Seven Flags Regional Advisory Council

Trauma Service Area-T

EMS Trauma System Plan

Fiscal Year 2022

INTRODUCTION

The Seven Flags Regional Advisory Council (SFRAC) is an organization of local citizens representing all healthcare entities within Trauma Service Area (TSA) T. The SFRAC is an organization chartered by the Texas Department of State Health Services, Division of Regulatory Services, Office of EMS/Trauma Systems Coordination; to develop, implement, and monitor regional emergency services or Trauma System Plan for TSA-T; and to oversee trauma system network. SFRAC Bylaws are included by reference**.**

Member Counties

Texas TSA-T consists of three counties, Jim Hogg, Webb, and Zapata. These three counties cover approximately 5,507 square miles, with a population that exceeds 270,000 residents. TSA-T has a geographical composition of urban (Laredo), rural (Zapata), and frontier (Jim Hogg), all presented with unique challenges in the delivery of care to trauma patients. This TSA is located on the United States-Mexico border and renders trauma and general health care to Mexican citizens and patients from hospitals in Nuevo Laredo and Tamaulipas, Mexico.

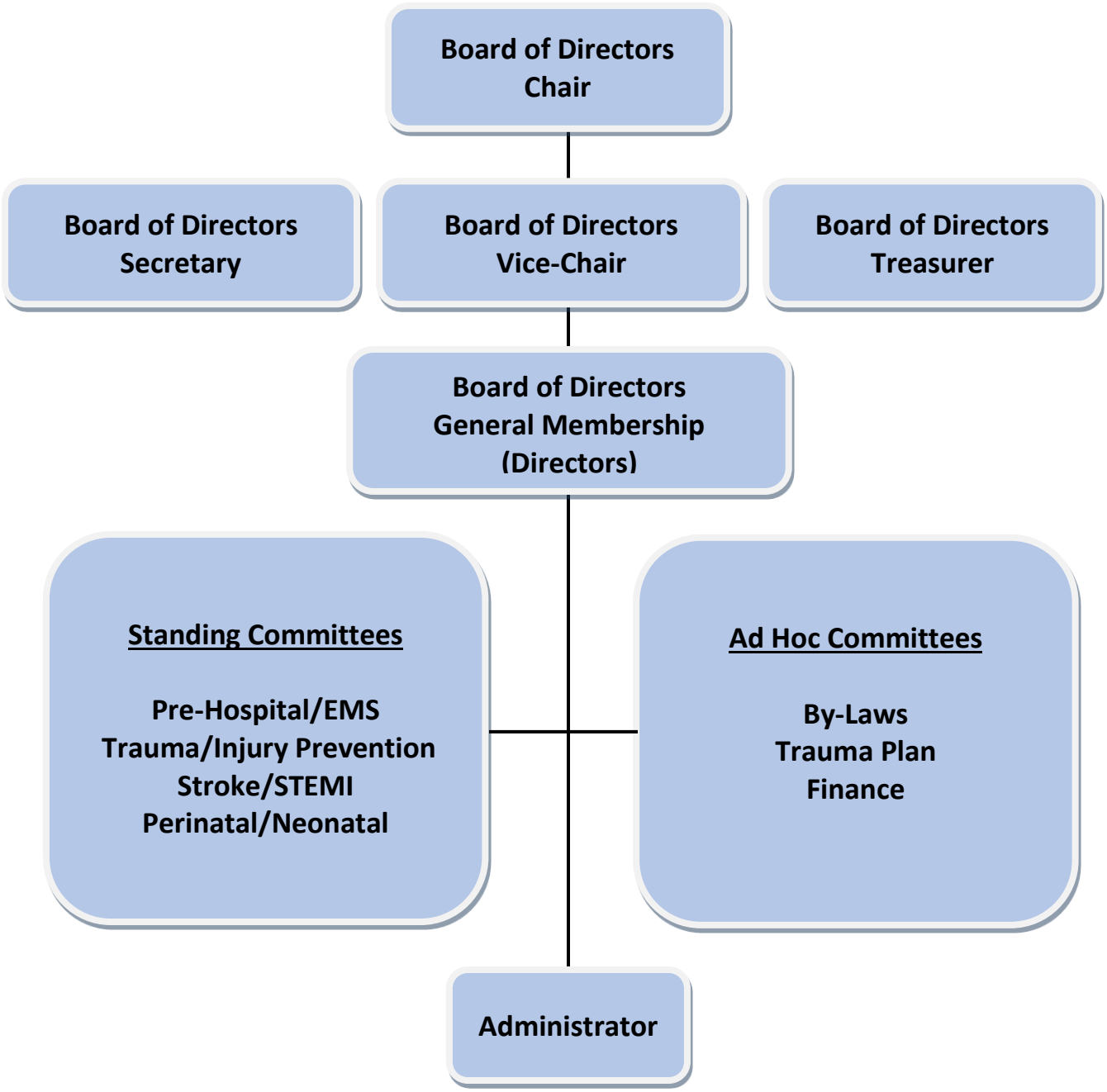
Currently, two hospitals in Laredo provide healthcare/trauma services in this area: Laredo Medical Center and Doctors Hospital of Laredo.

Seven Flags Regional Advisory Council Mission

The primary mission of the SFRAC is to provide the infrastructure and leadership necessary to develop an inclusive trauma system within the tri-county area through the following activities:

- Encourage multi-community participation in providing trauma care, ensuring the most efficient, consistent, and expeditious care for everyone who experiences an acute injury,
- Enhance assessment, triage, and communication between prehospital providers and hospitals to facilitate treatment and transportation of patients to the most appropriate trauma facility,
- Encourage activities designed to promote cooperation between member organizations and provide a forum to resolve conflicts regarding the care of the injured patient,
- Provide and facilitate professional education for trauma care providers in the region,
- Provide and facilitate public education and awareness through trauma prevention activities, and
- Develop a Trauma System Plan and regional standards of care through the cooperative efforts of member organizations.

