Regional Trauma System Plan

East Texas Gulf Coast Regional Trauma Advisory Council

REGIONAL TRAUMA SYSTEM PLAN

Table of Contents

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MISSION

To promote, develop and maintain a comprehensive EMS, trauma and acute care system that will meet the needs of all patients and that will raise the standards for community healthcare by implementing innovative techniques and systems for the delivery of emergency care for our community.

VISION

A unified, comprehensive and effective EMS, trauma and acute care system for a healthy, and safe community.

PHILOSOPHY

Assure the trauma system will attain its goal of decreasing morbidity and mortality of trauma patients by creating a seamless transition as patient's progress through the trauma systems continuum of care.

Belief Statements:

- We believe that all trauma patients are entitled to optimal trauma care.
- We believe that a planned and coordinated system with a public health model approach (assessment, policy development, and a performance improvement patient safety program) will result in a reduction of morbidity and mortality from injury events.
- We believe that the majority of injuries are preventable and that planned prevention strategies will result in decreased morbidity and mortality related to injuries.
- We believe that a coordinated and organized approach is best accomplished with the full commitment, engagement and collaboration of the essential disciplines involved in trauma care and injury prevention.
- We believe that resources are limited and that coordinated distribution and utilization of resources will result in safe and effective trauma care.
- We believe that trauma care providers, through organized education and training, can be educated to deliver optimal trauma care based on evidence based standards.

SCOPE OF RESPONSIBILITY

The East Texas Gulf Coast Regional Trauma Advisory Council, "RAC-R", is a nonprofit 501 (c) (3) organization governed by a Board of Directors elected by the membership. The Texas Department of Health officially recognized the Regional Trauma Advisory Council for Trauma Service Area (TSA) –R on May 6, 1993.

RAC – R encompasses the following counties: Brazoria, Chambers, Galveston, Hardin, Jasper, Jefferson, Liberty, Newton, and Orange. This Trauma System Plan for Trauma Service Area (TSA) – R is provided to meet the requirements within Texas Administrative Code (TAC) 157.123 and related to Department of State Health Services (DSHS) documents forming the *Regional Advisory Council (RAC) and Regional Trauma System Essential Criteria RAC Implementation Guidelines* (Revised 08/2009). These guidelines define the regional emergency medical services trauma system plan, the purpose of which is to "facilitate trauma and emergency healthcare system networking within a TSA".

This plan is aligned with the Texas Department of State Health Services *RAC Operation Guidelines Regional Trauma System Plan;* however, it is framed within the Health Services and Resources Administration (HRSA) and American College of Surgeons (ACS) *Regional Trauma Systems: Optimal Elements, Integration, and Assessment Systems Consultation Guide.* It is a regional resource to be updated annually and approved by RAC-R membership as a resource for providers of trauma care from the First Responders Organization through the rehabilitation facilities, and includes not only care providers, but other keys components of this system including injury prevention, public and professional education, system performance, performance improvement, and disaster preparedness. (Refer to **Appendix A**: Trauma Plan Signature Page).

SYSTEM LEADERSHIP

The board of directors is charged with promoting awareness of the trauma system plan as a component of the East Texas Gulf Coast Regional Advisory Council annual report. In addition, the board coordinates an annual review of the plan. The plan will be presented to the general membership and will be posted on the RAC website. RAC-R Board is available to assist in the development, implementation, education, and monitoring of the Regional Trauma System Plan. Current contact information is listed at www.rac-r.com.

REGIONAL DEMOGRAPHICS

The Texas Department of Health officially recognized the Regional Trauma Advisory Council for Trauma Service Area – R on May 6, 1993. The East Texas Gulf Coast Regional Advisory Council (RAC-R), encompasses Brazoria, Chambers, Galveston, Hardin, Jasper, Jefferson, Liberty, Newton and Orange Counties. The region covers 7,574 square miles and is home to 1,209,563 people. The top three (3) counties in population are Jefferson, Galveston, and Brazoria. Four (4) of the nine (9) counties are classified as rural: Jasper, Chambers, Hardin, and Newton. (Refer to Appendix B for a map of the region.) In 2015, falls accounted for 42% of all injuries closely followed by Motor Vehicle crashes which accounted for 29%. (Texas Department of State Health Services EMS & Trauma Registries RAC R 2015 Summary). This

data aligns with state and national trends.

The table below delineates the population and square miles of each county within TSA –R:

County	Population Estimates 2018	Square Miles	Number of Trauma Centers
Brazoria	362,457	1,387	3
Chambers	41,441	599	0
Galveston	335,036	399	2
Hardin	57,139	894	0
Jasper	35,561	937	1
Jefferson	256,299	904	3
Liberty	83,658	1,160	0
Newton	,952	938	0
Orange	85,047	356	0
Total	1,186,932	7,574	9

Reference: https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmk

The largest petrochemical complex in the world is located in Texas. Texas' chemical manufacturers account for more than 50% of the total US chemical production with 400 chemical plants and refineries along the Texas Gulf Coast. Several international ports are located along the upper Texas Gulf Coast along with multiservice regional airports, multiple small airports and several paper product plants.

