crisis assistance including access to decorporation agents or guidance on their use call:

REAC/TS: 865.576.1005 (24x7 - Ask for REAC/TS)

Medical personnel caring for a few casualties with exposures in excess of 200 Rad (2 Gray) or with cytopenia should call REAC/TS.

The Radiation Emergency Assistance Center and Training Site (REAC/TS) is located outside Knoxville, TN and has been providing crisis response to radiological accidents since 1976. REAC/TS staff include physicians and health physicists. REAC/TS maintains a stockpile of decorporation agents as well (REAC/TS Website: http://orise.orau.gov/reacts).

The Radiation Injury Treatment Network plans for the coordination of care for large groups of casualties with marrow toxic injuries.

RITN
Radiological Injury Treatment Network
E-mail: ritn@nmdp.org
Phone: (612) 884-8276
Fax: (612) 294-4441

Regional Burn Surge Plan

This document is Attachment 9 to the Catastrophic Medical Operation Center (CMOC) Plan.

February 23, 2021 (*v* 1.0)

Foreword

WARNING: This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with U.S. Department of Homeland Security policy relating to FOUO information and is not to be released to the public or other personnel who do not have a valid "need-to-know" without prior approval of an authorized official.

The opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the U.S. Department of Homeland Security (DHS), the Texas Division of Emergency Management (TDEM), or any individual jurisdiction within the 25-county Southeast Texas Regional Advisory Council (SETRAC) region.

This Regional Burn Surge Plan focuses on regional support and coordination for safe and effective evacuation or mass medical surge affecting the healthcare and emergency services infrastructure of burn patients within the Regional Healthcare Preparedness Coalition (RHPC) geographical boundaries of Trauma Service Area (TSA) Q, R, and H. The Clinical Advisory Committee created this plan based on expertise contributions and researched articles. This committee reports to the Regional Healthcare Preparedness Coalition (RHPC) and is made up of experts from emergency management, burn triage, pediatrics, emergency and transport medicine from burn units, hospitals, Emergency Medical Services (EMS) and SETRAC employees. Before implementation, this plan was validated and updated with recommendations by additional experts from across the region during a tabletop exercise (TTX) conducted on January 28, 2021.

Implementation and maintenance of this Regional Burn Surge Plan is coordinated by SETRAC or the Regional Healthcare Preparedness Coalition (RHPC), a SETRAC committee. For more information, call 281-822-4444. The RHPC and/or SETRAC will review and update this plan every five years, or when:

- Ongoing regional planning efforts affect or change this document;
- There are lessons learned or best practices from exercises and real-world incidents that should be incorporated; or
- There are changes in regional structures or processes that render parts of the document inaccurate.

Record of Changes

Change #	Change Description	Change Made By	Date
1	Original document created via researched article reviews, American Burn Association recommendations, and subject matter expert participation in committee meetings from May-December 2020 for version .09 utilized in the January 28, 2021 Tabletop Exercise (TTX).	Tina Rose on behalf of RHPC & the Clinical Advisory Committee	January 21, 2021
2	Updates based on subject matter experts and feedback from participation in the January 28, 2021 TTX for completion of the Regional Burn Surge Plan version 1.0, dated February 23, 2021.	Tina Rose on behalf of RHPC & the Clinical Advisory Committee	February 23, 2021
	Note: Release of this document across the region March 2021		

Table of Contents

Executive Summary

The number of burn centers and available beds has been decreasing over time, and while the national capacity is significant, the available beds within a region for a burn mass casualty incident (BMCI) may be extremely limited and there is a high risk of local and regional assets being overwhelmed. As of May, 2016, the United States has 123 designated burn centers; 64 have been verified by the ABA, and the rest are self-designated centers. These centers have approximately 1,800 beds, most of which are occupied at any given time.

The expectation is that burn surge capacity plans include a 50% increase in capacity but given that the average number of burn beds is 15, there are many scenarios under which this capacity will be inadequate to meet demand. Other hospitals may provide burn care, but generally accept patients with limited burns. Further, many areas in the U.S. are hundreds of miles from the closest burn center. Therefore, a regional tiered approach to planning for and responding to a BMCI is critical to success. This tiered system is familiar to healthcare coalitions that have planned for tailored responses (e.g. pediatric patients) where specialty centers provide a significant proportion of care. Careful planning and coordination is needed to maximize these highly specialized resources. Even with the best triage and coordination, many incidents are possible that will overwhelm available capability for specialized care, accenting the need for a planned approach (online link: www.ameriburn.org/quality-care/verification/).

Texas has more oil refineries than any other state in the country with a vast majority established near the Gulf of Mexico. Houston remains unrivaled as a center for the American energy industry and dominates U.S. oil and gas exploration and production with one of the world's largest manufacturing centers for petrochemicals. There is $15 billion petrochemical complex at the Houston Ship Channel, which is the largest in the country. Supporting the energy industry is a complex of several thousand miles of pipeline connecting 200 chemical plants, refinery, salt domes and fractionation plants along the Texas Gulf Coast, which allows transfer of feedstocks, fuel and chemical products among plants, storage terminals and transportation facilities.

The healthcare community across the Southeast Texas region has recognized the need for all hospitals regardless of capability, to be prepared for the possibility of receiving an influx of burn patients and to be prepared for their unique care needs. Recent incidents, including chemical plant explosions, improvised explosive devices, riots with explosives and burning buildings, have increased the need for regional patient BMCI planning and preparedness. The physiology and physical make-up of varying degrees of burns, as well as the needs of infants and children that greatly differ from adults, present unique challenges to caring for burn-specific needs of patients during mass casualty incidents.

Proper burn surge planning should include:

- Preparedness plans with resource assessments and planning for a surge in patients requiring stabilization from burn wounds following a burn mass casualty incident.
- The ability to triage and stabilize burn patients in ICU beds at non-burn centers until transfers to a burn care center can occur, if needed.
- Trained personnel in burn care, stabilization techniques, and aftercare complexities.
- Burn patient triage and transport/transfer considerations

Introduction

This Regional Burn Surge Plan focuses on regional support and coordination of a mass surge in burn patients across healthcare facilities and emergency services within the boundaries of the Regional Healthcare Preparedness Coalition (RHPC), geographically defined as Trauma Service Areas (TSA) Q, R and H in Southeast Texas. The intended audience for this plan includes EMS providers, healthcare facilities, burn care centers, free standing emergency rooms, as well as local, regional, state, and federal government, and public health representatives from jurisdictions in the RHPC 25-county region.

Purpose & Scope

The purpose of this Regional Burn Surge Plan is to provide a coordination framework of emergency medical response resources specifically during large-scale, catastrophic incidents that result in a mass surge of burn patients due to one or more burn mass casualty incidents (BMCI). This document includes a burn overview for emergency medical services (EMS) and non-burn facilities/physicians to assist with triage, stabilization, and transfer coordination of burn patients, as well as, best practices and recommendations in the context of an emergency medical response to an incident within the RHPC 25-county region. This document is an attachment to the Catastrophic Medical Operations Center (CMOC) Plan.

The plan focuses on regional support and resource coordination specifically for the needs of burn patients, both adult and pediatric. It includes the activation, notification, identification, and integration of medical resources (e.g. personnel, equipment), as well as the triage, transport and/or transfer of patients from incident site(s) that affects one or more jurisdictions. This plan excludes mass fatality management (MFM) procedures & internal facility plans.

This is a regional plan that includes:

- Burn care considerations for adults and pediatric patient populations
- Burn center capabilities and limitations locally, regionally, and nationally.
- Mass surge considerations due to burn mass casualty incidents (BMCI).
- A burn overview for EMS, non-burn facilities and physicians to assist with triage, stabilization, and transport/transfer coordination of patients during a BMCI.
- Regional resource coordination and patient tracking procedures for burn patients
- Anticipated roles and responsibilities of regional stakeholders.

Critical Assumptions

The Clinical Advisory Committee assumed the following while developing this plan:

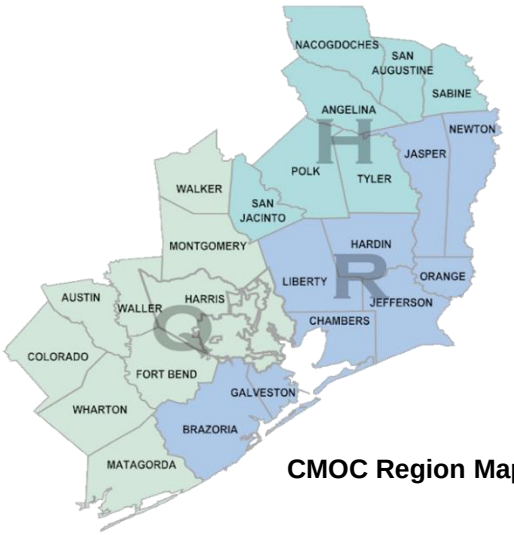
- Activation of this plan will trigger the overall activation of the CMOC plan.
- The Southeast Texas Region and the State of Texas has limited burn bed surge capacity.
- Healthcare facilities have their own internal facility plans.
- Throughout the United States, there are a limited number of pediatric and adult burn hospitals/beds during daily operations.
- Burn patients from a Burn Mass Casualty Incident (BMCI), may be transported to any operational hospital by any means available, likely without pre-hospital triage or care.
- There may be varying levels of trauma injuries and care considerations that accompany patients with burn injuries.
- Depending on how/when the patient presents, ideally initial triage is done by EMS and secondary triage will be done by a physician at the initial receiving facility.
- Patients may present as walking wounded or be brought to the emergency room without EMS triage whereby the initial receiving facility will perform initial triage without pre-notification.
- All hospitals may not have specific equipment and personnel to address the variety and degree of burns: thermal, chemical, inhalation, and contact burns.
- During a burn mass casualty incident (BMCI), pediatric and adult burn bed availability at burn centers will be overwhelmed and ICU beds in non-burn facilities would be utilized to assist with burn triage, stabilization, and treatment or for transfer to specialist care.
- Non-Burn healthcare facilities should plan for rapid decompression/discharge operations to open additional ICU beds to assist with burn patient secondary triage and stabilization.
- Most general hospitals in the region do not have sub-specialty trained Burn Emergency Medicine Specialists on staff and would utilize just-in-time training to respond to burn surge.
- BMCI with private industry, such as chemical plants and maritime vessels, may have chemicals causing contact and/or inhalation burns that may overwhelm hospital staffing and require emergency notification to utilize telehealth for triage and stabilization care and/or to call in additional personnel according to the facility's internal disaster surge plan.
- ABA ABLS is the standard for care and treatment of burn stabilization, triage, and transport.
- The ABA has designated and verified burn centers that meet specific burn care criteria.
- Depending on the cause of burn (chemical, radiation, etc.) decontamination may be necessary.
- Availability of resources may be impacted by natural disasters or human-caused incidents.
- During catastrophic incidents burn subject matter expertise may be requested via CMOC.
- Telemedicine is available in some form between burn specialists and healthcare facilities; however, technology availability may vary depending on the type of facility.

Catastrophic Medical Operation Center

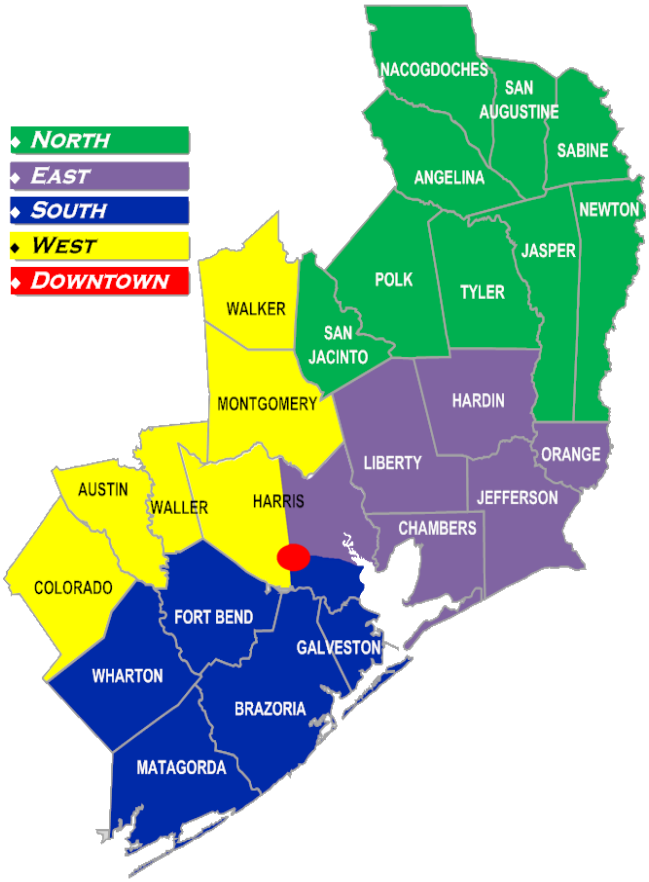
The Catastrophic Medical Operation Center (CMOC) recognizes its unique role and responsibilities to the medical community and may respond to local, regional, state, and national medical emergencies by providing the coordination of medical regional assets, including, but not limited to transportation, surge capacity, patient tracking, and facility requests for resources. This Regional Burn Surge Plan is Attachment 9 of the CMOC Plan.

Geographical Region

The Catastrophic Medical Operation Center (CMOC) supports a region comprised of 25 counties in three Trauma Service Areas: TSA Q, TSA R, and TSA H. The SETRAC regional footprint is divided geographically into the five corridors described below (the North, East, South, West, and Downtown Corridors):



CMOC Region Map



- **North Corridor**
  Includes the counties of: Nacogdoches, San Augustine, Sabine, Angelina, San Jacinto, Polk, Tyler, Jasper, and Newton.
- **East Corridor**
  Includes the counties of: Hardin, Liberty, Chambers, Jefferson, Orange, and portions of Harris County that are outside 610 Loop and North of Hwy 225 and East of Hardy Toll Road.
- **South Corridor**
  Includes counties of: Ft Bend, Brazoria, Matagorda, Wharton, Galveston, and portions of Harris County outside 610 Loop and East of 288 and South of Hwy 225.
- **West Corridor**
  Includes counties of: Colorado, Austin, Waller, Montgomery, Walker and portions of Harris County outside 610 Loop and West of 288 up to Hardy Toll Road.
- **Downtown Corridor**
  Includes City of Houston and Harris County within the 610 Loop.

SETRAC Notification

Notification of a potential disaster may come from a variety of sources (e.g. local health departments, fire departments, law enforcement, etc.). SETRAC/CMOC will share open source information that could impact the normal or continued operations of healthcare and EMS agencies. Multiple sources are available to provide redundancy in the external notification system such as EMResource, WebEOC, email and Regional Radio Communication System. During a response to a BMCI, CMOC will notify and coordinate with local burn centers and notify DSHS for additional support and coordination with a BMCI. SETRAC is notified by calling the 24 hour on-call duty officer at 281.822.4444 option 2.

CMOC Activation

The CMOC will notify health care facilities throughout the region that the CMOC is beginning operations. Health care providers may coordinate with the CMOC for patient transfer from the on-scene treatment area to an appropriate health care facility based on its capacity and specialized capabilities. The CMOC anticipates unmet needs of personnel, bed space, pharmaceuticals, and supplies in health care facilities. If the scope of the emergency expands to the point that facilities within the region have exhausted or are depleting internal response assets, the CMOC will assist with the coordination of requests with the following agencies: local Fire and Police Departments, EMS, city/county emergency management, Texas Department of State Health Services (DSHS), Texas Department of Public Safety (DPS), Texas Disaster District Committee (DDC), and the Federal Emergency Management Agency (FEMA), or any other applicable agency.

EMResource

EMResource is a web-based communications and resource management system that was designed to address resource management needs across our healthcare consortium and allow administrators to collect general or specific information from health care resources to support situational awareness, planning and response activities. EMResource supports exercise and live incident management by allowing users to create events, notify involved individuals and collect critical information necessary to effectively respond to an emergency. The system is utilized daily to update information in mass casualty and other urgent health care situations.

EMTrack

EMTrack supports tracking of evacuees, patients, pets, and associated property and equipment using triage tags or disposable bar-coded wristbands. The intuitive and secure design supports a common operating picture to facilitate interoperable communications among different agencies and organizations. Response and support teams can effectively track, coordinate, and manage patient movements throughout the continuum of care including at the scene, during transport, at the destination, at discharge, and during promotion of the family reunification process.

WebEOC

WebEOC is an information sharing system used by all regional preparedness agencies during a small to large emergency event or disaster. Hospitals provide and receive information pertaining to the healthcare related activities on this platform during any regional incident. WebEOC provides the availability to view additional information provided by local, regional, and state officials and is used for the hospitals to request additional resources from the Catastrophic Medical Operations Center (CMOC). For additional information, refer to www.SETRAC.org

Healthcare Facility Operations

Healthcare facilities involved in the response are expected to activate their emergency operations plan and incident command structures based on the type of incident and/or proximity of an impending disaster. They should plan to communicate facility status and patient tracking, as well as plan for resources, personnel, equipment, and/or supply needs for additional patient surge. Primary means of notification and bed availability reporting will be through EMResource. Patient tracking will be reported through EMTrack. Resource requests and situational awareness is shared with CMOC through WebEOC.

