RAC Operation Guidelines
Regional Trauma System Plan

The purpose of this section is to assist the regional advisory councils in developing (annual reviews/revisions) a regional trauma system plan for their Trauma Service Area. A sample format to organize the system plan is included. (See Attachment) The areas to be addressed in the plan are explained to avoid confusion or misunderstanding. Questions regarding the plan's components may be directed to the Department of State Health Services (DSHS), Office of EMS/Trauma System Coordination (OEMS/TS).

I.   ORGANIZING AN EMS TRAUMA SYSTEM PLAN

A complete EMS/Trauma System Plan should integrate all components of the trauma care system within the trauma service area (TSA). The plan itself has taken a significant period of time to complete and is *always changing* (thus a living document) with the needs and resources of the community. Therefore it is imperative that the organization of the plan and elements of the plan should be addressed thoroughly.

Assemble the contents of the plan to allow easy and quick access to the desired information. A cover page, to include the name of the regional advisory council (RAC), date of origin and most current revision is essential. Many RACs has structured their trauma system plan into individual files, therefore it is essential that component section have a cover page with name of RAC, date of origin and most current revision clearly identified on each cover page. This permits individualized review and revision of a component and therefore identifies true dating and RAC identification. Regional Trauma System Plan as a whole and or components is to be reviewed and revised annually. DSHS, Office of EMS/Trauma Systems Coordination request that a current copy of trauma system plan be electronically transferred and or made available on RAC's web site for review and approval. It is also highly encouraged the Trauma System Plan is maintained on RAC website to allow access to stakeholders and public.

In the event a RAC completes an annual review of their Trauma System Plan and makes no revision, the plan should still be presented to general membership for approval. The reviewed and approval date should be updated on the cover page of the plan and on each component of the plan. This review/approval by general membership should be noted in RAC meeting minutes for the meeting general membership approves the reviewed plan.

II.   Table of Contents:

Include a listing of the plan's contents and page number where each can be found. The Table of Contents can be expanded to include sub-sections, attachments, examples, etc.

III.   Introduction:

Present a "general overview" of the TSA. Describe the area's topography and demography; mention the acceptance of the plan by member counties; include special or unique features used or problems incurred in trauma system and patient care development.

IV.   List of RAC Officers:

List the RAC officials and the office and position(s) each holds. This list should include members of the "Executive Board" or "Board of Directors", and the standing committees

and the chairperson for each and the name, mailing address and telephone number of the RAC contact person. Each official and or chairperson's affiliation should be listed.

V.   RAC Bylaws:

Include a current copy of the RAC Bylaws. Bylaws in actuality are to be included into the regional trauma system plan. If a RAC decides to maintain their bylaws in a separate document, a reference should be made within the system plan to the bylaws.

List of EMS/FRO and Air Medical Providers: Provide a listing of <u>all</u> EMS and Air Medical Providers in Trauma Service Area, whether participating in RAC or not. The following should be maintained and listed within the system plan.

A.   Name of firm

B.   Address

C.   Emergency Numbers(s)

D.   Telephone/fax Number(s)

E.   Number of Vehicles

F.   Type of Service: (private, public, volunteer)

G.   Level of Service: (BLS, ALS, MICU, etc.)

VI.   List of Hospitals: Provide a list of <u>all</u> hospitals in Trauma Service Area, whether participating in RAC or not, whether designated or non-designated. The following should be maintained and listed in the system plan.

A. Name of hospital

B. Address

C. Telephone/fax Number(s)

D. Trauma Designation: (I, II, III, IV; Comprehensive, Major Medical-Surgical, General or Basic, specialty)

E. Number of Beds: (routine)

F. Pediatric services availability (if applicable)

G. Rehabilitation services availability (if applicable)

H. ICU-CCU units

I. Radio Frequency Monitored (telemetry, on-line medical control)

VII.   Plan Requirements: Include in the plan the following information:

A. List of counties: *List the counties in the TSA. Describe the general boundary lines of any fragmented county with in the TSA; maps are suggested*

B. Evidence of system participation: *Documentation is required to show that all healthcare entities and interested specialty center have an opportunity to participate in trauma system planning*

C. The following information should be addressed within the TSP:

1. List of the committees with the names of the committee members, their profession and affiliation

2. A public notice or bulletin seeking volunteers for system planning participation

3. Date a hospital submitted, or plans to submit, an application for trauma facility designation, or any evidence that would satisfy this.

