The Health and Medical Response to Hurricanes Katrina and Rita by the Texas Department of State Health Services

After Action Report

Prepared by

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1 Executive Summary

In August of 2005, Hurricane Katrina left a swath of destruction across Louisiana, Mississippi, and Alabama. Particularly hard hit was the city of New Orleans. Ultimately, the hurricane was responsible for at least 1,300 deaths. It was the most destructive natural disaster in American history with an expected economic cost of nearly $96 billion. Texas received over 450,000 evacuees from Katrina, requiring over 177 shelters to be established throughout the state.

On September 21, 2005, Hurricane Rita, then in the Gulf of Mexico, was upgraded to a Category 5 hurricane. The National Oceanic and Atmospheric Administration projected that Rita would most likely strike the Texas gulf coast. As a result, Governor Rick Perry recalled emergency personnel sent to Louisiana. Twenty-two Texas gulf coast counties issued a mandatory evacuation order, causing several million citizens to flee the approaching storm. Among the major metropolitan areas under evacuation were Houston, Galveston, and Corpus Christi. Approximately 146,000 Katrina evacuees living in hotels and shelters and countless Texas residents evacuated to inland communities, such as San Antonio, College Station, Austin, Dallas, Fort Worth, El Paso, and Lubbock.

Eventually Hurricane Rita tracked northwest, sparing Houston and cities southward direct damage. However, this new track created extensive damage to communities along the "Golden Triangle"—formed by Beaumont, Port Arthur, and Orange. These communities sustained wind and rain damage from the storm. Seventeen Texas counties were declared disaster areas.

Throughout Katrina and Rita, Texas supported the health and medical needs of evacuees and victims. The Texas Emergency Management Plan (Annex H) identifies the Department of State Health Services (DSHS) as the lead agency for providing health and medical support during an emergency. This support is categorized in the following areas.

a. Community evacuation, health and medical assistance;
b. Assessment of health and medical needs;
c. Health surveillance;
d. Medical care personnel;
e. Health and medical equipment and supplies;
f. Patient evacuation;
g. In-hospital care, and hospital facility status;
h. Food, drug, and medical device safety;
i. Worker health and safety;
j. Mental health;
k. Public health information;
l. Vector control and veterinary services; and
m. Victim identification and mortuary services.

After the immediate crises of the hurricanes had passed, DSHS sought to identify its strengths and weaknesses with regard to the health and medical response for the purpose of improving operational performance for future hurricanes or other emergency situations. DSHS contracted with The Litaker Group, an Austin based scientific and research consulting firm, to produce an After Action Report to review and evaluate the DSHS response and to present a plan of action identifying specific recommendations for improvement. DSHS reviewed the Florida Department of Health 2004 Hurricane Season After Action Report and used it as a model for this report.

1.1 Major Findings

All personnel involved with the health and medical response to the two storms expended professional and personal energy to provide appropriate care during this crisis. The Litaker Group uncovered numerous stories of people working above and beyond any reasonable expectation to care for hurricane victims or to protect their communities. The State of Texas can be proud of its citizens. Yet, despite the efforts of all those involved, there are specific areas in the health and medical response effort that can be improved upon. These areas are summarized below.

1.1.1 Information Flow

DSHS needs to improve the flow of information between the state and local levels and between state and federal partners. Several issues surrounding information flow include:

- Information flow often did not follow established emergency management channels.
- DSHS did not have a system that could appropriately track all requests from localities to ensure they had been completed.
- During the evacuation, the inability to identify and track special needs patients created difficulties in providing medical treatment and in repatriating evacuees after the hurricane passed. This was an issue for the National Disaster Medical System in its hurricane response, as well.

1.1.2 Roles and Responsibilities

DSHS needs to improve the understanding of its roles and responsibilities, both internally and with regard to other partners, during a disaster. Additionally, DSHS needs a better understanding of the roles of other State and Federal partners. Several issues surrounding roles and responsibilities include:

- The Governor's Division of Emergency Management operated the State Operations Center (SOC) in Austin to coordinate all emergency services related to the hurricane response. DSHS is the lead agency for health and medical support. As such, DSHS created the Emergency Support Center (ESC) as an adjunct to the SOC to support health and medical requests from the SOC. However, the role of the ESC in relation to the SOC was not always clear, thus resulting in duplicated tasks being performed by both the ESC and SOC.

- Local responders often felt that the ESC issued commands or directives for information or response activities rather than focusing on providing support to the local level.