Burn centers involved in response will activate their facility emergency operations plan and incident command structures will also be activated, depending on the nature and scope of the incident. Burn centers will work in collaboration with their local emergency management offices, Southeast Texas Regional Advisory Council (SETRAC), and the American Burn Association Southern Region Coordination Center (SRCC) during a burn mass casualty incident (BMCI). Primary means of notification and bed availability reporting will be through EMResource. Patient tracking will be reported through EMTrack and the incident commander will provide guidance for coordination. Burn Center actions taken may include some of the following:

- Assisting with secondary burn patient triage for next level of care.
- Working with physicians/clinicians to determine which patients may be cared for safely at non burn facilities.
- Provide clinical support to healthcare facilities providing care for burn patients via telephone or telemedicine.

EMS Agency Operations

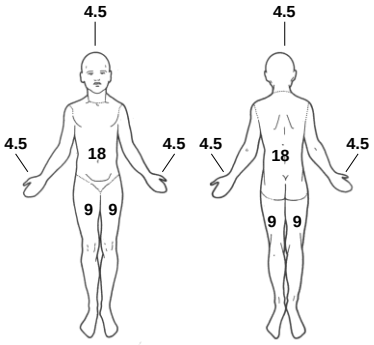
The primary EMS agency and/or medical command should utilize EMResource for emergency room and hospital capacities and should notify receiving hospitals of incoming patients. In a pre-planned event or facility evacuations, the CMOC may coordinate and notify receiving facilities of in-coming patients (see the CMOC plan). EMS maintains patient accountability in the form of documenting where patients were transported from (the various scene locations) and which facility they were transported to via their agency patient tracking method (e.g. manual forms, electronic patient tracking). Receiving hospital facilities will enter patient information into EMTrack upon arrival to their facility. Activation and notification of additional EMS resources will follow the Regional EMTF 6 Standard Operating Guide.

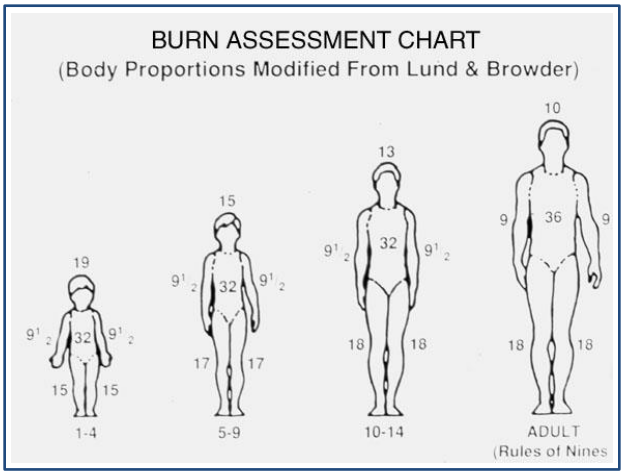
Burn Care Overview

In 2017, data collected from inpatient admissions for 91 hospitals across 35 states and the District of Columbia reported that of the 450,000 people treated annually and 45,000 hospitalized, 25,000 of them were in burn centers. The statistics of those treated showed that 70% were men with the mean age of 31. Children under the age of 15 years old accounted for 24% of those injured while 15% were over the age of 60 years old. Almost 70% were reported as accidents that were not work related and 67% of the burn sizes were less than 10% Total Body Surface Area (TBSA). This example provides a reason for all healthcare facilities to be better prepared to assist with burn injuries on regular days and to prepare to assist with lower percentage Total Body Surface Area (TBSA) patients so that burn centers can focus on the higher percentage TBSA cases during surge for burn mass casualty incidents (https://asprtracie.hhs.gov/technical-resources/28/burns/0.)

Rule of 9's

The "Rule of 9's" is used as an estimation of burn size. Each aspect of the body is measured as a multiple of 9%. The anterior trunk is 18%, the posterior 18%, upper extremities 9% each and the lower extremities 18% each.
(http://ameriburn.org/wp-content/uploads/2017/05/burncenterreferralcriteria.p).





When estimating burn size, the palm surface of the hand with fingers together is equal to approximately 1% of that persons Total Body Surface Area (TBSA). This can be useful for irregular or scattered burn areas, but for very large burns, it may be expedient to calculate the unburned areas to get the inverse burn area more quickly. Once determined, this TBSA percentage directly relates to the patients anticipated:

- systemic reaction to the burn,
- length of hospitalization,
- fluid and caloric requirements,
- morbidity and mortality.

Burn Injury Considerations

The primary burns reported nationwide are caused by scalding hot water and thermal flame injuries, however, some of the most severe burns are caused by other mechanisms (e.g. electrical, chemical, air). Depending on the type of contact or inhalation burn, wounds may demand additional or altered treatment protocols to achieve the best outcomes. The likelihood of death increases in patients with inhalation injuries, advanced age, and/or advanced burn size. When a total body surface area (TBSA) burn is between 0.1 and 19.9 the presence of an inhalation injury increases the likelihood of death by 16 times.

The presence of the burn injury should not take priority over the identified trauma. Once trauma is stabilized (e.g. active bleeding), then burn injury assessment and burn care considerations should be followed. Triage, stabilization, and overall burn care includes the following considerations:

- Identifying characteristics of different types of burns
- Determining the extent and severity of the burn
- Stabilizing the Airway, Breathing, and Circulatory system (ABCs) of burn injury patients
- Understanding the body's systemic responses to burn injuries
- Recognizing various care priorities throughout the post-injury phases
- Recognizing patient rehabilitation and long-term recovery needs

ABCs	Burn Care Key Considerations
Airway	1. Recognition of upper airway edema and placement of an endotracheal tube, as indicated. 2. Assess/Evaluate for the signs of possible inhalation injury (e.g. soot in the airway, singed nasal/facial hairs). Administer 100% O2 by nonrebreather or positive pressure ventilation.
Breathing	1. Adequacy of rate.: Normal finding is tachypnea, bradypnea is abnormal. 2. Normal respiration pattern should be maintained by patient or with positive pressure ventilation [e.g. bag valve mask (BVM)]. 3. Bagging difficulty should be noted in relation to airway edema, or subsequent edema due to poor chest wall compliance and/or circumferential trunk burns. 4. Decreased chest wall compliance may require escharotomies by emergency department provider or burn center specialist.
Circulation	1. IV placement and fluid resuscitation should commence within one hour or less of the injury for any burn greater than 20%. 2. Fluid resuscitation should be initiated based on an appropriate resuscitation protocol (e.g. Parkland, Brooke, etc.). 3. Recognition of circumferential 3rd degree burns may necessitate escharotomy (especially evident if there is a loss of pulse). 4. Ideally, elevate all burned extremities above the heart for circulation.
Additional Complexities/ Considerations	1. Infection control 2. Contraction protection 3. Wound management 4. Environmental considerations 5. Nutritional support considerations
For more detailed information, refer to Appendix B: Burn Overview	

This regional burn surge plan focuses on coordinating patient triage, transport, and/or transfer during the Emergency/Resuscitative Phase described in the summary below.

PHASE	POST-BURN INJURY PRIORITIES
Emergency/ Resuscitative Phase	This phase is described as the initial 24-72 hours from onset of burn injury to completion of fluid resuscitation and urinary output, which could take several days. The goal during this phase is to stabilize patient trauma, maintain normal hemodynamics, provide wound care, and transfer to a burn center if criteria are met.
Acute Phase	This phase is characterized from the beginning of urinary output (i.e. diuresis), which typically starts about 24-72 hours after the burn injury, until final wound closure. Burn patient care planning should include the following priorities: • Maintaining ABCs • Maintaining Homeostasis, especially normothermia • Adequate wound care • Assessment and treatment of possible infection • Pain management • Definitive wound closure
Rehabilitation Phase	This phase is characterized by the time period after wound closure to the individuals return to optimum level of functioning and may include the following priorities: • Functional positioning (e.g. full extension of the arm, normal positioning of hands) to decrease the likelihood of contractures • Psychological, social, and family support • Mobilization plan specific to patient rehabilitation • Recognition for possible reconstructive surgery needs in the future.

Southeast Texas Burn Care Capacity

It is essential that the unique needs of burn patients be included in planning emergency responses, including ICU bed surge. Unfortunately, most disaster plans do not consider the needs of the burn patient. Additionally, there is not enough surge capacity within existing burn units to accommodate the number of adults, children, or neonates potentially needing hospital care during a mass casualty burn-related disaster.

Burn Bed Availability

Burn surge will use available ICU beds to increase surge capacity. Many non-ICU patients would be managed in the context of the regular surgical populations. For a list of all burn centers in Texas refer to Appendix A, page 5 (A-5). The table below portrays burn bed availability in this region:

Bed Type	Shriners Children's Burn Center	UTMB Blocker Burn Unit	Memorial Hermann John S. Dunn Burn Ctr	Other burn centers in Region	**TOTAL Burn Beds**
	Galveston	Galveston	Houston TMC	none	
Adult ICU Burn Beds	0	12	14	0	**26**
PICU Burn Beds	15	-	-	0	**15**
Pedi Burn Beds	15	-	-	0	**15**
Total Beds	**30**	**12**	**14**	**0**	**56**

ICU Bed Surge Capability

Burn surge uses adult and pediatric ICU beds to increase regional burn surge capacity. NICU beds are reserved for newborns and cannot be utilized for burn surge. For the SETRAC/RHPC 25-county region, the total number of licensed adult, pediatric, and neonatal beds, along with the ICU bed count reported for September 2020 is outline in this table:

2020 Total Licensed Beds	
Total Pedi Beds	2,048
Total Pedi ICU Beds	451
Total Nursery Beds	651
Total NICU Beds	1,213
Total Adult Beds	19,945
Total Adult ICU Beds	2,239

To demonstrate the limited number of beds available for surge capacity, a bed report at 12 PM on December 28, 2020 provided the operational burn bed and ICU bed availability for burn bed surge capacity across the 25-County region in the bed count listed below:

Burn Bed and ICU Surge Capacity	
Adult Burn Beds available	9 beds
Pediatric Burn Beds available	0 beds
Adult ICU Beds available	96 beds
Pediatric ICU Beds available	72 beds

Burn Mass Casualty Incident (BMCI) Mass Surge

Planning for a BMCI has specific challenges because burn patients have unique resuscitation needs, have a high risk for death and complications, and require dedicated specialty care for their burn injuries. There are limited resources regionally and nationally for burn patients, necessitating a tiered system of response that prioritizes the identification of patients that can benefit most from burn center care and getting them to specialty centers while others would be stabilized in non-burn center ICU beds. Limitations on patient movement for these highly complex injuries will require sophisticated planning to understand how far the patients must be safely moved to obtain a specialty care bed. Healthcare coalitions and burn centers work closely with state, local, tribal, and territorial partners to assure operational plans developed are exercised for these contingencies.

The healthcare community in our region has recognized the need for all hospitals, regardless of burn care capability, to prepare for the possibility of receiving an influx of injured adult or pediatric patients and preparing for their unique care needs. For more information, please see the SETRAC Regional Trauma Plan: https://www.setrac.org/wp-content/uploads/2017/09/Trauma-Plan-2018-revisions.pdf

EMS Triage and Transport Considerations

There are several nationally recognized mass casualty triage systems used in the region. While this plan does not designate one over the other, only one addresses the unique physiology of the pediatric population. JumpSTART is the only triage tool being used in large-scale incidents for the pediatric population. Regardless of whether a facility includes JumpSTART as a component of its MCI plan, it is important to develop a systematic approach to the triage of pediatric patients. Additional triage resources include the following:

- USDHHS Pediatric Triage Algorithm: https://chemm.nlm.nih.gov/startpediatric.htm
- USDHHS Adult Triage Algorithm: https://chemm.nlm.nih.gov/startadult.htm
- Use Rule of 9's and Total Body Surface Area (TBSA) to estimate % burn size: http://ameriburn.org/wp-content/uploads/2017/05/burncenterreferralcriteria.p

Transport to Appropriate Care Facility

EMS may deliver adult or pediatric burn patients to any local facility, regardless of burn care capabilities. Alternatively, patients may be self-transported by other means (e.g. ambulating, private vehicle, taxi, ride-sharing service). Recent incidents demonstrate that the first patients arrive at hospital emergency departments within ten minutes of an incident occurring, often before any notification of the incident has taken place. Triage/decontamination may not have been performed by first responders, so it is imperative to maintain a high degree of suspicion of contamination until ruled out and protect the integrity of the facility to continue to accept patients.

Patient status may change during transport and re-assessing/triaging may be necessary. Patients meeting criteria for major burns (below) should be transported to a burn center as soon as possible:

- 10% total BSA with second or third-degree burns
- compromised airway
- hypotension
- Glasgow Coma Scale (GCS) score less than 14

There are times when minor burn patients would be best served at a burn center. If a patient presents with any of the following, they could be transported to a burn center:

- burns to hands, feet, face or genitalia
- circumferential burns (due to possible vascular compromise)
- 3rd degree burn with greater than 2% BSA
- burns with associated trauma
- burns in adults over 50 years of age, especially with any underlying comorbidity

Healthcare Facility Surge Considerations

All healthcare facilities that receives trauma patients should be prepared to provide stabilizing care for burn patients including airway management, initial fluid resuscitation, and pain management. These needs can be substantial (e.g. a single 100kg patient with 60% body surface area (BSA) thermal burns will be predicted to need 24 liters of intravenous (IV) solution over the first 24 hours and approximately 250 mg equivalent of morphine). The volume of fluids needed for a single patient is extensive, therefore it is important to monitor fluid levels and resupply frequently to ensure adequate supply is available.

During a BMCI, local hospitals should be prepared for a surge of patients with trauma and burn injuries, ranging from infants to the elderly. Preparedness planning with knowledge of the facility's surge capability and capacity is key to patient care. Due to the nature of the disaster, patient decontamination may also be necessary. Pediatric patients can be challenging or difficult because they are accident prone and may easily become hypothermic, distracted, agitated, and confused. If possible, children should go through decontamination with a family member. Decontamination systems should be designed for all ages of children and adults, and for non-ambulatory and special health care needs children.

Initial Burn Care/Stabilization

After the initial resuscitation, burn surgery can be deferred for a few days while appropriate triage and transportation occurs. During this time, basic antimicrobial burn dressings must be applied (e.g., bacitracin and petrolatum-impregnated gauze or silver impregnated dressings if available). Additional fluids, medications, and other supplies should be requested as early as possible. After casualties have arrived and received stabilizing care, the following information should be gathered:

- Age of patient;
- Clinical stability;
- Associated trauma;
- Associated inhalational injury.
- Extent (TBSA) and location of burns;
- Past medical history (e.g., diabetes, heart disease, respiratory disease); and
- Current treatments and transport needs (e.g. IV medication, mechanical ventilation).

Burn Patient Transfer Protocols

In certain BMCIs, most casualties will be critically burned (e.g. Station Nightclub Fire). In others, there may be many patients with burns appropriate for outpatient care or care at a non-burn center. Other conditions (e.g. weather, overwhelming demand) may require that the initial receiving facility hold the patient awaiting transfer, in which case specialty consultation should be obtained. Care of major burn patients is extremely resource intensive and this consultation should be obtained as soon as possible. The use of telemedicine is recommended to assist with burn assessment for treatment or transfer to burn centers. A photo or video of actual wounds is necessary for burn subject matter experts (SMEs) to review the "degree of burn" and provide recommendations for treatment and/or transfer of care.

Some patients may have catastrophic burns and an expected outcome that does not justify transfer, particularly in the setting of advanced age, comorbid conditions, and combined injury. These patients will still need analgesia and ongoing care at the receiving facilities. Burn care experts should generally be involved in these triage decisions. Note that the burn triage table which correlates age, percent TBSA burned, and mortality developed by Saffle and others should not be used in isolation, but can contribute to triage decisions made by experienced providers with other injury and illnesses factored. The use of experienced burn care providers in making decisions about priority for transfer is important to the successful management of such incidents. The larger the BMCI, the farther that patients may have to be transferred to obtain an appropriate burn center bed. This may require using transportation assets from the destination facility for pick-up, rather than the usual method of using local assets to deliver the patient and return. (*Redefining the Outcomes to Resources Ratio for Burn Patient Triage in Mass Casualty;* J Burn Care Res. 35(1):41-45 *(2014)* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3935344/).

Patients with major burn injuries will require critical care transport. Their intensive fluid and medication need and their susceptibility to cold mean that most methods of mass patient movement (e.g., military airlift) will be of limited utility. Fixed wing, rotor-wing, and ground transportation assets (including the use of ambulance buses) will be critical components of a successful BCMI response plan. It should be noted that after the first few days, complications are likely to increase if the patient needs specialty care and is not transferred to a specialty facility.

Once the patient is stable and identified for transfer, then the CMOC can assist with resources to transfer the patent to another facility within the region, state, or another state, as necessary.