Seven Flags Regional Advisory Council
Organizational Structure



REVISION DATE HISTORY

Section	Change	Date
Access to the System	Review	December 16, 2014
Communication	Review	December 16, 2014
Medical Oversight	Review	December 16, 2014
Pre-hospital Triage Criteria	Review	December 16, 2014
Diversion Policies	Review	December 16, 2014
Bypass Protocols	Review	December 16, 2014
Regional Medical Control	Review	December 16, 2014
Facility Triage Criteria	Review	December 16, 2014
Inter-hospital Transfers	Review	December 16, 2014
Designation of Trauma Facilities, Planning	Review	December 16, 2014
Performance Improvement	Review	December 16, 2014
Regional Trauma Treatment Protocols	Review	December 16, 2014
Regional Helicopter Activation Protocols	Review	December 16, 2014
Injury Prevention	Review	December 16, 2014
Medical Oversight	Review	December 16, 2015
Access to the System	Review/Revised	March 24, 2015
Communication	Review/Revised	March 24, 2015
Medical Oversight	Review/Revised	March 24, 2015
Pre-hospital Triage Criteria	Review/Revised	March 24, 2015
Diversion Policies	Review/Revised	March 24, 2015
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Performance Improvement	Review/Revised	March 24, 2015
Regional Trauma Treatment Protocols	Review/Revised	March 24, 2015
Regional Helicopter Activation Protocols	Review/Revised	March 24, 2015
Injury Prevention	Review/Revised	March 24, 2015
Medical Oversight	Review/Revised	March 24, 2015
Medical Oversight	Removed	April 21, 2015
Regional Medical Control	Removed	April 21, 2015
Air Medical Activation	Revised	April 21, 2015
Facility Diversion	Revised	April 21, 2015
Facility Diversion	Reviewed/Revised	July 28, 2016
Working Committees	Reviewed/Revised	February 12, 2018
Communication, Prehospital Triage, and Inter-hospital Transfers	Reviewed	April 23, 2019
Comprehensive Edits to all Sections	Revised	August 30, 2021
SFRAC Board Review	Adopted	October 26, 2021

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I. REGIONAL SYSTEM ACCESS

In SFRAC, the primary emergency communication systems for public access are **Basic** or **Enhanced 9-1-1**. The emergency communication systems were implemented, providing citizens access to emergency communications to municipalities and counties (incorporated and unincorporated areas) in the TSA-T.

Basic 9-1-1

The primary regional system provides dedicated trunk lines that allow the direct routing of emergency calls administered by the City of Laredo Information Services and Telecommunications Department for South Texas Region 19, comprised of Webb, Zapata, and Jim Hogg counties. The communication system encompasses the cities of: El Cenizo, Escobares, La Grulla, Laredo, Rio Bravo, Rio Grande City, and Roma. Although Automatic Number Identification (ANI) and Automatic Location Identification (ALI) are not provided with the Basic 9-1-1 system, public access incorporates the Enhanced 9-1-1 system. Additionally, all coin-operated telephones and cellular providers offer complimentary 9-1-1 access.

Enhanced 9-1-1

Enhanced 9-1-1 is a system that automatically routes emergency calls to a pre-selected answering point based upon the geographical location from which the call originated. The system operates by a caller dialing the digits 9-1-1. First, the call is routed to the local telephone company Central Office (CO). Then, the telephone number is attached to the voice and sent to the Public Safety Answering Point (PSAP). Next, with ALI and Selective Routing (SR), the call is forwarded to the CO, and the 9-1-1 computer assigns an address to the phone number, then routes the call to the designated PSAP.

ANI is a system capability that enables an automatic display of the ten-digit number of the telephone utilized to place a 9-1-1 call. ALI is a system that enables the intuitive display of the calling party's name, address, and other pertinent information. Alternate Routing (AR) is a selective routing feature that allows 9-1-1 calls to be routed to a designated alternative location if all incoming 9-1-1 lines are busy or the central system (PSAP) closes for some reason. Finally, the SR enables 9-1-1 calls from a defined geographical area to be answered at a pre-designated PSAP.

Selective Routing Capabilities

A. Selective routing capabilities are available for calls received from outside the city limits.

B. Calls from the County of Webb are routed to the Webb County Sheriff's Department, which relays information to 9-1-1 to activate proper response of Fire and/or EMS.

C. Calls from the County of Zapata are routed to the Zapata County Sheriff's Department, which relays information to 9-1-1 to activate proper response of Fire and/or EMS.

D. Due to the interconnecting county lines, SR capabilities are also available for calls outside the city limits. Some calls are answered in Webb or Zapata County and are then redirected to Jim Hogg by administrative lines (i.e., frontier, ranch areas).

E. In cases of system failure or busy lines, the pre-designed PSAP in Corpus Christi will answer, and the 9-1-1 calls will be forwarded to Zapata County Sheriff's Department. Then, they will redirect to Jim Hogg County through administrative lines. Finally, Jim Hogg County PSAP will forward calls to local EMS via party conference by phone, mobile radio, cell phone, or pager.

II. COMMUNICATIONS

Relating to the broad types of EMS and first responder organization agencies in TSA-T: municipal, city, county, basic and advanced equipped, acute care, and transport providers, various communication systems and dispatch methods are employed in SFRAC. Although each agency has established dispatch methods that utilize two-way radios on VHF and 700MHz radio frequency, most providers have cellular telephones used when radios are out of range to contact hospitals for patient reports.

Hospital Communications

The ambulance crews can contact the hospital emergency department (ED) via VHF-band radios. In addition, crews typically use cellular phones to provide patient reports, especially those in the urban area with consistent cell coverage.

Each hospital can post its status using EMResource, a component of EMSystem. This post enables providers and dispatch to see the status of the ED, CT scanner, OR availability, etc. In addition, this same software can support an MCI by sharing patient capacity and collecting patient information to aid in family reunification efforts.

During disasters, the hospitals have redundant communications using HAM radios and satellite telephones in addition to the day-to-day VHF radio system.

Fire Communications

Laredo Fire utilizes a digital 700MHz radio system within the City of Laredo. Webb County uses a combination of VHF analog and digital trunk radio systems. The rest of the fire agencies within the RAC use VHF radios to communicate with each other and dispatch.

EMS Communications

The ambulance crews communicate with dispatch, EDs, air ambulances, and each other via the same VHF frequencies as the fire departments. While EMS providers monitor fire agency radio traffic, they do not typically transmit on fire frequencies. For example, Webb County Volunteer Fire/EMS and current contracted EMS Provider, Angel Care, use Webb County Volunteer Fire Department frequency for dispatch and transmission. Crews also use cellular phones for similar communication needs when feasible.

HEMS Communications

Helicopter EMS (HEMS) providers utilize VHF radios to coordinate with first responders, EMS providers, and dispatch centers. There is a satellite telephone for additional backup.

SFRAC shall aspire to develop a robust infrastructure for communications and disseminating education, injury prevention, and internal discussion items. Both internal and external electronic mailing lists shall be created to achieve this process. In addition, digital archiving shall be employed to maximize difficult to reach stakeholders and to communicate to the TSA-T public community.

SFRAC will continue to improve the region's website to efficiently target stakeholders and community members with resources such as:

- Frequent news and updates to inform the community
- Trauma data and supportive injury prevention efforts

- Performance reports
- Information about SFRAC activities and contact information
- Instructional, resource links, and materials for stakeholders and medical professionals
- Board and Committee meeting information
- Archival documents

SHORT TERM GOAL: Ensure all fire, EMS, and HEMS resources can communicate during an incident for scene safety and coordination during an MCI or significant incident.

LONG TERM GOAL: Advance the operations of the SFRAC website to provide concurrent information to stakeholders.

