

Disaster Preparedness

I. When was the last assessment of trauma system preparedness resources conducted, and what were the significant findings of the assessment as they relate to emergency preparedness?

The members of the Governor's EMS/Trauma Advisory Council, GETAC committees, task forces and stakeholder groups from around the state performed a comprehensive assessment of emergency health care needs in 2002, particularly given the dramatic events of September 11 and the significant changes in demands on Emergency Medical Services and Trauma Systems throughout the state. From the beginning of the process, a concerted effort was made to solicit maximum participation and explore every possible issue identified in order to develop a strong consensus for the plan. The result of this assessment is included in the attached *A Strategic Plan for the Texas EMS/Trauma System* (attachment 1.1).

The Texas legislature wanted trauma care resources to be available to every Texan. The Omnibus Rural Health Care Rescue Act, passed in 1989, directed the Bureau of Emergency Management of the Texas Department of Health to develop and implement statewide emergency medical services (EMS) and trauma care system, designate trauma facilities, and develop a trauma registry to monitor the system and provide statewide cost and epidemiological statistics. The trauma system was initially adopted by the Texas Board of Health in accordance with Senate Bill 530, Health & Safety Code, Chapter 773 (Emergency Medical Services), whereby the state was divided into twenty-two regions called Trauma Service Areas (Texas Administrative Code § Rule 157.122), provided for the formation of a Regional Advisory Council (Texas Administrative Code § Rule 157.123). In each area, a regional trauma system plan was developed and implemented, delineating the trauma facility designation process, and provided for the development of a state trauma registry. A Regional Advisory Council, an organization of healthcare entities and individuals such as hospitals, physicians, nurses, EMS providers and other individuals interested in trauma care and injury prevention thus provides a vital link in implementing the regional trauma system plan.

Trauma system is assessed on the local level more often by the Regional Advisory Councils. Central Texas Regional Advisory Council (CTRAC) conducted their most recent assessment in 2009 and updated their trauma system plan (attachment 1.2) *Central Texas Regional Advisory Council, TSA-L, Emergency Healthcare System Plan, 2009*. CTRAC, represents TSA L, has been active in trauma prevention and education programs as well as development and implementation of trauma patient care standards. Maintaining public education and awareness activities to increase the understanding of the trauma care system, access to trauma care and prevention of injuries, and providing coordination of acute medical services in mass casualty and disaster settings is an integral part of the mission and goals of CTRAC.

Significant findings from other assessments suggest that both designated and non-designated facilities play an important integral role in the trauma system. As such, facilities use the Pre-hospital Trauma Patient Triage and Facility Bypass Guidelines: see attachment (1.3) *TSA-Q, Prehospital Patient Triage and Facility Bypass Guidelines*. These facilities, based upon their available resources and capabilities, transfer trauma patients rapidly to an appropriate level trauma center in accordance with applicable transfer laws. Air Medical Activation Guidelines, attachment (1.4) *Southeast Texas Trauma Regional Advisory Council, TSA-Q, Air Medical Activation Guidelines* are intended to provide a standardized method for ground emergency medical service providers to request a scene response by an Air Medical Provider (AMP), to reduce delays in providing optimal care for severely ill or injured patients, and to decrease mortality and morbidity.

Southeast Texas Regional Advisory Council conducted an assessment of ground EMS transports to Memorial Hermann Hospital after Hurricane Ike, attachment (1.5) *SETTRAC response to Memorial Hermann Hospital Increased Diversion Time Post Ike*. One result was that HFD changed pre-hospital triage guidelines and as such was able to disperse appropriate patients to level 3 and increased the percent of patients to BTGH by ground.

2. What actions were taken to remediate or mitigate the gaps identified through tabletop or simulated responses in disaster drills among the acute care facilities participating in the system?

The following four After Action Reports demonstrate the actions taken to remediate or mitigate gaps among the acute care facilities.