- Focus group participants suggested that the coordinated sharing of resources across the Health and Human Services Commission Enterprise would improve future response efforts

- The Texas Emergency Management Plan Annex H does not reflect the Health and Human Services Commission consolidation based on House Bill 2292. As a result, many of the DSHS tasks listed in Annex H require review and clarification.

1.1.3 Resource Management

DSHS needs to improve its management and coordination of resources and resource requests. Several issues regarding resource management include:

- Local responders and DSHS had a difficult time managing and coordinating the large numbers of volunteers. The Texas Medical Association (TMA) and Texas Nurses Association (TNA) coordinated and verified credentials of medical volunteers. However, it was the responsibility of health care providers to determine the delineation of privileges of arriving medical volunteers, which required significant time and resources.

- DSHS did not have a clear understanding of all the capabilities of sister agencies or federal partners.

- DSHS was not initially prepared to monitor local medical capabilities. DSHS developed an ad hoc system for monitoring local medical capabilities during the hurricane response by daily interactions with hospitals and hospital organizations.

- Focus group participants expressed frustration with the difficulty of purchasing supplies in an emergency situation due to the lack of a dedicated emergency fund and with the inability to identify a single source list of

potential service and good providers. However, the Centers for Disease Control and Prevention allowed grant money for bioterrorism and all hazards to be used by local communities, though not all communities were aware of this.

- DSHS must better use its human resource capabilities to ensure that personnel do not become overburdened. In particular, ESC staff members and other personnel must have designated work and rest periods to ensure fatigue does not set in. In addition, during the emergency response those taking up emergency duties should be exempt from their regular duties.

1.1.4 Preparedness

DSHS should take steps to improve disaster preparedness for future responses to hurricanes or other emergencies. DSHS should focus preparedness efforts on the following areas.

- DSHS should define medical special needs and determine agency responsibilities for special needs patients. There is no agreed upon definition for special needs. As a result, the number of patients defined as such increased throughout the event. Agencies at every level of government had their own definition or interpretation of what constituted special needs.

- Future evacuation planning should include provisions for emergency medical stations and personnel along evacuation routes. Spending long hours in evacuation traffic jeopardized the health and safety of evacuees, especially nursing home residents and other frail individuals.

- Texas should review requirements for nursing home emergency preparedness plans. In particular, officials should review nursing home emergency preparedness plans to ensure that resources identified by a particular nursing home are not the same resources identified by other nursing homes in the region. For example, nursing home evacuations became problematic when many planned to evacuate their residents to the same facilities or to use the same ambulance service to transfer residents, thus causing these resources to be overburdened.

- DSHS and all state agencies need to understand federal reimbursement policies and procedures prior to disasters. Throughout the event, federal officials (i.e., FEMA) indicated that many expenses related to the hurricane response would be reimbursed. In turn, DSHS personnel communicated this information in good faith to providers and other entities that responded to the hurricane. However, reimbursement has not been forthcoming by federal officials. There are many private companies and local agencies that have not yet been reimbursed as of February 2006.

- DSHS should involve private and nongovernmental partners in the emergency planning process. The private sector and nongovernmental agencies are important partners during a crisis; however, they expressed concern that they were not utilized as fully as they could have been.

- DSHS should provide its response staff—including senior management—with training and exercising on the Incident Command System (ICS) basics at least annually. DSHS should provide additional, customized ICS training specific to DSHS plans and procedures. Although DSHS personnel who staffed the Emergency Support Center and State Operations Center had received basic ICS training, their ability to operate within the prescribed incident command structure for the agency should be strengthened.

- The Texas Emergency Management Plan needs to address animals. Many evacuees brought pets with them to the shelters. While pets typically are not permitted in shelters, shelter managers made provisions to care for pets. Separating evacuees from their pets caused anguish for some evacuees.

- The decision to institute a mandatory evacuation for east Texas impacted health and medical services. According to focus group participants along the coastal region, key personnel evacuated the area ahead of persons requiring medical assistance. For example, some nursing home staff evacuated, leaving residents behind. For personnel who remained, this made conforming to the evacuation order more difficult.

- Hospital surge capacity was an issue during the hurricane response. Overall, Texas had sufficient hospital capacity to care for hurricane victims and evacuees requiring medical care. However, not all persons involved in the medical response were aware of hospital bed availability.