Numerous entertainment venues are available to the residents and visitors within TSA - R including many local county fairs, the Texas State Fair in Beaumont, many concert venues and sporting events. The region has hosted the Little League World Series and the softball World Series as well as minor league basketball, indoor football, and hockey teams. Lamar University, hosts inter-collegiate football, basketball, and baseball tournaments.

Additional entertainment venues include a NASCAR circuit speedway and several amusement parks. Several large convention centers are scattered throughout the region which host cultural, business and political events. One large entertainment complex located centrally in the region has also served as a staging area during disasters.

Galveston is a barrier island and is considered a major tourist destination and remains the port of entry and destination for cruise ships. The Island hosts more than 200,000 visitors during the annual Lone Star Rally. Other events on the island include Mardi Gras and Dickens on the Strand which draw thousands of visitors to these events annually.

Opportunities for higher education are located throughout the region including the University of Texas Medical Branch, Lamar University, Texas A&M Galveston and multiple community colleges. The University of Texas Medical Branch in Galveston, established in 1891, is the

first academic health center in Texas and one of the oldest in the nation. The campus includes a large medical school along with nursing and allied health programs. Many of the universities and junior colleges in the region offer healthcare curriculums.

EMS /PREHOSPITAL DATA

Within TSA-R, there are multiple licensed EMS providers. The level of EMS provider and numbers of providers can fluctuate per county. For a current list of EMS services in RAC R per county refer to the following website: **https://www.dshs.state.tx.us/emstraumasystems/.** The RAC has adopted standard regional trauma activation criteria, which can be found under Appendix C.

TRAUMA CENTERS

With the vast geographic area of the TSA, one of the leading trauma care concerns is the amount of time it can take to reach the patient and the amount of time it can take to reach a trauma center. Within the rural counties of Newton, Jasper, Hardin, and Chambers, ambulances are generally based in the largest towns within the counties. To reach some areas in the county, it may take an ambulance 30 minutes to a maximum of one hour. By the time the patient reaches a trauma center, the golden hour has expired. Access to air ambulance services within the region is available.

Within TSA-R, there are multiple designated trauma centers to serve approximately 1.2 million people. The highest Level trauma center, the Level I, is located in the southern area of the TSA and two Level III facilities are located centrally and the southwestern end of the TSA. For a list of the current trauma facilities with their designation status refer to the following website: https://www.dshs.state.tx.us/emstraumasystems/ EMS providers are often faced with the decision to transport to the closest facility. This ultimately necessitates hospital to hospital transfer to meet the needs of the patient. At times, hospitals will transfer out of RAC-R to adjacent RAC's which is acceptable. Fixed wing services are available for those patients that require long transport times.

Access to the Level I facility in the region from the eastern area of the TSA is challenging. Transport by an ambulance entails the use of a ferry to cross the ship channel. Depending on the time of year, an ambulance may wait as long as 45 minutes for the ferry to arrive. All these issues must be addressed when formulating a regional trauma plan.

Located within the RAC-R region are three (3) Council of Governments (COG's). The councils are committed to assuring non-discrimination in its programs and activities to the effect that no person shall on the grounds of race, color, national origin, sex, age, disability or income status be excluded from participation in, be denied the benefits of, or be otherwise subjected to

discrimination or retaliation under any federally or non-federally funded program or activity administered by the COG's. Chambers, Liberty, Galveston, and Brazoria counties are serviced by the Houston Galveston Area Council (H-GAC). H-GAC is the regional organization through which local governments consider issues and co-operate in solving area wide problems. Through H-GAC, local governments also initiate efforts in anticipating and preventing problems and saving public funds. The 13-county H-GAC service region is developing, becoming more diverse and is constantly changing. In order to address the needs of citizens and businesses, local governments are providing leadership to guide regional development. The foundation for responsible public service in a rapidly changing region is H-GAC's program of regional planning. H-GAC provides planning programs in its areas of shared governmental concern. All H-GAC programs are carried out under the policy direction of H-GAC's local elected official Board of Directors. H-GAC is made up of the region's local governments and their elected officials, and works together with public and private sector organizations and a host of volunteers. The 13 counties in H-GAC's service region are: Austin, Brazoria, Chambers, Colorado, Fort Bend, Galveston, Harris, Liberty, Matagorda, Montgomery, Walker, Waller, and Wharton with more than 100 member cities in the region.