Regional Burn Surge Coordination

This regional plan includes a mechanism to involve local and regional burn experts who can help determine priority for movement and whether certain patients are stable enough to be moved as a group. For example, selected trauma/emergency medicine providers, retired burn surgeons, or staff from a burn center in an adjacent region can be included in this process to support the local burn staff when required and according to coalition plans. Certain patients should be prioritized for early movement. Examples include: burns > 50% of BSA (on salvageable patients who will nearly always be intubated); patients with inhalational injury (which can progress rapidly to acute respiratory distress syndrome and require advanced Intensive Care Unit [ICU] management and interventions); and patients with coincident trauma and burns. Information on mass burn prioritization and care is available from several resources, including those listed in the ASPR TRACIE Burns Topic Collection (https://asprtracie.hhs.gov/technical-resources/28/burns/0).

Regional Operations

As soon as the Southeast Texas Regional Advisory Council (SETRAC) is notified of the Burn Mass Casualty Incident (BMCI), then the Catastrophic Medical Operation Center (CMOC) is activated and CMOC notifies all healthcare facilities, EMS responders, and supporting partners of the incident and potential need for regional resource coordination. The following outline provides some actions that may take place through CMOC coordination during a BMCI

1. Immediately (within 24 hours)
    a. BMCI notification to Healthcare facilities, EMS Responders, and supporting partners
    b. Coordination of patient transport to appropriate facilities
    c. Increase medical surge capacity (bed availability and staffing) for burn patients
    d. Coordination of equipment and supplies to support BMCI

2. 24-72 hours (including patient transfer assistance)
    a. Coordination of patients transport as needed within the region, to other parts of Texas, or to other states
    b. Continued support of staff, equipment, and supplies to support BMCI response

3. CMOC Coordination post 72 hours
    a. Reassess if CMOC operations should continue and in what capacity
    b. Reassess, reallocate, request, and/or demobilize resources, as needed.

4. Southern Region ABA patient coordination with facilities outside of Texas
    a. CMOC works with the Southern Regional Burn Coordinator for interstate transfers
    b. Track patients transported to facilities outside of our Region

Regional Coordination and Assistance

When patient transfer assistance is requested by a healthcare facility, the CMOC contacts the facility's point of contact to request the following information:

1. Number of patients to be transferred;
2. Name of facility accepting patient(s) (if known or obtained); and
3. Environmental or clinical care needs associated with the burn patient transport/transfer.

The CMOC will assign the transfer facility to a Corridor Coordinators as primary lead for the transfer and request a patient manifest from the transferring facility. At a minimum, the manifest should include the patients:

1. First and last name(s); Age; and/or Date of Birth;
2. Chief complaint/diagnosis and acuity assessment; Burn TBSA
3. Supportive medical equipment/personnel to accompany patient and transportation needs;
4. Other medical or physical considerations (e.g. infectious disease, immobility, orthopedic traction, IV medications for hemodynamic stability, O2, bariatric, etc.).

The Corridor Coordinators will take the steps outlined below, depending on if the transferring facility has already designated a receiving facility to accept their patient or if the transferring facility needs assistance identifying a designated receiving burn care or trauma care facility.

A. If the transferring facility <u>does not have a receiving facility accepting their patients</u>, then the Corridor Coordinator will:

1. Review the patient manifest and identify receiving trauma or burn facilities based on bed availability, capability, and capacity for the patient's needs.
2. Make telephone contact with the receiving hospital for patient manifest acceptance.
3. Obtain a point of contact from the receiving hospital and provide it to the transferring hospital to call for formal transfer approval and the patient care report.
4. Once the receiving facility is confirmed for accepting the transferring facility burn or trauma patient, then all steps below can be followed by the Corridor Coordinator.

B. If the transferring facility <u>has a receiving facility already accepting their patients</u>, then the Corridor Coordinator will:

1. Review the patient manifest for
   a. transportation needs (e.g. paratransit vehicle, helicopter, Ambulance Bus, ALS/BLS ambulance, neonatal transport teams, IV fluids, burn care equipment), and
   b. number of each asset needed to safely transport the patient(s).
2. Complete a <u>CMOC 213 General Message</u> form, then
   a. attach the form to the top of the patient manifest, and
   b. submit the transfer packet to the CMOC Clinical Director for approval/review.
3. Upon approval, the CMOC Clinical Director will
   a. input the transfer mission into the CMOC Mission Task Board in WebEOC and
   b. route the request to the Transportation Sector of CMOC.
4. The Transportation Sector will
   a. determine the appropriate staging area and assets for the mission and
   b. assign the mission to the Staging Manager who will then assign the individual asset and update the Mission Task as "in-progress."

Upon successful transportation and care of the patient has been turned over to the receiving hospital, the transporting unit will notify the ambulance staging manager who will mark the Mission as "Complete."

Coordination Roles & Responsibilities

Agency/Entity	Possible Coordination Roles and Responsibilities
EMS SETRAC/ CMOC Local PH Local OEM Healthcare Facilities	• Rescue, transport, and distribute casualties to appropriate local facilities in accordance with established burn center MCI protocols. • Request/mobilize any coalition/regional caches of burn supplies. • Activate coalition coordination mechanisms (Contact SETRAC to activate the CMOC and activate any burn-specific plans). • Once SETRAC/CMOC is activated, then incident notification is sent across the region within five minutes by SETRAC/CMOC. • Coordinate local lists of patients and their clinical information. • Triage/prioritize patients for forward movement to specialty centers in accordance with established BMCI protocols and/or expert input. • Coordinate with burn experts to determine appropriate destinations for patients that cannot be accommodated in the local healthcare system with assistance from state and ABA. • Assure that appropriate clinical information is relayed between the referring and receiving facilities during the transfer process. • Coordinate information with state/federal/ABA partners. • Create and manage patient/family reunification process (EMTrack). • Coordinate across local EMS for patient transport/transfers. • Maintain situational awareness on patient location and facility capacity. • Ensure resources for stabilizing patient during transport/transfer are met.
Receiving Healthcare Facility	• Determine the number of patients requiring hospitalization. • Determine the nature of trauma and/or burn injuries and general patient care requirements • Contact the Regional Catastrophic Medical Operation Center (CMOC) to determine which patients may be cared for safely at current location (pre-identified non-burn centers which can safely care for minor burns/inhalation/plastics issues as noted above). • Contact the ABA Regional Burn Coordinating Center with this information (note that ABA and FEMA regions are different – See Figures 1 and 2 below). • Work with local health system stakeholders/healthcare coalition to determine • Provide or request assistance from the state and the ABA to provide clinical advice and support to BSFs. • Develop final list of patients requiring transfer. • Arrange transfers in coordination with State and local partners, and as identified in the State BMCI plans, with assets available locally/regionally. • Public information is managed per individual facility policies…

Roles and Responsibilities Continued…

Agency/Entity	Possible Coordination Roles and Responsibilities
State PH/ EM TDEM/DDC/ SOC DSHS/SMOC	• Support local jurisdiction with state- level coordination and requests for assistance (e.g., federal declarations). • Assure that patient triage, tracking, and transport needs are addressed. • Make request for burn care assets, including dressings and other materials from the Strategic National Stockpile (SNS). • Engage Emergency Management Assistance Compact (EMAC) assets to provide inter-state support for transportation, staff, or other logistics. • Liaison between local and federal resources. • Support bed polling and matching functions as required in coordination with ABA regional center. • Ensure coordination with Catastrophic Medical Operation Center (CMOC),
Closest ABA Burn Center	• Provide patient care. • Activate facility and regional surge capacity plans to accommodate multiple patients. • Liaison between local response and regional ABA coordinating center. • Assist with patient triage for forward movement. • Support facilities providing care for burn patients in the area via telephone or telemedicine, or request outside support from more remote ABA / other sources.
ABA Regional Coordination Center	• Coordinate with SETRAC/CMOC • Serve as the point of contact (POC) for the ABA system. • Conduct bed polling within ABA region (and request assistance from adjacent regions as required). • Facilitate requests for tissue bank products, as well as graft equipment and other specialized supplies. • Provide expertise to affected area. • Assist with bed matching (right patient to right bed/facility). • Facilitate exchange of patient transfer information between referring and receiving facilities once patients are matched to destinations.
ABA National Headquarters	• Provide expertise and advice on request from a member center. • Provide expertise and advice to inform the federal response.
HHS/ ASPR	• Provide federal support to local and state activities as requested/ authorized under the National Response Framework including supplies, staff, and transportation assistance through the Federal Coordinating Officer (FCO) appointed to the State for the incident. • Coordinate approved use of National Disaster Medical System (NDMS) personnel or transportation assets. • Coordinate information and access to burn expertise during BMCI. • Support/ assist states and ABA information and system needs (e.g., bed polling / data management).

Logistics/Supply Chain

Establishing logistics services and support systems to all the organizational components involved in the incident is critical. Once established logistics is responsible for all support requirements needed to facilitate effective and efficient incident operations to include transportation, supplies, equipment maintenance, fuel, food services, communications and information technology support, emergency responder medical services/support and accountability of all personnel and resources.

Bed Type	Recommended Staffing/Equipment Capabilities
Adult ICU Burn Beds	Typical staffing ratio equals 2:1 with staff trained and proficient in managing fluid resuscitation for burns larger than 20% TBSA. Equipment needs include: • ICU telemetry monitors with invasive monitoring including art blood pressure CVP • Ventilator Capable • Warm rooms to maintain core body temp • Capable of multiple drips, pressers, etc. • Supplies on hand to manage trauma, burn, and complex pulmonary needs, i.e. Inhalation injury • The capability should also include the ability to provide bedside procedures such as escharotomy and fasciotomy.
Pediatric ICU Burn Beds	Vital sign monitoring capability; Ventilator capability; Oxygen; Suction; IV pole(s) and pump(s); Feeding pump; Ability to warm; Crib or bed

Tissue Bank

The *American Association of Tissue Banks* (AATB) has an *Emergency Preparedness Task Force*. If there is a large enough tragedy, that a large amount of skin grafts may be needed, AATB will contact the members on the task force to assess how much tissue is available. The task force is made up of individuals in the tissue bank industry (website: https://www.aatb.org/).

It may be quicker for a hospital to contact one of the major tissue processors directly for the larger tissue processors of skin grafts (listed below):

- **Community Tissue Services**, (800) 684-7783, https://www.communitytissue.org/
  Texas (and the surrounding states) Rep: Jay Cudal, BA, CST, CTBS, Area Sales Director jcudal@communitytissue.org; Mobile: 817-229-4452; Office: 817-332-1898 ext. 5812

- **MTF Biologics**, 800-946-9008, www.mtfbiologics.org
- **AlloSource,** 800. 557. 3587, https://allosource.org/
- **LifeNet Health, https://www.lifenethealth.org/**
  Note: May not process split-thickness skin; may only do acellular grafts now.

Conclusion

It is recognized within the state and across the 25-county RHPC/SETRAC region that there is limited burn bed capacity. This plan provides considerations and recommendations for facility personnel to address adult and pediatric burn triage, stabilization, and emergency services for no-notice burn mass casualty incidents (e.g. chemical plant explosions, facility fires).

This new regional plan provides a framework specifically relative to the coordination of burn patient care for adults and pediatrics. The attachments in this document include considerations for non-burn facilities to utilize for mass surge of burn patient and bed capacity management. This plan does not replace facility specific plans, it provides recommendations and procedures to facilitate a safe and efficient response to a mass surge in burn patients.

Future steps identified across the region include the following:

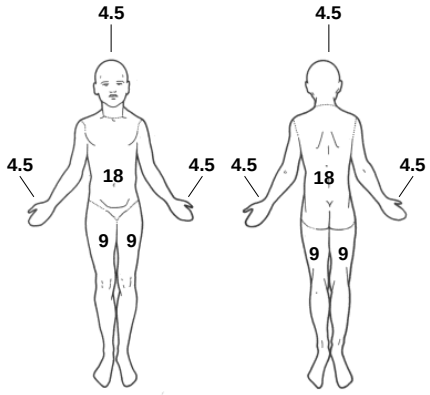
- Recommending burn triage training for pediatric burn patients in adult healthcare facilities.
- Evaluation for the development of burn SMEs and strike teams, which may include physicians, nurses, and respiratory therapists.
- Consider universal regional patient transfer forms (e.g. Memorandum of Transfer) between facilities.
- Utilize regional and institutional emergency preparedness practices within daily work procedures with periodic drills.
- Establish more interstate and regional collaboration and documentation practices to prepare for emergency relocation of burn patients.

Appendix A: American Burn Association (ABA)

Approximately 30% of injuries in a mass casualty incident (MCI) have a burn component, therefore, verified burn centers assist with secondary triage of burn survivors. The American Burn Association (ABA) has written guidelines for patient transfer to a burn center to ensure patient-centered care for the best outcomes. The ABA Burn Center admission criteria include the following considerations:

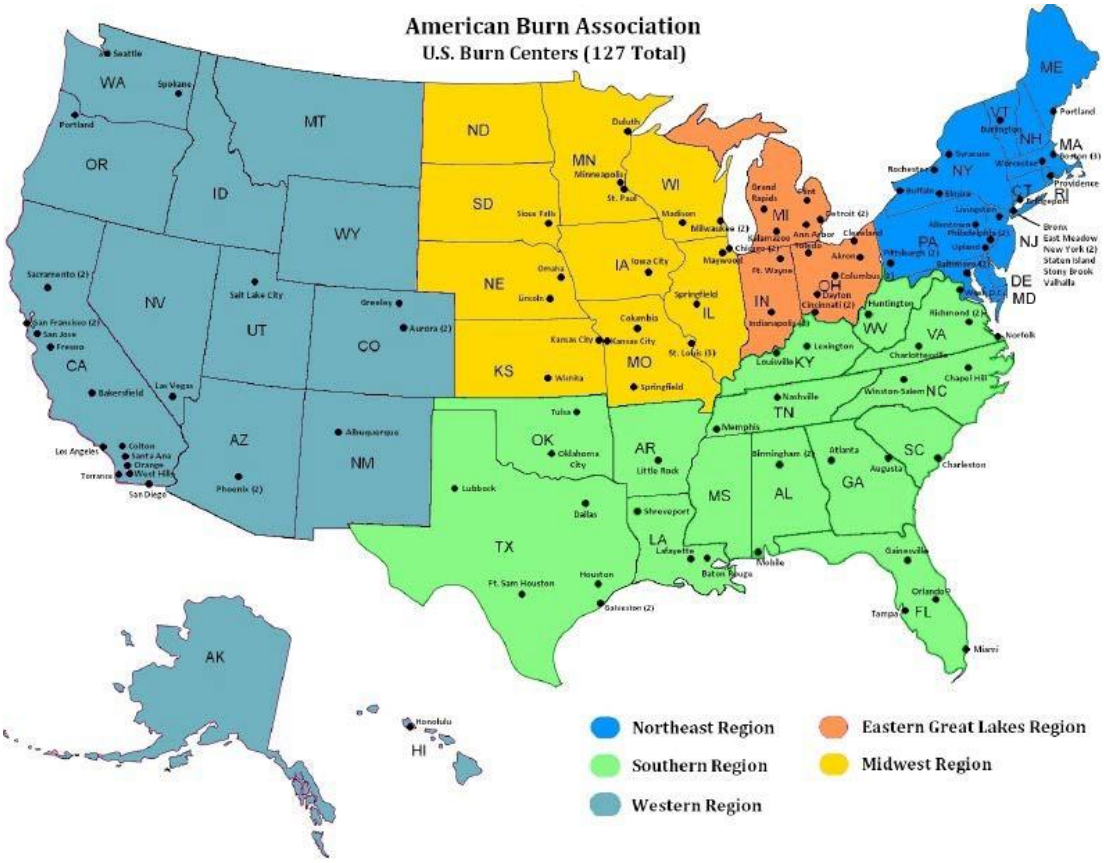
- Partial thickness burns of 10% TBSA or greater
- Burns involving the face, hands, feet, genitalia, perineum, or major joints
- Third- and fourth-degree burns
- Electrical burns, including lightening injury
- Chemical Burns
- Inhalation burns
- Burn injuries in patients with pre-existing medical disorders
- Any patient with burns and concomitant trauma
- Burned Children
- Patients who will require special social, emotional, or long-term rehabilitation

Rule of 9s are used in calculating and communicating burn size between physicians for care. (http://ameriburn.org/wp-content/uploads/2017/05/burncenterreferralcriteria.p).