1.1.5 Continuity of Operations

During the emergency response it was difficult for some DSHS programs to maintain essential agency functions. This was due to a combination of several factors: (1) personnel assigned to the Emergency Support Center primarily came from the Community Preparedness Section; (2) employees in other parts of the agency or sister

agencies were neither trained nor brought in to assist with daily functions; and (3) the response to this disaster extended for nearly five weeks. All of these factors contributed to the difficulty in maintaining essential agency functions.

2 Introduction

In August 2005, Texas witnessed the destruction caused by Hurricane Katrina as it struck the Louisiana and Mississippi coast. On September 24, 2005, Hurricane Rita came ashore at Sabine Pass, Texas causing widespread destruction in both Texas and Louisiana. The state of Texas mobilized its resources in support of the response to the medical and emergency needs of individuals impacted by both hurricanes.

After the immediate crises of the hurricanes passed, DSHS undertook a comprehensive assessment of the health and medical response to the hurricanes. In particular, DSHS sought to identify its strengths and weaknesses with regard to the response as well as to identify ways to improve operational performance in preparation for future hurricanes or other emergency situations. DSHS contracted with The Litaker Group, an Austin based scientific and research consulting firm, to produce an After Action Report to review and evaluate the DSHS response and to present a plan of action identifying specific recommendations for improvement.

This After Action Report outlines the strengths and weaknesses of the DSHS heath and medical response to hurricanes Katrina and Rita. Consequently, much of this report concentrates on what needs improvement and how these improvements should be made. Despite the focus on improvement, readers should not lose sight of the magnitude of these storms and the unprecedented response by state and local personnel to protect the citizens of Texas. As this report shows, improvements can always be made, but this in no way takes away from the effort expended by so many people across the state who tried to ensure that the health and medical needs of Texans were met during the hurricanes and their aftermath.

The suggested actions in this report should be viewed as recommendations. The Department of State Health Services, in collaboration with all partnering agencies, should review the recommendations and determine the most appropriate action and resources required for implementation.

2.1 Timeline

2.1.1 Hurricane Katrina

Figure 1: Map of Hurricane Katrina from August 23, 2005 to August 31, 2005

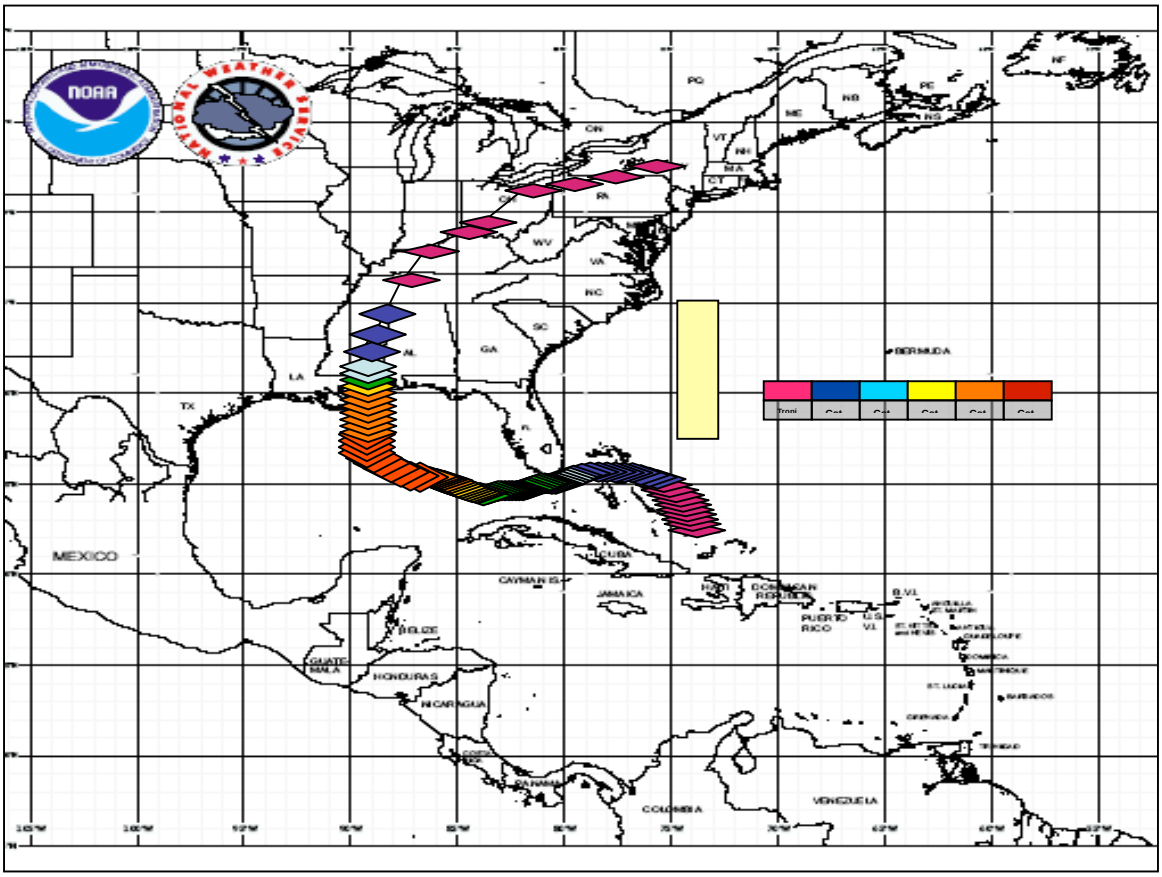
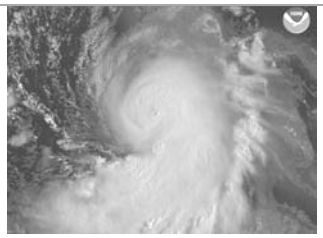
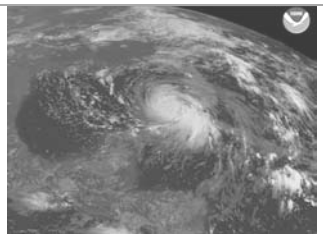
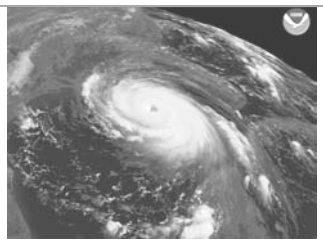
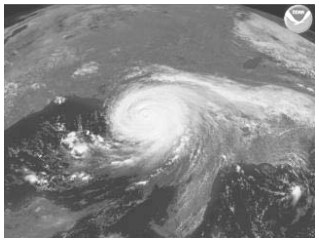