The South East Texas Regional Planning Commission (SETRPC) State Planning Region 15 is the local COG which includes Hardin, Jefferson, and Orange counties, 19 member cities (including the Beaumont/Port Arthur Metropolitan SA), and 21 special purpose districts. SETRPC seeks to assist member governments in meeting the ever-changing needs of a dynamic society while retaining home rule and individual identity. SETRPC is organized into 11 functional divisions, which are: Administration, 9-1-1 Emergency Communications, Area Agency on Aging of Southeast Texas, Criminal Justice, Experience Corps® Southeast Texas, Homeland Security & Emergency Planning, Regional Development & Services, Retired and Senior Volunteer Program, South East Texas Foster Grandparent Program, Substance Abuse, and Transportation & Environmental Resources. SETRPC seeks to provide the focus for bringing diverse interest groups together, a forum for the discussion of regional issues, and the foundation for a regional approach to problem solving.

The Deep East Texas Council of Governments (DETCOG) Deep East Texas Planning Region 14 is composed of Jasper, Newton, Angelina, Nacogdoches, Polk, Sabine, San Augustine, San Jacinto, Shelby, Trinity, and Tyler counties. By combining the resources of local governments, the Deep East Texas Council of Governments (DETCOG) provides a window of opportunity for helping citizens improve their quality of life. DETCOG has successfully worked for better intergovernmental cooperation, more efficient services, fiscal accountability, quick response to public needs, and serious economic development involvement. DETCOG has increased interaction with state and federal government agencies; enhanced communication with the public, the press and members; and made a conscious effort to become more accessible to the citizens of Deep East Texas. As the new decade unfolds, DETCOG remains pledged to hard work, true collaboration, solid accountability, and a spirit of regionalism in all areas of endeavor.

BURNS

Burn care is limited throughout the state of Texas with only six burn centers to provide burn care to over 27 million people. The University of Texas Medical Branch Blocker Burn Center (Adult Burn Center) and the Shriners Hospitals for Children- Galveston (Pediatric Burn Center) are verified Burn Centers as accredited by the American Burn Association. As a verified Burn Center, they meet the highest current standards of care for the burn-injured patient and have the resources to ensure the provision of optimal care from the time of injury through rehabilitation to re-integration back into the community.
The American Burn Association provides specific guidelines when considering transport or referral to a burn center, further information can be found at www.ameriburn.org.
Criteria to transport or transfer to a burn center include:

- 2nd degree burns >10% of the body surface area
- 3rd degree burns
- Burns to face, hands, feet, genitalia, perineum and major joints
- Electrical burns (including lightning injury)
- Chemical burns
- Inhalation injury
- Burn injury in patients with preexisting medical disorders that could complicate management, prolong recover, or affect mortality.
- Any patient with burns and concomitant trauma
- Burn injury in patients requiring special social, emotional or rehabilitative intervention

When treating a victim with burns, it is important to expeditiously stop the burning process, remove clothing, jewelry, and contacts. Avoid hypothermia by keeping the patient warm, do not apply ice to wounds. Do not apply wet dressings or ointments to the wound. Wounds should be covered with clean, dry dressings or sheets which will also minimize exposure to air currents and reduce pain. Management of pain is also key in the treatment of the patient. The following are the fluid replacement guidelines recommended by UTMB Blocker Burn Center:

Pre-Hospital: Initial Fluid Rates

- 5 years old and younger: 125 ml Lactated Ringers (LR) per hour.
- 6-13 years old: 250ml LR per hour.
- 14 years and older: 500 ml LR per hour.

Hospital: Adjusted Fluid Rates

Step 1: Calculate the total body surface area burn (% TBSA) and obtain patient's pre-burn injury weight in kilograms (kg).

Step 2: Calculate fluid resuscitation.

INJURY EPIDEMIOLOGY

The East Texas Gulf Coast RAC Board of Directors and membership have made a commitment to acquire meaningful data to provide information for decision making. RAC-R lacks a regional trauma registry therefore relies on the state trauma registry for a compilation of data. RAC members may request specific epidemiology reports from the state registry as needed by submitting a request through http://www.dshs.texas.gov/injury/data/Data-Requests.doc

PREVENTION AND OUTREACH EDUCATION

Unintentional and intentional injuries are a significant public health concern within the State of Texas. Trauma systems must develop prevention strategies that help control injury as part of an integrated, coordinated and inclusive trauma system.

Working with stakeholders and community partners, prevention and intervention programs and strategies are defined by reviewing the data collected by trauma centers and pre-hospital partners. Intervention programs seek to create a measurable reduction in injury or increase in prevention strategies (such as use of car seats for pediatrics), that are attainable and have a defined timeline.

The mission of the Injury Prevention committee for RAC–R is to effect change in decreasing injuries through education and to promote prevention efforts in injuries through committee initiatives. In 2016, the RAC embraced the Stop the Bleed program and collaborates with public and private schools to offer training for the staff. Through grant funds, the RAC distributes Bleeding Control kits to every school that has received training. Kits are placed with the AED's throughout the school system. Training is also presented to business, community members and churches to name a few. Refer to the RAC website (www.rac-r.com) to view current and past injury prevention programs.