U.S. Burn Centers

Burn Center: Link: https://ameriburn.site-ym.com/search/custom.asp?id=925
Burn Center interactive map Source American Burn Association.
http://ameriburn.org/public-resources/burn-center-regional-map/



FEMA/ABA Region Comparison Chart

FEMA Region	ABA Region	States by ABA Region	ABA Regional Burn Coordinating Centers - Contact Point
I	NE	CT, ME, MA, NH, VT, RI,	NE Region Burn Medical Coordination Ctr. Saint. Barnabas - NJ 866-778-3659 (24 Hour Burn Hot-Line) Burn Center 973-322-5920 Kathe Conlon, Disaster Coordinator: KConlon@barnabashealth.org
II			
III	NE	PA, DE, MD,DC	
	S	VA, WV	Southern Region Burn Medical Coordination Center, UAB 800-359-0123 Sue Vanek, Disaster Coordinator sue.vanek@yahoo.com
IV	S	AL, FL, GA, KY, MS, NC, SC,	
V	MW	MN, WI, IL	Nebraska Medicine 800-995-2876 (24 Hour Burn Hot-Line) Judy Placek, Disaster Coordinator juplacek@nebraskamed.com

	EGL	MI, IN, OH	Eastern Great Lakes Region Coordinating Center State of Michigan Burn Coordinating Center/University of Michigan Burn Center 734-936-2876 (24-hour response line) Anne Fast, Disaster Coordinator afast@med.umich.edu
VI	S	TX, OK, LA, AR	Southern Region Burn Medical Coordination Center, UAB 800-359-0123 Sue Vanek, Disaster Coordinator sue.vanek@yahoo.com
	W	NM	Western Region Burn Medical Coordination Ctr. University of Utah 866-364-8824 (24 hour burn hotline) Annette Matherly, Disaster Coordinator annette.matherly@hsc.utah.edu
VI	MW	IA, KS,	Nebraska Medical Center 800-995-2876 (24 Hour Burn Hot-Line) Judy Placek, Disaster Coordinator juplacek@nebraskamed.com
VI II	MW	ND, SD	
	W	MT, WY,	Western Region Burn Medical Coordination Ctr. University of Utah 866-364-8824 (24 hour burn hot line) Annette Matherly, Disaster Coordinator annette.matherly@hsc.utah.edu
IX	W	CA, HI, Marshall Islands Palau,	
X	W	OR, ID,	

FEMA Region Map

Southern U.S. Burn Care Coordination

The Birmingham Regional EMS System - Alabama Trauma Communication Center (ATCC) in the University of Alabama at Birmingham is the coordinating entity for the ABA Southern Region.

Bed Requests to Burn Centers:

Other burn centers should be considered secondary assistance outside of local, regional, and state patient transfers. To determine if other burn centers have enough capacity to receive patients, a bed status report is sent through the ABA. An example of a bed report message is as follows:

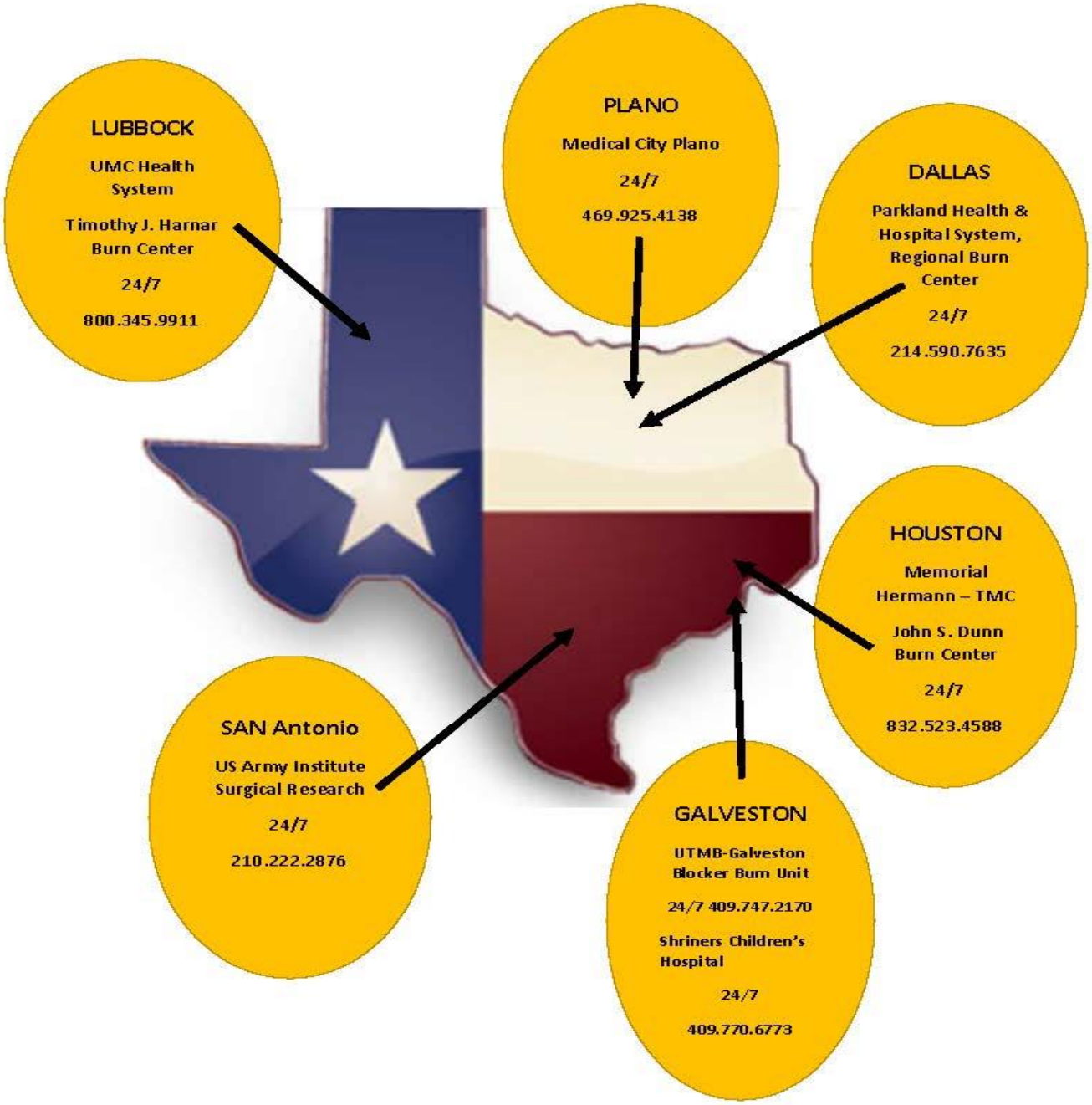
The ABA is requesting a burn bed count to assess the continued impact on burn bed surge capacity during the current incident. Please reply to this email (BREMSS-Admin@mail.ad.uab.edu) with the following information for your center:

a) Available Flexible Beds (Used for Adults or Peds):
   This is described by the burn center as the number of ICU beds that could be used for burn patients because they are ICU beds in the facility with staffing available to care for burn patients – additionally the MICU or other in-patients can be moved to surgical intensive care units or other facilities for those beds to be used for burn patients.
b) Available ADULT Beds (Now):
   This is the actual number of adult burn beds available now.
c) Available PEDIATRIC Beds (Now):
   This is the actual number of pediatric burn beds available now.
d) What is the maximum number you could take in a surge situation?
   This is described as multiplying 1.5 times the number of total burn beds available).

Texas Burn Centers

Seven facilities in Texas have specified burn beds that may be available during mass surge of burn patients in the region. The respective regional advisory councils (RACs) would communicate with each other to help facilitate patient transfers during mass casualty incidents. The following table and map depict those facility contacts in Texas.

City	Burn Facility	24/7 Number
Houston	Memorial Hermann-TMC Houston, John Dunn Burn Center	832.523.4588
Galveston	UTMB Galveston, Blocker Burn Unit	409.747.2170
Galveston	Shriners Children's Hospital-Texas	409.770.6773
San Antonio	US Army Institute of Surgical Research	210.222.2876
Lubbock	UMC Health System, Timothy Harnar Burn Center	800.345.9911
Dallas	Parkland Memorial Hospital	214.590.7635
Plano	Medical City-Plano	469.925.4138


LUBBOCK
UMC Health System
Timothy J. Harnar Burn Center
24/7
800.345.9911
PLANO
Medical City Plano
24/7
469.925.4138
DALLAS
Parkland Health & Hospital System, Regional Burn Center
24/7
214.590.7635
HOUSTON
Memorial Hermann – TMC
John S. Dunn Burn Center
24/7
832.523.4588
SAN Antonio
US Army Institute Surgical Research
24/7
210.222.2876
GALVESTON
UTMB-Galveston Blocker Burn Unit
24/7 409.747.2170
Shriners Children's Hospital
24/7
409.770.6773

Burn Centers in the State of Texas

Facility Name	Memorial Hermann – TMC John S. Dunn Burn Center	UTMB-Galveston Blocker Burn Unit	Shriners Children's Hospital	US Army Institute of Surgical Research	UMC Health System Timothy J. Harnar Burn Center	Parkland Health & Hospital System, Regional Burn Center	Medical City Plano
Address	6411 Fannin Jones Pavilion 8th floor, Houston TX 77030	301 University Blvd. Galveston, TX 77555	815 Market St. Galveston, TX 77550	3698 Chambers Pass Fort Sam Houston (JBSA) San Antonio, TX 7823	602 Indiana Avenue Lubbock, TX 7945	5201 Harry Hiles Blvd. Dallas, TX 75235	3901 West 15th St. Plano, TX 75075
Phone	**713.704.4350**	**409.772.2023**	**409.770.6600**	**210.916.2876**	**806.775.8668**	**214.590.7635**	**972.596.6800**
24/7 Emergency #	**832.523.4588**	**409.747.2170**	**409.770.6773**	**210.222.2876**	**800.345.9911**	**214.590.7635**	**469.925.4138**
# Acute Care ICU Burn Beds	**8**	**6**	**15**	**12**	**6**	**9**	**8**
# non-ICU Step Down burn beds	**6**	**0**	**15**	**18**	**8**	**14**	**8**
Total # beds	**14**	**6**	**30**	**30**	**14**	**23**	**16**
Burn Surge capacity	**21**	**9**		**40**	**30**		**24**
Admission ages	**Adults Only**	**Adults Only**	**Pediatrics Only**	**Adults Only**	**Adults & Pediatrics**		**Adults & Pediatrics**
Admission age restrictions	**> Age 16**	**> Age 16**	**0-18**	**>Age 18**	**All ages**		**All ages**
Does burn center have a heli-pad	**Yes**	**Yes**	**No/Access available via UTMB**	**Yes**	**Yes**		**Yes**
RAC Region	**SETRAC**	**SETRAC**	**SETRAC**	**STRAC**	**BRAC**	**NCTTRAC**	**NCTTRAC**

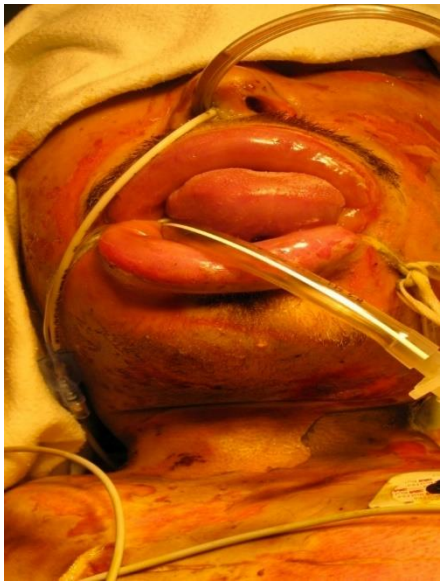
This page intentionally left blank.

Appendix B: Burn Overview

Types of Burns

The primary burns reported in the national burn repository (NBR) are caused by scalding hot water and thermal flame injuries, however, some of the most severe burns are caused by other mechanisms (e.g. electrical, chemical, air, other). Depending on the type of contact or inhalation burn, wounds may demand additional or altered treatment protocols to achieve the best outcomes. The likelihood of death increases in patients with inhalation injuries, advanced age, and/or advanced burn size. When a total body surface area (TBSA) burn is between 0.1 and 19.9 the presence of an inhalation injury increases the likelihood of death by 16 times(National Burn Data Standard, online: http://ameriburn.org/wp-content/uploads/2017/04/nbds_final_061615.pdf).

Inhalation Injury



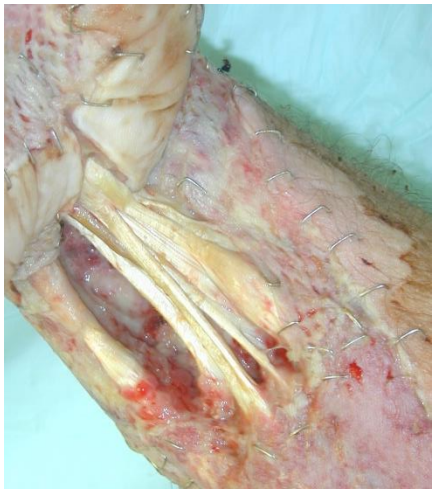
Inhalation injury in the setting of burns can be defined as damage to the upper airway after high heat or prolonged exposure. Typical manifestation includes swelling of the lips or presence of carbonaceous sputum or soot in in the airway. The concern is for damage/edema to the airway. Any indication of airway edema or complaints of difficulty breathing, presence of stridor should compel the provider to place an endotracheal tube (ETT).

Smoke inhalation with penetration to the lower pulmonary tree is generally confirmed after direct visualization. In the setting of airway/inhalation injury, the primary treatment is prompt administration of 100% O_2 by nonrebreather mask. In this setting O_2 saturation may be an unreliable indicator of oxygenation due to the possibility of Carbon Monoxide (CO) poisoning. The acute treatment for CO poisoning is prompt administration of 100% O_2 non-rebreather.

Scald/Flame Injury

Scald and flame injuries represent the most common burn injuries with scalds being more common in pediatric patients. Severity of injury is proportional to size of burn injury and exposure time. General considerations for field management of the burn patient include, airway evaluation, estimation of burn size, resuscitation according to an established protocol such as Parkland formula (providing 4ml/kg/% TBSA burn with half the fluids administered in first eight hours and the remaining fluids over the subsequent 16 hours), elevation of affected extremities, and warm blankets/dressings to prevent hypothermia. Prompt transport to the Burn Center is essential for good outcomes. See Attachment 1: ABA transfer criteria for burns.

Electrical Injury



Incandescent, arc, or flash electrical burns may be treated as thermal burns; however, conductive electrical injuries are usually more extensive than cutaneous damage indicates and require specialized care. Electricity follows the path of least resistance resulting in thermal burns along that pathway which may not be apparent on visual examination, therefore a patient with less than 1% TBSA may have deep tissue burns throughout their body. EKG monitoring is recommended for 24 hours as life threatening arrhythmias can occur up to 24 hours after an electrically conductive injury. Additionally, high voltage current causes tetany which can fracture bones. Fourth-degree burns are typically conductive electrical burn damage to bone, tendons, etc.

Chemical Injury

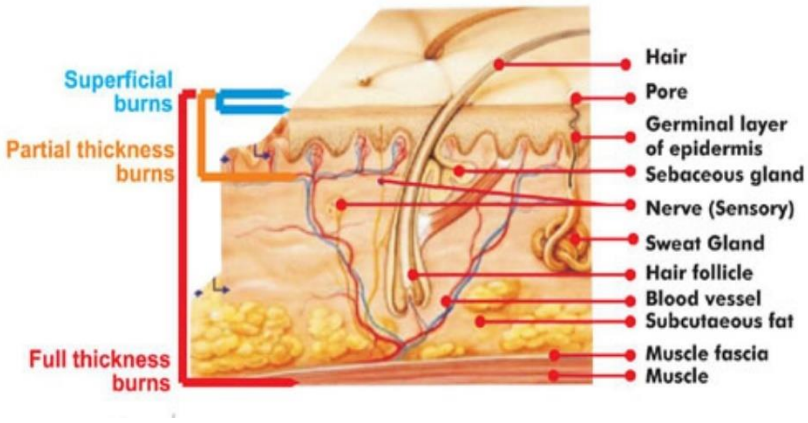
Although there are a variety of different chemicals and potential burn injuries, there are three primary categories that should be considered in chemical burn treatment planning:

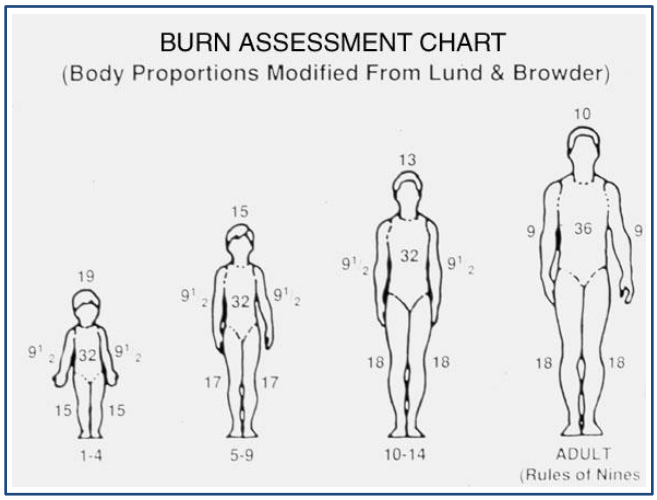
1. Alkalis, including drain/oven cleaners, fertilizers, heavy industrial cleaners, and wet cement (may remain present in skin and dermis for prolonged periods despite protracted irrigation with H2O and often requires surgical excision). As an example, tar burns are considered contact burns that should be cooled immediately and removed using fatty oils such as mayonnaise, mineral oil, or Vaseline to prevent further skin damage.
2. Acids, including bathroom cleaners, rust removers, and acidifiers for home swimming pools (tends to cause dry, hard eschars on skin contact). As an example, hydrofluoric acid (HF) is used in home glass etching and in factories/plants as a cleaning agent. These burns can cause extreme hypocalcemia and require IV calcium supplementation and topical application of calcium gluconate in KY jelly.
3. Organic Compounds, including chemical disinfectants (phenols), creosote, and petroleum products (typically readily absorbed into the bloodstream). As an example, petroleum burns tend to be superficial and heal spontaneously, however prolonged contact can cause dissolution of lipid cell membranes.

