2010 Regional Trauma System Plan

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NCTTRAC serves the counties of Cooke, Fannin, Grayson, Denton, Wise, Parker, Palo Pinto, Ellis, Kaufman, Navarro, Collin, Hunt, Rockwall, Erath, Hood, Johnson, Somervell, Tarrant, and Dallas.
North Central Texas Trauma Regional Advisory Council

2010 REGIONAL TRAUMA SYSTEM PLAN

Table of Contents

I. MISSION .............................................................................................................. 4
II. VISION ................................................................................................................. 4
III. PHILOSOPHY ..................................................................................................... 4
IV. SCOPE OF RESPONSIBILITY ........................................................................... 5
V. REGIONAL DEMOGRAPHICS ............................................................................. 5
VI. INJURY EPIDEMIOLOGY .................................................................................. 7
VII. DATA EVALUATION .......................................................................................... 8
VIII. SYSTEM LEADERSHIP .................................................................................... 9
IX. COALITION BUILDING ........................................................................................ 10
X. LEAD AGENCY AND HUMAN RESOURCES .................................................... 11
   RAC Bylaws ......................................................................................................... 12
   Evidence of System Participation ....................................................................... 12
XI. FINANCIAL MANAGEMENT ............................................................................. 13
   Trauma System Funding ....................................................................................... 13
   Funding Breakdown ............................................................................................... 14
XII. PREVENTION AND OUTREACH EDUCATION .............................................. 16
XIII. EMERGENCY MEDICAL SERVICES ................................................................. 17
XIV. MEDICAL OVERSIGHT ................................................................................... 20
XV. DEFINITIVE CARE FACILITIES ...................................................................... 22
XVI. SYSTEM COORDINATION AND PATIENT FLOW ........................................ 24
XVII. REHABILITATION ............................................................................................. 27
XVIII. DISASTER PREPAREDNESS ........................................................................... 27
XIX. TRAUMA SYSTEM EVALUATION AND PERFORMANCE IMPROVEMENT ...................................................................................................................... 31
XX. TRAUMA MANAGEMENT INFORMATION SYSTEM ........................................ 31
XXI. RESEARCH.......................................................................................................................... 32
XXII. RECOMMENDATIONS APPENDIX .................................................................................. 32
    Coalition Building and Community Support ................................................................. 32
    Prevention and Outreach ............................................................................................. 32
    Trauma Medical Oversight .......................................................................................... 33
Appendix A .......................................................................................................................... 35
Appendix B .......................................................................................................................... 35
Appendix C .......................................................................................................................... 37
Appendix D .......................................................................................................................... 37
Appendix E .......................................................................................................................... 37
Appendix F .......................................................................................................................... 37
Appendix G .......................................................................................................................... 37
I. MISSION

The mission of the NCTTRAC Trauma System Plan is to focus diverse resources in a collective strategy to reduce morbidity and mortality due to trauma within Trauma Service Area E.

II. VISION

To be the safest and most effective Trauma Service Area in Texas.

III. PHILOSOPHY

Belief statements:

- We believe that all trauma patients are entitled to optimal trauma care (i.e. right patient, right care, right time, right place, and back home again).
- We believe that a planned and coordinated system with a public health model approach (assessment, policy development, and assurance) 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 (primary, secondary, and tertiary) will result in decreased morbidity and mortality related to injury.
- We believe that a coordinated and organized approach is best accomplished with 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 the most safe and effective Trauma Service Area in Texas.
- We believe that trauma care providers, through organized education and training, can be trained to deliver optimal trauma care based on best evidence.
IV. SCOPE OF RESPONSIBILITY

This Trauma System Plan for Trauma Service Area (TSA) – E is provided to meet the requirements within Texas Administrative Code (TAC) § 157.123 and related 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 NCTTRAC membership as a resource for providers of trauma care from the First Responder Organization through the rehabilitation facilities, and includes not only care providers, but other key components of this system including injury prevention, public and professional education, system performance improvement, and disaster preparedness.

V. REGIONAL DEMOGRAPHICS

Trauma Service Area E (TSA-E), known as the North Central Texas Trauma Regional Advisory Council (NCTTRAC), incorporates nineteen north central Texas rural, suburban and urban counties: Cooke, Fannin, Grayson, Wise, Denton, Palo Pinto, Parker, Ellis, Kaufman, Navarro, Collin, Hunt, Rockwall, Erath, Hood, Johnson, Somervell, Tarrant and Dallas counties. See Appendix A. The 2008 census indicates that 6.7 million people reside within the 15,574.71 square miles of TSA-E, representing 27% of the entire population of the State of Texas.

The business community includes an international airport, a multiservice regional airport, multiple small airports, a military base, a nuclear power plant, and several regional entertainment venues. Entertainment venues include an NFL stadium, an NBA/NHL arena, an MLB stadium, a NASCAR circuit speedway, several large scale amusement parks, and many large convention centers that play host to many cultural, business and political
events. The region has over six large college system campuses, multiple community colleges, and two medical school campuses. TSA-E is home to two of the most successful airlines in the industry, an automobile assembly plant, and many other national and international business headquarters. These issues must be taken into account when planning an integrated trauma system.

Dallas Fort Worth International Airport is the third busiest airport in the world in terms of aircraft movements totaling 685,491 annually. In terms of passenger traffic, it is the seventh busiest airport in the world and the ninth busiest international gateway in the United States, transporting almost 60 million passengers in 2007. In terms of land area, at 18,076 acres, it is the largest airport in Texas, the second largest in the United States, and the third largest in the world. The Naval Air Station Joint Reserve Base Fort Worth (NAS JRB), also known as Carswell Field, is a military airfield located within NCTTRAC. This military airfield is operated by the United States Navy, and is headquarters to the Air Force Reserve Command's Tenth Air Force; the 301st Fighter Wing, and the 136th Airlift Wing of the Texas Air National Guard continue to be based at the installation. A number of Marine Corps aviation and ground units are also co-located at NAS JRB Fort Worth. The Comanche Peak Nuclear Power Plant is a two-unit nuclear-fueled power generating facility located four and a half miles northwest of Glen Rose in Somervell County.