PERFORMANCE AND SYSTEM IMPROVEMENT

Participating organizations in RAC-R concur that ongoing monitoring and evaluation of the Trauma Care System through a well-defined System Performance Improvement (PI) Program is the primary way to improve trauma care thus, ultimately improving survival and reducing morbidity from injury. This is especially important in the predominately rural and frontier areas of TSA-R. Clear communications and rapid transport are crucial in a region with such a large land mass area. It is important that providers participate in the PI process with facilities within their catchment area.

All member organizations agree that both organization based and system based PI are essential.

Neither an individual entity's nor provider's information will be collected for any internal PI actions including disciplinary actions. Sentinel Events as defined by a certifying/accrediting body will be addressed by the individual entities. While organization based PI focuses primarily on the care rendered to individual patients, system based PI focuses on the overall functioning of the system components and their interactions from pre-hospital care through rehabilitation.

By participating in RAC-R, all organizations accept the guiding principles for System PI as outlined by the Texas Department of State Health Services. EMS, Hospital, and System PI programs will be developed in close cooperation to monitor and improve trauma care in TSA-R. Regional data obtained from the Texas Department of State Health Services Trauma Registry will be reviewed for trends and identified issues and reported to the Executive Committee and Board of Directors. The identification of major injury types will be utilized in the development of appropriate Injury Prevention Programs for the region.

It is important to establish a PI plan to systematically monitor and evaluate trauma care from a system perspective. Participation in the PI process by all participating organizations, both EMS and hospital is encouraged. The Performance Improvement process will follow the guidelines as detailed in Section 161.031 – 161.032 and Section 773.092(e) of the Texas Health and Safety Code, which detail the confidentiality afforded activities of this type. Each document submitted for RAC-R Performance Improvement will be stamped CONFIDENTIAL and blinded, with all specific patient identifiers removed.

The PI Committee will be composed of participating members in RAC-R from all disciplines including EMS providers; hospital representatives; nursing; and physicians. Committee members must sign a Confidentiality/Nondisclosure form which will be reviewed and renewed annually. The committee will review all aspects of the trauma system, including access, dispatch, pre-hospital management, transport, hospital access, hospital management, transfers, initiatives, and disaster response. Performance standards and expectations will be communicated to all EMS providers and hospitals.

Data analysis will be utilized to determine parameters for use in improving the quality and availability of care in the region. Data should be submitted to the PI Committee on a quarterly basis to be utilized to identify system wide and provider specific technological, communication, educational needs, and opportunities for improvement in the trauma care system. The PI process in RAC-R is currently limited due to the dependence of the manual collection of data for analysis of system based issues. Until this process is automated to allow for tracking of cases through the system, the PI Committee's function will be limited. To enhance the understanding of the PI process, case reviews are presented at the general assembly meetings that highlight current trends in evolving standards of care. Case reviews are de-identified, presented by a third party, and provide a summary of care through the continuum. Open discussion is encouraged during the presentation of each case review.

PATIENT CARE CONTINUUM

The Texas Department of State Health Services (DSHS) is the lead agency for trauma in the State of Texas and RAC-R is the lead agency for TSA-R. DSHS defines the regulatory standards for emergency medical service providers and trauma facilities which can be located at https://www.dshs.state.tx.us/emstraumasystems/default.shtm The American College of Surgeons defines the trauma facility criteria for the Level I and Level II trauma centers in the Resources for Optimal Care of the Injured Patient. The Level III and Level IV trauma facility criteria are defined by DSHS. In addition, criteria for Regional Advisory Councils are defined by DSHS. RAC-R defines the system standards of care for TSA-R. RAC-R has developed regional protocols / guidelines regarding trauma care. To review these guidelines, refer to the RAC-R website at www.rac-r.com. Per the criteria defined by DSHS and the American College of Surgeons, each facility should define their own trauma activation criteria. Due to the size and capabilities within TSA-R, the responsibility of lead trauma facility is designated to the Level I trauma facility in the region.

The hospitals provide assistance to facilities seeking trauma facility designation. The trauma subcommittee through committee meetings, agenda items and networking helps facilities identify any areas of need in trauma facility designation. Each facility that applies for trauma center designation must be a member in good standing of the RAC. Upon request of the designating hospital, the RAC will send a letter of participation to the designating body. Once the hospital receives notification of the dates of the site visit, the representative should contact the RAC Board Member nearest their facility. A Board Member will be available to attend the visit to provide RAC support.