Severity of Burns

To identify the severity and degree of burn infers a knowledge of the skin anatomy and underlying functions. The epidermis is considered a keratinized layer of skin responsible for keeping water in the body while keeping harmful chemicals and pathogens out. It also helps with regulating the body temperature and protects the body from the sun's rays. The dermis layer is next and cushions the body from stress and strain. It houses the mechanoreceptors that provide a sense of touch and temperature, hair follicles, sweat glands, sebaceous glands, apocrine glands, and blood and lymphatic vessels that provide nourishment and waste removal. The hypodermis is made up of loose connective tissue and elastin often referred to as subcutaneous tissue containing 50% of the body fat to pad and insulate the body while attaching skin to underlying bone and muscle as well as supplying it with blood vessels.

Burn severity includes a calculated factor called the Total Body Surface Area (TBSA). First degree burns (superficial) do not impact the skin's ability to function and therefore are not used in TBSA. The TBSA is calculated based on estimation of the second (partial thickness or deep dermal), third (full thickness), and fourth degree burn areas on the patient. The degree of burn refers to the depth of burn affecting these layers and therefore damage to structures and functions also affected.



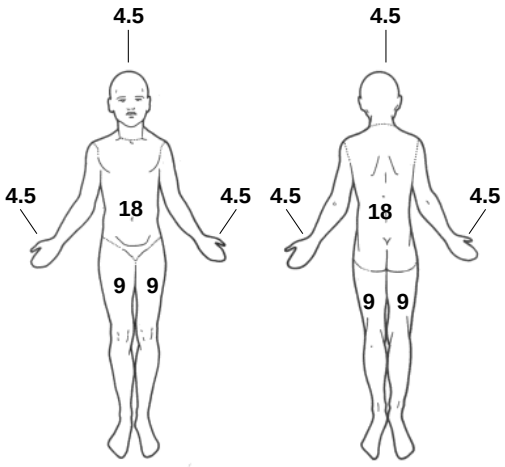


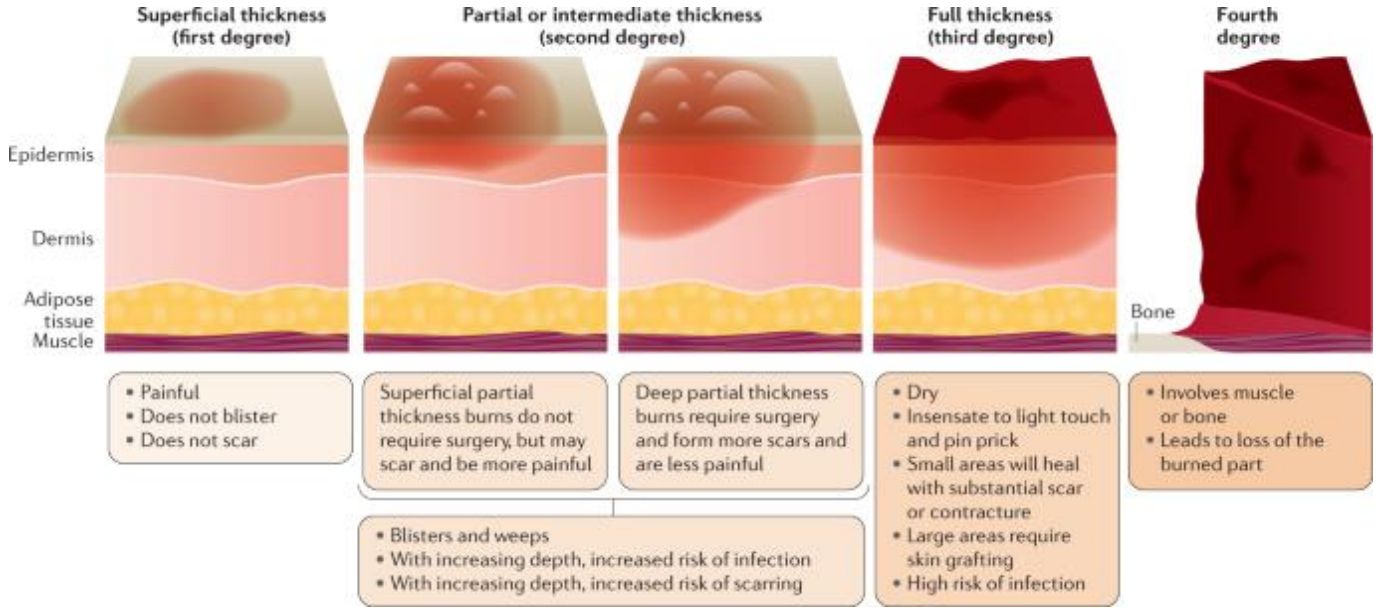
When estimating burn size, the palm surface of the hand with fingers together is equal to approximately 1% of that persons Total Body Surface Area (TBSA). This can be useful for irregular or scattered burn areas, but it very large burns it may be expedient to calculate the unburned areas to get the inverse burn area more quickly. Once determined, this TBSA percentage directly relates to the patients anticipated:

- systemic reaction to the burn,
- length of hospitalization,
- fluid and caloric requirements,
- morbidity and mortality.

The "Rule of 9's" is used as an estimation of burn size. Each aspect of the body is measured as a multiple of 9%. The anterior trunk is 18% the posterior 18%. The upper extremities are 9% each and the lower extremities 18% each.

(http://ameriburn.org/wp-content/uploads/2017/05/burncenterreferralcriteria.p).

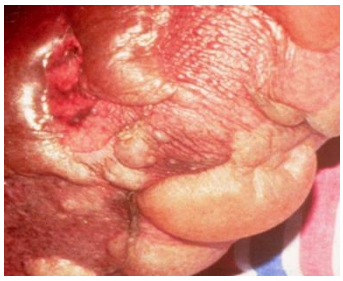




1st Degree Burns

The first-degree burn is not used as a percentage TBSA calculation. It is a superficial burn of the epidermis layer characterized as dry red skin that is likely hypersensitive and painful (e.g. sun burn, flash flame, momentary exposure scald). Healing time is usually 3-7 days with itching and peeling, sometimes discoloration, but no scarring. Is not used in % TBSA calculations.

2nd Degree Burns

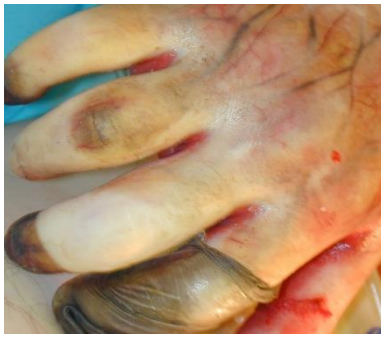


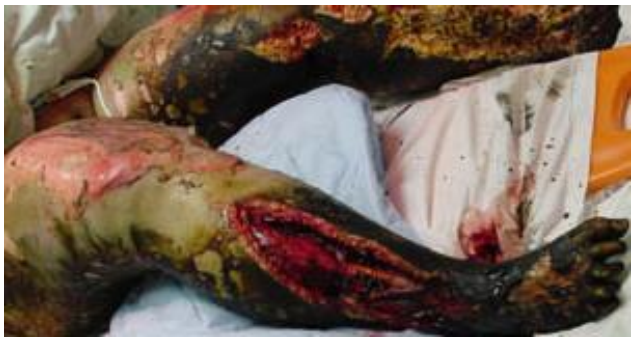
A second-degree burn is caused by high temperatures or prolonged contact with hot liquids, solids, flames, or chemicals. The dermis damage is described as superficial partial thickness that may be dull to hypersensitive, very painful, and painful to pinprick. The skin is red, blistered, swollen and very painful. Partial thickness burns viable dermis layer "soft" and "wet" to the touch. It is important to note that partial thickness burns could convert to full thickness third-degree burns as damaged body functions may compromise healing factors.

3rd Degree Burns

A third-degree burn destroys both dermis and hypodermis layers of skin described as deep partial thickness and full thickness burns portrayed as dry and leathery with charred blood vessels that may be visible under burned or "degloving" skin. These full thickness burns are caused by long duration contact with high temperature vapors, liquids, solids, flames, chemicals, or electrical currents that destroy the microcirculation creating wounds "dry" to touch, often characterized by whitish, charred, or translucent areas. The nerve endings are usually dead and therefore no pain or pin prick sensation in the burned areas, some of which may be necrotic and require escharotomy.

When there is necrotic tissue from a burn it will slowly separate from the underlying viable tissue whereby the loose 'blackened' dead bits will need to be trimmed daily. A yellowish/gray "pseudoeschar" layer may form on superficial burn wounds as a result of the wound exudate interaction with Silvadene. This thin layer can then be lifted away to expose healthy epithelium.

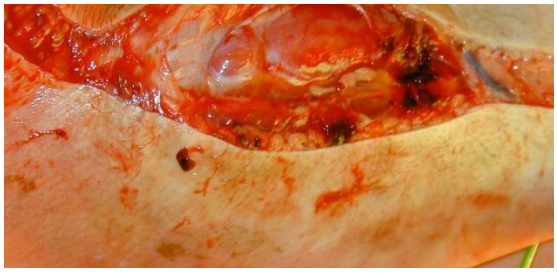




Skin "degloving"

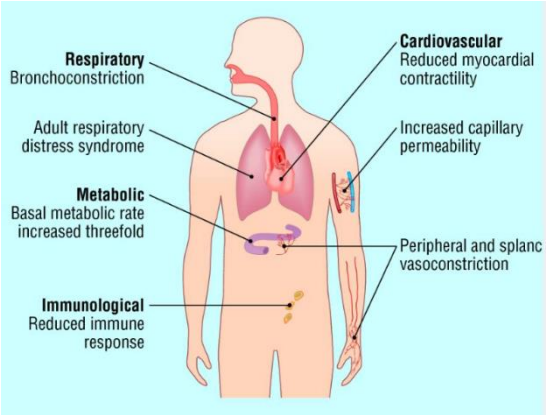
4th Degree Burns

A fourth-degree burn is identified as affecting underlying structures such as tendons, muscles, organs, and/or bones. The burn appears on the patient as charred or skeletonized skin that often necessitates fasciotomy or amputation. Electrically conductive burns may not have large % TBSA externally, however, they may have deep tissue burns or even fractures undiscovered upon initial examination.



Systemic Response

What separates burns from other trauma is an exaggerated Systemic Inflammatory Response Syndrome (SIRS) that is proportionate to the size of the injury. Systemic response typically increases once burn size reaches/exceeds 30% TBSA, however, it is often cited as 20% TBSA. The successful treatment of burn wounds necessitates an understanding of the systemic response to ameliorate that response while meeting the increased metabolic and nutritional demands that will promote the best outcomes. Release of inflammatory mediators at the injury site triggers an inflammatory response with the following symptoms:



1. Cardiovascular – increased capillary permeability/ vasoconstriction, decreased myocardial contract contributing to hypotension & end organ perfusion.
2. Respiratory – Bronchoconstriction, tachypnea possibly leads to respiratory distress
3. Metabolic – Basal metabolic rate dramatically increases, requiring early enteral feeding to decrease catabolism (loss of muscle) and maintain gut integrity.
4. Immune – Down regulation of immunologic response (immunosuppression).

Post-Injury: Emergency/Resuscitative Phase Priorities

This phase is described as the initial 24 hours from onset of injury to completion of fluid resuscitation. The goal in this phase is to maintain normal hemodynamics, provide wound care, and transfer to the burn center if criteria are met.

Airway

The effects of airway injuries (including chemical and smoke inhalation) below the glottis are often missed or seen later, greatly increasing morbidity and mortality. Damage to the alveoli can impair gas exchange (e.g. Carbon Monoxide poisoning can prevent oxygen delivery). Often, inhalation injury is not evident on Carboxyhemoglobin (COHB) levels. Definitive diagnosis of inhalation injury is identified through bronchoscopy and description of injury. If there is any possibility of inhalation injury via presentation or historical evidence, then administer 100% oxygen by non-rebreather.

Plaque or mucus may form as artificial airway obstruction in due to a foreign body (e.g. soot, chemical). Although intubation isn't always indicated, aggressive pulmonary hygiene may be critical to remove mucous plugs. Nebulized Heparin Sodium is one treatment modality used to decrease plaque formations using same principle as aspirin and platelets.

Key Airway Considerations:

1. Recognition of upper airway edema and placement of an endotracheal tube, as indicated.
2. Assess/Evaluate for signs of possible inhalation injury (e.g. soot in the airway, singed nasal/facial hairs). Administer 100% O2 by nonrebreather or positive pressure ventilation.

Breathing

Providers should monitor respiratory rate, chest depth, chest expansion, and inspiratory pressures. Expect tachypnea, not dyspnea. Trauma accompanies burn injuries and should be assessed. Non-intubated patients may describe a feeling of being "smothered" because second- and third-degree circumferential torso burns will decrease chest excursion, thereby decreasing the ability to ventilate. If intubated, providers will notice rising peak pressures or increasing force required when bagging. In some cases, emergency escharotomies may be required to improve chest expansion.

Key Breathing Considerations

1. Adequacy of rate.: Normal finding is tachypnea, bradypnea is abnormal.
2. Normal respiration pattern should be maintained by patient or with BVM.
3. Bagging difficulty should be noted in relation to airway edema, or subsequent edema due to poor chest wall compliance and/or circumferential trunk burns.
4. Decreased chest wall compliance may require escharotomies by ED provider or burn center specialist.

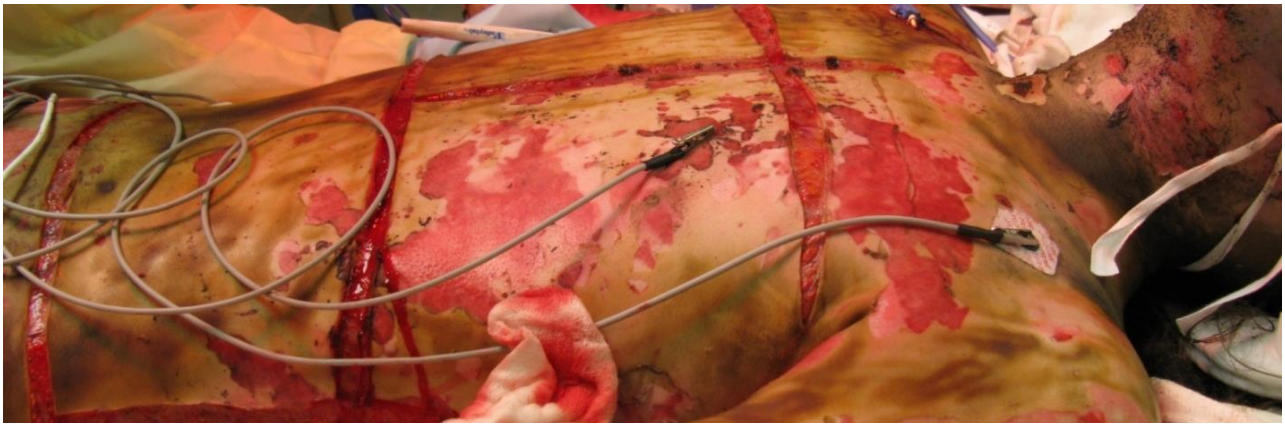
Circulation

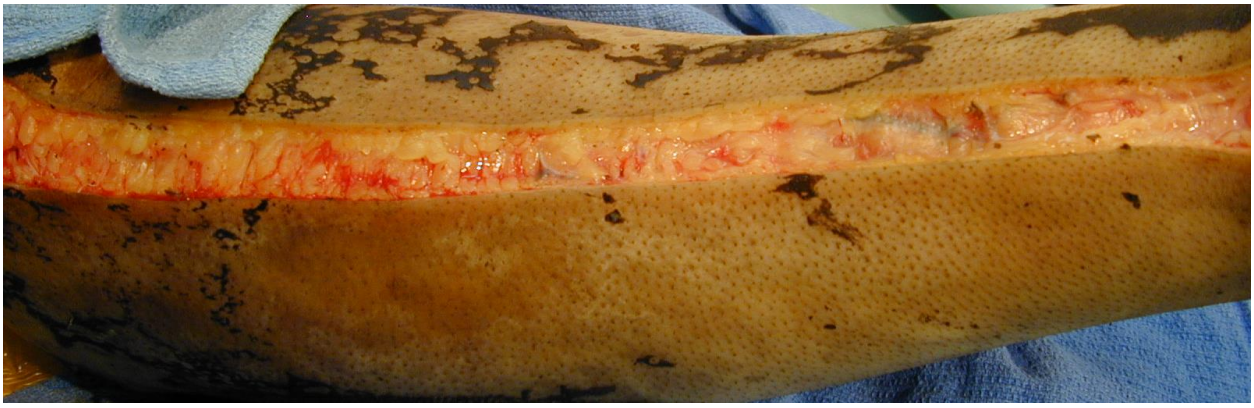
Frequent and continued pulse checks to all extremities and especially in affected limbs are critical. Circulation must go both ways; while the pulse indicates arterial blood is getting to the area, patients also need return circulation, so elevation of involved extremities is often required and escharotomies may be indicated. By splitting the eschar compartment pressure is relieved, thereby promoting circulation. In larger burns, typically 20% TBSA or greater, IV access may be necessary to maintain circulation. Since the fluid lost is plasma, lactated ringers are preferred, and two large bore IVs are recommended due to the typical large volume of fluid required.