III. MEDICAL OVERSIGHT

Medical oversight is defined as the assistance given to the RAC in system planning by a physician or group of physicians designated by the RAC to provide technical assistance. Input from the medical community is critical to the success of the RAC. Ideally, all SFRAC clinical committees should have access to and support of physician representation.

The successful functioning of a Regional Trauma Plan should require the active participation of qualified and engaged physicians representing as many RAC entities as possible. Physician involvement from as many RAC stakeholder organizations as possible should regularly participate in the RAC structure, including physicians and medical directors of EMS agencies and hospitals. Physician representation at the RAC level should be composed of clinically qualified physicians who are competent in treating and managing trauma patients.

The geographical challenges of TSA-T's frontier area and the limited physician resources of SFRAC are acknowledged with regards to a formal RAC-level physician's oversight committee. Although there is no single position of medical oversight for SFRAC, each EMS service and hospital has its own Medical Director who is experienced in emergency medical systems (EMS) and trauma care in both the prehospital and acute care setting. Medical oversight and management of triage, transport, treatment, and transfer guidelines and protocols should be integrated within the RAC system. The Trauma System Plan should foster a collaborative working relationship between all entity medical directors. It is beneficial to establish a cohesive team of medical directors to collaborate and advance the care of trauma patients at the regional level.

SHORT TERM GOAL – Begin earnest discussions to enhance physician oversight and leadership within the SFRAC stakeholder medical directors. Create enrichments to support physician involvement in SFRAC committees to include input via physical and electronic venues.

LONG TERM GOAL- Establish an SFRAC Medical Director Committee that meets quarterly to provide guidance and review prehospital and hospital treatment, treatment protocols, and regional trauma care improvement opportunities. Attend, and sponsor when possible, attendance at clinical conferences to bring back EMS innovation and best practices to SFRAC providers.

IV. PREHOSPITAL TRIAGE CRITERIA

Time and distance are critical variables to consider when triaging injured patients and making transport decisions to the two designated trauma centers within SFRAC or transporting them to a higher designated facility outside SFRAC. These variables are of unique significance when considering the geographical layout of SFRAC and its large frontier area. Consideration should be given to the impact on the entire regional system when adapting prehospital triage criteria. Thought processes should include using Level III Trauma Centers within SFRAC to stabilize trauma patients in relation to their immediate transport to facilities outside of SFRAC. Patients who sustain major injuries may require care at a Level I or Level II Trauma Center; however, they may receive initial stabilization at one of SFRAC's Level III Trauma Centers, especially if the incident occurs in a rural area. It should be noted that patients with major severe injuries can be secondarily triaged to more distant trauma centers should local resources become inadequate for continued care.

Specific prehospital trauma triage guidelines should, at a minimum, align with the most recent national Trauma Center Field Triage Criteria found in the American College of Surgeons (ACS), Resources for Optimal Care of the Injured Patients, and the Centers for Disease Control (CDC) guidance. Furthermore, the regional prehospital trauma triage criteria should be reviewed regularly by SFRAC and revised accordingly. This review is mandatory if there is a change in trauma center status or a new hospital or trauma center opens within the SFRAC.

It should be remembered that the immediate transportation of trauma patients is a high priority. Therefore, on-scene treatment should be limited only to those techniques used to stabilize life-threatening injuries. In addition, attention should be given to any scene treatment that would prolong the transport of the patient to a designated trauma facility.

Multiple factors are involved in determining the most beneficial method of transportation to a Trauma Center. Considering the geographic area and concurrently available resources of SFRAC, transportation of the trauma patient by the most expedient means may be via helicopter. The following should be considered when determining transport mode:

- Patient is extricated, and land transport time to the nearest trauma center is significant.
- Patient is entrapped, and HEMS can arrive at the scene before extrication, thus reducing transport time.
- Inclement weather.
- Prolonged ground transport would significantly impact the response to additional emergencies by the remaining EMS services.

Further consideration in adopting prehospital trauma triage criteria should include the following:

- Burn patients
- Pediatric patients
- Geriatric patients on anticoagulants
- Obstetric patients

SHORT TERM GOAL – Develop a uniform prehospital trauma triage criterion that can be enacted within the next year and adopted for use by all SFRAC stakeholders.

LONG TERM GOAL – Lower the TSA-T prehospital on-scene time by 5% within the next five years.

V. SATURATION (DIVERSION) POLICIES

The current composition of TSA-T acute care resources, composed of only two hospitals, both located in the same city and designated as Level III Trauma Centers, creates a symbiotic relationship regarding trauma diversion situations. In conditions where one facility elects to divert EMS trauma patients, the other facility is significantly impacted. These conditions dictate that concurrent communication is established between the two Trauma Centers and EMS dispatching.

Diversion of ambulance traffic should occur only by prearrangement. To implement a diversion period or extend the period, the facility should have a person in authority decide (e.g., house supervisor, administrative representative, or emergency physician). This status change should be posted using EMResource (see Reference page) and notify the appropriate communications centers (i.e., 9-1-1 dispatch). If both facilities request simultaneous diversion status, diversion status will end for both. EMS personnel should be notified of facility status via the communications centers.

The consistent use of the EMResource software platform catalogs and annotates hospital and EMS stakeholder concurrent conditions. It affords the ability to produce status reporting for review, transparency, and performance improvement. In addition, facilities can report on the general status of their EDs using the 'Open / Advisory / Advisory-Surge / Closed' status general conditions.

- **Open**: The ED is open and accepting patients with no limitations.
- **Advisory**: Hospital is advising EMS about a resource constraint so that EMS crews can make an informed decision regarding patient destination.
- **Advisory-Surge**: Hospital is advising EMS about a high patient census in the ED that may affect EMS and patient care wait times. Hospitals can still receive EMS patients.
- **Closed**: The ED is suffering from an internal disaster or facility emergency preventing it from accepting patients (e.g., fire, flood, water shortage, loss of power).

Trauma Diversion

The two Trauma Centers should strive for minimal diversion time considering their importance and impact within the TSA-T. Therefore, considerations for diversion status ideally should be limited to:

- Trauma surgical support is not available
- Trauma Surgeon is not available
- Specialty equipment is not available

If trauma diversion exceeds 5%, this is a critical deficiency requiring an immediate corrective action plan.

ED saturation and trauma diversion are two distinct conditions. The immediate surgical intervention for the trauma patient should have minimal bearing on a facility's ED census. The use of the EMResource platform affords this distinction of status.

Facility diversion should be reviewed both at the hospital and SFRAC levels in the spirit of improving the regional trauma system.

SHORT TERM GOAL: Begin scheduled review of facility diversion and EMS availability at the SFRAC level. Maximize the use of EMResource platform for capturing status and diversion hours for SFRAC quality improvement review.

LONG TERM GOAL: Due to the limited SFRAC acute care hospitals, develop a 'No Diversion' policy.