University of Texas Medical Branch, Galveston, Texas (attachment 2.1)

September 13, 2008: Actual Occurrence – Hurricane “Ike” After Action Report and Improvement Opportunities. This report is an accurate depiction of the events pre, during and post hurricane landfall. Preparation for the storm started as the storm approached the Gulf of Mexico. Standard preparations start at the beginning of each hurricane season and the emergency Standard Operating Procedures served the campus well. Hurricanes Dolly, Eduardo and Gustav earlier in the year each served to help prepare for Ike and our situational awareness was at a very high level. There were lessons learned in each previous storm that served to prevent even greater impacts to the campus facilities and help prepare staff for this event. For Ike, the decision to evacuate patients and non essential personnel, students and staff came Thursday before the storm. The evacuation went smoothly. Other preparations included ensuring the supply stock was full, preparation of the command center, cleaning up and tying down loose equipment, and hardening certain areas for wind. The response, impact, long term recovery and improvement planning components of this AAR/IP are extensive and merit review and reading as many observations and corrective actions were identified. In Appendix 1 of

this AAR, observations included that communications systems were not reliable, and that evacuation plans would be improved if hospital practiced/drilled this activity.

Capital Area Public Health and Medical Preparedness Coalition (attachment 2.2)

December 9, 2008: Regional Full-scale Exercise. Participating organizations/agencies included the Capital Area Council of Governments, Capital Area Regional Trauma Advisory Council, Williamson County and Cities Health District, 9 participating regional hospitals, and Austin/Travis County Combined Transportation Emergency and Communications Center. Objectives included an insurance that 800MHz interoperability radios are in place and operational for hospitals to demonstrate interoperability, demonstrated ability to send notification of emergency recall to 90% of all off-duty staff, successful evacuate a patient from an upper level floor. Demonstrated ability to dress out 6 staff member plus a safety officer by utilizing onsite staff or by utilization of shared staff with another facility, implementation the media policy for the facility by the Public Information Office, and demonstrated ability of tracking patients using the appropriate HICS paper form throughout the incident. At the hospital level, improvements identified included need for ongoing NIMS training and integrate NIMS/HICS documentation; practice hospital evacuation procedures; and review, address staffing, security, infrastructure, internal communications, training, and documentation.

Central Texas Regional Advisory Council (CTRAC) (attachment 2.3)

On April 15, 2009 CTRAC conducted a full-scale Pandemic Influenza exercise. This full-scale exercise included participation from the following organizations/agencies: Bell County Emergency Management, Regional Medical Operations Center, Bell County Public Health District, 7 Area Hospital (identified within the AAR/IP), University of Mary Harden Baylor, and other Counties and Municipal and health facilities participated through the use of WebEOC. General exercise objectives included: communications, emergency operations center management, Emergency public information and warning, fatality management, mass care, medical supplies management and distribution, medical surge, public safety and security response, triage and pre-hospital treatment. Additional CTRAC exercise objectives included the determination of capabilities of the EMS, hospital and health department to effectively handle massive numbers of pandemic influenza patients, contaminated persons, adequacy of medical support plans; the effectiveness of mutual aid plans and the coordination between jurisdictions or organizations if responding to a major outbreak and if officials have coordinated hospital disaster plans with the local emergency operations plans. The hospitals reported that several quick fixes as a result of this exercise: increase communication between hospitals and county agencies; train staff on use of WebEOC, train staff on communication equipment, identify security needs and establish MOUS with local law enforcement.

Texas Department of State Health Services attachment (2.4)

On May 21, 2009: The Texas Department of State Health Services sponsored full-scale Radiological Dispersal Device Exercise, conducted in Waco/McLennan County. Participating organization/agencies included the Falls Community Hospital, Hill Regional Hospital, Hillcrest Hospital, Lake Whitney Hospital, Limestone Hospital, North Bosque Hospital, Parkview Hospital, and Providence Hospital. A few of the exercise objectives included minimizes the consequences of radiation exposure, identifying the hazard, notifying response teams, and activating emergency radiation response plans. In addition coordination of incident information and the need for radio-protective pharmaceuticals in a timely manner, and timely activation and staffing to protect staff, provide triage, treatment and transfer of casualties received through EMS, as well as self-presenters was tested. Hazardous materials decontamination was provided on-site with assistance to local hospitals. FEMA agreed to augment the exercise evaluation team with Subject Matter Experts (SME's) in radiation detection; monitoring and population monitoring conducted during this exercise. Results indicated that WebEOC was not fully capitalized. It was determined that lack of training resulted in lack of full capacity use. There was disagreement as to final authority. It was determined that if the agency owns and allocates the resource, the authority remains in place as the approval for the request.

