# Regional Trauma Plan

# RAC-R Trauma Plan

## PURPOSE

The Trauma Committee collaborates with the RAC board for the oversight of the trauma system in Trauma Service Area R (East Texas Gulf Coast Regional Trauma Advisory Council RAC-R) including the Regional Trauma System Plan. This Plan includes strategies to focus diverse resources in a collective strategy to reduce morbidity and mortality due to trauma. The committee will provide guidance in the development and review of hospital and pre-hospital guidelines and protocols, regional plans, compilation of regional data, and injury prevention for the population in RAC-R.

## GOALS

A. Goals for each year are established at the beginning of the fiscal year.
B. Collaborate and provide mentorship with entities that provide trauma care within the RAC and bordering regions.
C. Provide injury prevention initiatives to the community as needed per our RAC data.
D. Statewide collaborative projects will be incorporated into the committee's goals as they arise.

## OBJECTIVES

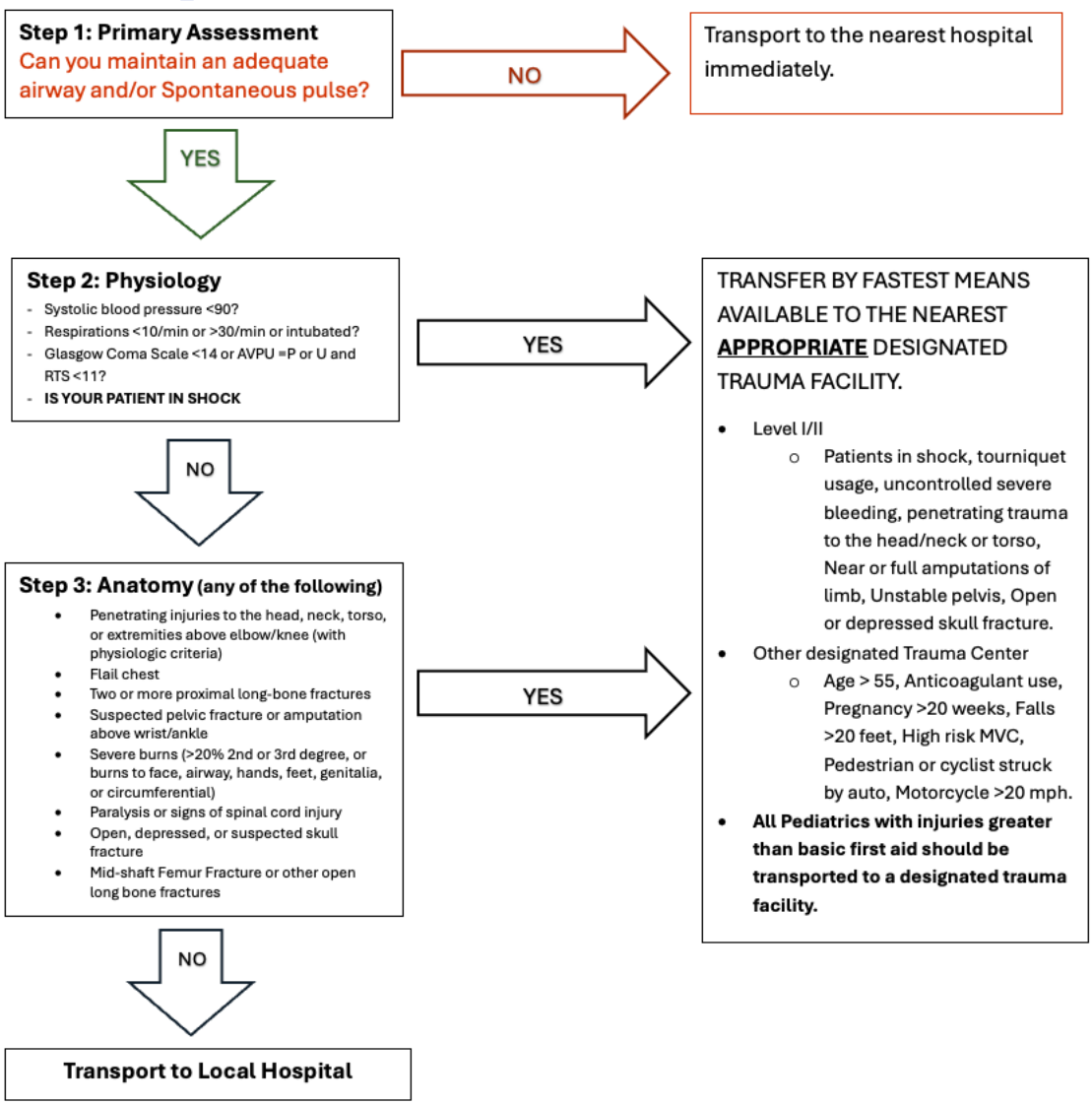
The Trauma Committee's mission is to provide the best care to traumatically injured patients as well as promoting responsible behaviors within the community. The committee will promote safe and effective care practices through constant attention to quality assurance and performance improvement. The committee will foster collaborative relationships with healthcare stakeholders in our region to provide evidence-based education, training, resources, and injury prevention measures.