VIII. Plan Components

The plan's components are listed below. There are several topics listed under each component to be addressed in the system plan. Additional components and issues may be added to the plan if desired. The issues to be addressed within these components will vary from TSA to TSA, but should reflect actuality of the individual RACs. Solutions to problems are dependent upon available resources, complexity of the problem, estimated cost, perceived seriousness of the problem, etc. The core components are essential in accordance with Texas Administrative Code, Rule 157-123.

A. System Access

1. "911" or single access telephone number

2. First Responders

History of 911: 911 is the most widely used method to access emergency services in Texas. Most counties in the state have the 911 telephone access in place. As of December 1991, only six counties and fourteen cities had not committed to implement the 911 system. If a TSA has a county or city that does not participate in 911, special care will need to be taking by the RAC to provide adequate access capabilities with that area.

Prior to 911, some areas received emergency services by dialing a single access number provided by the area telephone company. The single access number was usually connected to a law enforcement agency that provides the dispatch of all emergency services: police, fire, and ambulance. It is paramount that persons living in areas not service by 9-1-1 know the correct way to access the emergency system.

Should any area within the TSA not be accessible to 911, the TSA should note the location and availability of first responders within specific areas, especially areas not covered by an EMS service and where response times are excessive. Where feasible, first response units may be established.

B. Communications

    1.   Dispatch of response teams and/or agencies

    2.   Communication devices and frequencies

    3.   Emergency Medical Dispatch training

    4.   Response Times

    5.   Communication for multi-agency scenes

In areas where 911 have been activated, it is important to review the dispatch procedures, dispatch training, response times and the communication devices used.

A review and listing of the communication devices, operating frequencies, and the "effective range" of each device use by the EMS providers and trauma facilities should be noted. EMS providers must be able to communicate with medical control and the receiving facility, and vice versa. Medical control should have the listing of the radio frequencies and telephone numbers used by the EMS services, First Responders Organizations, air medical providers and hospitals within its TSA. Care should be given in the selection of additional or replacement communication equipment for the TSA compatibility with existing equipment, financial constraints, terrain, and training much be considered prior to purchase.

In reviewing response times in the TSA, problem areas should be noted to determine if dispatch times are a factor in delays. This component is frequently overlooked and is not easy to correct once noted. Training is, of course, a factor; but so too is equipment and number of emergency vehicles. Training EMS dispatchers can be costly and time consuming. The need for training is increased if police or fire department personnel perform ambulance dispatch duties in addition to their own dispatch responsibilities.

C. Medical Oversight

1. Standardization of provider off-line treatment protocols and on-line policies and procedures

2. Scene times

3. Field command when multiple providers respond

4. Standardized pre-hospital report forms

5. Protocols for the activation and use of helicopter, fixed wing aircraft and boats (*Helicopter activation protocols may be addressed under separate component*)

6. Pre-hospital personnel education issues (initials training, upgrading skill level, continuing education, etc.)

7. Composition of medical director board

It is important that medical direction be evident in all phases and at all levels of regional system planning. By law, those pre-hospital services which offer advanced care must have a medical director. The medical director develops treatment and physicians are referred to as an "off-line" medical director.

"On-line" medical control is voice supervision and direction provided by a licensed physician to an EMS service during a call via radio or telephone communication. The physician in voice communication with the responders may change protocol orders base upon the condition of the individual patient.

Protocols within this, the RAC may choose to establish a medical direction advisory group composed of off-line medical directors who consult on regional protocols. In some areas, the RAC may find it more effective for one physician to maintain this system oversight.