Table 1: Chronological timeline of Hurricane Katrina from August 23, 2005 to February 7, 2006

DAY	EVENT
August 23	Tropical Depression number 12 formed over the southeastern Bahamas.
August 24	The system was upgraded to Tropical Storm Katrina in the morning. The Texas State Operations Center (SOC) began issuing regular hurricane situation reports.
August 25	Katrina upgraded to Hurricane status as a Category 1 storm and struck southern Florida between Hallandale Beach and Aventura, Florida just north of Miami, Florida.
August 26	 Katrina weakened over land to a tropical storm, but regained hurricane status at 2:00 a.m. EDT only about one hour after re-entering the Gulf of Mexico. Louisiana governor Kathleen Babineaux Blanco declared a state of emergency for state agencies. The Texas SOC established a daily conference call with Emergency Management Council Agencies to plan support for Gulf Coast states.
August 27	 Katrina strengthened to Category 3. President George W. Bush declared a state of emergency in Louisiana, Alabama, and Mississippi.

August 28	 Katrina was upgraded to a Category 5 storm with maximum winds of 175 mph and a minimum central pressure of 902 mbar. New Orleans Mayor Ray Nagin ordered a mandatory evacuation of the city.
August 29	 Katrina weakened considerably as it approached land, making its second landfall in the morning along the Central Gulf Coast near Buras-Triumph, Louisiana with 125 mph winds and a central pressure of 920 mbar, a strong Category 3 storm (having just weakened from Category 4 as it was making landfall).  The storm surge breached the levee system that protected New Orleans from Lake Pontchartrain and the Mississippi River. Most of the city flooded, mainly by water from the lake. Making its way up the eastern Louisiana coastline, most communities in Plaquemines, St. Bernard Parish, and Slidell in St. Tammany Parish were severely damaged by the storm surge and the strong winds of the eyewall, which also grazed eastern New Orleans. A few hours later, after weakening slightly, it made landfall for a third time near the Louisiana / Mississippi border with 120 mph (190 km/h) sustained winds, still a Category 3.
August 29	Full Emergency Management Council activation in support of potential relief efforts along the Gulf Coast began.