## DEFINITION

Trauma is a physical, cognitive, and emotional response caused by a traumatic event, series of events, or set of circumstances that is experienced as harmful or life-threatening.

## PRE-HOSPITAL REGIONAL TRIAGE GUIDELINES

Ensuring trauma patients are transported to the most appropriate trauma facility is guided by the assessment of the patient. RAC-R has developed regional Pre-hospital Triage and Transport Guidelines.




## AIR MEDICAL ACTIVATION

Consider air medical activation based on previously defined criteria.

## TRAUMA TREATMENT GUIDELINES

Healthcare providers should use the following guidelines in conjunction with their professional knowledge and expertise during the hospital care and interfacility transfer of the major or severe trauma patient.

Minimum regional trauma activation criteria are listed below.

- 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 need 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

## 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:

- Partial thickness >10% of the body surface area
- Full thickness burns
- Burns to face, hands, feet, genitalia, perineum and over any joints
- All high voltage (≥1000V) electrical injuries
- Lightning injury
- Chemical burns
- Suspected 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
- All pediatric burns may benefit from burn referral (≤14 years, or <30kg)

- Poorly controlled pain

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 utilizing the modified Parkland Formula:

- 2ml x weight in kg x %TBSA (adults)
- 3ml x weight in kg x %TBSA (pediatrics)
- 4ml x weight in kg x %TBSA (electrical burns)

- Patients should be assessed and managed according to provider protocols and/or orders from Medical Control if needed.
- Patients should be initially evaluated and managed according to ATLS, ATCN, TNCC, ITLS/PHTLS, ACLS, PALS, ENPC and/or PEEP guidelines.

## REIMPLANTATION

Reimplantation is a highly specialized field, and few facilities are available to provide this time sensitive resource to injured patients. When a patient in the region needs reimplantation, emergent transport should be initiated immediately. The following facilities offer reimplantation services in our RAC and surrounding regions to ensure that patients receive timely and specialized care for these complex procedures.

- University of Texas Medical Branch at Galveston (RAC-R)
- Memorial Hermann Texas Medical Center (SETRAC)
- Texas Children's Hospital (SETRAC)
- Ben Taub General Hospital (SETRAC)

## DESIGNATED TRAUMA FACILITIES (link to DSHS for designated sites)

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 1.4 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 within 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.

## TRAUMA PATIENT REHABILITATION

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.

## PREVENTION EDUCATION

Unintentional and intentional injuries are a significant public health concern within the State of Texas. Trauma systems must develop prevention strategies that help limit 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 injury prevention within RAC–R is to effect change in decreasing injuries

through education and to promote prevention efforts in injuries through committee initiatives. Since 2016, the RAC has embraced the Stop the Bleed program and collaborates with public and private entities to offer training for the staff. Through grant funds, the RAC distributes Stop the Bleed Training Kits to our hospital and EMS partners in the region that provide this valuable training to the community. Training is presented to businesses, schools, community members and churches to name a few. Additionally, each trauma designated facility in the region has their own specialized injury prevention programs targeted to meet the needs of their specific communities.

## TRAUMA QUALITY 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 entities 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.