Numerous entertainment venues are available to the residents and visitors within NCTTRAC including Six Flags Over Texas, the Texas State Fair at Fair Park, MayFest in Fort Worth, and many concert settings and sports arenas. In particular, the American Airlines Center in Dallas is a venue for hockey, basketball, and arena football games as well as concerts and various other events. The Ballpark in Arlington is home to the Texas Rangers and is located within walking distance from Six Flags and the new Cowboys Stadium in the heart of Arlington and TSA-E. Cowboys Stadium, the largest domed stadium in the world, seats 80,000, and expands to 100,000 for sporting and entertainment events including college bowl and championship football games, a Super Bowl, the NCAA Final Four and international rock star concerts. Texas Motor Speedway hosts several NASCAR series, seating over 138,000 spectators in Denton County.

NCTTRAC collaborates with the North Central Texas Council of Governments (NCTCOG). The NCTCOG is a voluntary association
comprised of 229 local government members, which include cities, counties, independent school districts, and special districts that serve a 16-county area surrounding Dallas/Fort Worth. Cooke, Grayson, and Fannin are not part of the NCTCOG; these counties are members of the Texoma Council of Governments. The NCTCOG is able to assist local governments and facilitate sound regional development through transportation planning, dissemination of demographic information, assistance with information systems development, environmental impact studies, planning for human services needs, 9-1-1 planning, emergency preparedness coordination, federally funded employment and training programs, training local government officials, and providing basic and continuing education for area personnel.

NCTTRAC is served by three Level I comprehensive adult trauma centers, one Level I comprehensive pediatric trauma center, two Level II major trauma centers, three Level III general trauma centers, fourteen Level IV basic trauma centers, 85 acute care hospitals, and approximately 125 ground and air EMS services.

VI. INJURY EPIDEMIOLOGY

The NCTTRAC Board of Directors and membership have made a commitment to acquire meaningful data to provide information for decision making. The general area is trending upward, and NCTTRAC looks forward to the data that will be available soon after implementation of the regional registry this late spring. See Appendix B for sample partial data.
VII. DATA EVALUATION

NCTTRAC has responsibility for implementation of a regional registry; the TSA-E regional registry for EMS and acute care is known as REG*E. The regional trauma registry is a sub data set of REG*E and is available to all NCTTRAC full members. Hospitals participating in NCTTRAC that are designated trauma facilities submit the standard Texas Trauma Registry data elements defined by the Department of State Health Services (DSHS) to NCTTRAC through REG*E. EMS providers participate by submitting data elements for all patients as defined by DSHS to the REG*E. Data submission is electronic unless special arrangements have been predefined. Data submission occurs monthly per the related performance standards.

Trauma Facilities and EMS Providers will each have a registry workgroup defined. These workgroups are charged with overseeing standards for maintaining the data integrity, data validation, data accuracy, and data security of the acute care functionality of REG*E. The Regional Trauma Registry Workgroup defines the standard reports that are produced from the regional trauma registry and the processes for current members of NCTTRAC to request data from the regional registry. This workgroup will include a lead hospital representative from each designated level I, II, III and IV facility who have completed the regional registry super user training, the American Trauma Society’s Trauma Registry Course, the AAAIM Injury Scoring Class, and have a letter of support from his or her facility to commit to participation in the Regional Trauma Registry Workgroup. Certification as a Trauma Registrar is preferred for participation in this workgroup. The EMS Registry Workgroup will have the same charge for EMS registry records. Participants on the EMS Registry Workgroup will have an appropriate background in EMS patient data management. All actions of these workgroups are processed through the System Development Committee through the appropriate subcommittee or the EMS Committee to the Board of Directors.
VIII. SYSTEM LEADERSHIP

The Board of Directors is charged with promoting awareness of the Trauma System as a component of the NCTTRAC Annual Report.

See attached Organizational Chart (See Appendix C)

<table>
<thead>
<tr>
<th>Board of Directors</th>
<th>Officer</th>
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</thead>
<tbody>
<tr>
<td>Chair</td>
<td>Carrie Hecht, RN</td>
</tr>
<tr>
<td>Vice Chair</td>
<td>Jimmy Dunn</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Wes Dunham</td>
</tr>
<tr>
<td>Secretary</td>
<td>Robert Knappage, LP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Committee</th>
<th>Committee Chair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Medical</td>
<td>Dr. Robert Simonson</td>
</tr>
<tr>
<td>EMS</td>
<td>Jodie Harbert, LP</td>
</tr>
<tr>
<td>Finance</td>
<td>Garrett Hall</td>
</tr>
<tr>
<td>Physician Advisory Group</td>
<td>Board Liaison: Dr. Robert Simonson</td>
</tr>
<tr>
<td>Pediatric</td>
<td>Lori Vinson, RN</td>
</tr>
<tr>
<td>Professional Development</td>
<td>Courtney Edwards, RN</td>
</tr>
<tr>
<td>Public Education/Injury Prevention</td>
<td>Mary Ann Contreras, RN</td>
</tr>
<tr>
<td>Regional Emergency Preparedness</td>
<td>Donna Glenn RN, EMT</td>
</tr>
<tr>
<td>System Performance Improvement</td>
<td>Cyndi Mastropieri, RN</td>
</tr>
<tr>
<td>Systems Development</td>
<td>Kris Powell, RN</td>
</tr>
<tr>
<td>Trauma Subcommittee</td>
<td>Jorie Klein, RN</td>
</tr>
<tr>
<td>Stroke Subcommittee</td>
<td>Robert Knappage, LP</td>
</tr>
<tr>
<td>Cardiac Subcommittee</td>
<td>Kris Powell, RN</td>
</tr>
</tbody>
</table>