August 30	First requests were made to Texas for medical staff and shelter support. Mass evacuation from Louisiana began. The Texas SOC went to 24/7 staffing, as did the DSHS Emergency Support Center (ESC). Commissioner Sanchez directed DSHS medical staff to respond to Louisiana as needed.
August 31	An announcement was made that evacuees from Louisiana would be moved to the Astrodome in Houston, Texas.
Sept 1	A National Guard official announced on Thursday, September 1, that as many as 60,000 people had gathered at the Superdome in New Orleans for evacuation. Texas policies and procedures were vetted for medical professional credentialing, vaccination requirements in shelters, pharmacy practices, etc. Six retail pharmacy chains established temporary dispensing stations in the state's largest shelters and dispensed medications at no cost. DSHS became the primary point for pharmacy donations.
Sept 2	A Presidential Disaster Declaration for all of Texas was established.
Sept 4	Commissioner Sanchez authorized DSHS employees to assist in shelter operations.
Sept 5	Over 230,000 people took shelter in Texas by Labor Day.
Sept 6	The Superdome in New Orleans was evacuated completely.
Sept 7	The Louisiana evacuation ended. Approximately 450,000 Louisiana, Mississippi, and Alabama residents were in Texas, and there were over 200 shelters in operation. Some 56,000 hotel rooms were occupied by Katrina evacuees in Texas.
Sept 8	The Texas SOC encouraged local jurisdictions to rent apartments and hotel rooms for shelter occupants.
Sept 9	Substance Abuse and Mental Health Services Administration (SAMHSA) expedited an Emergency Relief Grant to DSHS. SAMHSA advised that the amount would be increased from $75,000 to $150,000. Funds would be used to purchase methadone. Approximately 360 persons requested methadone. A dedicated toll free telephone number for mental health and substance abuse professional volunteers was activated. Web access to a registration form for these volunteers was enabled and linked to the DSHS website.

Sept 10	Training was provided to crisis counselors and mental health community managers, emergency departments, public / private providers, and state hospital staff. Training was held in Dallas, San Antonio, and Austin.
Sept 12	The new Joint Field Office (JFO) was established with federal, state, county, and city officials. Thirty-one pallets of medical supplies donated by Project Hope were repackaged and sent out to Texas, Mississippi, and Louisiana sites from Austin.
Sept 13	A pharmaceutical company shipped vaccines to DSHS.
Sept 14	The Mental Health / Substance Abuse Helpline for Katrina victims reduced its 24 / 7 operations to 5:00 a.m. to 11:00 p.m. 7 days a week due to very low nighttime volume.
Sept 16	The DSHS Emergency Support Center stood down from the Katrina event.
Feb 7, 2006	The Federal Emergency Management Agency established a deadline of February 7, 2006 (extended from January 7) as the official end of any further coverage of hotel costs for Katrina victims.