Key Circulation Considerations:

1. IV placement and fluid resuscitation should commence within one hour or less of the injury for any burn greater than 20% TBSA.
2. Fluid resuscitation should be initiated based on an appropriate resuscitation protocol (e.g. Parkland, Brooke, etc.).
3. Recognition of circumferential 3rd degree burns may necessitate escharotomy (especially evident if there is a loss of pulse).
4. Ideally, elevate all burned extremities above the heart for circulation.

When burned tissue becomes taut and unyielding to the edema underneath it, it begins to act like a tourniquet, especially if the burn is circumferential. Any circumferential burn may cause compartment syndrome, as well as any mistreated burn in a dependent extremity. Electrical injuries have a high incidence of this complication. Compartment syndrome is common due to a lack of circulation and the ABA recommends releases (escharotomies) at 25 mmHg.
[Reference: Herndon, D. (2018). *Total Burn Care* (Fifth Ed.). Elsevier.]





Post-Injury: Acute Phase Priorities

Characterized from the beginning of diuresis, typically starts about 24 hours after the injury until final wound closure. Burn patient care planning should include the following priorities:

- Maintaining ABCs
- Maintaining homeostasis, especially normothermia
- Adequate wound care
- Assessment and treatment of possible infection
- Pain management
- Definitive wound closure

Hypermetabolic State

The catabolic pattern due to burn injury creates a hypermetabolic state that includes elevations in glucagon, cortisol, and catecholamine levels, as well as depressed levels of insulin. This state results in catabolization of lean muscle mass. These effects of catabolism persist even after wound closure and can be limited by immediate and adequate enteral nutrition. Studies also show exercise can decrease muscle loss. The hypermetabolic response can be influenced by environmental warming, infection control, and topical or systemic agents that affect free oxygen radical release and inflammatory cascades (e.g. beta blockers, vitamin C, occlusive dressings). Key considerations include the following:

1. Keep patients warm
2. Provide enteral nutrition support

Immunosuppressive Effects

Severe burn injuries alter the function of lymphocytes, macrophages, and neutrophils because there is cellular damage and death from the inflammatory cytokine cascade and arachidonic acid cascade (prostaglandin E2 and thromboxane B2 are produced with immunosuppressive effects). These interactions interfere with the biological fighting of pathogens and cause additional cellular damage due to the inflammatory cascading response itself.

Patient Rehabilitation/Long-Term Recovery

This stage is characterized by the time period after wound closure to the individuals return to optimum level of functioning and includes the following priorities:

- Functional positioning at all times (e.g. full extension of the arm, normal positioning of hands) to decrease the likelihood of contractures
- Psychological/social support and family support
- Mobilization plan specific to patient rehabilitation
- Recognition for possible reconstructive surgery needs in the future.

.

This page intentionally left blank.

Appendix C: RHPC Regional Burn Centers

UTMB Blocker Burn Unit

In April 1947, the SS Grandcamp freight ship filled with ammonium nitrate exploded in the harbor of Texas City, Texas. More than 600 people were killed and over 5,000 people were wounded in what became the worst industrial disaster in the United States. Due to accident proximity, the University of Texas Medical Branch (UTMB) in Galveston treated many injured in the multi-blast and multi-fire incident. As a result, Texas medical legend Dr. Truman Blocker organized and developed the Department of Surgery at UTMB into a multidisciplinary burns program, recruiting researchers, teachers and clinicians to prepare them for future mass disasters. The Truman G. Blocker Burn Unit at UTMB has been recognized as one of the world's leading centers for burn treatment, research and education.

In March 2005, the local BP (formerly Amoco) oil refinery exploded, killing 15 and injuring over 100 people. The likelihood of plant accidents or purposeful attacks occurring is a high probability due to the large amount of facilities across the region. Last year, in 2019, the UTMB-Galveston Blocker Burn Unit treated 400 patients with the following etiologies of burn injuries: 60% flame, 27% scald, 8% chemical, and 5% electrical. Of the work-related chemical injuries, the chemicals causing injury included acrylic acid, acetic acid, molten sulfur, monoethanolamide, sulfuric acid, and phenol.

Shriners Children's Hospital - Texas

Shriners Hospital for Children is currently a network of 22 non-profit medical facilities across North America. The first Shriners Hospital for Children was established in Shreveport, Louisiana for orthopedic care because thousands of children were suffering from the crippling effects of polio, clubfoot, and other orthopedic conditions in 1922. Funding was allocated in 1962 to establish three hospitals for the treatment and rehabilitation of pediatric burn injury at the University of Texas Medical Branch (UTMB) in Galveston (1962), Boston, Massachusetts (1964), and Cincinnati, Ohio (1968). UTMB was chosen as the first location because modern burn care advances and new techniques to improve patient outcomes were developed there by Dr. Truman Blocker who had led the triage of hundreds of burn victims following the Texas City Disaster in 1947 when an ammonium nitrate vessel exploded causing other ships and nearby facilities to explode injuring more than 5000 people and admitting 1784 people to 21 area hospitals.

Shriners Children's Hospital in Galveston provides quality care to children with burn injuries and other special healthcare needs within a compassionate, family-centered and collaborative care environment. The facility serves pediatric burn patients from birth to age 18, and up to age 21 for certain patients. In addition to burns, the Galveston Shriners Hospital treats other skin and wound conditions, including epidermolysis bullosa and Stevens-Johnson Syndrome. The facility is supported by the Shriners fraternity, donors, insurance payments, and government grants to provide treatment regardless of a patient's ability to pay. In January 2021, Shriners Hospitals for Children-Houston moved into Shriners Hospital for Children-Galveston, to become Shriners Children's Hospital - Texas. This move expanded capacity and service lines (e.g. orthopedic care, spinal cord injury, and cleft lip and palate) to enhance the mission of providing the highest quality of pediatric medical care to children with orthopedic, neuromusculoskeletal, cleft lip and palate, and burn injuries.

Currently, the hospital in Galveston is 30 beds, with 15 dedicated to ICU level care and 15 reserved for outpatient surgical patients. The facility has pediatric experts treating external and internal inhalation burn injuries (e.g. from smoke, chemicals, and outlier substances like volcanic ash). It does not have a decontamination unit for radiation burns and would have to collaborate with partners to decontaminate any radioactive material from affected patients before treatment. Although ICU bed capacity will remain at 15, during an incident causing a burn surge of patients, current ICU patients would move to a step-down inpatient unit. There are four pediatric burn centers in the Shriners Network across the United States:

Shriners Pediatric Burn Care Locations	Pedi Burn Beds	PICU Burn Beds	Step Down Unit
Galveston, Texas	30	15	15
Boston, Massachusetts	30	4	
Cincinnati, Ohio (moving to Dayton, Ohio)	30		
Sacramento, California	80	20	10

Memorial Hermann Dunn Burn Center

In 1979 Ben Taub had a burn unit and Memorial Hermann burn patients were scattered throughout the hospital. Dr. James "Red" Duke used the UTMB and Shriner Burn Hospital models to place all burn patients on the same unit. Dr. Donald Parks officially organized the burn unit in 1986 as the Institute for Thermal Injuries. The name was later changed to the Hermann Burn Center. Once funded by the John S. Dunn Foundation, the name was officially changed to the John S. Dunn Burn Center (https://trauma.memorialhermann.org/services/burn-treatment-houston/).

The Memorial Hermann John S. Dunn Burn Center provides adult burn patients that required complicated wound management with comprehensive, multidisciplinary care alongside the goal of restoring patients and their families to a functional level of independence through education and assistance. The burn center recently moved into a new state-of-the-art facility at Sarofim Pavilion on February 16, 2020 and have received a grant from the John S. Dunn foundation to purchase additional equipment and make improvements to the hydrotherapy tank room for optimal patient care. The type of burn patients treated include flame, scald, chemical, and/or electrical burns, as well as patients requiring complicated wound management (e.g. severe road rash, Steven Johnson /Toxic Epidermal Necrolysis Syndrome).

The John S. Dunn Burn Center is part of the Memorial Hermann Hospital Red Duke Trauma Institute, located in the world-renowned Texas Medical Center (TMC). Memorial Hermann is a non-profit hospital dedicated to improving health and, as part of this system, the John S. Dunn Burn Center, provides care to patients, aged 16 or older, who may not have the means to pay for burn care elsewhere. The Burn Center is a Phoenix Society for Burn Survivors SOAR (Survivors Offering Assistance in Recovery) Hospital that also participates in the Amos House of Faith Annual Gala (www.phoenix-society.org). The Amos House of Faith is a non-profit organization established to provide post-burn support to children and families affected by burn trauma (www.theamoshouse.org). The current bed count for this location is below:

Memorial Hermann Burn Center (TMC)	Adult Burn Beds	Adult ICU Beds	Pediatric ICU Beds	Neonate ICU Beds
Sarofim Pavilion: Houston, Texas	14	58	30	128

Radiation Injury Treatment Network® (RITN)

The Radiation Injury Treatment Network® (RITN) is comprised of medical centers with expertise in the management of bone marrow failure and care for patients with Acute Radiation Syndrome following a mass casualty disaster with radiation exposure. RITN is led by the US National Marrow Donor Program and American Society for Blood and Marrow Transplantation; possible through grant funding by the US Navy Office of Naval Research. Texas contains two RITN hospitals: Texas Children's Hospital and the University of Texas MD Anderson Cancer Center.

Radiation injury patients may have any combination of injuries and this would affect triage and the primary distribution of patients. Ideally, those survivable patients with primarily radiation injuries would be transported to the RITN hospitals. Those with primarily trauma injuries would go to trauma hospitals. Those with primarily burn injuries would go to burn units. Collaboration in treatment may be required for those with combined injuries. Depending on the number of injured, patients would also be transported to overflow hospitals, and those treating physician may need the ability to consult with radiation and burn injury specialists.

The existing RITN plans include information before, during, and after the disaster:

a) *Before the disaster* RITN hospitals develop treatment guidelines for managing hematologic toxicity among victims of radiation exposure and educate health care professionals about pertinent aspects of radiation exposure management through training and disaster exercises.
b) *During the disaster* RITN hospitals provide comprehensive evaluation and treatment in an inpatient and outpatient setting for these victims; the RITN control cell helps to coordinate the response through sharing critical information about the disaster between DHHS-ASPR and RITN hospitals.
c) *After the disaster* RITN hospitals collect patient treatment data for retrospective research through the Center for International Blood and Marrow Transplantation Research.

Nuclear and radiation incidents could occur as a result of nuclear plant and transportation incidents or acts of terrorism and war. Patient injuries can include radiation, burn (radiation or thermal from secondary fires), and trauma. The regional RITN plan prepares for both incidents within the region such as nuclear plant incidents, as well as, incidents external to the region where the number of casualties exceeds local resources. In cases where patients are transported from other parts of the country, the National Disaster Medical System (NDMS) and Federal Coordination Center (in Houston) would coordinate transport.

This page intentionally left blank.

Attachment 1: Burn Center Referral Criteria

Courtesy of the American Burn Association

Advanced Burn Life Support (ABLS)

Learn more about the ABA and ABLS at **www.ameriburn.org**

Referral Criteria

A burn center may treat adults, children, or both.

Burn injuries that should be referred to a burn center include:

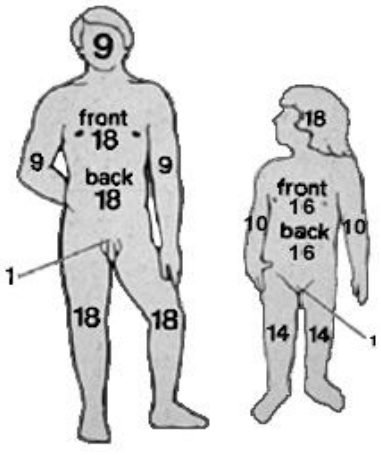
1. Partial thickness burns greater than 10% total body surface area (TBSA).
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints.
3. Third degree burns in any age group.
4. Electrical burns, including lightning injury.
5. Chemical burns.
6. Inhalation injury.
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality.
8. Any patient with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols.
9. Burned children in hospitals without qualified personnel or equipment for the care of children.
10. Burn injury in patients who will require special social, emotional, or rehabilitative intervention.

Severity Determination

First Degree (*Partial Thickness*) Superficial, red, sometimes painful.

Second Degree (*Partial Thickness*) Skin may be red, blistered, swollen. Very painful.

Third Degree (*Full Thickness*) Whitish, charred or translucent, no pin prick sensation in burned area.



Excerpted from Guidelines for the Operation of Burn Centers (pp. 79-86), Resources for Optimal Care of the Injured Patient 2006, Committee on Trauma, American College of Surgeons

This page intentionally left blank.

Attachment 2: Southern Region BMCI Response

Southern Region
Burn Mass Casualty Incident (BMCI)
Response Plan

The American Burn Association (ABA)- designated Southern Region[1] encompasses Burn Centers located along the southeast and gulf coasts of the United States extending from Virginia through Texas, including West Virginia, Kentucky, Tennessee, Arkansas and Oklahoma

- **For a BMCI occurring anywhere within the Southern region of the United States the Southern Region Coordination Center (SRCC)[2] serves as a communications and coordination center to support Burn Center(s) with burn bed census and/ or patient triage and transfer**
- **A BMCI is defined as any incident where capacity and capability significantly compromises patient care, as identified in accordance with individual BC(s), state, regional or federal disaster response plans**

Requesting Assistance from the ERBDC for BMCI Response and Coordination

Upon request by a referring BC(s) the SRCC • Conducts a bed census of southern region BCs • Supports and assists with regional efforts for patient triage and transfer	Agencies requesting assistance include: • SRCC BCs • Affected ABA BCs • ABA Regional Coordinator(s) • ABA Central Office • Department of Health & Human Services (DHHS) or designee
To request SRCC assistance contact: • SRCC at University of Alabama at 800-359-0123	Upon notification SRCC: ○ Activates the Southern Region Burn Disaster Plan ○ Conducts burn bed census of non-affected Southern BC(s) for 02, 12, 24, 72 H intervals Coordinates requests for patient transfer between referring and receiving BC(s)

Definitions

1. Southern Region – one of five American Burn Association-designated regions. Refer www.ameriburn.org Homepage for a map of all regions.
2. Southern Region Coordination Center

This page intentionally left blank.

Attachment 3: BMCI Triage for Non-Burn Physicians

Just-in-Time Training Summary Sheet
Patient Care Priorities for the
First 24 hours in Burn Mass Casualty for Non-Burn Physicians
(Based upon "Guidelines for Burn Care Under Austere Conditions")

Triage

1. If facility resources are overwhelmed, triage according to the "Resource Triage Diagram for Burn Injury in a Disaster." To estimate Total Body Surface Area (TBSA) burn use the "Rule of Nines" or Palmar Method. Note: Only 2nd and 3rd degree burns are tallied.
2. Direct exposure to ionizing radiation (even as low as 2-6 Gy) may change the above triage categories (worsened outcomes)
3. Consider concomitant injuries from the effect of the blast. Follow Advanced Trauma Life Support (ATLS) guidelines.

Decontamination for Radiation Exposure

1. Determined by a radiation meter such as a Geiger-Mueller meter with a pancake probe. Readings of greater than two times background in counts per minute (cpm) are considered positive for contamination. If not available, all patients should be considered contaminated.
2. There can also be internal contamination (*e.g.*, pulmonary secretions).
3. Irrigate with water or saline. Contain runoff. Follow proper disposal of contaminated clothing/supplies.