NCTTRAC Contact:
Hendrik J. (Rick) Antonisse
Executive Director
Phone: 817-608-0390
600 Six Flags Drive
Arlington, TX 76011

NCTTRAC committee chairs are elected for two year terms; they are chosen by vote of the present and eligible voting members of the committee and approved by a simple majority vote of the Board of Directors. NCTTRAC standing committee membership participation, with the exception of the System Performance Improvement Committee closed sessions, are open to any individual who wants to attend. Currently the
System Performance Improvement Committee membership is reviewing and defining committee structure to include but not be limited to the disciplines of trauma, stroke, and cardiac patient care for hospital and prehospital patients. However the System Performance Improvement Trauma Workgroup, which reports to the System Performance Improvement Committee, will generally consist of a balance of physicians, nurses, and prehospital providers as listed below. Refer to www.NCTTRAC.org for the most current committee information.

- Trauma Surgeons
- ED Physicians
- EMS Medical Directors
- Representatives from Level I,II,III and IV trauma facilities
- Urban/ Rural Ground EMS Providers
- Air Providers
- Pediatric
- Education

IX. COALITION BUILDING

Coalition building is a continuous process of cultivating and maintaining relationships with stakeholders within the NCTTRAC trauma service area. Collaboration on injury control and trauma system development with community partnerships are key. Constituents include health care professionals, prehospital providers, insurers, payers, data experts, consumers, advocates, policy makers, trauma center administrators, and media representatives. Coalition priorities are trauma system development, policy making, financing initiatives and disaster preparedness, system integration, and promoting collaboration rather than competition between trauma centers and prehospital providers. It would be ideal if every member of NCTTRAC participated in at least one activity or one committee.

Currently most initiatives around Injury Prevention are carried out by members of NCTTRAC hospital and prehospital providers. NCTTRAC needs to focus on bringing in business partners and community leaders to assist with injury awareness and prevention activities. NCTTRAC is developing a list of coalitions and activities that members can engage in with the assistance of the new Public Relations and Development Program Manager.

Approval Date: 03/09/2010
X. LEAD AGENCY AND HUMAN RESOURCES

DSHS is the Lead Agency for the trauma in the State of Texas and NCTTRAC is the Lead Agency for TSA-E. DSHS defines the regulatory standards for Emergency Medical Service Providers and Trauma Facilities. The American College of Surgeons defines the Trauma Facility criteria for the Level I and Level II trauma centers in *Optimal Care Resources for 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. NCTTRAC defines the system standards of care for TSA-E. These standards include Trauma Facility Field Triage Criteria, Trauma Transfer Guidelines, and Regional Trauma Registry Data Management Guidelines. Due to the size and capabilities within TSA-E, the responsibility of lead trauma facility is shared between all Level I facilities. Refer to definitive care facilities.

The Trauma Facilities Field Triage Criteria is reviewed annually through the Physician Advisory Group and processed through the Trauma System Subcommittee, the Systems Development Committee, and then approved by the Board of Directors. These criteria align with the national Trauma Center Field Triage Criteria outlined in the American College of Surgeons, *Optimal Care Resources for the Injured Patient*, and the Centers for Disease Control (CDC). See Appendix D. This document is also posted on the NCTTRAC website at www.NCTTRAC.org under the Trauma System Plan. These criteria are recommendations but not mandated to be standardized due to TSA-Es variability of capabilities.

The ability of trauma facilities to monitor their resource capabilities is through NCTTRAC implementation of TSA-E Tracking, Resource, Alerts, and Communications (*E*TRACS). Communication to providers is addressed through EMResource. For details refer to the Disaster Preparedness section.

The Regional Communications Center (RCC), as a contracted service through NCTTRAC, assists facilities in the region to transfer serious and critical trauma patients to definitive care. For details refer to the System Coordination Patient Flow section.
NCTTRAC has dedicated staff to assist in development, implementation, education, and monitoring of the Regional Trauma System Plan. Listed are the individuals that assist in coordination of the Regional Trauma System Plan. Contact information and areas of responsibility are listed at www.NCTTRAC.org.

<table>
<thead>
<tr>
<th>NCTTRAC Staff</th>
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<tbody>
<tr>
<td>Executive Director</td>
<td>Hendrik J. (Rick) Antonisse</td>
</tr>
<tr>
<td>Comptroller/Deputy Director</td>
<td>Paula J. Welch</td>
</tr>
<tr>
<td>Senior Program Assistant</td>
<td>Vicki Thedford</td>
</tr>
<tr>
<td>Program Assistant</td>
<td>Sue Curfman</td>
</tr>
<tr>
<td>Emergency Healthcare Systems Program Manager</td>
<td>Leigh Anne Bedrich</td>
</tr>
<tr>
<td>EHS Coordinator</td>
<td>Danielle KWL Chinn</td>
</tr>
<tr>
<td>Data Systems Program Manager</td>
<td>Shawn Chisholm</td>
</tr>
<tr>
<td>Data Systems Administrator</td>
<td>Kacy Bird</td>
</tr>
<tr>
<td>Hospital Preparedness Program Manager</td>
<td>Hank Hufham</td>
</tr>
<tr>
<td>Logistics &amp; Transportation Supervisor</td>
<td>Jean Becerril</td>
</tr>
<tr>
<td>Logistics &amp; Transportation Coordinator</td>
<td>Raymond Coimbre</td>
</tr>
<tr>
<td>Training, Exercises &amp; PI Supervisor</td>
<td>Ann Marie Harris</td>
</tr>
<tr>
<td>Training, Exercises &amp; PI Coordinator</td>
<td>Derek Trabon</td>
</tr>
<tr>
<td>Public Relations &amp; Development Manager</td>
<td>Michelle Raczynski</td>
</tr>
<tr>
<td>Operations Center Manager</td>
<td>Chip Orton</td>
</tr>
<tr>
<td>Communications &amp; Ops Support Supervisor</td>
<td>Phillip Tetreault</td>
</tr>
<tr>
<td>Communications &amp; Ops Support Coordinator</td>
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</tbody>
</table>