VI. BYPASS PROTOCOLS

Facility bypass protocols should be developed by each of the two Trauma Centers and optimally supported by SFRAC. Field Triage Criteria should also be vetted at the TSA-T level to address conditions or situations that would require either Level III Trauma Center to be bypassed for a higher level of trauma care external to the SFRAC regional trauma operations area. Consideration of ground vs. air transport, weather, and 'out of service' support factors should be considered in the development of bypass protocols.

SHORT TERM GOAL: Establish at the SFRAC level a uniform guideline for bypassing a Level III Trauma Center for higher care external to TSA-T.

LONG TERM GOAL: Revise any established bypass protocols to minimize scene transport out of the TSA-T region and maximize stabilization of high injury severity score (ISS) trauma patients within the SFRAC facilities.

VII. REGIONAL MEDICAL CONTROL

Regional Medical Control is a centralized location for receiving online and offline medical orders and developing regional treatment protocols. Per this definition, there is no regional medical control in TSA-T. In addition, having a single centralized medical control in TSA-T is challenging considering the large geographic area and terrain.

Presently, each EMS agency has a separate medical director and standard operating procedures. Each medical director has the legal authority under Texas Administrative Code, Chapter 197, and the Texas Department of State Health Services Chapter 157 for developing the agency's local protocols and guidelines. Additionally, each medical director within the TSA-T assumes the responsibility for trauma oversight and specific performance improvement to investigate patient outcomes for their EMS personnel.

Currently, there is no standardized prehospital report form, and each EMS agency has its own BLS or ALS-specific form. Although regional medical control has yet to be established, prehospital agencies have worked together and integrated their individual medical control guidelines as needed. A regional protocol is not established, but experience is obtained through interagency training set by individual EMS providers. The supervising agency at the scene is established by the determination of the lead agency for geographic location. Exercises involving federal, state, and regional stakeholders should occur regularly.

SHORT TERM GOAL: Establish a medical directors committee at the SFRAC level.

LONG TERM GOAL: Establish regional protocols to set proper expectations for prehospital and ED staff. Exercise training operations that dictate required regional medical control regularly.

VIII. FACILITY TRIAGE CRITERIA

The triage process allows hospitals to prioritize patients based on the patient complaint, history, and physical assessment findings. This process is individualized according to facility designation level and input from medical staff; however, guidance can be found in the ACS – Committee on Trauma document "Resources for Optimal Care of the Injured Patient."

With both Trauma Centers geographically located in the same city and designated as Level III Trauma Centers, each facility's trauma triage criteria should align with industry standards, including the ACS Committee on Trauma recommendations.

When both Trauma Centers have the same designation level, it affords collaboration and unifies both criteria at the regional level. Additionally, the capability of establishing a uniform language or terminology for hospital activation levels can be accomplished at the SFRAC level via the Trauma Committee consensus. The results are then released for all EMS and hospital personnel to implement. Then, prehospital staff can correctly identify trauma level when transporting a trauma patient.

SHORT TERM GOAL: Create a uniform facility trauma triage criteria for the region. A sample protocol is included below.

LONG TERM GOAL: Conduct reviews and needed revisions to facility triage criteria on an annual basis.

Table 3 An Example of a Tiered Trauma Team Activation Protocol

FULL Trauma Team Criteria Persons who sustain injury with any of the following			LIMITED Trauma Team Criteria Persons who sustain injury with any of the following
PRIMARY SURVEY: PHYSIOLOGIC			**MECHANISM OF INJURY**
Airway	Unable to adequately ventilate Intubated or assisted ventilation	Unable to adequately ventilate Intubated or assisted ventilation	• Falls: adult >20 ft; child >10 ft or 3× height • Fall from any height if anticoagulated older adult • High-risk auto crash with: - Intrusion of vehicle >12" in occupant compartment; >18" in other site - Ejection (partial or complete) from automobile - Death in same passenger compartment • Auto vs. pedestrian/cyclist thrown, run over, or with significant (>20 mph) impact • Motorcycle crash >20 mph • High-energy dissipation or rapid decelerating incidents, for example: - Ejection from motorcycle, ATV, animal, and so on - Striking fixed object with momentum - Blast or explosion • High-energy electrical injury • Burns >10% TBSA (second or third degree) and/or inhalation injury • Suspicion of hypothermia, drowning, hanging • Suspected nonaccidental trauma • EMS provider judgment • Blunt abdominal injury with firm or distended abdomen or with seatbelt sign
Breathing	Respiratory rate <10 or >29 per minute	Any sign of respiratory insufficiency (hypoxia, accessory muscle use, grunting)	
Circulation	SBP <90 mm Hg perfusion	Any sign of abnormal (capillary refill >2 secs, BP low for age)	
		Age: <1 y; 1–10 y; >10 y — SBP (mm Hg): <60; <70 + 2× age; <90	
Deficit	GCS motor score ≤5, GCS ≤13	AVPU: responsive to pain or unresponsive	
• Deterioration of previously stable patient • Transfers requiring blood transfusion			
SECONDARY SURVEY: ANATOMIC • Penetrating injuries to the head, neck, torso, or extremities proximal to the elbow/knee • Open or depressed skull fracture • Paralysis or suspected spinal cord injury • Flail chest • Unstable pelvic fracture • Amputation proximal to the wrist or ankle • Two or more proximal long bone fractures (humerus or femur) • Crushed, degloved, or mangled extremity			

IX. INTER-HOSPITAL TRANSFERS

Access to timely trauma care is a system focus within TSA-T, including minimizing the time between the onset of injury and definitive care. It is critical to decide to transfer early, and non-essential diagnostic testing and procedures should be avoided when these could delay the transfer. Attention should be focused on life-saving stabilization and rapid transfer when the decision to elevate the patient to a higher designated trauma facility is made. DSHS standards specify that transfers of patients to a higher level of care should occur no later than two hours after arrival at the initial treating facility.

The need for inter-hospital transfers within TSA-T is not applicable as both facilities hold the same trauma designation level. Injured patients should be transferred to a higher level of care when the medical needs of the patients supersede the resources of the initial treating facility. It should be noted that the TSA-T trauma centers should be utilized to stabilize high ISS trauma patients when determining transport from the EMS scene to higher-level trauma centers outside the region.

Timely transfer of trauma patients to a Level I or Level II facility outside of TSA-T may include patients with:

- Neurosurgical support injuries: Open skull fractures and spinal cord injuries.
- Complex Pelvic fracture injuries: open book, unstable pelvis, open pelvis.
- Pediatric high ISS injuries
- Significant burn injuries
- Regionally determined acute injuries

Transferring facilities should send medical records, including radiographic studies, to the receiving facility during the initial management. Electronic/Web-based delivery of records should be considered for efficiency. Care should be taken to reduce exhaustive imagery that could delay the transfer or potentially repeated at the receiving facility due to the failure to include studies with the transferring packet or lesser quality imagery.

Physician-to-physician communication is essential between the initial facility and the receiving referral facility. Early contact with the receiving trauma surgeon can increase the efficiency of the transfer process. Scrutiny of this process for improvement opportunities should be reviewed at the hospital and RAC level.