Any change in the trauma facilities capacity and capability should be reflected in EMRESOURCE. (https://emresource.juvare.com/login) Trauma facilities that cannot meet an essential criterion for trauma centers for a prolonged length of time (defined as three (3) months or more) should report these issues to the RAC office for submission to the board as well as the designating body. The RAC trauma subcommittee can assist the facility in developing strategies to support the facility and maintain optimal care. DSHS defines the critical elements that must be reported to the State as the following:

- Loss of Trauma Medical Director (with no interim)
- Loss of Trauma Program Manager / Coordinator (with no interim)
- Loss of Surgical coverage (with no interim plan -Level I, II, and III)
- Loss of Orthopedic Coverage (with no interim plan – Level I, II, and III)

- Loss of Neurosurgical Coverage (with no interim plan – Level I, II)
- Loss of Trauma registry (with no interim plan)
- Loss of capabilities to provide Injury Prevention or Outreach Education (with no interim – Level I and II)
- Loss of ability to provide acute trauma resuscitation and critical care stabilization
- Closure of facility
- Decision to relinquish trauma designation

Transfer guidelines are reviewed annually and processed through the trauma subcommittee and approved by the board of directors. The Level I, II and III facilities are expected to accept trauma transfers based on the receiving facilities capacity and capability. Each hospital may have their own method or process for accepting transfers. For a list of hospitals with Trauma center designation refer to https://www.dshs.state.tx.us/emstraumasystems/etrahosp.shtm and https://emresource.juvare.com/login

The trauma system plan is integral to trauma facilities and pre-hospital emergency providers. The trauma plan will be signed annually by each facility's trauma medical director and EMS medical director. (Refer to **Appendix A** for the Medical Director Signature Page). These signature pages are included in the annual membership packet. To become a member of RAC-R, the trauma system plan signature page must be signed and submitted with a request for membership.

FACILITY CLOSURE OR LOSS OF TRAUMA DESIGNATION

Upon the decision of a facility to relinquish their trauma designation or close their facility, notification in writing must be immediately sent to DSHS and the RAC office.

DIVERSION/SATURATION

Proper posting on EMRESOURCE shall be considered the official and standard mechanism for notification in TSA-R. All EMS services are expected to participate in EMRESOURCE and to monitor it at all times for current system information and hospital status. An EMS agency may call a receiving hospital for information on the status of facilities in their area if they do not have access to monitor EMRESOURCE. The capacity and capability of trauma facilities is listed and tracked via EMRESOURCE. Hospitals are required to update their status daily. Facilities may provide messages such as alerts for equipment malfunction, maintenance or traffic concerns/road closures to assist EMS agencies in making a transport destination decision. Proper posting on

EMRESOURCE shall be considered to be the official standard mechanism for notification from hospitals to EMS and other facilities in TSA-R.

RAC-R adheres to the definitions of Open, Internal Disaster and Evacuation outlining the status of the entire facility. Open, High Volume, and Saturation are used to describe the current capabilities of the Emergency Department, ICU, Trauma, Neurotrauma, Orthopaedic and Stroke capabilities as outlined by EMRESOURCE.

TSA-R does allow hospitals to use saturation status for the designated hospital's Emergency Departments, in case of critical saturation. This status must be updated every 4 hours for as long as the Emergency Department is at critical saturation, but for no longer than 12 hours. Status changes are not considered to be in effect until the notice is posted on EMRESOURCE. Facilities may communicate information to EMS that may be relevant in the decision to transport to their destination, but a facility may not refuse to accept any patient that is brought during the critical saturation status. Hospitals are reminded that saturation is a request and not an absolute. Patients whose care would be compromised by delaying transport or lengthening transport time, should be transported as quickly as possible to the closest most appropriate facility ***without*** regard to the hospital status. EMS services are reminded that the best interest of the patient may be to honor the saturation request and transport to an alternate hospital.

Any hospital that goes on trauma saturation must update their status in EMRESOURCE to indicate their saturation status. The EMRESOURCE web page is located at https://emresource.juvare.com/login. Every effort should be taken to minimize the time on trauma saturation. Trauma facilities should keep a log of all trauma saturation hours and report the time to the state. Trauma saturation hours can be monitored by running a status report on EMRESOURCE for regional saturation hours.

Level I facilities or other lead trauma facilities should not be on trauma saturation, unless there is a severe crisis. It is the recommendation of the American College of Surgeons that Level I facilities must not be on diversion/saturation more than 5% of the time.

Facilities are required to update their Emergency Department status at least once daily. Failure to update the system will result in an automatic status update to "Auto Open" status. Facilities may post an "Internal Disaster" status if they are suffering from a facility emergency. Examples may include an internal disaster such as a fire, flooding, power outage, water shortage, structural damage or evacuation due to weather emergency. This status expires every 2 hours, so the facility needs to update the system during the emergency. The facilities may also utilize WebEOC and CMOC for assistance during a disaster, and to notify those in TSA-R of an emergency in the facility. There are trained personnel in each facility that are able to access assistance through WebEOC and CMOC. The system will automatically update to "Open Overdue" when the closed status expires or is overdue for updates in each 2 hour window.

Bypass protocols address the intentional movement of trauma patients from the scene to a specific designated trauma facility, not necessarily the nearest hospital, based on the patient's needs. Facility bypass is addressed in the Adult Trauma Pre-Hospital Triage Guidelines.