Standardized protocols for alerting and/or activating helicopters, fixed wing aircraft, and boats for rescue and transport should be considered by the RAC. Mutual-aid agreements with military, privately owned, or other agencies that operate these services should be developed.

D. Pre-hospital Triage Criteria

1. Transport protocols and times

2. Provider(s) notification

All pre-hospital triage and transport protocols used within a TSA should be reviewed and evaluated. When possible, a uniform triage protocol should be adopted. This may not be possible for all TSAs due to differences in terrain, hospital distance, response time, etc. There may be an EMS provider that responds to call and

transports patients between bordering TSAs. These services should be actively involved in discussions or meetings concerning pre-hospital triage protocols as they will be directly affected.

E. Diversion Policies & Bypass Protocols

1. Written acceptance, or intent to accept by a specified date, by area hospitals

2. Written acceptance by trauma facilities in the TSA

3. Providers notification

4. Hospital acceptance or intent to accept by a specified date

The RAC should have a copy of the diversion policy used by the trauma facilities within its TSA. Each trauma facility should include in its diversion policy the situations which require the facility to go on diversion; the notification procedure to activate the policy; and the procedure to terminate the division policy. Diversion criteria within the TSA should be uniform. Problems associated with diversion policy. Diversion criteria within the TSA should be uniform. Problems associated with diversion should be monitored.

The fundamental principle of the EMS/trauma system is getting the trauma patient to the right hospital in the right amount of time. Ideally, trauma patients are transported to a trauma facility capable of providing the appropriate level of care, especially high-risk patients. Patients who receive definitive care within the "golden hour" have an increase chance for survival and recovery. In developing bypass protocols, evaluation of available resources in all areas of the TSA must be made.

Trauma facilities of all sizes and levels are important; each contributes to the system. The number and location of the trauma facilities within the TSA must be considered when developing bypass protocols. Evaluate each facility's level of care; some may not be prepared to manage major trauma patients.

F. Regional Medical Control

1. Identification of provider and their response areas

2. Medical Control staffing

3. Qualifications and training requirements for Medical Control physicians

4. Communications access

This component is crucial to a successful EMS/trauma system. Lives depend on the information reported to, and the decisions made, by medical control. Strong physicians' leadership and supervision (on-line and off-line) is essential for pre-hospital EMS providers. The medical control station can be designed to monitor the status of each facility (services that are available); the number and location of available EMS units; dispatch back –up units; activates airlift services; locate an

accepting facility or hospital for patient transfer; and provide on-line medical direction.

In many cases, regional medical control will be located at the Lead trauma facility in the TSA. Several medical control centers within a large TSA may be required. The location of medical control centers within a large TSA may be required. The location of medical control will influence staffing, training, and equipment needs.

Medical control will serve many functions and be involved with regional issues, such as: planning educational programs; developing protocols; identifying communication needs; evaluation pre-hospital patient care; approving off-line protocols; assist with by-pass and diversion policies, etc. <u>A successful EMS/trauma system will have active physician participation in medical control working closely with all health care entities</u>.

G. Facility Triage Criteria

    1. Patient categories

    2. Method to monitor the current resource capability of trauma facilities

    3. Notification of providers

Trauma patients are typically classified by the degree of injury sustained. Following initial treatment in the emergency room, and subsequent treatment, the trauma patient is re-classified, this time by their condition or prognosis. However, the definitions used by the facilities to classify a trauma patient are not consistent. Injury classification is determined by assigning a numerical value to subjective findings. A patient classified as a "Major" trauma injury patient at one facility might be classified as a "Severe" trauma injury patient at another facility.

All hospitals within the TSA should develop, and use standard definitions to classify trauma patients. Facility acceptance of uniform criteria and category definitions should enhance patient reporting and inter-hospital transfer decisions.

Reporting patients by category can be easily monitored to determine the capability of each facility, accurately count and classify the number of trauma patients by city/county/TSA, identify future EMS and facility needs determine financial requirements for trauma care, etc.