Although a review of trauma cases exceeding the DSHS transfer standard of two hours is completed at the hospital level, it is recommended that all transfers external to TSA-T be reviewed for potential performance improvement at the SFRAC level on a routine basis. The purpose of the Texas 22 Regional Advisory Council systems is to oversee trauma transfers between RACs.

SHORT TERM GOAL: Using the SFRAC Trauma Committee, develop a documented process to review trauma transfers to facilities outside of the region.

LONG TERM GOAL: Decrease the inter-facility transport average time by 10%. Review all transfers, including non-trauma, leaving the region for performance improvement opportunities.

X. DESIGNATION OF TRAUMA FACILITIES

The Omnibus Rural Health Care Rescue Act of 1989 charged DSHS through the Bureau of Emergency Management to designate trauma facilities in Texas. The law requires the Bureau to designate trauma facilities that are part of the regional trauma care system. Trauma facilities must be established in accordance with standards from the ACS for Level I & II facilities. Level III & IV facilities may be surveyed based on criteria adopted by DSHS.

TSA-T follows the Texas Administrative Code 157.125 'Requirements for Trauma Facility Designation' when recognizing designated Trauma Centers within the region. In addition, this Code includes guidance for facilities' In Active Pursuit.'

Although the SFRAC consists of two Level III facilities, it should encourage the development of additional or higher-level trauma centers as needed. A facility that desires to proceed with 'In Active Pursuit' status shall inform the SFRAC Board of its plan in writing and offer a formal plan presentation, assets, and operational support including clinical and physical plant in an environment enabling question and answer format from SFRAC stakeholders. It is acknowledged that the DSHS process for trauma facility designation requires written support from the RAC.

As mandated by DSHS, Trauma Centers within SFRAC must maintain SFRAC membership in good standing and meet active participation requirements. Therefore, a hospital seeking 'In Active Pursuit' status shall notify SFRAC and DSHS of their intent, qualifications, and timetable.

Trauma Centers that cannot meet DSHS stipulated essential criteria must notify the Office of EMS/Trauma Systems, SFRAC, and impacted EMS agencies. Critical elements that must be reported include:

- Loss of Trauma Medical Director (excluding active interim)
- Loss of Trauma Program Manager (excluding active interim)
- Loss of Trauma Registry (without an interim plan)
- Loss of capabilities to provide Injury Prevention or Outreach Education (without an interim plan)
- Loss of ability to provide acute trauma resuscitation and critical care stabilization

SHORT TERM GOAL: Incorporate DSHS revised RAC 157.122 (TSA rules) criterion, and DSHS revised 157.125 (Trauma Facility rules) criterion into TSA-T plan when adopted and published by DSHS.
DSHS TSA website
DSHS Trauma Facility website

LONG TERM GOAL: Support the establishment of additional trauma centers or level upgrades within TSA-T as requested.

XI. PERFORMANCE IMPROVEMENT

The TSA-T Trauma System Performance Improvement (PI) program aims to reduce morbidity and mortality from trauma by identifying educational needs and opportunities for improvement relating to trauma patient care and system processes. In addition, the program should provide ongoing assessment and improvement activities designed to monitor and evaluate the effectiveness of the regional trauma system through objective and systematic data analysis. Specific focus will be applied to:

- The evaluation of high-risk, high volume, or problem-prone areas related to trauma care via stakeholder request or analysis of regional trauma data.
- Collaborate with other committees and workgroups to provide educational offerings when opportunities for quality improvement are identified through the PI process.

Authority for the implementation and adherence to the PI process shall rest with the SFRAC Board of Directors. This responsibility includes oversight, participation of stakeholders, conflict of interest issues, confidentiality, equity, and the dissemination of improvement action items.

Although the ultimate responsibility for the TSA-T PI process resides with the Board of Directors, it should be recognized that the appointment of a PI standing committee or workgroup should be established to provide equity and fairness when reviewing and examining specific stakeholder issues. Considering the limited SFRAC stakeholders, trauma centers, and EMS 9-1-1 responder agencies, this process can present a challenge.

Trends in the quality of trauma care and adherence to established metrics can best be reviewed by scrutinizing and analyzing applicable data. It is noted that trauma facility data is reported at scheduled SFRAC Board Meetings and should be engrained into the plan for collation via an aggregated dashboard tool. Optimally, data shall be regularly submitted to SFRAC by stakeholders (both prehospital and hospital) to review trends, develop PI metrics, and aggregate analysis on a defined time plan – like the EMS and Trauma Center submission process to the State of Texas. The development of submission tools to include spreadsheets and registry software should be explored for viability. Cataloging of meeting dates, participants, and issues being reviewed is essential.

All members privy to protected healthcare information (PHI) or non-aggregated data for performance improvement shall have non-disclosure and confidentiality agreements on file with SFRAC. Further, maximum efforts to ensure objectivity shall be enacted by the SFRAC Board of Directors and any committees or workgroups. Documents relating to PI shall be secured by the SFRAC administration and protected from discovery under the Health and Safety Code of Texas Chapter 773 and related statutes.

Data analysis is essential to increasing the quality of care for trauma patients and the regional trauma system. Specific best practice interventions, strategic system goals, and evaluations of trauma care necessitate the submission and review of stakeholder data at the SFRAC level. The PI process shall also be used to drive the SFRAC assessment annual performance reporting to the State of Texas and program budget justifications across SFRAC programs.

SHORT TERM GOAL: Establish a formal process with supporting tools and structure for PI operations.

LONG TERM GOAL: Acquire the ability to receive registry submissions at the SFRAC level.

XII. REGIONAL TRAUMA TREATMENT PROTOCOLS

Texas Administrative Code, Title 25, Part 1, Chapter 157, Subchapter G, Rule §157.123 establishes the legal framework of the Emergency Medical Services (EMS) Trauma System in the State of Texas. The Code includes creating Regional Advisory Councils and their respective authority to develop an EMS/Trauma System plan based on standard guidelines for comprehensive system development, including trauma treatment guidelines.

SFRAC, therefore, adopts the following general trauma treatment protocols with the understanding that changes in best-practice guidelines and ongoing medical treatment advances should be incorporated into the SFRAC treatment protocols as needed. In addition, a protocol review shall be undertaken at the SFRAC Board level on an annual basis at a minimum.

For the trauma patient, as for other critically ill patients, assessment is the foundation on which all management and transportation decisions are based. The trauma patient's survival depends upon rapid recognition/management of life-threatening injuries and rapid transport to an appropriate trauma facility. Scene times should be kept to a minimum with only the necessary interventions to correct immediate life-threatening conditions. All secondary interventions should be performed en route to an appropriate facility or while awaiting Air Medical evacuation.