EMERGENCY MEDICAL SERVICES

RAC-R is supported by EMS systems with two-way communication to dispatch and hospitals. Medical oversight includes online and offline guidelines written by each medical director.

Each Medical Director within RAC-R assumes the responsibility for trauma oversight as well as specific performance improvement activities to investigate patient outcomes for his or her EMS personnel. Individual Medical Directors may adopt and supplement RAC guidelines and has the legal authority under Texas Medical Association Chapter 197 and the Texas Department of State Health Services (DSHS) Chapter 157 to adopt protocols and guidelines. They may create and implement performance improvement system guidelines to restrict the practice of pre-hospital practitioners to monitor, improve, and increase medical appropriateness of the EMS system. As a trauma system, performance improvement should include each trauma center in the review of care provided to the trauma patient.

EMS Medical Directors are responsible for active involvement in the development, implementation, and on-going evaluation of dispatch guidelines for the jurisdictions under their purview. These should include:

- Basic Life Support (BLS)
- Advanced Life Support (ALS)
- Air and ground coordination
- Pre-arrival instructions

Air Medical services are integral to patient transport within TSA-R. These guidelines can be found on the RAC-R website at www.rac-r.com.

DSHS, along with the Medical Director is responsible for the retrospective medical oversight of the EMS system for trauma triage, communication, treatment, and transportation. This is coordinated through performance improvement of each provider. All counties in the State of Texas have 9-1-1 service. 911 districts may provide their own emergency medical dispatch training.

DSHS provides a designation for First Responder Organizations (FROs), which can range in support capabilities, but does not include the ability to transport. Part of the DSHS approval process includes obtaining Mutual Aid Agreements with a licensed EMS provider that transports for them.

911 capabilities for all EMS providers allow for efficient dispatch of response teams/agencies to the scene. Refer to the section titled Patient Care Continuum. RAC-R helps coordinate response teams for disaster and regional surge responses through the CMOC and EMTF-6.

DSHS supervises provider licensing of EMS vehicles including Basic Life Support (BLS), Advanced Life Support (ALS), and Mobile Intensive Care Unit (MICU) vehicles in Texas. Medical Directors, Providers, and RAC-R work to assist in ensuring that providers have the resources for a well-coordinated transportation system to arrive on scene with promptly and expeditious transport of patients to the correct hospital by the appropriate transportation mode including ground and air transport. Mutual Aid Agreements and Memorandum of Agreements are also in place if and when needed.

RAC-R offers grants to support EMS Education programs to provide continuing trauma training to pre-hospital providers and Medical Directors. Examples of courses include: Prehospital Trauma Life Support (PHTLS), International Basic Trauma Life Support (ITLS), and trauma specific courses that are available in Texas. Trauma education may be driven by performance improvement and part of a credentialing process put into place by an EMS Medical Director.

The development of a regional system for trauma care encourages the active participation of qualified physician providers. All physicians should be clinically qualified in their area of clinical practice and exhibit expertise and competence in the treatment of trauma patients.

All EMS providers must have the benefit of medical oversight. This is true regardless of the level of services provided. Such oversight is necessary to help ensure that EMS is delivering appropriate and quality services that best meet the needs of the patient and community.

From time to time certain participating / designated trauma facilities may be unable to accommodate certain patients based on the capacity, capability and / or medical resources. RAC-R has adopted EMRESOURCE as the mechanism to be utilized to re-route those patients to other participating / designated trauma facilities. (Refer to the section entitled Patient Care Continuum.) This practice is utilized to re-direct patients to appropriate trauma centers to assure optimal patient care is maintained in the regional system. The redirection of trauma patients for financial reasons is not acceptable and can be reported as a potential EMTALA violation.

Scene times are not currently trended at the regional level but a threshold of twenty minutes is a regional expectation that may be requested and reviewed by the System Performance Improvement Committee. As referenced before, the System Performance Improvement Committee consists of multidisciplinary group of participants. EMS Services shall perform Performance Improvement based on their own criteria.

Currently active RAC-R members consult and utilize information from their own resources and bring issues to RAC-R with information or requests for standardization or suggestions for review.

RAC-R recommends a standardized method of report utilizing MIST; Mechanism of Injury, Injuries identified, Signs/Symptoms and Treatment. A template of this format can be found on the website at www.rac-r.com. RAC-R members are free to modify the form to meet their individual needs.

The National Incident Management System (NIMS) is the standardized approach to incident management and response utilized by TSA-R. The Incident Command System (ICS), a subcomponent of NIMS, is the standard method used for field command when multiple providers respond. A regional protocol is not established due to the number of EMS providers in the region, but experience is obtained through interagency training established by individual EMS providers. Supervising agency at the scene is established by the determination of lead agency for location.

REHABILITION

Rehabilitation is the process of helping a patient adapt to a disease or disability by teaching them to focus on their existing abilities. Within a rehabilitation center, physical therapy, occupational therapy, cognitive therapy, and speech therapy along with other specialty modalities can be implemented in a combined effort to increase a person's ability to function optimally within the limitations placed upon them by disease or disability. To uphold the continuum of care from illness to health and offer a high-level of service, rehabilitation is a critical service offered within TSA-R through hospital based programs and private organizations.