3. What is the trauma system plan to accommodate a need for a surge in personnel, equipment, and supplies?

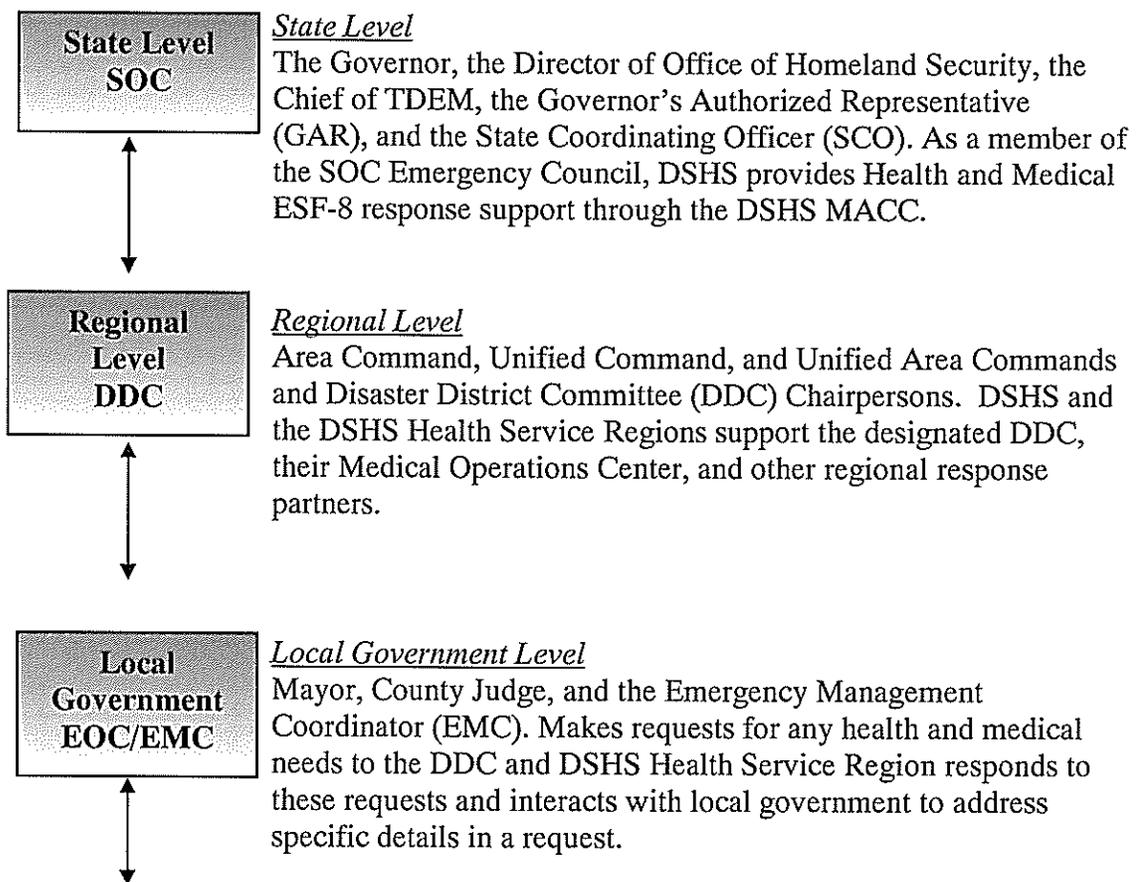
As stated above under question 1, each of the 22 Regional Advisory Councils develops and implements their plans to expand their capacity to respond to MCIs. Trauma System Manual supplement is intended to assist each Regional Advisory Council (RAC) in the development of a regional EMS/Trauma System Plan for their Trauma Service Area (TSA), attachment (3.1) *EMS/Trauma System Plan; A Supplement to the Texas Trauma System Manual*,. An example on how these guidelines have been used to develop a trauma service plan, RAC G Trauma Plan, attachment (3.2) *Piney Woods, TSA G, Trauma, EMS, Acute Care, and Hospital Preparedness Plan, 2010*, has been attached. It states in their plan that accommodate a need for surge in personnel “each agency and their vehicles also maintain a listing of their mutual aid responders for ready reference, although written mutual aid agreements are not formally maintained by all of the EMS Systems” (page 55). In addition, this plan includes a “Disaster Plan” which has been in place for several years and is based on the designation levels of all hospitals as well as the pre-hospital response and triage. This plan addresses how triage will be accomplished if there is a need for surge. Facility diversion is the primary strategy in response to surge. According to the attached RAC G Trauma Plan under the category of *Trauma Facility Diversion Policy*, “each facility is required to have a local Mass Casualty Plan and know how to activate additional resources within RAC-G if needed. The use of the EMS system will facilitate this process” and “each facility must have policies and procedures in place to open critical care beds in the event there is a mass casualty situation. The use of the EMS system allows constant real-time communication