The first step in trauma assessment is the Scene Assessment/Scene Size-Up. As you approach the scene, assure safety for yourself and the patient while taking BSI precautions. Next, rapidly identify the number/type of patients and request additional resources as appropriate.

- Additional resources (e.g., air medical evacuation, special rescue, ambulances, police, hazmat) should be notified based on dispatch information; and requested to proceed with arrival/landing on scene during scene assessment/scene size-up.
- Recognition of multi-patient and mass-casualty incidents is critical. During these events, priority shifts from focusing all resources on the most injured patient to providing the greatest good to the most patients.

Once a brief scene assessment/scene size-up has been performed, including rapid triage of multiple patients, attention should focus on evaluating individual patients. Individual patients should be assessed/treated based on initial triage priority.

The Primary Assessment begins with a simultaneous, global overview of the patient's respiratory, circulatory, and neurological systems. The goal is to identify obvious, significant problems with oxygenation, circulation, hemorrhage, or gross deformities. Next, a rapid, focused assessment of Airway, Breathing/Ventilation, Circulation/Bleeding, Disability, and Expose/Environment is completed.

- Make immediate interventions to correct life-threatening injuries in the order assessed. For example, progress from BLS (least invasive) to ALS (most invasive), utilizing the most appropriate intervention warranted in a given situation.
- Assess the Patient's Mental Status: If unresponsive, check for a pulse. If no pulse, initiate CPR per local protocol.
- Airway: While simultaneously applying C-spine precautions (if able), the provider should establish/ensure a patent airway by opening (e.g., jaw-thrust), clearing (e.g., suction), assessing, and intervening with the appropriate device.
- Breathing: Ensure adequate oxygenation and ventilation of the lungs utilizing appropriate oxygen-delivery devices. If abnormal ventilation is present, expose the chest and visually assess

for trauma while assessing breath sounds. If an open pneumothorax is present, cover with an occlusive dressing. If a tension pneumothorax is suspected, rapidly decompress the affected side.

- Circulation: Control massive hemorrhage utilizing appropriate hemorrhage control devices. Observe the skin's color, temperature, and moisture while rapidly assessing for pulses' presence/location/quality (e.g., carotid, femoral, and radial) to estimate Blood Pressure and perfusion. IV access and fluid administration are secondary to the initiation of Rapid Transport.
- Disability: Rapidly assess Level of Consciousness, pupils, and motor/sensory responses. If Central Nervous System injury is suspected, utilize appropriate devices to restrict spinal motion. Observe patient for increased ICP and signs/symptoms of impending brain-stem herniation (e.g., unequal pupils, bradycardia, hypertension, irregular respirations).
- Expose/Environment: Rapidly extricate/remove patients from dangerous environments (e.g., fire, water, chemicals, etc.). Remove patient's clothing to assess for injury fully. After evaluating, cover the patient to maintain normothermia.

The Secondary Assessment begins after the recognition/management of life-threatening injuries found in the Primary Assessment and after a transport decision has been made. The objective of the Secondary Assessment is to identify injuries not initially found.

- Reassess/Confirm Airway, Breathing, and Circulation. Make appropriate interventions as necessary.
- Obtain full, detailed vital signs utilizing available equipment.
- Obtain vascular access and administer appropriate fluid boluses to restore/maintain a radial pulse or SBP > 90 mmHg. Do not over-resuscitate trauma patients with IV fluids. Do not attempt to restore baseline vital signs.
- Perform a detailed head-to-toe physical examination.
- Immobilize/Splint suspected fractures and dress secondary wounds. Reassess circulation, motor, and sensory after intervention.
- Obtain SAMPLE history if able (i.e., Symptoms, Allergies, Medications, Past medical history, Last oral intake, Events preceding injury.
- Continuously reassess airway, breathing, circulation, and disability. Document vital signs frequently. Make appropriate interventions as necessary.

Special consideration should be applied to the following patient categories:

- Witnessed cardiac arrest secondary to blunt mechanism of injury
- Burns
- Geriatric
- Bariatric
- Pregnancy
- Pediatrics
- Special Needs population

SFRAC establishes a regional prehospital patient handoff of care report to assist the receiving hospital or entity accepting patient care to maximize efficiency and uphold best practice guidelines and compliance with TDSHS EMS Rule 157.11. The handoff communication standards will include:

- Notification of patient(s) and patient(s) status prior to EMS arrival
- At the time of transfer of patient care, verbal communication will occur, and a paper (or electronic) draft report will be delivered.

- A final paper (or electronic) prehospital report will be available within 24 hours

SHORT TERM GOAL: Conduct a minimum of 2 annual exercises with SFRAC stakeholders and community participants that include scenarios requiring regional trauma treatment protocols and incorporate 'lessons learned' into protocol revisions.

LONG TERM GOAL: Test regional protocols through a tabletop exercise with external SFRAC stakeholders (law enforcement at the local, county, and federal levels).

XIII. REGIONAL HELICOPTER ACTIVATION GUIDELINES

Considering TSA-T's vast frontier landscape, national border proximity, limited trauma centers, and geographically spread-out EMS/first responders, rotor-wing air activation and transport play an impactful role in supporting the regional trauma system.

Representatives from air transport stakeholders should regularly attend all SFRAC Board and Committee meetings to facilitate the customization and dissemination of developed SFRAC air activation guidelines and operations. The unique aspects of air operations within TSA-T dictate that collaborative work by all stakeholders and federal agencies be discussed, developed, and practiced optimizing safety and expedience.

Helicopter services may be utilized for the care and transport of high-acuity trauma patients according to the Texas Trauma Service 'T' guidelines under such circumstances as:

- Scenes involving severe trauma patients where treatment or transport will be delayed with resulting delay impacting patient outcome.
- When air services can deliver severe trauma patients to a trauma center more rapidly than land transport.
- Scenes that are inaccessible by ground access.

Dispatch and coordination of helicopter services shall be accomplished through the responding helicopter communication system. It is acknowledged that the scene commander or designee should notify the helicopter service of potential responding requests as soon as possible to afford maximum response preparation for the helicopter dispatch and aircrew.

Landing zone safety is critical to helicopter operations, and the following general safety rules should be maintained:

- Approach the aircraft when signaled by the flight crew
- Approach the aircraft only from the front for maximum cockpit view
- Approach the aircraft only by walking
- Do not assist the aircrew in opening or closing the helicopter doors
- Crowds must always be kept to a minimum of 150 feet from the aircraft

Anatomical considerations for air transport should be considered, including:

- Significantly decreased GCS
- Respiratory rate below 10 or above 30
- Crushed, mangled, or de-gloved extremity
- Paralysis
- Open or depressed skull fracture
- Significant burns

SHORT TERM GOAL: Ensure continued participation by SFRAC stakeholders in determining the proper dispatch and transport of patients via air ambulance.

LONG TERM GOAL: Participate in air ambulance organization's performance improvement processes to maximize clear, efficient air activation guidelines.