H. Inter-Hospital Transfers

    1. Identification of patients

    2. Identification of equipment and personnel

    3. Written transfer agreements

Trauma patients requiring additional or specialized care and treatment beyond the facility's capability must be identified and transferred to an appropriate General or

Basic trauma facility. The critically injured patient often requires a higher level of care and inter-hospital transfer must be arranged.

Application of the regional facility triage criteria will facilitate the inter-hospital transfer process. Participating trauma facilities will accept patient transfers, providing beds are available. Medical control can assist with inter-hospital transfers, if necessary.

Written transfer agreements are necessary especially if patients routinely are transferred to hospital or medical center, which does not participate in the trauma system. Transfer agreements for pediatrics, burn victims, head, and spinal injury victims are especially important since immediate intervention is required.

I. Plan for Designation of Potential Trauma Facilities

    1. Identification of potential trauma facilities and proposed dates of applying for designation

    2. Identification of a potential lead trauma facility and a date for applying for designation

DSHS and or Texas Hospital Association can provide a RAC with a listing of all licensed general and special hospital located in its TSA. Each hospital has the potential to receive trauma facility designation and participate in regional system planning. Strategies for contacting hospitals within a given TSA will differ, however, early contact and inquiry of each hospital's intent or interest is important.

There is no limitation to the number or location of trauma facilities. Identification and selection of a Lead trauma facility is an important component issue. Normally, the highest-level trauma facility in a TSA will be the "Lead" facility. The Lead trauma facility has the additional responsibility to provide area outreach and increased educational activities. Professional assistance and inter-hospital transfer agreements will be provided to the smaller facilities by the Lead facility. If appropriate, the responsibilities of the Lead facility may be shared by other trauma facilities. Every TSA must have a lead facility for compliance purposes.

J. System Quality Management (Performance Improvement) Program

    1. Data Collection

    2. Trauma Center Quality Improvement

    3. Regional Multi-Disciplinary Trauma Review Committee

A key element in a trauma system plan is the monitoring and evaluation component. It is imperative that a system be able to monitor its own performance over time and to assess its impact on trauma mortality and morbidity. This will require a plan for continuous evaluation of operations, demonstration that the system is meeting its stated goals and documentation of system performance. The trauma continuous

quality improvement (CQI) process should be designed to satisfy these goals. The subsets of an effective quality management program are data collection, trauma center quality/performance improvement, and a multi-disciplinary trauma review committee.

a)   Data Collection: The trauma registry will satisfy the requirement for data collection efforts. All hospitals in TSA should participate in the trauma registry in order to develop the complete "trauma picture" for the TSA. Data collected should be both pre-hospital and hospital and contain system indicators. The Texas Department of Health, Bureau of Epidemiology, and Injury Prevention Program may offer additional assistance with trauma registry issues.

b)   Trauma Center Quality Improvement (CQI): The goal of a CQI process is to monitor the process and outcome of trauma patient care and to document appropriate and timely provision of care according to established standards of care. All hospitals should participate in a system wide trauma CQI. The following points should be addressed by the CQI plan of each trauma facility:

(1) An organization structure that facilitates the process of CQI

(2) Clearly state goals and objectives of the CQI plan.

(3) The development of standards of care

(4) A process to delineate surgical privileges for surgeons

(5) Providing trauma care

(6) Participation in trauma registry

(7) Establish quality indicators (audit filters). The plan should, at the minimum, include the recommended audit filters by the ACS and JACHO. The plan should define adverse outcomes by using an explicit list of well defined complications.

(8) Establish a systematic informed peer review process utilizing a multidisciplinary method including pre-hospital care providers.

(9) A method for computing survival probability and comparing patient outcomes with the standard outcome tool is TRISS

    c) Regional Multi-Disciplinary Trauma Review Subcommittee: A multi-disciplinary trauma review subcommittee should be established to review potential problem cases and system issues identified through the system registry. This subcommittee should be composed of representatives of all chief of trauma services; chief of emergency services; trauma nurse coordinators; pre-hospital providers and medical directors.

K. Rehabilitation

    a.   Local resources
    b.   Transfers protocols