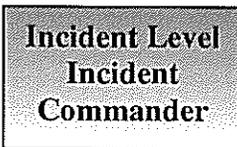
between the hospitals and pre-hospital providers” (page 65). If regional resources have been exhausted, regions may request another regions resources or request state resources per the process outlined in below in question 4. These state resources include t not limited to personnel, equipment, such as ventilators and mobile medical units, and medical supplies.

4. How is the trauma system integrated into the state’s incident command system and the communications center?

In Texas it has been often stated that all disasters are local. This statement makes the point that in an emergency event in Texas the local jurisdiction is the Incident Commander. If an emergency is so grand in scale that the local jurisdiction requires assistance from the State of Texas, the State Operation Center (SOC) is activated and the Department of State Health Services, as the ESF-8 Health and Medical representative in the SOC, handles the health and medical issues associated with the response. DSHS provides command, control and coordination of all health related emergency response activities utilizing a NIMS compliant organizations response structure.

State of Texas Emergency Response Operation Command Structure





Incident Level

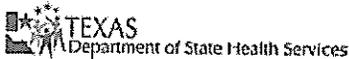
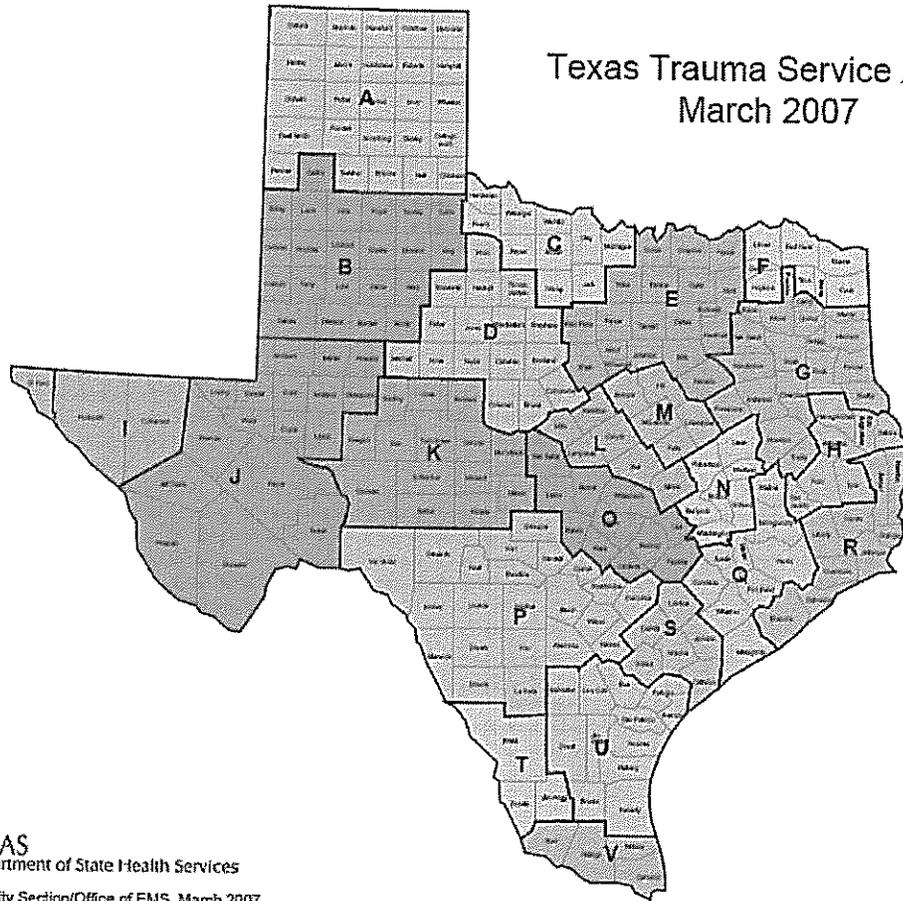
Incident Commander. Makes requests for support to the local government for any health related needs.