NCTTRAC Bylaws

See Appendix E

Evidence of System Participation

Announcements for trauma system planning are sent electronically to all NCTTRAC membership to allow participation from interested members and to include a broad range such as physicians, nurses, EMS prehospital providers, and staff. Members have the capability to call in through both audio and visual forms of technology. Announcements are made at the Board of Directors meetings for maximum visibility of members to participate. To provide evidence and track actual participation in trauma system planning, rosters are kept at NCTTRAC offices.

Approval Date: 03/09/2010
XI.  FINANCIAL MANAGEMENT

NCTTRAC’s Board of Directors defines an annual operating budget that supports the Regional Trauma System Plan. The Trauma System Subcommittee participates in the development of this budget. This budget is moved to the System Development Committee and approved or adjusted by the Board of Directors. NCTTRAC staff is responsible for the execution and management of the overall NCTTRAC budget.

Trauma System Funding

Senate Bill 102 (SB-102)
Signed in June 1997, established the EMS/Trauma System fund (Health and Safety Codes §773.122 – 144, and §157.130). The following November, the Board of Health proposed rules for the commitment of funding distribution, and then adopted in March 1998.

Senate Bill 1131 (78th Legislative Session)
Established a fund for county and regional emergency medical services, designated trauma facilities, and trauma care systems, which was appropriated to the Department of State Health Services. Within the bill are stipulations for the distribution of funds composed of money deposited under the Code of Criminal Procedures, and earnings of the account.

Senate Bill 3588; Article 10: Driver Responsibility Act (78th Legislation)
Created a system of points and surcharges applied to the driver’s license of those convicted of certain moving violations to be implemented by the Department of Public Safety. One half of the funds are credited to trauma facilities and emergency medical services. Additionally, a $30 court fee was added on some traffic violations, of which one-third of the revenue is credited to designated trauma facilities and emergency medical services and is to expire in September 2007.

House Bill 1676 (76th Legislative Session)
Established the EMS & Trauma Care Tobacco Endowment for emergency medical services and trauma care to reduce morbidity and mortality due to injuries. The source of funds is interest earned on the endowment up to the appropriation level established by the 76th Legislative Session. The annual allocations are for Regional EMS/Trauma Systems Development
grants, EMS Local Project Grants (LPG), DSHS administrative costs, and DSHS program costs.

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Fund</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS/TRA-RAC</td>
<td>3588</td>
<td>EMS/Trauma funds routed to RAC for distribution</td>
</tr>
<tr>
<td>EMS/TRA-CTY</td>
<td>3588</td>
<td>EMS/Trauma funds passed thru to counties within RAC who meet compliance at discretion of RAC formularies</td>
</tr>
<tr>
<td>EMS/COUNTY</td>
<td>911/1131</td>
<td>EMS funds passed thru based on 911, mandated by state legislature and collected throughout stated, designated for EMS expended by county; funds distributed to each entity via the RAC based on RAC formularies</td>
</tr>
<tr>
<td>EMS/RAC</td>
<td>911/1131</td>
<td>Funds designated for exclusive and discretionary use by RACs</td>
</tr>
<tr>
<td>EMS/TOB</td>
<td>Tobacco</td>
<td></td>
</tr>
<tr>
<td>Local Project Grants (LPG)</td>
<td>LPG</td>
<td>Funds to local EMS entities based on application for local projects/needs; EMS entities to apply for funds via RAC, which may or may not assist local EMS entities in seeking funds for LPG needs</td>
</tr>
<tr>
<td>EEF</td>
<td>EEF</td>
<td>Emergency Extraordinary Funds</td>
</tr>
<tr>
<td>Dispro</td>
<td>Dispro</td>
<td>Disproportion funds for designated trauma care facilities, active participant in RAC, specified for indigent care</td>
</tr>
</tbody>
</table>

**Funding Breakdown**

A. Commissioner’s Extraordinary Emergency Allotment
   1. $500,000 911/1131 funds
      a) To resolve acute compromise to provision of emergency services
b) Eligible: EMS providers, hospitals, and registered FRO who participate in a RAC
2. $500,000 3588 funds
3. To resolve acute compromise to provision of emergency services
4. Eligible: EMS providers, hospitals, and registered FRO

B. EMS Allotment
1. EMS Portion: 911/1131 funds
2. 50% accumulated in accounts
3. To support EMS providers
4. Eligible: Licensed EMS providers

C. EMS Portion: 3588 funds
1. 2% accumulated in the account
2. Eligible: Licensed EMS providers

D. RAC Allotment
1. 911/1131 funds
2. 20% accumulated in the account
3. Eligible: RACs recognized by DSHS §Rule 157.123

E. RAC Portion: 3588 funds
1. 1 % of accumulated 3588 monies
2. Eligible: RACs recognized by DSHS §Rule 157.123

F. Tobacco RAC Grants
1. Tobacco endowment: portion of accrued interest
2. Support RACs
3. Quarterly distribution
4. Eligibility: RACs recognized by DSHS §Rule 157.123

G. EMS Local Project Grants (LPG)
1. Tobacco Endowment: portion of accrued interest
2. To increase availability/quality of EMS/Prehospital health care
3. Eligible: licensed EMS provider, registered FRO

H. ECA Training
1. Tobacco endowment: portion of accrued interest
2. Tobacco Endowment: portion of accrued interest
3. To provide ECA training to rural and underserved areas
4. Eligible: Government entities or non-government organizations that meet rural or underserved area status
XII. 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 programs and strategies are based on epidemiologic data that is collected through REG*E. Prevention programs are defined by an annual needs assessment targeting specific populations with defined intervention programs. Intervention programs seek to create a measurable reduction in injury or increase in prevention strategies (such as increased use of seatbelts), that are attainable and have a defined timeline. Staffing and community partners are essential for success.