XIV. DISASTER MANAGEMENT

As reflected in the State of Texas Emergency Management Plan, Annex H (Public Health and Medical), all emergencies are considered a local responsibility. Legal responsibility for providing support for emergencies is placed on the senior elected official within the affected jurisdiction. Local Health Care Coalition (HCC) partners such as hospitals and EMS agencies must work through these officials when local assets cannot meet resource needs alone.

Individual medical facilities and other resources in SFRAC have response obligations to their patients and communities. During emergencies with significant impact, private and public sector entities may require resources beyond their capacities, and these agencies must be incorporated into local emergency response activities. Both sectors must be prepared to share status information, coordinate their response and requests for support with their respective local government jurisdiction, and use the incident command system to integrate and manage their response activity. TSA-T supports this interaction with prehospital, hospital, jurisdiction emergency management, and public health authorities.

The **Hospital Preparedness Program (HPP)** provides leadership and funding through grants and cooperative agreements to improve surge capacity and enhance community and hospital preparedness for public health emergencies. The Office of the Assistant Secretary for Preparedness and Response (ASPR) manages the program, providing grant oversight and working with its partners such as the Coastal Bend Regional Advisory Council (CBRAC) to ensure that the program's goals are met or exceeded. Through a contract and partnership between SFRAC and CBRAC, this funding is used to support programs within SFRAC to help strengthen public health emergency preparedness in several ways. CBRAC's HPP covers three Trauma Service Areas: TSA-U, TSA-V, and TSA-T. TSA-T works in conjunction with the HPP assets of TSA-U to augment needed supplies, organization, and support during disaster magnitude events.

Additionally, TSA-T has the Texas Emergency Medical Task Force (TX EMTF), specifically EMTF-11. The TX EMTF is a series of components capable of activating resources on behalf of Texas on a state mission that provides a custom, scalable approach to medical disaster response. The key to the program is the ability to activate members from EMS and fire departments, public and private healthcare organizations, regional coalitions, and state and local governments who provide personnel and assets that activate during disasters.

The mission of EMTF-11 is to provide a well-coordinated response, offering rapid professional medical assistance to emergency operation systems during large-scale incidents. The critical tasks are accomplished through the utilization of specially trained teams that respond to incidents down to the local SFRAC level when needed, providing assets that include:

- Ambulance Staging Management Team (ASMT)
- Ambulance Strike Team (AST)
- Ambulance Medical Bus (AMBUS)
- Infectious Disease Response Unit (IDRU)
- Medical Incident Support Team (MIST)
- Mobile Medical Unit (MMU)
- Registered Nurse Strike Team (RNST)
- Wildland Fire Medical Support Unit (WFMSU)

The TSA-U HCC works with all member organizations, including TSA-T, to promote emergency preparedness and health care delivery response. Its purpose is to:

- Lead collaborative regional planning, formulate strategies and make recommendations to ensure that the best possible approaches to regional Health Care Coalition (HCC) planning can be achieved.
- Identify and assess regional needs to develop possible options for strengthening the overall resiliency of regional response capabilities based upon federal and state guidance and best practices (e.g., HPP, Centers for Medicare & Medicaid Services, Federal Emergency Management Agency).
- Serve to identify the regional priorities set forth by current federal and state guidelines by utilizing input from Subject Matter Experts to set strategic planning goals and objectives.

While the current symbiotic relationship between SFRAC and CBRAC is financially sound, TSA-T recognizes the need for a more intentional coordination effort between itself and TSA-U's HCC.

SHORT TERM GOAL: Participate in a minimum of one HPP or EMTF tabletop drill per year.

LONG TERM GOAL: Increase collaboration between the SFRAC organization and local, regional, state, and federal disaster management organizations.

XV. APPENDICES

Resources

A. Texas Department of State Health Services EMS and Trauma Systems
B. EMResource
C. DSHS TSA Texas Administrative Code 157.122
D. DSHS EMS Trauma Systems Code 157.123
E. DSHS Trauma Facility Code 157.125
F. DSHS Denial, Suspension, and Revocation of Trauma Facility Designation 157.128
G. DSHS Emergency Medical Services 157.1
H. DSHS EMS and Trauma Registries
I. DSHS Regional Advisory Councils
J. DSHS RAC Operation Guidelines
K. DSHS RAC Essential Criteria Guidelines (2009)
L. TSA-T Seven Flags RAC Homepage
M. CDC Guidelines for Field Triage of Injured Patients
N. ACS Interfacility Transfer of Injured Patients Guidelines for Rural Communities
O. ACS Interfacility Transfer Tool Kit for the Pediatric Injured Patient Guidelines for Rural Communities
P. ACS Resources for the Optimal Care of the Injured Patient (2014)