2.1.2 Hurricane Rita

Figure 2: Map of Hurricane Rita from September 18, 2005 to September 25, 2005

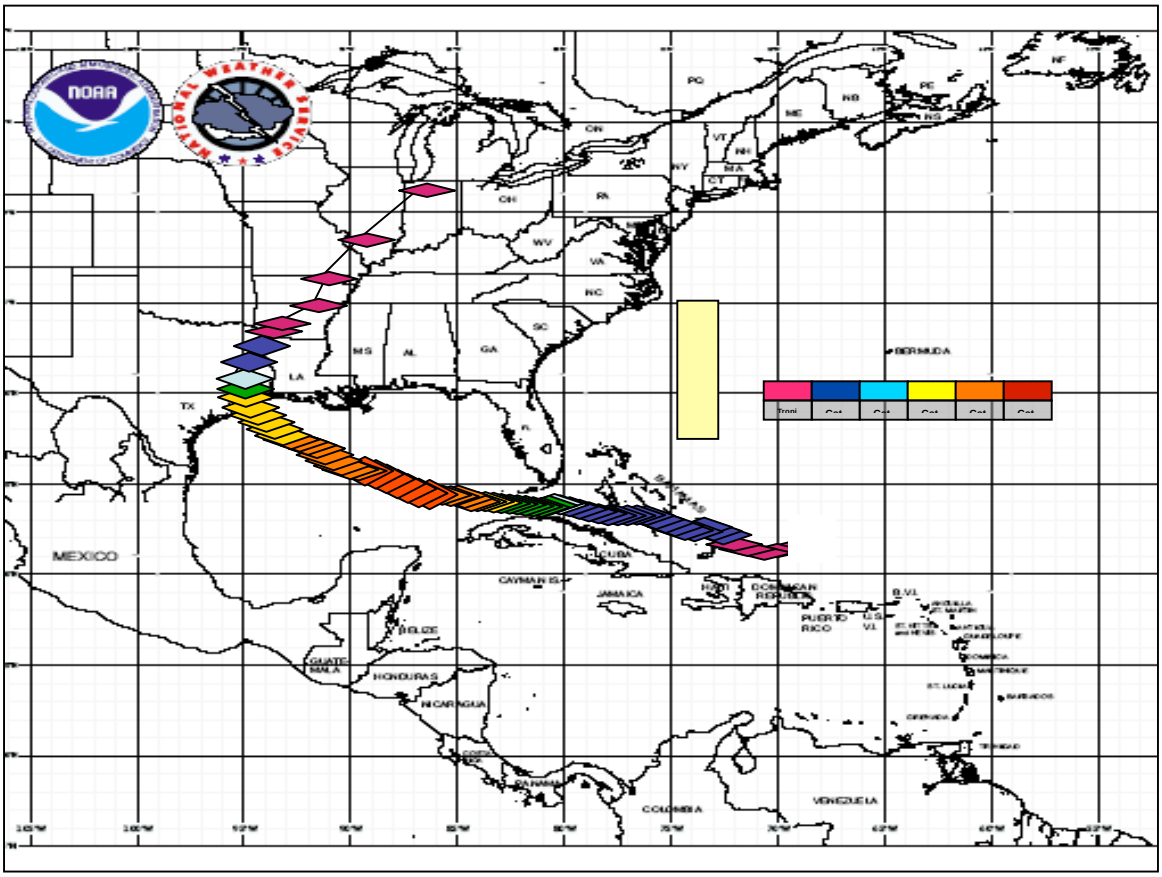
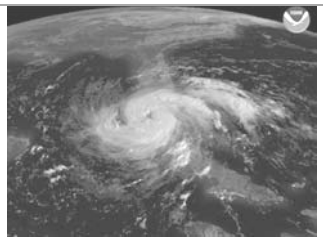
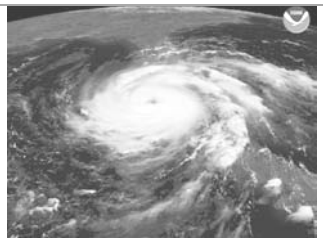
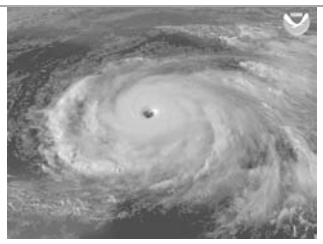
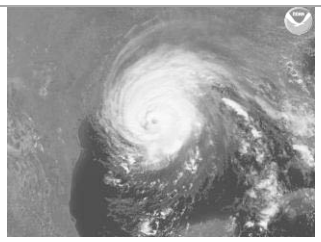
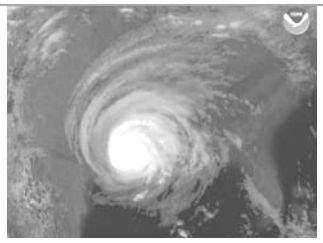


Table 2: Chronological timeline of Hurricane Katrina from September 18, 2005 to October 25, 2005

DAY	EVENT
Sept 18	A surface low formed east of the Turks and Caicos Islands and became the 17th tropical storm of the season less than a day after forming. A mandatory evacuation was ordered for the entire Florida Keys.
Sept 19	Texas State Operations Center (SOC) initiated planning to move sheltered Katrina evacuees out of Texas.
Sept 20	 Hurricane Rita was declared a Category 1 hurricane. Texas Governor Rick Perry recalled emergency personnel, including almost 1,200 Texas National Guard from Katrina recovery efforts, in anticipation of Hurricane Rita's arrival. The Texas SOC initiated an evacuation needs assessment in conjunction with DSHS and the Department of Aging and Disability Services of approximately 1,900 special needs facilities along coastal evacuation zones from Brownsville to Lake Sabine.
Sept. 20	 Rita was upgraded to a Category 2 hurricane. The SOC authorized the evacuation of all medical facilities along coast. Emergency Support Function 8 (Health and Medical) services were prepared.