During a large scale disaster DSHS activates and operates the Multi Agency Coordination Center (MACC). Attachment (4.1) *The DSHS ESF-8 Health and Medical Command, Communication and Coordination chart*, provides a visual description of the external response processes for ESF-8 Health and Medical activity from the local jurisdiction, up through the regional DDC/HSR, into the DSHS MACC. The ICS structure for the internal command and control activities that take place in the MACC have been included in attachment (4.2) *DSHS MACC ORGANIZATION CHART*. There are several supporting agencies involved in the health and medical response efforts. The two most prominent partners assisting DSHS in our health and medical response efforts are the DSHS Health Service Regions and the EMS Trauma Regional Advisory Councils- the RACs. The Operations Branch within the DSHS MACC coordinates hospital and trauma system activities with the Regional and Local MOCs established by the RACs.

The EMS Trauma Regional Advisory Councils

The twenty-two (22) EMS RACs across Texas and they each serve a geographic region called a Trauma Service Areas (TSA's). See the map below for the regional breakdown of these TSA's. These RACs provide guidance, planning, and support to hospitals and the EMS systems within their regions. In all Trauma Service Areas in Texas, the RACs work with local government officials for regional and local disaster planning and integration into local and state incident management systems. During events the RACs provide support to the local response Emergency Operations Center (EOC), the regional Disaster District Committees (DDC), and the DSHS Multi Agency Coordination Center (DSHS-MACC). In each TSA, the RACs have developed local and regional Medical Operations Centers (MOCs) that provide support to a local Emergency Operation Center (EOC) and the regional Disaster District Committee (DDC). These MOCs are supported by the RACs, the staff from the Health Service Regions and local EMS response systems.

Texas Trauma Service Areas March 2007



Source: Health Quality Section/Office of EMS, March 2007
Created by: GIS Team, Center for Health Statistics, March 2007

During disasters, the DSHS MACC Incident Command works with the Health Service Regions and the EMS Trauma Regional Advisory Councils (RACs) to coordinate health and medical issues. The MACC coordinates this activity through several means including but not limited to conference calls, utilization of internet based communication tools like EMSsystems and WebEOC, and by direct contact with teams that respond and report back to the MACC. The personnel on these teams come from various medical professions across Texas. These teams connect into the Medical Operation Centers that are established by the Health Service Regions and the RACs. These MOCs respond to all requests for health and medical support.

- The Health Service Regions work with the MACC to coordinate and provide information on issues related to the health and well being of the citizens of a community that has been impacted by an emergency. This includes information on the infrastructure of the medical systems; water, air and food quality, availability of medical supplies, etc. They also help coordinate needs regarding disaster mental health and provide shelter surveillance.
- The RACs are responsible for coordinating all response issues associated with providing acute medical care to the community. This includes command and

control of medical transportation assets, coordinating evacuation of MSN people, patient tracking, and providing support to sheltering operations. They also provide support for repatriation of MSN people

Example of MOC support: During Hurricane responses the Regional Medical Operation Center (RMOC) in San Antonio supports DSHS by serving as the staging area manager for the State Staging for all medical transportation assets. Both the Catastrophic Medical Operation Center (CMOC) in Houston and the RMOC are utilized to help manage ambulance operations within their assigned regions and to coordinate the evacuation and tracking of medical special needs patients that cross multiple jurisdictions. Other RACs establish their MOCs and provide support to the EOC and DDC, enabling a well coordinated process of caring for, tracking and receiving the evacuating citizens.