Current status of NCTTRAC

The injury prevention and public education committee provides guidance and financial aid to prevention efforts such as child passenger safety seats, bicycle helmets, Shattered Dreams, MADD, safety fairs etc. Some courses are also sponsored. This committee provides promotional items to various events and groups in an effort to raise NCTTRAC awareness.

NCTTRAC participates in the Governors EMS and Trauma Advisory Council (GETAC) Injury Prevention Committee.
XIII. EMERGENCY MEDICAL SERVICES

NCTTRAC TSA-E is supported by EMS systems with two-way communications to dispatch and hospitals. Medical oversight includes online and offline guidelines written by each medical director. The PAG provides leadership and guidance to documents for TSA-E. Prehospital triage and transportation is integrated into the EMS and public health system.

Each Medical Director within TSA-E assumes the responsibility for trauma oversight as well as specific performance improvement to investigate patient outcomes for his or her EMS personnel. TSA-E provides off line guidelines to each EMS provider and Medical Director in the form of:

- Off Line Therapeutic Guidelines
- Guidelines for Helicopter Transport
- Diversion and Bypass Guidelines
- Pediatric Guidelines

The NCTTRAC PAGs include Emergency Physicians, Trauma Surgeons, and EMS Medical Directors to include oversight of prehospital and hospital therapeutic modalities in TSA-E. The Physician Advisory Groups meet periodically, with an EMS/emergency department practicing physician serving as a liaison that frequently updates the Board of Directors. Other disciplines of PAGs meet as necessary. Participation is flexible with a broad range of participants including private, municipal, rural, and urban areas represented.

Each Medical Director 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 prehospital practitioners to monitor, improve, and increase medical appropriateness of the EMS system.

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
• Prearrival instructions

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. All counties which are within NCTTRAC zones 2-8 are all within the NCTCOG and therefore have received recent and robust updates including the location technology for cellular location. Texoma Council of Governments have updated in similar fashion as the NCTCOG with 911, interoperability, and cellular call location software.

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 System Coordination and Patient Flow. NCTTRAC helps coordinate response teams for disaster and regional surge responses through TSA-E E*TRACS. These responses include ambulance strike teams and task forces, Ambulance Strike Team Leaders, and Medical-Incident Support Team (M-IST) personnel, which are also coordinated with DSHS and other RACs around the state.

DSHS, Bureau of Emergency Management, 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 NCTTRAC work to assist in ensuring that providers have the resources for a well coordinated transportation system to arrive at the scene and promptly and expeditiously transport patients to the correct hospital by the correct transportation mode including ground and air transport. Mutual Aid Agreements and Memorandum of Agreements are also in place if and when needed.
State and local licensing and certification agencies, hospitals, EMS Education programs, Board of Nurse Examiners, and the Texas Medical Association ensures a competent work force in TSA-E. Providers of prehospital and hospital care along with associations may impose post graduate certifications to allow certificants and licensees to provide trauma care (i.e., International Trauma Life Support (ITLS) and Trauma Nurse Core Course (TNCC) as examples).

911 districts provide their own emergency medical dispatch training.

EMS Education programs in TSA-E and Medical Directors ensure that prehospital personnel who routinely provide care to trauma patients have initial and continuing trauma training. This may be part of the continuing education process or Medical Directors may require providers to take post graduate trauma training courses such as Prehospital Trauma Life Support (PHTLS), International Basic Trauma Life Support (ITLS), and trauma specific courses that are available in Texas. Trauma education may be performance improvement driven and part of a credentialing process put into place by an EMS Medical Director. NCTTRAC supports EMS agencies that strive to put comprehensive systems in place and support these agencies as they pursue excellence.

Formal multidisciplinary trauma conferences may take place at trauma conferences at or away from the provider facilities as part of continuing education. Informal multidisciplinary trauma conferences may take place at patient destinations with medical staff, hospital staff, or as part of ongoing quality performance improvement programs supervised by the Medical Director.

DSHS, the Medical Director, and NCTTRAC act as the lead agencies to protect the public welfare by enforcing various laws, rules and regulations as they pertain to the trauma system.

Incentives may be provided to individual agencies and institutions to seek state or national recognition such as awards presented by the Texas Department of State Health Services and the National Association of EMS Educators Accreditations. These may be obtained by meeting state and national standards as set by Commission on Accreditation of Medical Transport or Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions for EMS Education programs.
XIV. MEDICAL OVERSIGHT

The development of a Regional System for Trauma care requires the active participation of qualified physician providers. All of the physicians should not only be clinically qualified in their area of clinical practice, but should have 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 nature of their injury or due to temporary unavailability of necessary therapies, beds or resources.

NCTTRAC has adopted EMResource as the mechanism to be utilized to re-route those patients to other participating/designated trauma facilities. Refer to System Coordination and Patient Flow. This practice is for the purpose of re-directing patients to appropriate trauma care so that optimal patient care is maintained in the regional system. The redirection of trauma patients for financial reasons is not the intent of this policy, nor the intent of the Regional Trauma System Plan.

Scene times are not currently monitored for trending at a regional level but a threshold of twenty minutes is a regional standard set by the System Performance Improvement Committee. As referenced before, the System Performance Improvement Committee consists of a broad range of participants.