Sept 21	 Rita was upgraded to a Category 5 hurricane. Houston mayor Bill White urged residents to evacuate the city. With support from the DSHS Emergency Medical Service division, the University of Texas Medical Branch in Galveston began evacuating patients using 150 ambulances and 17 rotor wing aircraft. Airlift of special needs population began from Jefferson County. Approximately 12,000 people were flown out of the area to 17 states.
	Officials in Galveston County (which includes the city of Galveston) ordered mandatory evacuations effective 6:00 p.m.
	An advisory was issued stating that Rita's maximum sustained winds had increased to 175 mph (280 km/h) with an estimated minimum pressure of 897 mbar .
	Rita first struck Florida after making an approach near Cuba and went on to strike Texas and Louisiana. A day prior to landfall, the resultant storm surge also reopened some of the levee breaches caused by Hurricane Katrina a month earlier, and reflooded parts of New Orleans.
Sept 22	 Governor Rick Perry and the Texas Department of Transportation implemented a contraflow lane reversal on Interstate 45 north towards Dallas, on Interstate 10 west towards San Antonio, and U.S. Highway 290 northwest to Bryan / College Station to assist in evacuations. The Texas Disaster District Committees reported fuel shortages in evacuation zones. Texas A&M University's Large Animal Veterinarian Hospital opened with 250 beds for special needs evacuees.

Sept 23	 A bus carrying 45 nursing home evacuees from Brighton Gardens in Bellaire, Texas erupted into flames and exploded on Interstate 45 southeast of Dallas in Wilmer. Twenty-three people were killed as a result of that incident. Houston escaped physical damage from the Hurricane.
Sept 24	 Rita made landfall near Beaumont and Orange, Texas. All communities in the "Golden Triangle"—formed by Beaumont, Port Arthur, and Orange—sustained extensive damage from Rita's winds.
Sept 25	Federal Disaster Medical Assistance Teams (DMAT) were deployed to east Texas.
Sept 26	Twenty-six-person DMATs were converted to 3 - 5 person Strike Teams for shelter surveillance and assistance in east Texas.
Sept 27	Waco and Marlin Veterans' Administration (VA) facilities were identified as available special needs shelter locations.
Sept 28	Buses were sent to east Texas to pick up special needs evacuees in shelters to transport them to Waco. Triage took place in an empty store building.
Oct 2	Texas began work on a Katrina / Rita repatriation plan.
Oct 5	Texas authorized an action request form for the VA facilities to be kept open for two to four months. Power was still out in large parts of east Texas. The Joint Field Office in Austin shut down operations at 5:00 p.m.
Oct 11	The Federal special needs repatriation process became operational.

Oct 12	DSHS requested assistance for nurses to go to Tyler County Hospital and for a physician or physician's assistant to go to the Sabine County Hospital.
Oct 24	The last of the federal Public Health and Department of Defense liaisons returned to normal duty stations.
Oct 25	The DSHS Emergency Support Center stood down.

3 Methods

3.1 Introduction

This report is a culmination of three distinct activities: (1) an analysis of survey data provided by DSHS; (2) information collected from a series of 15 focus groups conducted throughout Texas; and (3) data collected from personal interviews with key individuals from federal and state agencies who worked with DSHS during the hurricane response. The process of collecting and analyzing data for each of these activities is described below.