Airway/Breathing

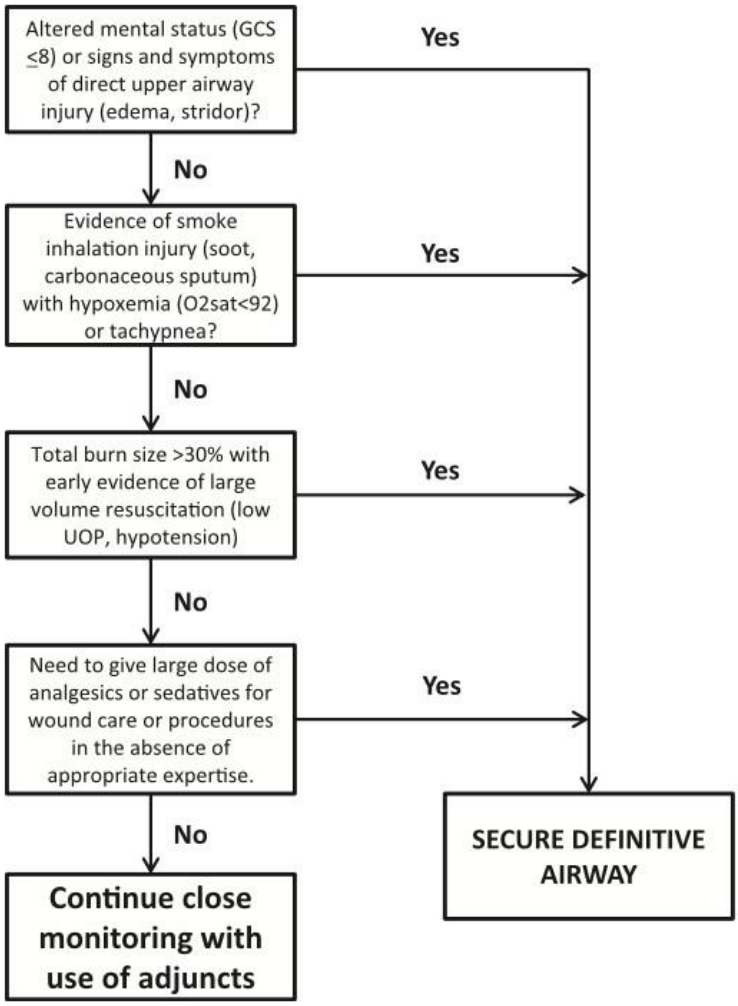


Figure 2. Proposed decision matrix for airway management during burn disasters.

Considerations:

- If there is a lack of ventilators, separate the need for airway protection from the need of mechanical ventilation.
- Utilize airway adjuncts where necessary.
- May need to ration oxygen.
- Conduct periodic airway/ventilator needs assessment rounds.
- C-spine precautions as needed.

Circulation (Resuscitation)

1. Patients with burns less than 20% BSA can be effectively resuscitated from burn shock using oral solutions; many patients with burns up to 40% TBSA can also be safely resuscitated in this manner.
   a. There are many formulas for oral rehydration solutions, but all include clean water, glucose, and electrolytes.
   b. Adults and children > 2 years should be allowed to take sips from a cup frequently, with the goal of consuming approximately 8 to 10 ounces every 10 to 15 minutes.
   c. Very young children < 2 years should be given a teaspoon of fluid every 1 to 2 minutes.
   d. Oral fluids should be given in amounts tolerated by the patient, accepting the occasional episode of nausea and vomiting as inevitable but not a reason to discontinue oral therapy.

2. For patients with burns >20%, IV resuscitation, if supplies permit, should be utilized using the Parkland formula. In resource-constrained environments where supplies are limited, IV resuscitation may need to be restricted to survivable burns >40%.
    a. Total mL 24-hour fluid requirement = 4mL LR x Kg body weight x %TBSA
    b. Give ½ during the first 8 hours post injury and ½ during the following 16 hours
    c. Example: 4mL x 70 Kg patient x 50% TBSA = 14,000mL
    d. Give 7000mL during first 8 hours (875mL/hour) and 7000mL during following 16 hours (437.5mL/hour)
    e. Monitor hourly urine output: 30-50mL/hour for adults, 1m/Kg/hour for children
    f. Other endpoints of resuscitation as able: Vital signs, Hct, Lactate, Base Deficit
    g. Increase/decrease fluids by 10-20% each hour according to urine output. Beware of abdominal compartment syndrome if fluid rate gets to 6mL/Kg/hour.

If the patient is not responding to increases crystalloid volume consider 5% Albumin or FFP. If means of communication available, contact a burn surgeon for assistance or consider re-triage of resources.

Dressings

Recommendations adapted from "Guidelines for Burn Care Under Austere Conditions: Surgical and Nonsurgical Wound Management"

1. If the burn injury has just occurred, remove smoldering clothing and flush for a few minutes with any readily available water source (cool to lukewarm temperature). This will stop the burning process and provide some pain relief.
    Caution: Avoid hypothermia, especially in patients with larger TBSA burns.
2. Identify and train a wound-care team.
3. Prepare a venue for wound care.
4. Determine availability of topical antimicrobials and plan their rational use.
5. Provide adequate analgesia and anxiolysis.
    a. Benzodiazepines
    b. Opioids, Ketamine
6. Mafenide acetate (Sulfamylon) and silver sulfadiazine (Silvadene) creams should be used when available (especially contaminated and/or deeper wounds). Twice daily ideal, once daily acceptable.
    a. Alternatives are Bacitracin, Polysporin with Vaseline or Xeroform gauze interface.
7. Alternatives to creams/ointments
    a. Silver-based dressings: *e.g.*, Acticoat™, Kerra Contact® Ag, Silverlon®
    b. Aqueous solutions: *e.g.*, Mafenide acetate solution, Dakin's

For patients with minor burns (<10% TBSA), consider having them do their own wound care or help each other if resources are limited.

Table 1. Resource triage diagram for burn injury in a disaster

Age	0–9.9	10–19.9	20–29.9	30–39.9	40–49.9	50–59.9	60–69.9	70–79.9	80–89.9	≥90
Burn size group, % TBSA all										
0–1.99	Very high	Very high	High	High	High	Medium	Medium	Medium	Low	Low
2–4.99	Outpatient	Very high	High	High	High	Medium	Medium	Medium	Low	Low
5–19.99	Outpatient	Very high	High	High	High	High	Medium	Medium	Low	Low
20–29.99	Outpatient	Very high	High	High	High	Medium	Medium	Medium	Low	Low
30–39.99	Outpatient	Very high	High	High	Medium	Medium	Medium	Low	Low	Expectant
40–49.99	Outpatient	Very high	High	Medium	Medium	Medium	Medium	Low	Low	Expectant
50–59.99	Outpatient	Very high	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant
60–69.99	Outpatient	High	Medium	Medium	Low	Low	Low	Expectant	Expectant	Expectant
≥70	Very high	Medium	Low	Low	Low	Expectant	Expectant	Expectant	Expectant	Expectant
Burn size group, % TBSA no inhalation injury										
0–1.99	Very high	Very high	High	High	High	High	Medium	Medium	Medium	Medium
2–4.99	Outpatient	Very high	High	High	High	High	High	Medium	Medium	Medium
5–19.99	Outpatient	Very high	High	High	High	High	High	Medium	Medium	Low
20–29.99	Outpatient	Very high	High	High	High	Medium	Medium	Medium	Medium	Low
30–39.99	Outpatient	Very high	High	High	Medium	Medium	Medium	Low	Low	Expectant
40–49.99	Outpatient	Very high	High	High	Medium	Medium	Medium	Low	Low	Expectant
50–59.99	Outpatient	Very high	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant
60–69.99	Very high	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant	Expectant
≥70	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant	Expectant	Expectant
Burn size group, % TBSA with inhalation injury										
0–1.99	High	Medium	Medium	Medium	Medium	Medium	Low	Low	Expectant	Expectant
2–4.99	High	High	High	High	High	Medium	Medium	Medium	Low	Low
5–19.99	High	High	High	High	Medium	Medium	Medium	Medium	Low	Low
20–29.99	Very high	High	High	Medium	Medium	Medium	Medium	Low	Low	Expectant
30–39.99	Very high	High	High	Medium	Medium	Medium	Medium	Low	Low	Expectant
40–49.99	Very high	High	Medium	Medium	Medium	Low	Low	Low	Low	Expectant
50–59.99	High	Medium	Medium	Medium	Medium	Low	Low	Expectant	Expectant	Expectant
60–69.99	Medium	Medium	Medium	Low	Low	Low	Expectant	Expectant	Expectant	Expectant
≥70	Medium	Medium	Low	Low	Expectant	Expectant	Expectant	Expectant	Expectant	Expectant

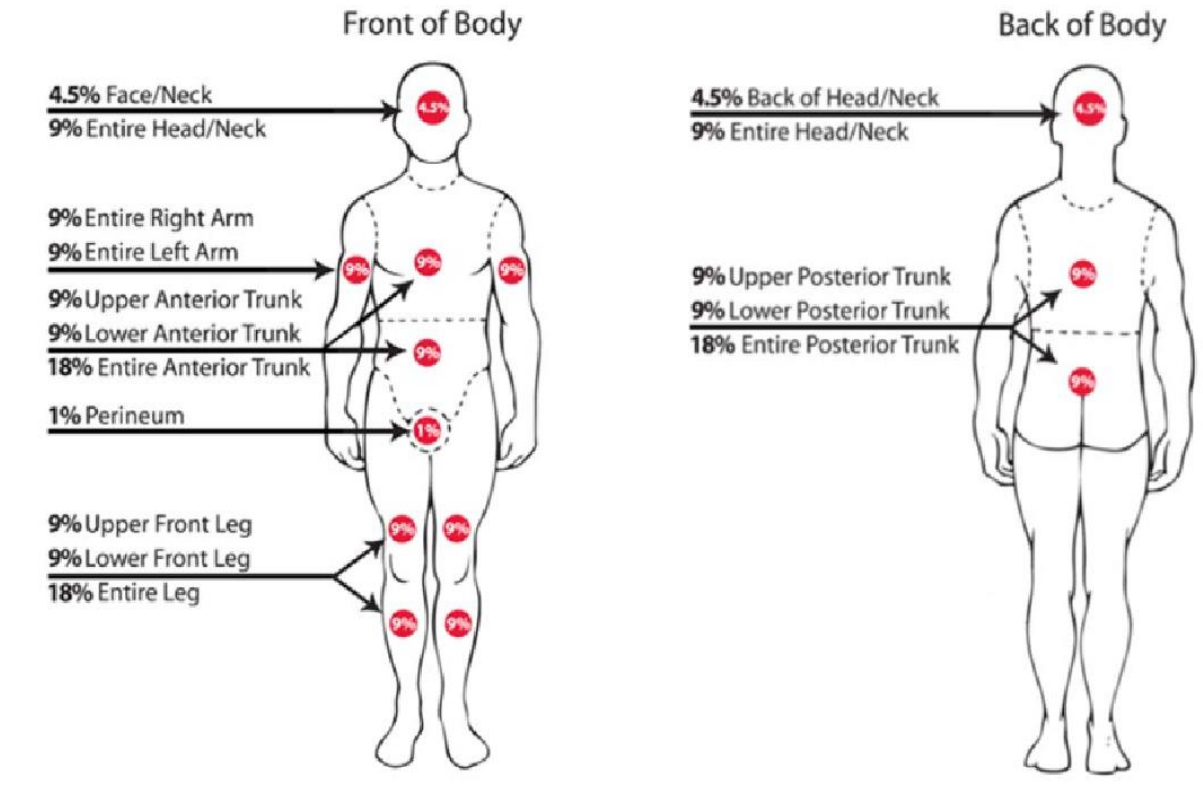


Figure 1. Depiction of the Rule of Nine's and Palmar Method of burn size estimation. For the Rule of Nines, each body region has a surface area in a multiple of nine. In the Palmar Method, the patient's palm represents approximately 1% of that patient's BSA. Reprinted with courtesy from The Burn Center at Saint Barnabas Medical Center, Livingston, New Jersey.

Table 2. Composition of oral glucose-electrolyte solutions and clear liquids (based on 62–64, 66–68)

Solution	Na^+	K^+	Cl^-	Base	Glucose	Osmolality
Rehydration						
WHO-UNICEF ORS salts	90	20	80	10 (citrate)	111 (20 g/L)	310
WHO-UNICEF reduced osmolarity ORS salts	75	20	65	10 (citrate)	75 mmol/L	245
Meyer's solution	85	0	63	29 (citrate)	0	160
Rehydralyte®	75	20	65	30	139 (25 g/L)	325
Infalyte® or Ricelyte® liquid, oral	50	25	45	36 (citrate)	30 g/L as rice syrup solids	270
Lytren®	50	25	45	10 (citrate)	111 (20 g/L)	290
Pedialyte®	45	20	35	10 (citrate)	140 (25 g/L)	250
Resol®	50	20	50	11 (citrate)	111 (20 g/L)	270
Gatorade®	20	3	20	3	250 (35 g/L)	280
Cola	2	0.1	2	13 (HCO_3)	730	750
Ginger ale	3	1	2	4 (HCO_3)	500	540
Apple juice	3	28	30	0	690	730
Chicken broth	250	8	250	0	0	450
Tea	0	0	0	0	0	5

ORS, oral rehydration solution. Manufacturer information: Rehydralyte: Abbott Pharmaceutical Company, Abbott Park, IL; Infalyte: Mead Johnson and Company, Glenview IL; Ricelyte: Mead Johnson and Company, Glenview, IL; Lytren: Mead Johnson and Company, Glenview, IL; Pedialyte: Abbott Pharmaceutical Company, Abbott Park, IL; Gatorade: Gatorade Company, Chicago, IL.

REFERENCES

Guidelines for Burn Care Under Austere Conditions: Introduction to Burn Disaster, Airway and Ventilator Management, and Fluid Resuscitation. *J Burn Care Res* 2016; 37:427–39.

Guidelines for Burn Care Under Austere Conditions: Special Etiologies: Blast, Radiation, and Chemical Injuries. *J Burn Care Res* 2016; 37:e482–496.

Guidelines for Burn Care Under Austere Conditions: Surgical and Nonsurgical Wound Management. *J Burn Care Res* 2016; DOI: 10.1097/BCR.0000000000000368

American Burn Association
311 S. Wacker Drive, Suite 4150
Chicago, IL 60606
(312) 642-9260

www.ameriburn.org

This page intentionally left blank.

Attachment 4: Burn Care Equipment/Supply List

American Burn Association information can be found online at http://ameriburn.org/

Bed Type	Recommended Staffing/Equipment Capabilities
Adult ICU – Burn Beds	Typical staffing ratio equals 2:1 with staff trained and proficient in managing fluid resuscitation for burns larger than 20% TBSA. Equipment needs include: • ICU telemetry monitors with invasive monitoring including Art blood pressure CVP • Ventilator Capable • Warm rooms to maintain core body temp • Capable of multiple drips, pressers, etc. • Supplies on hand to manage trauma, burn, and complex pulmonary needs (e.g. inhalation injury) • The capability should also include the ability to provide bedside procedures such as escharotomy and fasciotomy.
PICU – Burn Beds	Vital sign monitoring capability; Ventilator capability; Oxygen; Suction; IV pole(s) and pump(s); Feeding pump; Ability to warm; Crib or bed

The major considerations include the following:

- Can the facility manage patient body temperature (burn patients are prone to hypothermia and maintaining their core temperature is directly related to patient outcomes)?
- Do they have the capability to perform emergent escharotomies/fasciotomies (e.g. Provider trained in the procedure to conduct it whether in the Operating Room or Emergency Room or in an ICU, depending on the facility capabilities)?
- Is there a formal resuscitation plan for burns greater than 20%?
- Wound management procedures.
- Rapid and aggressive fluid resuscitation.
- Tetanus prophylaxis is required/recommended for any burn patient being treated.
- Types of drugs to consider (e.g. for pain and infection management).
- Consider additions: transport sheets, Rule of 9s posters, etc.
- Do they have some wound care plan for burn injuries up to and including third-degree burns if they cannot be transferred immediately to a burn center?
- This plan can vary dramatically from one facility to another based on what products are available from their formularies. Anyone who has questions or is seeking advice about what burn centers use can contact them directly to help set up contingency resources, as necessary.

This page intentionally left blank.

Attachment 5: POETE Burn Surge Gap Analysis

The Clinical Advisory Committee considered the current 25-county SETRAC region abilities and burn bed status through a Planning, Organization, Equipment, Training, and Exercise (POETE) gap analysis to identify best practices and resources that need to be developed across the region. The tables in the following pages also includes committee comments on the current status of burn care capabilities, identified gaps, and suggested recommendations for a surge in patients with various degrees of burn wounds (created 9/17/2020).

PLANNING

POETE	Definition	Committee Comments
Planning	Development of policies, plans, procedures, guidance documents, strategies, and other publications; mutual aid agreements; collection/analysis of information	Mass casualty planning in this region needs to involve industrial and maritime stakeholders as an accidental or intentional incident at a plant or in the ship channel is a likely source of a burn mass casualty incident. The SETRAC/CMOC would serve as a central repository for transfer agreements because they can detail/manage where facilities are most likely to refer patients to as facilities get overwhelmed. EMTRACK is used to track patients. The time from burn injury site to facility for care has a direct impact on patient outcomes, therefore triage and transport should be consistent. What is considered mass casualty incident for burn surge? 1.5x the normal burn bed (example if they have 6 staffed ICU beds for burn and they exceed 1.5x that amount i.e. 9 burn beds, then they're in trouble). 1. There are 3 burn centers within the region (20 adult burn beds and 15 pediatric burn beds). 2. Burn units within the region often respond to assist other states and countries, e.g. 9/11, international disasters, explosions, etc. American Burn Association (ABA) verified hospitals will collaborate with the American Burn Association Southern Region Coordination Center (SRCC) during a burn mass casualty incident (BMCI). They contact the SRCC at University of Alabama at 1-800-359-0123 to request assistance and work in collaboration with the local City Office of Emergency Management (GCOEM), Southeast Texas Regional Advisory Council (SETRAC) and Emergency room for medical and decontamination needs. The American Burn Association (ABA) Southern Burn Region talks to burn centers across the U.S. for burn bed count from the Alabama Trauma Communication Center (ATCC) requesting the following: a) Available Flexible Beds (Used for Adults or Peds): (Defined as ICU Beds available for burn surge) b) Available ADULT Burn Beds (Now): c) Available PEDIATRIC Burn Beds (Now): d) What is the maximum number you could take in a burn surge situation?
Planning Gaps		1. There is a need for consistent triage at the scene/facility for burn types during mass casualties. 2. There is a lack of consistent burn triage protocols across EMS Agency Operations. 3. What are the decon procedures for burn patients on scene vs at facilities? 4. How would triage occur at the scene for initial patient distribution? 5. What is the secondary distribution/transfer of patients to lower care or higher care facilities, per triage/care? 6. There is a need for collaboration in treatment among the different specialties (burn, radiation, trauma) 7. Non-burn centers may not have protocols to provide initial assessment and stabilization with treatment and/or transfer. 8. Include a consistent method for EMS burn identification, triage & transport too appropriate level of care facility 9. Gap is the need for telehealth protocols to assist with EMS triage decisions on scene and for initial stabilization care. 10. There is a need for coalition protocols: Immediate/Initial SETRAC/CMOC response communication and coordination within first 24 hours, then 24-48 hours, as well as, CMOC Coordination post 48 hours through to recovery actions… 11. What is the deactivation and recovery strategy/protocol for the CMOC and how would SETRAC/CMOC support burn surge activities during recovery?