DISASTER PREPAREDNESS

The emergency response system within TSA-R incorporates all emergency support functions (ESF) indicated in the National Response Framework, and as incorporated within state and local plans. Regional ESF- 8 (Health and Medical) response to incidents and emergencies, in which response is localized, is typically managed by individual hospitals, EMS agencies, and with minimal involvement by supporting local health departments and jurisdictional emergency management officials. However, additional regional resources must be used when these incidents exceed local capacity and local jurisdictions are required in order to achieve a satisfactory response.

As reflected in the state of Texas Homeland Security Plan, all emergencies are considered a local responsibility, and legal responsibility for provision of support for emergencies is placed on the senior elected official within the affected jurisdiction. Response entities such as hospitals and EMS agencies must work through these officials when resource needs cannot be met by local assets only.

Many resources have been placed within TSA-R by participation in a number of Federal and State programs designed to enhance local and regional ESF-8 readiness. These programs include:

- Jurisdictional participation through health departments and the Federal Bioterrorism Public Health Emergency Preparedness Program, which includes the nine county service area of TSA-R. These programs prepare jurisdictions, their supporting local health departments, and partnering health and medical professional for epidemiological intervention and biological events, including strategic national stock pile preparations.
- TSA-R is a part of the Regional Hospital Preparedness Program, and does participate in an area wide response in conjunction with TSA-Q and TSA-H.
- Texas Hospital Preparedness Program, through which area hospitals work towards a higher level of local and regional disaster preparedness.

Resources improved for hospital and EMS disaster response readiness:

- Provision of interoperable communications capability spanning jurisdictional, public health, and health care providers, expanding traditional telephone systems by adding regional internet based platforms such as WebEOC, EMRESOURCE, EMTRACK, emergency notification systems, and two way radio capabilities, enabling hospitals and jurisdictions to communicate in virtually any disaster.
- Provisions of deployable communications kits with interoperable two-way radios.
- Development of hospital caches of medical supplies for use in acute care and trauma centers, or which could be deployed to large scale trauma events.
- A cache of emergency ventilators is located throughout the TSA-R area within the participating hospitals.
- Placement of Level C personal protective equipment, decontamination equipment, and hospital evacuation equipment are located at some area hospitals within the region, and the provision of training and exercise opportunities for response.

Hospitals participating in the Texas Hospital Preparedness Program, and those pursuing accreditation under Joint Commission standards, have developed all-hazard response plans and protocols, including methods by which they respond to mass casualty events. Some of the response systems developed include plans for sheltering in place, medical evacuation, mass fatality management, and resource sharing. These plans and resultant Hospital Incident Command Systems incorporate the National Incident Management System, and are based on hospital, city, county, and regional hazard vulnerability assessments (HVA). Hospital integration to local emergency management systems is emphasized.

In conjunction with TSA-Q, TSA-R utilizes the Homeland Security Exercise Evaluation Program exercises that integrate participating hospitals, supporting jurisdictions, and regional and state

partners into discussion based and operations based exercises. Regional communication drills testing both internet based communications and radio systems are held regularly. Participating agencies produce after action reports and corrective action plans for internal use, and provide input for regional development of these documents. In order to effectively manage assets and to enhance mutual aid among hospitals, EMS agencies, and supporting jurisdictions, RAC-R utilizes the Emergency support functions of RAC-Q. Capabilities include:

- Regional administration of internet based crisis communications platforms, including WebEOC and EMRESOURCE, and support for local administration of the Texas Disaster Volunteer registry (TDVR).

    - WebEOC provides a common platform for all resource requests originating at TSA-R hospitals and funneling through city, county, and state response agencies. It also provides the ability to track evacuees, inter-hospital patient transfers, hospital significant event reporting, situation reporting, and a mission / task system. It further enables near real time bed reporting by all acute care and trauma facilities.

    - EMRESOURCE provides every hospital, ground EMS, and air-medical EMS services a single platform for alerting and reporting the ability to respond to a mass casualty event. This system indicates agency ability to respond to mass casualty locations and the ability to receive disaster victims.

    - The Texas Disaster Volunteer Registry is the Texas version of the Federal Emergency System for Advance Registration of Voluntary Healthcare Professionals. Within TSA-R, registration of volunteer health, medical, and other supporting professionals is principally a jurisdictional responsibility. The TDVR is available for any agency that pre-registers such personnel, and provides licensure validation services.

- RAC-Q maintains the inventory system of disaster supplies for RAC–R. This system provides hospitals a medium through which they may seek available resources in the region and request if needed.