Identified medical staff is appointed to the System Performance Improvement Committee and Closed System Performance Improvement Committee.

There are established Physician Advisory Groups (PAGs) made of focus groups of physicians. These groups meet as needed to review medical
questions by committees and membership. Established PAGs include Trauma Surgeons, Stroke Interventionalists, and EMS Medical Directors, and meet together when an issue covers more than one PAG’s focus.

The Air Medical Committee is an established committee, meeting at least quarterly, with defined medical leadership and an identified medical staff chair.

There is no regular active participation in the regional committees from Neurosurgery, Orthopedic, Anesthesia, Hand Surgeon, or Rehabilitation Physicians. In addition, there is minimal Trauma Surgeon participation in the regional committees.

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

Currently there are no standardized pre-hospital report forms/run sheets. Each agency has its specific forms, some BLS and some ACLS. A standardized prehospital dataset however is expected due to the impending roll-out of the regional registry.

HICS 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.

Protocols for activation and use for helicopter, fixed wing aircraft and boats are made through the recommendation of Air Medical Committee and designated PAG.
XV. DEFINITIVE CARE FACILITIES

NCTTRAC currently has three level I trauma centers, one level I pediatric trauma center, two level II trauma centers, three level III trauma centers and fourteen Level IV trauma centers. There are seven facilities recognized by DSHS as being in “active pursuit.”

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For extended list see Appendix G

NCTTRAC provides resource assistance to facilities seeking trauma facility designation. NCTTRAC completes a needs assessment annually that identifies gaps in programs and defines priorities in trauma facility designation assistance. The Trauma System Subcommittee defines a
schedule and volunteers for targeted programs that assist facilities in reaching trauma facility designation.

Facilities that are in the process of trauma facility designation must send a letter of intent to DSHS. In addition, facilities who want to be included in NCTTRAC field triage process must go through NCTTRAC defined SOP for this recognition. This request will be sent to the NCTTRAC Executive Director at the address listed on the website. Documentation required will be outlined in the SOP, and will be similar to that required in the DSHS application. The Trauma Medical Director and Trauma Program Manager/Trauma Coordinator must be present to present this formal request to the Trauma System Subcommittee. The Trauma System Subcommittee will make a recommendation to the Systems Development Committee Chair to approve the inclusion of the facility in trauma field triage or to request additional information. There will be follow-up submissions required until the facility has achieved its designation.

Trauma Facilities that cannot meet an essential criterion for a prolonged period (defined as three months or more) must report these issues to the NCTTRAC Executive Director with a plan for resolution. The Trauma System Subcommittee is responsible to assist the facility in developing regional strategies to support the facility and maintain optimal patient care. DSHS defined 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 / Trauma coordinator (with no interim)
- Loss of Neurosurgery Coverage (with no interim plan – Level I & II)
- Loss of Orthopedic Coverage (with no interim plan – Level I, II, III)
- Loss of Trauma Registry (with no interim plan)
- Loss of capabilities to provide Injury Prevention or Outreach Education (with no interim plan – Level I, II, III)
- Loss of ability to provide acute trauma resuscitation and critical care stabilization

In support of the facility, the Trauma System Subcommittee will make the recommendation to the Systems Development Committee and Board of Directors to continue the field trauma triage to this facility, provide

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modifications or to realign the field trauma triage dispersal for the region until the issues is resolved. The facility must provide monthly updates and data to the Trauma Subcommittee to ensure progress is being made to meet all trauma facility criteria and keep the State updated on activities, with the ultimate goal of optimal patient care.

The Trauma System Subcommittee will develop trauma guidelines that include, but are not limited to, the following:

- Trauma Facility Field Triage Guidelines
- Pediatric Trauma Triage
- Pediatric Trauma Age Criteria
- Geriatric Trauma Triage
- Orthopedic Trauma Triage
- Neurosurgery Trauma Triage
- Hand Injury Guidelines
- Burn Triage and Management Guidelines
- Facility Trauma Triage Guidelines
- Trauma Facility Diversion Guidelines
- Trauma Registry Data Submission Guidelines
- Multidisciplinary Trauma Case Review Guidelines
- Regional Trauma Performance Improvement Guidelines

**XVI. SYSTEM COORDINATION AND PATIENT FLOW**

NCTTRAC coordination and patient flow does not exist for all patient categories, although there are several smaller systems that have strong functionality and there is infrastructure in place to improve the communication across TSA-E.

NCTTRAC has been a user of EMResource (formerly EMSystem) for communication of emergency department status in TSA-E for several years. Facilities are asked to update their status daily; if they do not, the system shows them as “forced open.” Facilities may provide messages such as alerts for construction or equipment malfunction to assist EMS agencies in making a transport destination decision.

As the result of a cooperative effort between NCTTRAC and the Dallas Fort Worth Hospital Council (DFWHC), there is no longer an official
category of “divert” in the region. Facilities may communicate information to EMS that may be relevant in the decision to transport to their destination, such as ED saturation, but may not post a “divert” status within EMResource.

Facilities may choose from status values of “Open” or “Closed.” ED personnel are required to monitor and update their ED status at least once each day. Failure to update the system will result in an automatic status update to Open Overdue status.

Level I and II Trauma Centers (TC) may post a “Trauma resource alert” status, for one hour increments, which is asking EMS to use one of the other Level I/II TCs in their area; these decisions are facilitated by Biotel for the Dallas County TCs and EPAB for the Tarrant County TCs. Level I Trauma Facilities should not be on “trauma resource alert” status unless there is a severe crisis.

A facility may post a “closed” status only if they are suffering from a facility emergency. Examples may include an internal disaster such as a fire, flooding, power outage, water shortage, or structural damage. This status expires every two hours, so the facility needs to update the system during the emergency or contact NCTTRAC staff to maintain the status for them during these rare events. The system will "automatically update" to Open Overdue when the closed status is expired and overdue for update or if the facility does not update daily during the 2-hour window.