Planning Recommendations:	1. Create table of roles and responsibilities to manage burn surge expectations 2. Need a protocol or diagram from when the incident happens to SETRAC notification and CMOC activation process 3. Self-Presenting Patient triage considerations should include protocols to evaluate inhalation burns and exposure to chemicals/air particles post incident. 4. Create a Burn Surge Plan that coordinates consistent triage with the movement of patients to the right place through both scene to facility transport and facility to facility transfers with overarching SETRAC/CMOC support. 5. Burn Surge Plan to cover the RHPC/SETRAC 25-County Geographical Region 6. A regional plan for consistent burn patient identification/triage and transport coordination 7. Front-end communication at mass casualty incident (MCI) scene for burn triage; ID type of burn patient to be sent to correct level of care burn facility or non-burn facility for treatment. 8. ID recommendations for non-burn facilities to prepare for burn surge patients 9. Combined injury-burns with trauma or radiation injuries-markedly increases mortality and these patients may be better served at trauma and other centers depending on the severity of each injury. Expert clinical input will be needed to support decision-making. Initial triage by EMS should always focus on traditional trauma triage guidelines when trauma is present. Secondary triage providers will need to consider combined injury. 10. Description of Coordination Methodology to include roles and use of EMResource/EMTrack 11. Burn cause/potential to cause more harm (e.g. fire, chemical, ash, radiological/nuclear) 12. Provide ABA Burn definitions based on the degree of burn with examples/pictures to reference in EMS triage protocols alongside considerations for inhalation burns vs contact burns 13. Ensure Emergency Medical Services (EMS) have consistent protocols specifying destination hospitals for burn patients including contingencies to monitor capacity at the preferred receiving facility. Protocols include preferred secondary facilities when the hospital of first choice is overwhelmed in a Burn Mass Casualty Incident (BMCI). 14. Burn patient coordination and tracking will be done with EMResource & EMTrack. 15. Create Burn Patient Transfer protocols/recommendations: On regular days vs during Mass Burn Casualty Incidents 16. Recovery considerations should include support services and follow-up care with rehabilitation, ambulatory, and mental/behavioral health services 17. 9-1-1 and ambulance dispatch: scene to facility & facility/facility transfers; full capacity in region – transfer to other regions/states 18. Resuscitation & early intubation protocols at burn injury site prior to and during transport to facility in crease patient outcomes and therefore need to be added to any plan/protocol developed. 19. All hospitals providing emergency care may receive burn patients and should have protocols in place to provide initial assessment and stabilization with treatment and/or transfer. 20. Healthcare facilities need to consider a 10:1 ratio for surge planning in family members to # of patients 21. Burn Patient Transfer protocols/recommendations: On regular days vs during Mass Burn Casualty Incidents w/9-1-1 and ambulance dispatch: scene to facility & facility/facility transfers; full capacity in region – transfer to other regions/states.

ORGANIZATION

POETE	Definition	Committee Comments
Organization	Staffing, teams, organizational structure, and leadership at each level in an organization structure	Hospital Department Leadership are responsible for managing the Mass Casualty Plan within their department. The Administrator or designee, Director of Patient Care Services or Safety Officer, with the Board of Governors, the Medical Staff, and the Administrative staff assures that enough resources and staff are available or provided. Non-ICU patients would be managed in the general surgical wards so that ICU bed capacity could be used for burn patient surge and would vary depending on hospital census. Once your facility has reached capacity, coordinating with regional entities will ensure patients transferred to within region, state, or across other states for appropriate care. a) CMOC activation via SETRAC 24/7 duty officer (281.822.4444) b) Southern Regional Burn Mass Casualty Incident (BMCI) Response Plan (1.800.359.0123) c) Our region transferred patient to St. Luis because nothing was available for PICU patient that had 3rd degree burn over 20% of their body. d) Some burn centers only admit certain types of burn patients and not others (e.g. age of patient, degree of burn, type of burn) which can make triage and transport time critical. e) Radiation Injury Treatment Network (RITN) may be activated, whereby radiation burn injuries would go to RITN site for decontamination, initial triage and care, while thermal (fire) burn injuries go to burn centers o RITN sites within this region are MD Anderson & Texas Children's Hospital. o The Federal RITN program may intertwine with regional medical surge plans.
Organization/Staffing Gaps:		1. There are no NICU nurses trained in burn care within the region 2. There is a lack of burn surge strike teams with pre-identified burn doctors, nurses, respiratory therapists, and equipment. 3. The triggers for burn surge and use of ICU beds for burn patients in non-burn facilities are not known. 4. The UTMB Blocker Burn unit only admits patients over 18 years of age. 5. The Shriners Burn Unit in Galveston only admits pediatric patients to age 18 with some patients up to age 21. 6. There is limited staffing and burn bed capacity to provide care for mass casualty burn incidents in the region.
Organization Recommendations:		1. Create a table with burn surge roles and responsibilities for partners and stakeholders. 2. Create RN strike team capability for burn care (ICU/NICU/PICU) and/or burn care response teams with pre-identified basic level of burn care cross-training for physicians and nurses. 3. EMS and regional healthcare coalitions have primary responsibility for initial response including casualty distribution and triage of patients for movement, including matching patients to available resources. 4. State and Local Public Health Departments and EM agencies support the response to assure coordination with the closest burn center in accordance with established EMS and regional healthcare coalition protocols. 5. Burn centers and Level 1 and Level 2 trauma centers should plan for a major role in the receipt and care of burn patients and understand their role in a BMCI for the local community, region, or state. 6. Consider universal/consistent transport options & burn care thresholds per facility (Trauma vs. Burn Center) for referrals. 7. Triage decisions of patients with **catastrophic burns** will require expert input. The ABA provide subject matter expertise during a burn incident. This could include telemedicine and telephone support to the affected jurisdiction(s). 8. Identify alternate care sites and non-burn center recommendation for triage, stabilization, telehealth, then Facility -to- facility transport. Ensure ability to move patients from acute care to other locations for care quickly. 9. Create considerations for healthcare facility social workers and care managers during patient care and transfers. 10. Maintain a tracking protocol for personnel with preferred skills for treating burn patients.

EQUIPMENT

POETE	Definition	Committee Comments
Equipment	Tangible resources, supplies, and relevant IT systems	UTMB uses EPIC EMR, Arcos Burn navigator for burn shock resuscitation, Hydrotherapy rooms (2) ICU rooms modified to meet needs of burn patients (i.e. hot rooms). Shriners has 9 conventional ventilators, 3 VDR, 2 Transport ,4 anesthesia machines, 3 OR suites, 15 PICU beds, and 3 treatment rooms. Coordination with the Tissue Bank and Blood Bank will be primary patient needs. Facilities can take pictures of the burn and send them via secure email if they don't have telehealth to help with triage and treatment decisions and/or with identifying transfer needs and prepare for receipt of patient. The telehealth ability must to include the visual burn degree so that the burn center professional can look at the degree of burn clearly to help with triage, stabilization, and/or sending patient to the appropriate facility level of care.
Equipment Gaps		1. Need to identify triggers for national tissue bank and blood bank for access and assistance from these organizations. 2. Limited pediatric and no neonatal dedicated burn care beds in the region 3. Limited ICU/PICU/NICU/ICU capacity for burn surge 4. Smaller rural hospitals won't have the ICU bed capacity or staffing to care for burn patients 5. A lack of SETRAC/CMOC inclusion in the current burn bed ABA regional process 6. Gap in the need for telehealth to assist with triage from site w/EMS transport, & facility patient assessments. 7. There are limited resources to designate NICU beds for neonate burn care in the region. 8. Facilities have different equipment and varying levels of telehealth (UTMB uses doxy.me). 9. The number & type of supplies needed in an ICU room for stabilization of burn patients in a non-burn facility is unknown. 10. There is no minimal list of equipment/supplies needed for pediatric vs adult stabilization care based on the degree of burn. 11. There is no list of minimal equipment needed for EMS or for a non-burn facility for transport/transfers and/or stabilization.
Equipment Recommendations:		1. Use ICU Beds in non-burn facilities to triage and stabilize patients during the need for regional burn surge capacity. 2. Identify ICU Adult and Pediatric Beds minimal equipment needs for burn ID and management in any non-burn facility ICU 3. Identify cache of burn care equipment for non-burn care facilities to utilize for surge 4. ICU beds will be utilized to surge care for burn patients 5. Due to lack of burn beds, all Burn Centers assist with burn care nationally and internationally. 6. Secondary triage of patients to appropriate center for continued care may be delegated to burn experts via telehealth, outside the immediately affected area, due to competing demands for direct patient care. 7. Care of **critical burns** is extremely resource-intensive and requires specialized staff and transportation assets. 8. The ABA polls for available burn beds, then assists with matching patient needs to available burn care resources. 9. Maintain minimal level of medical countermeasures at each hospital for chemical/radiation burn injury management. 10. Maintain ongoing supply management and coordination with the Tissue Bank and Blood Bank levels via supply chain. 11. ID supplies that ICU should have for burn surg: gauze, synthetic dressings, wound management materials, lactated ringers, IV tubing IVs, burn navigator for guiding resuscitation. (BARTA model w/logistics & supply?) 12. Identification of the MCM for specific chemical burns and radiation burns 13. Create an EMResource notification template regarding burn-specific resource coordination. 14. Create a list of transportation Equipment considerations: Ambulance/Ambus; Scene to Facility Transport triage equipment considerations; Facility to Facility /Secondary Transfers; Air Ops Transport local, regional, and across city/state line. 15. Awareness of ground and air resources in the region is critical to successful movement of **seriously burned** patients. (***ABA referral criteria*** is for triage purposes)

TRAINING

POETE	Definition	Committee Comments
Training	Content based on applicable standards and guidance; methods of delivery comply with relevant training standards.	UTMB offers Advanced Burn Life Support (ABLS) training with 3 ABLS Instructors and 1 ABLS Coordinator in a 1-4-hour lecture options for training within the region. There are handouts and posters for refresher ABLS trainings, which can be requested. SETRAC offers EMTrack, EMResource, and WebEOC training available upon request. SETRAC is building out their learning management system for trainings Memorial Hermann holds quarterly ABLS trainings with LifeFlight that are open to the community. It includes burn recognition and when to transfer patients within facilities and community hospitals. UTMB also went live with best practice alert (BPA), whereby a diagnosis of burn within their electronic management system would trigger questions the nurse/doctor may review to see if the patient needa to be transferred to the burn center, based (referral and decision making) criteria within the system. UTMB and Memorial Hermann are working on a side-by-side evaluation criteria to ensure recognition of 1st, 2nd and 3rd degree burns for consistency. References: ABA JITT: http://ameriburn.org/wp-content/uploads/2020/03/austere-guidelines-just-in-time-training.pdf ABA Burn Center Referral Criteria http://ameriburn.org/wp-content/uploads/2017/05/burncenterreferralcriteria.pdf
Training Gaps		1. There is a need for more advanced burn life support (ABLS) training courses throughout the region. 2. There is a limited number of trained staff to care for burn patients, just-in-time training is often used for patient care. 3. There is a lack of burn care knowledge and burn care related resources across healthcare facilities. 4. There is a lack of consistent burn triage training across EMS Agency Operations in the region/state. 5. There are infrequent infant burns, therefore very limited knowledge, experience, and resources for neonatal burn care. 6. There is a need for consistent triage at the scene/facility for burn types (mass casualties) 7. There is a need for resuscitation and early intubation training based on burn injury at site prior to and during transport. 8. Patient coordination is done with EMResource & EMTrack, however, there is a lack of training in the software. 9. Telehealth needs execution changes to help in triage for burn patients for EMS on scene and for facility to facility transfers. • Lack of burn surge triage, early intubation, transport, training guidance and/or recommendations • Lack of training protocol for time from burn injury to facility for patient care/outcomes • Lack of training protocol to resuscitate on-site for a coordinated burn protocol for early intubation • Lack of training for children vs adult burn care - best practices, guidance, recommendations
Training Recommendations:		1. Provide handouts for just-in-time burn care training in ICUs for surge staffing. 2. Provide training in the use of telehealth equipment for technical expertise to consult and/or advise, during emergencies. 3. For consistency, utilize ABA guidance/acronyms/definitions in EMS triage & burn identification training modules. 4. Create pre-hospital burn care recommendations for EMS triage & airway stabilization, then train on these across the region. 5. Train on EMResource protocols and working with the ABA Burn Center for tracking and transferring burn patients. 6. ID minimal staff training for burn ID and management for any non-burn facility ICU 7. Create RN strike team capability for burn care (ICU/NICU/PICU) and/or burn care response teams with pre-identified basic level of burn care cross-training for physicians and nurses. 8. ABLS education should be more widely available, currently conducted by Shriners and UTMB for consistency. 9. Provide minimum education/training recommendations for non-burn facilities 10. Designated trauma centers should expand training with ABLS to ensure minimal training available for burn surge in the ICU. 11. Provide the burn surge plan/protocol training opportunities to all healthcare providers, responders, and stakeholders.

EXERCISE

POETE	Definition	Committee Comments
Exercises	Exercises and incidents that provide opportunity to demonstrate, evaluate, and improve the ability to perform best practices and tasks to standards.	UTMB has conducted mass casualty simulations for hydrofluoric acid exposures in Galveston several times over the past 6 years and have also hosted a symposium with industrial and regional medical partners to establish relationships and coordination. Regional exercises, as well as real-world incidents utilize EMTrack, EMResource and WebEOC frequently. The Southeast Region Advisory Council (SETRAC) in conjunction with the Regional healthcare Preparedness Coalition (RHPC) conducts annual full-scale and functional region-wide exercises and offers many tabletop exercise opportunities throughout the year.
Exercise Gaps		1. There is a need for a region-wide burn surge specific TTX that includes private sector and non-burn facilities. 2. There hasn't been a burn-incident or full-scale exercise to test regional response to burn surge in over 70 years.
Exercise Recommendations:		1. Conduct a Regional Burn Surge Tabletop Exercise (TTX) to test and validate the new Regional Burn Surge Plan. 2. Conduct an exercise with the ABA Southern Region to coordinate activities between regional and multi-state partners. 3. Integrate burn surge related incidents (testing the response annex) with other exercises. 4. Provide functional and full-scale exercise opportunities to test and validate the regional burn surge plan.

Bed Type with Recommended Staffing/Equipment Summary

Bed Type	Recommended Staffing/Equipment Capabilities	Shriners Burn Ctr	UTMB Burn Ctr	Memorial Hermann John S. Dunn Burn Ctr	Other Facilities in the Region	**TOTAL Regional Bed Count**
Adult ICU – Burn Beds	Typical staffing ratio equals 2:1 (UTMB) with staff trained and proficient in managing fluid resuscitation for burns larger than 20% TBSA. Equipment needs include: • ICU telemetry monitors with invasive monitoring including Art blood pressure CVP • Ventilator Capable • Warm rooms to maintain core body temp • Capable of multiple drips, pressers, etc. • Supplies on hand to manage trauma, burn, and complex pulmonary needs, i.e. Inhalation injury • The capability should also include the ability to provide bedside procedures such as escharotomy and fasciotomy.	**-**	**12**	**14**	**0**	**20**
Pediatric Burn Beds	What staff/equip specs will be available? This count is pending Jan 2021 new construction.	**15**	**-**	**-**	**0**	**15**
PICU – Burn Beds	Vital sign monitoring capability; Ventilator capability; Oxygen; Suction; IV pole(s) and pump(s); Feeding pump; Ability to warm; Crib or bed	**15**	**-**	**-**	**0**	**15**
NICU – Burn Beds		**-**	**-**	**-**	**-**	**0**

* Note: "Surge capacity defined as available ICU beds. Many non-ICU patients would be managed in the context of the regular surgical populations."

This page intentionally left blank.