- The CMOC functions as a Regional EMS Coordination Center and provides for deployment coordination of regional EMS support personnel and equipment into Ambulance Strike Teams with Strike Team leaders, and Medical Incident Support Teams. These teams are capable of forward deployment into other regions of the state, and may be called upon to support local disaster response, including receipt

or transfer of patients through the National Disaster Medical System (NDMS); state based emergency air lift, and mass shelter events.

The Emergency Medical Task Force (EMTF) Project was developed by the Texas Department of State Health Services (DSHS) to create a network of regionally based medical teams. The goal of the EMTF program is to provide a well-coordinated response, offering rapid professional medical assistance to emergency operation systems during large scale incidents. The EMTFs are multi-RAC regions designed to leverage the capabilities of several trauma systems. The state is geographically divided into EMTF regions. RAC-R is in EMTF6 region which is composed of SETRAC (RAC – Q) and Deep East Texas RAC (RAC-H). Further information about EMTF-6 can be found on their website at https://www.setrac.org/emtf6/.

RAC-R was the first in the state to create an MMU following Hurricanes Katrina and Rita in 2005. RAC-R is very active in EMTF6 with staff able to be deployed for the MMU and the Ambulance strike team.

Announcements for trauma system planning / drills are sent electronically to all RAC-R membership to allow participation from interested members and to include a broad range such as physicians, nurses, pre-hospital providers, refineries, and staff. Members have the capability to call in during the drills. Participation rosters are kept by RAC-Q but are available upon request to RAC-R members.

COALITION BUILDING

Coalition building is a continuous process of cultivating and maintaining relationships with stakeholders within TSA-R. Collaboration on injury prevention and trauma system development with the community partnerships are the key. Constituents include health care professionals, pre-hospital providers, refinery personnel, RAC-Q, insurers, payers, data experts, consumers, advocates, policy makers, trauma center administrators, and media representatives. Coalition priorities are trauma system development, injury awareness, injury prevention activities, policy making, financing initiatives, disaster preparedness, system integration, and promoting collaboration rather than competition between trauma centers and pre-hospital providers.

FINANCIAL MANAGEMENT

RAC-R operates using funding sources from local, state and federal resources. The RAC Board assists in the development of an annual operating budget drafted for each funding source allotted to the organization. Final approval and / or adjustment of the budget is the responsibility of the

RAC Board. The use of survey monkey and the annual needs assessment serve to provide the information required for the specific needs of the membership. Based on the results of the above, funds are allocated toward educational and equipment needs.

RESEARCH

RAC-R participates in system research on an ad hoc basis. The Board of Directors is responsible for governance and release of the data.

APPENDIX A

East Texas Gulf Coast Regional Trauma Advisory Council
REGIONAL TRAUMA SYSTEM PLAN
Signature Page

I have read and reviewed the East Texas Gulf Coast Regional Trauma System Plan. I understand this is a regional and overarching plan and may not reflect the practice of my institution.

Approval of Trauma Medical Directors, EMS Directors and EMS Administrators:

_____
Facility / Service

_____ _____
Name of the Trauma Medical Director or EMS Medical Director — Name of EMS Administrator

_____ _____
Signature of the Trauma Medical Director or EMS Medical Director — EMS Administrator Signature

_____
Date

APPENDIX B


JASPER
69
Brownsdell
Jasper
190
Newton
Kirbyville
NEWTON
96
59
HARDIN
Bessmay-Buna
Louisiana
Kountze
Silsbee
Cleveland
Lumberton
Deweyville
Mauriceville
LIBERTY
ORANGE
Sour Lake
Daisetta
Beaumont
Vidor
Orange
Dayton
Liberty
China
Bridge City
90
Nederland
Groves
West Lake
Fannett
Port Arthur
Mont Belvieu
Hampshire
10
Winnie
Cove
Houston
Anahuac
Texas
Beach City
CHAMBERS
JEFFERSON
45
Pearland
Smith Point
High Island
Gilchrist
Friendswood
Bacliff
Crystal Beach
Manvel
League City
Alvin
Dickinson
Texas City
Port Bolivar
Gulf of Mexico
Santa Fe
La Marque
Bayou Vista
BRAZORIA
Danbury
Galveston
GALVESTON
Angleton
W. Columbia
Lake Jackson
Sweeny
Brazoria
Richwood
San Bernardo
Freeport
Surfside
LEGEND
TSA "R" Hospitals

APPENDIX C

East Texas Gulf Coast Regional Advisory Council
Minimum Regional Trauma Activation Criteria

- Confirmed BP <90 at any time in adults and age-specific hypotension in children
- Penetrating Injuries to neck, chest or abdomen or extremities proximal to the elbow/knee
- GCS <10 with mechanism attributed to trauma
- Transfer patients from other hospitals receiving blood to maintain VS
- Intubated patients transferred from scene
- Patients who have respiratory compromise or are in need of an emergent airway (Includes intubated patients who are transferred from another facility with ongoing respiratory compromise)
- Suspected spinal cord injury with neuro deficits and or paralysis
- Emergency Physician's discretion