Proper posting on EMResource shall be considered to be the official and standard mechanism for notification in NCTTRAC (TSA-E). All EMS services are expected to participate in EMResource and to monitor it at all times for current system information including “Trauma Resource Alert” or “Closed” 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.

If the ED staff does not have the capability to update, they can contact NCTTRAC, Biotel, or EPAB to update their status for them.

If the patient destination decision is a factor and if the patient and/or family adamantly refuses to be transported to the redirected facility, an emergency physician or trauma surgeon at the initially requested facility will be notified of the situation. Any refusal shall be documented on the
patient record. Patient choice is supported by regional guidelines developed by the EMS Committee and the Physician Advisory Group for attaching to this Trauma System Plan. The current guidelines are on the NCTTRAC website.

Patients in acute status, whose care would be compromised by delaying transport or lengthening transport time, should be transported as quickly as possible to the closest most appropriate participating/designated facility without regard for redirect status. EMS services are reminded that the best interests of the patient may be to honor the diversion request and transport to an alternative hospital.

NCTTRAC sponsors a Regional Communication Center (RCC) for the use of designated and undesignated trauma facilities to assist in the transfer of their acute trauma patient to a higher-level facility. The goal is to expedite trauma transfers and complete the patient transfer process within a two hour window from request of transfer to patient arriving at the receiving facility. Posters and information on the NCTTRAC website describe the process to member hospitals, which begins with a call to a toll-free number for the region. Facilities call into the RCC, and the communication specialists then use a rotational basis along with specific patient requirements to locate a receiving trauma center. The RCC coordinates communication between the facilities to expedite the patient’s acceptance and may also arrange emergency transportation. This benefit is available to every NCTTRAC full member.

Transfer Guidelines are reviewed a minimum of every three years and processed through the Trauma System Subcommittee to the Systems Development Committee and approved by the Board of Directors. These guidelines are posted on the NCTTRAC website under Trauma System Plan. Level I and II trauma facilities have written transfer agreements; Level III and IV facilities do not have to have written transfer agreements therefore the RCC helps to facilitate transfers efficiently for NCTTRAC members.
XVII. 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, and speech therapy 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-E through hospital-based programs and private organizations. Transfer protocols for rehabilitation facilities are determined by individual facilities.

VIII. DISASTER PREPAREDNESS

The emergency response system within Trauma Service Area E incorporates all emergency response functions (ESF) indicated in the National Response Framework, and as incorporated within state and local emergency 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 multiple 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 alone.

Many resources have been placed within TSA-E 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 in the federal Bioterrorism Public Health Emergency Preparedness
Program, which includes all nineteen counties of TSA-E, and eleven counties associated in the Cities Readiness Initiative. These programs prepare jurisdictions, their supporting local health departments, and partnering health and medical professionals for epidemiological intervention in biological events, including Strategic National Stockpile preparations;

- Five cities (Garland, Irving, Dallas, Fort Worth, Arlington) are designated as participants in the Metropolitan Medical Response System, integrating through the North Central Texas Council of Governments;
- Texas Hospital Preparedness Program, through which approximately 85% of the area’s 146 hospitals work towards a higher level of local and regional disaster preparedness;
- Other supporting Urban Area Security initiatives.

Following a regional ESF-8 gap analysis, many resources were emplaced to improve hospital and EMS disaster response readiness. Capabilities improved upon include:

- 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 and EMResource, emergency notification systems, and two-way radio capability, enabling hospitals and jurisdictions to communicate in virtually any disaster environment;
- Provision of deployable communications kits with interoperable two-way radios, satellite phones, and internet – based platforms;
- Placement of mobile medical assets providing independent deployment of up to 180 beds in nine surge units with five supporting command, control, and logistics units. These units are capable of providing alternate care sites while operating in biological / chemical events in a negative pressure environment.
- Development of five mobile medical supply caches in support of large scale trauma events, for use in triage and victim stabilization;
- Development of four hospital caches of medical supplies for use within acute care and trauma centers, or which could be deployed to large scale trauma events;
Development of a cache of pandemic supplies and consumables for hospital or alternate care site use, including emergency TEMPS beds for deployment to surge locations;

- Development and maintenance of a cache of emergency – use ventilators;
- Placement of Level C personal protective equipment, decontamination equipment, and hospital evacuation equipment at most general and special hospitals within the region, and the provision of training and exercise opportunities for response teams.

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 includes 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.

TSA-E leads the state in the development and execution of Homeland Security Exercise Evaluation Program – compliant ESF-8 exercises that integrate participating hospitals, supporting jurisdictions, regional and state partners into discussion-based and operations-based exercises. Regional communications drills testing both internet-based communications and radio systems are held monthly. Quarterly exercises incorporating both discussion-based and operations-based elements are provided for a myriad of acute care subjects, with emphasis on events that are most likely to occur, based on HVA analysis. Pre-hospital and inter-hospital functions are also tested. All 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 the assets listed above and to enhance mutual aid among hospitals, EMS agencies, and supporting jurisdictions, TSA-E has established an ESF-8 multiagency coordination center that enables cross-jurisdiction communications and resource sharing. Capabilities include:
Establishment of video-teleconferencing ability for linking state and local health officials, jurisdictional authorities, and major trauma centers to, and independently of, the TSA-E Medical Operations Center (EMOC).

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-E 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-based 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-E, registration of volunteer health and 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.

Integration of hospital resource sharing through the TSA-E E*TRACS, gives hospitals a medium through which they may request, and support requests, for mutual aid and the provision of supplies, equipment, medications, and personnel, including licensed health care providers.