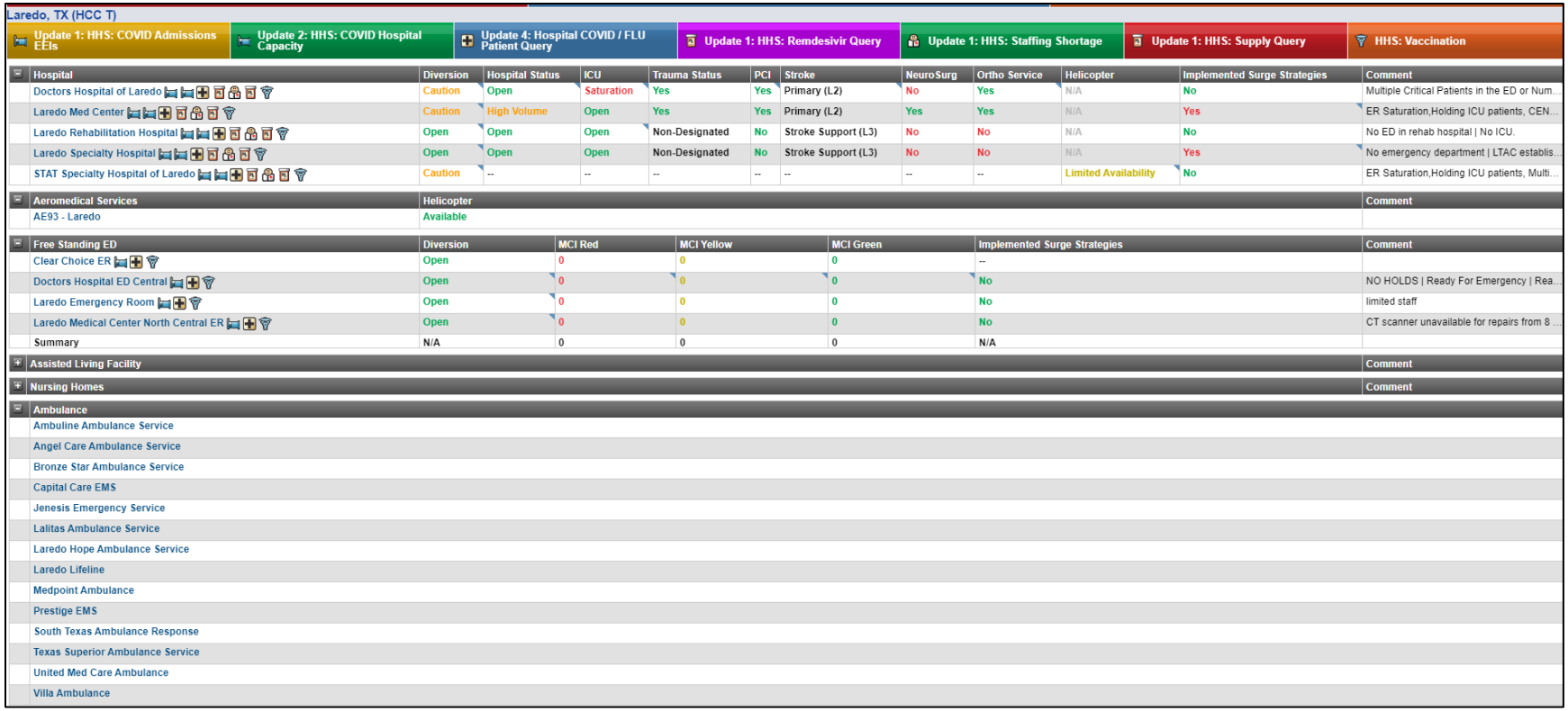
Member List

#	Person	Organization	Title
1	John Keiser	SFRAC	Administrator
2	Letisia Colon	Doctors Hospital of Laredo	Board Director
3	Jose "Joe" Gonzalez	Laredo Medical Center	Board Director
4	Jason Delattre	Air-Evac	Board Director
5	Ricardo Jaime	Angel Care Ambulance Service	Board Officer (Secretary)
6	Hector Medina	BronzeStar Ambulance	Board Director
7	Mike Martinez	Capital Care EMS	Board Director
8	Veronica Malacara	Jenesis Emergency Services	Board Director
9	Rene Castillo	Lalita's Ambulance	Board Director
10	Jesus Munoz	Laredo Hope Ambulance	Board Director
11	Peter Gonzalez	Laredo Lifeline	Board Director
12	Roy Arriaga	Medpoint Ambulance	Board Director
13	Jorge "JD" Delgado	Prestige EMS	Board Officer (Vice-Chairman)
14	Kevin Harris	Skyline EMS	Board Director
15	Juan Canavati	South Texas Amb Response (STAR)	Board Officer (Treasurer)
16	Gilbert Guardiola	Texas Superior Ambulance	Board Director
17	Victor Villarreal	Victoria's Care Ambulance	Board Director
18	Ricardo Rangel	Webb County Volunteer Fire/EMS	Board Director
19	Daniel Arriaga	Zapata County Fire	Board Director
20	Guillermo Heard	Laredo Fire Department	Board Officer (Chairman)
21	Nancy Puig	Laredo Medical Center	Perinatal/NICU Committee, Chair
22	Guadalupe Cisneros	Doctors Hospital of Laredo	Perinatal/NICU Committee, Vice-Chair
23	Jennifer Garcia	Laredo Medical Center	Stroke/STEMI Committee, Chair
24	Angie Alvarez	Doctors Hospital of Laredo	Stroke/STEMI Committee, Vice-Chair
25	Letisia Colon	Doctors Hospital of Laredo	Trauma/Injury Prevention, Chair
26	Joe Gonzalez	Laredo Medical Center	Trauma/Injury Prevention, Vice-Chair
27	Victor Villarreal	Victorious Care Ambulance	EMS/Prehospital Committee, Chair
28	Liz Cuellar	Laredo Medical Center	EMS/Prehospital Committee, Vice-Chair

EMResource

A statewide system is used for tracking available hospital beds, hospital and EMS resources, and other emergency response data. The system is beneficial for scene commanders, incident commanders, and EMS personnel to obtain concurrent hospital information regarding patient transportation. EMResource features include emergency department status information, Trauma Center information, patient tracking, hospital bed tracking, and event notifications. EMResource was developed in response to the need for timely EMS and hospital resource information and is a user-friendly application that requires only an internet connection and a computer running a current web browser to operate.

The following is an example screenshot of the TSA-T EMResource page:



Laredo, TX (HCC T)

Update 1: HHS: COVID Admissions EEIs | Update 2: HHS: COVID Hospital Capacity | Update 4: Hospital COVID / FLU Patient Query | Update 1: HHS: Remdesivir Query | Update 1: HHS: Staffing Shortage | Update 1: HHS: Supply Query | HHS: Vaccination

Hospital	Diversion	Hospital Status	ICU	Trauma Status	PCI	Stroke	NeuroSurg	Ortho Service	Helicopter	Implemented Surge Strategies	Comment
Doctors Hospital of Laredo	Caution	Open	Saturation	Yes	Yes	Primary (L2)	No	Yes	N/A	No	Multiple Critical Patients in the ED or Num...
Laredo Med Center	Caution	High Volume	Open	Yes	Yes	Primary (L2)	Yes	Yes	N/A	Yes	ER Saturation,Holding ICU patients, CEN...
Laredo Rehabilitation Hospital	Open	Open	Open	Non-Designated	No	Stroke Support (L3)	No	No	N/A	No	No ED in rehab hospital | No ICU.
Laredo Specialty Hospital	Open	Open	Open	Non-Designated	No	Stroke Support (L3)	No	No	N/A	Yes	No emergency department | LTAC establis...
STAT Specialty Hospital of Laredo	Caution	--	--	--	--	--	--	--	Limited Availability	No	ER Saturation,Holding ICU patients, Multi...

Aeromedical Services	Helicopter	Comment
AE93 - Laredo	Available	

Free Standing ED	Diversion	MCI Red	MCI Yellow	MCI Green	Implemented Surge Strategies	Comment
Clear Choice ER	Open	0	0	0	--	
Doctors Hospital ED Central	Open	0	0	0	No	NO HOLDS | Ready For Emergency | Rea...
Laredo Emergency Room	Open	0	0	0	No	limited staff
Laredo Medical Center North Central ER	Open	0	0	0	No	CT scanner unavailable for repairs from 8 ...
Summary	N/A	0	0	0	N/A	

Assisted Living Facility	Comment

Nursing Homes	Comment

Ambulance
Ambuline Ambulance Service
Angel Care Ambulance Service
Bronze Star Ambulance Service
Capital Care EMS
Jenesis Emergency Service
Lalitas Ambulance Service
Laredo Hope Ambulance Service
Laredo Lifeline
Medpoint Ambulance
Prestige EMS
South Texas Ambulance Response
Texas Superior Ambulance Service
United Med Care Ambulance
Villa Ambulance

TSA-T Service Area

The following is a visual aid representing the two trauma facilities within TSA-T, their proximity to the international border, and the frontier distance comprising SFRAC. (source: EMSResource)