Communications Tools Utilized by DSHS and the RACs

In Texas, all hospitals and trauma systems have access to and can utilize EMSystems and WebEOC. EMSystems provides the capability to monitor hospital status, ER status, bed availability, blood supplies levels, available ventilators, available ambulances, and provide event notifications, etc. EMSystems also provides data on End Stage Renal Disease (ESRD) facility status.

EMSystems Hospital Status

Houston, TX		DSHSCO User (dshscouser)		EMResource <small>powered by EMSystem</small>	
View		Other Regions	Event	Preferences	Form
Report		Regional Info	Instant Message	User Links	
Region Default					print refresh
- Pediatric Hospitals		Status	Comment	Last Update	
Children's Memorial Hermann (Level I)		Open		28 Jan 23:50	
Texas Children's*		Open		03 Feb 12:07	
- Level I		Status	Comment	Last Update	
Ben Taub General		Open	system	05 Feb 12:10	
Memorial Hermann*		Open	no psych beds/services/Limited MICU/IMM beds	01 Feb 13:28	
- Level III		Status	Comment	Last Update	
LBJ General		Open	system	05 Feb 01:32	
Montgomery Regional Medical Center.*		Caution	No L/D Beds, No Med/Surg Beds, No Tele Beds, Only 2 ICU/CCU beds available, CT Scan Down (Can only d	28 Jan 10:53	
Memorial Hermann Northwest*		Open	system	04 Feb 20:22	
Memorial Hermann Southeast*		Open		27 Jan 21:00	
Memorial Hermann Southwest*		Open		27 Jan 23:35	
Memorial Hermann The Woodlands*		Caution	No ICU beds	05 Feb 13:06	
Oak Bend Medical Center*		Caution	No Women's Services	02 Feb 21:18	
St. Joseph Medical Center*		Caution	Limited ICU and Telemetry beds	05 Feb 05:46	

EMSystems ESRD Hospital Status

Houston, TX DSHSCO User (dshscouser)		EMResource			
View Other Regions Event Preferences Form Report Regional Info Instant Message		User Links print refresh			
TX Dialysis A-I					
TX Dialysis A-I					
Monthly Update - Action Required					
RAC A - Amarillo	Patient Capacity	# Dialysis Patients	# PD # Home Hemo # Isolation Patients	Dialysis	Generator Availability
450369 Childress Regional Medical Center	30	19	0 0 0	Open	No
452513 Amarillo High Plains Dialysis	104	76	0 0 1	Open	Yes
452660 Hereford Dialysis Center	48	48	0 0 0	Open	No
452718 Crown of Texas Kidney Center	30	22	0 0 0	Open	No
452760 Pampa Dialysis Center	36	25	0 0 0	Open	Yes
452866 Amarillo Kidney Specialists, LLC	200	99	101 0 0	Open	No
672614 Renal Care Partners of Amarillo	64	37	2 0 0	Open	Yes
RAC B - Lubbock	Patient Capacity	# Dialysis Patients	# PD # Home Hemo # Isolation Patients	Dialysis	Generator Availability
452506 Dialysis Center of Lubbock	174	128	22 0 1	Open	No
452568 South Plains Kidney Disease Ct.	180	107	35 0 1	Open	Yes
452792 Lubbock Dialysis Center-Redbud	336	135	59 0 1	Open	No
452848 FMC Dialysis Services Plainview	120	62	0 0 0	Open	No
453508 Dialysis Services of West Texas	0	0	0 0 0	Closed	No
459001 Montford Prison Dialysis Unit	48	34	0 0 0	Open	Yes

In Texas, EMSystems and WebEOC have been integrated so that HAVBED reporting data in EMSystems can be flowed into WebEOC when requested by the state. This capability provides available hospital beds by Trauma Service Area. The RAC of each region report available beds and post to this board as requested during a response

WebEOC Bed Count Dashboard.