- The EMOC 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.

XIX. TRAUMA SYSTEM EVALUATION AND PERFORMANCE IMPROVEMENT

The Trauma Performance Improvement (PI) Workgroup reports to the System Performance Improvement Committee. This workgroup reviews aggregate data and specific case reviews in TSA-E. This review process analyzes the aggregate data generated by the regional trauma registry, and participating entities. The Trauma PI Workgroup is composed of defined members of the Trauma Subcommittee. The System Performance Improvement Committee defines the guidelines and processes for review.

XX. TRAUMA MANAGEMENT INFORMATION SYSTEM

NCTTRAC has a trauma registry to support system data management. EMS and trauma facilities are required to submit data sets to the registry. Participating agencies are required to have a signed MOA and User’s Agreement.

The regional registry, REG*E, has the ability to write reports leveraged against the entire trauma system. Quantifiable data is used to change current policies and procedures and provides for benchmarking against applicable standards to show the performance of the trauma system. REG*E data is available at a local level allowing each agency to identify individual program needs and strategies for injury prevention and education. Performance reports are evaluated at a regional level to provide a framework to identify needs in the system.

The Trauma PI Workgroup will process action items through the System PI Committee.
XXI. RESEARCH

The North Central Texas Trauma Regional Advisory Council participates in system research on an ad hoc basis. The Board of Directors is responsible for governance and release of the data.

XXII. RECOMMENDATIONS APPENDIX

The following are recommendations made by the Trauma System Plan Workgroup for further consideration by the Systems Development Committee and the Board of Directors.

Coalition Building and Community Support
(to ultimately improve patient outcomes and limit injury within the population)

NCTTRAC has the opportunity to research community coalition groups to define the opportunities for NCTTRAC members to partner with for identifying key community concerns, system development and injury prevention and awareness.

NCTTRAC has the opportunity to develop organized public information and education efforts to educate and communicate with elected officials and the public to raise awareness about the burden of injury and the need for injury prevention and trauma system development.

Prevention and Outreach

Development of a needs assessment focusing on the public information needed for media relations, public officials, general public and third party payers, leading to a better understanding of injury control, impact, burden, and prevention of trauma care.

Annual report of the status of injury prevention within the NCTTRAC trauma system.

Access to a database that is user friendly and available for public health surveillance and data collection. (in progress)
A media campaign to focus on injury/prevention awareness, trauma system development, and targeted media messages. (in progress)

Committee working together as a unit as well as individually on the top 5 causes of injury/death.

Staff member that is the “public information officer” for media, and general public information/trauma system/injury prevention updates, awareness. (in progress)

Compile a list with web access for organizations dedicated to injury prevention within NCTTRAC service area and statewide.

Funding source for injury prevention campaigns, education. (in progress)

Orientation program for NCTTRAC members to include injury prevention and outreach education.

Cumulative report of injury prevention projects/efforts that are held/available within NCTTRAC service area.

**Trauma Medical Oversight**

Ideas about the further development of a trauma care performance workgroup: There should be a trauma care performance workgroup that consists of interdisciplinary trauma providers involved in care in prehospital, hospital, surgical specialties, and rehabilitation settings. This workgroup needs a clear defined cooperative and on-going relationship between the trauma medical directors and the EMS medical directors as well as the many disciplines that support trauma care in the region. This workgroup would have the authority to develop protocols to ensure the appropriateness of prehospital and hospital trauma care. This workgroup would serve as a resource for trauma education for all disciplines and be charged with identify special needs groups (such as pediatric, geriatric, etc) to address specific guidelines for trauma care. Perform a routine needs assessment to ensure the needs of the population are being adequately met. Meet at least quarterly. This workgroup moves action items through the Trauma System Subcommittee to the Systems Development Committee. The Systems Development Committee presents items to the Board of Directors for approval.
SOP development for the recognition process for facilities in pursuit.

In addition, facilities who want to be included in NCTTRAC field triage process must send this same letter to the NCTTRAC Executive Director at the address listed on the website. The DSHS letter must also include the Trauma Facility Designation Planning Form. This form identifies the level of designation the facility is seeking and pertinent information regarding this facility. The facility must present this same form and formal request to be included in the field triage process to the Trauma System Subcommittee. The formal request must include the facility’s Board Resolution, Medical Staff Resolution, Trauma Medical Director Job Description, Trauma Program Manager / Trauma Coordinator Job Description, Trauma Performance Improvement Protocol, Trauma Registry Inclusion Criteria, Trauma Admission and Transfer Protocol and Trauma Activation Protocol. The facility must participate in the regional trauma registry and have provided a minimum of three months of data. The Trauma Medical Director and Trauma Program Manager/Trauma Coordinator must be present to present this formal request to the Trauma System Subcommittee. The Trauma System Subcommittee will make a recommendation to the Systems Development Committee Chair to approve the inclusion of the facility in trauma field triage or to request additional information. The facility will be scheduled to provide six month updates to track progress in trauma facility’s process until the designation is awarded by DSHS. The Trauma Facility Designation Planning Form is available on the NCTTRAC website under the Trauma System Plan.

The trauma registry workgroup is charged with defining the top five E-Codes causing death, hospital admission, hospital charges traumatic brain injury, spinal cord injury, amputations, alcohol related injuries and trauma center transfers to a rehabilitation facility within TSA-E. This workgroup defines the baseline reports to assist in targeting injury prevention initiatives and defining outcomes of interventions.
Appendix A

Zone Map

Appendix B

ED Volumes

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Approval Date: 03/09/2010
Appendix C
Organizational Structure – March 2010

Appendix D
Trauma Facilities Field Triage Criteria for EMS

Appendix E
NCTTRAC Bylaws

Appendix F
Extended List of EMS/FRO providers

Appendix G
Extended List Hospitals