TSA - Location	Beds (9052)	Psych Beds (773)	Vents (3754)	Neg/ISO (564)	HD Census (25716)	IB Census (5218)	Details	Time Last Update
TSA-A - Amarillo Edit Information Here	199	0	89	33	450	38	Details	05/07/2009 11:36:3
TSA-B - Lubbock Edit Information Here	485	55	65	22	672	102	Details	05/07/2009 11:34:0
TSA-C - Wichita Falls Edit Information Here	314	26	38	11	300	13	Details	05/07/2009 09:15:3
TSA-D - Abilene Edit Information Here	271	60	43	10	539	56	Details	05/07/2009 12:07:2
TSA-E - Dallas/Ft. Worth Edit Information Here	1120	0	872	109	7508	341	Details	05/07/2009 12:04:1
TSA-F - Texarkana Edit Information Here	287	0	61	4	594	35	Details	05/07/2009 11:32:4
TSA-G - Tyler/Longview Edit Information Here	444	10	117	47	1544	94	Details	05/07/2009 11:59:3
TSA-H - Lufkin Edit Information Here	269	0	49	0	398	40	Details	05/07/2009 11:47:5
TSA-I - El Paso Edit Information Here	279	10	111	34	1203	154	Details	05/07/2009 11:55:5
TSA-J - Midland/Odessa Edit Information Here	380	8	78	27	430	36	Details	05/07/2009 10:38:3

Many other specialized boards have been created for WebEOC that the RACs and DSHS use including:

- ESF-8 Significant Events
- Shelter Boards – locations, occupancy, MSN capability, etc.
- Patient Tracking used during evacuation
- Response Resource Tracking – monitors ambulance use during an disaster
- 213RR Resource Request

5. What strategies and mechanisms are in place to ensure adequate inter-hospital communication during an MCI?

Hospitals are required to have interoperable communications with their local Emergency Operations Center. Of the approximately 600 hospitals in Texas, 528 have interoperable communications as required by the Hospital Preparedness Program (HPP) funding from the Department of Health and Human Service (HHS) Assistant Secretary for Preparedness and Response (ASPR).

The HPP End-of-Year Report for federal FY08 indicates that there are strong mechanisms in place to ensure adequate inter-hospital communications. As reported in attachment 5.1 (*HHS HPP Cooperative Agreement FY08 Progress Report*) 468 hospitals have redundant communications ability and 540 hospitals were able to demonstrate sustained 2-way communications during an event. There has been limited hospital participation in the Federal Communications Commission's (FCC) Telecommunications

Service Priority Program (TSP). The primary issue contributing to a lack of participation is the question of who actually has priority for restoration of services and if hospitals are among those with top priority (in addition to Emergency Medical Services (EMS), police and fire), the length of time required to actual service restoration. Hospitals were told that “healthcare entities” have priority. In the past none of the phone service providers would provide written documentation on their response. Given this situation, the Texas Sub-state regions have worked for seven years to build redundant and interoperable systems so that they don’t have to rely on cellular and analog telephone service. As noted above, these efforts included purchases of VHF base stations, 800 MHz radios, ham radios, satellite radio phones, and a continued effort to build out a wireless wide area network for local WebEOC® usage in case of an Internet failure.

One strategy to increase use of inter-hospital communication is to foster use of WebEOC. Ongoing discussions occur among the directors/staff from the 22 RACs during monthly meetings attachment (5.2 – item 8) *Hospital Preparedness Program, Meeting Minutes*. As indicated, discussion occurred regarding the upcoming WebEOC training to encourage wide use among emergency responders (a need determined through multiple exercises).

A major strategy is to provide configuration services to Regional Advisory Councils (RACs) that either own or are principle partners in a WebEOC server for their Trauma Service Area (TSA). Texas WebEOC Interoperability Project (TWIRP) installs the most current medical status boards. These boards include, but are not limited to, Bed Reporting, Patient Tracking and EMS Resources boards. These boards display data by regional boundary of the lead agency, i.e. by TSA for hospital response. This innovative project is fully outlined in attachment (5.3) *Texas WebEOC Interoperability Project, Central Texas Regional Advisory Council, TSA-L, Site Survey, 2007*.