3.2 Analysis of Survey Data

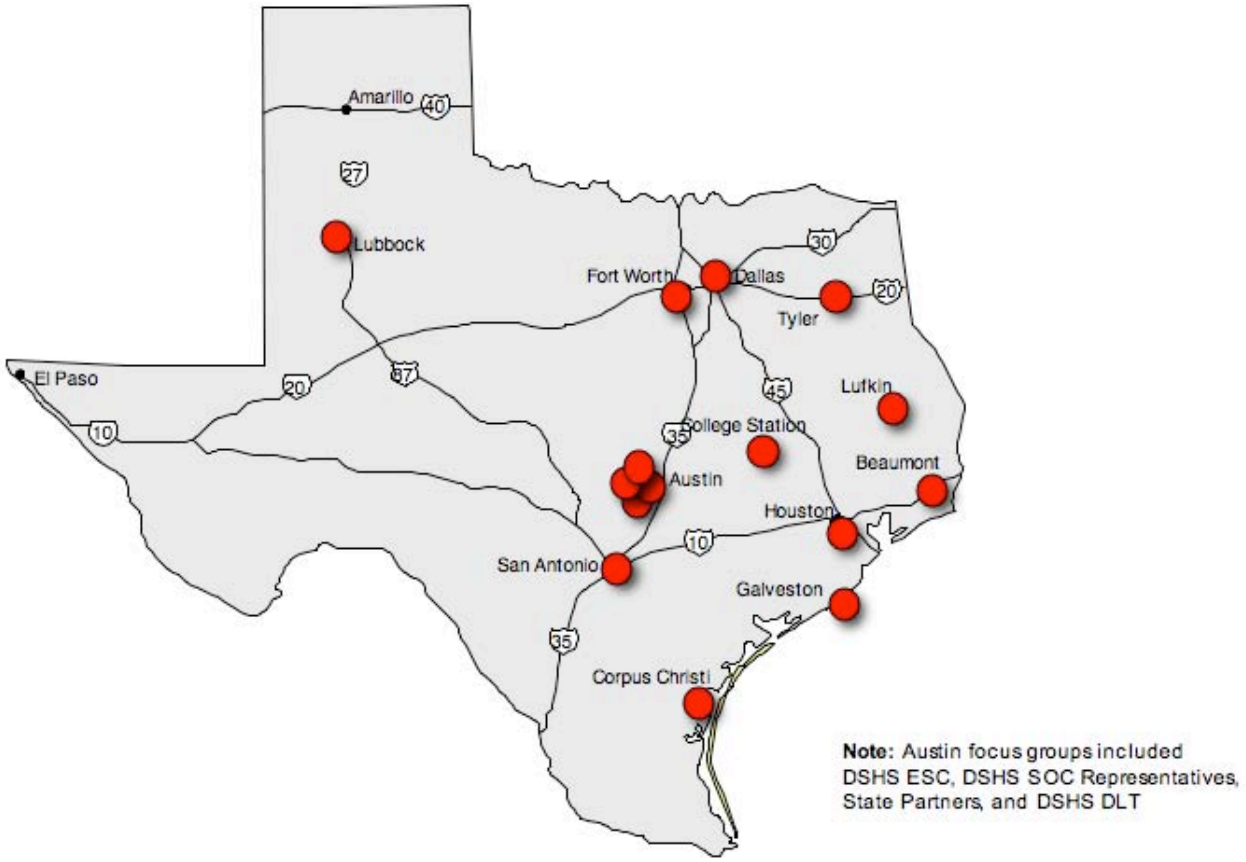
DSHS conducted a survey to solicit input regarding the health and medical response to the hurricanes from both DSHS employees and external public health partners. Both groups completed a survey specific to their roles (e.g., either as an employee of DSHS or external public health partner from the US Public Health Service, FEMA, CDC, etc.) for both Hurricanes Katrina and Rita. DSHS staff developed the surveys using the Florida hurricane response survey as a guide and based on specific emergency management issues applicable to the State of Texas. The Litaker Group analyzed a total of four surveys. Nearly 3,000 DSHS employees and 22,000 external public health system partners were asked to complete the online survey.

The Litaker Group received initial data sets on the employee and external public health partner surveys on December 20, 2005, in Microsoft Excel format and exported them to SPSS format (Version 14.0). Data were cleaned, reviewed, and analyzed using SPSS. Descriptive and inferential statistical tests were performed. Complete details of the survey analyses and results are reported elsewhere.

3.3 Focus Groups

The Litaker Group conducted 15 focus groups throughout Texas in order to obtain input from key participants in the hurricane response (see Figure 3). The purpose was to solicit input from the local level (i.e., in areas affected by the two hurricanes or by the evacuations) to help DSHS understand whether the agency met the medical response needs of local communities. Focus groups were conducted over a two week period in February 2006.

Figure 3: Map of Texas cities where focus groups took place



Focus group participants selected by DSHS were essential partners who could provide feedback about the agency's response from various perspectives. These partners included city and county agencies, private industry, volunteer agencies, and elected officials. Specifically, representatives from the following groups were asked to participate:

- Local health departments
- District Disaster Committees
- Local Emergency Operations Centers
- County Judges
- Local Councils of Government
- Local partners such as EMS units, hospitals, and suppliers
- National Guard
- Regional Advisory Councils
- American Red Cross
- Salvation Army

- Other state partners (e.g., Texas Medical Association, Texas Nursing Association, Texas Association of Homes and Services for the Aging, Texas Hospital Association, and Texas Pharmacy Association)
- University health science centers (e.g., The University of Texas Health Science Center at Houston, Texas Tech University Health Science Center, Texas A&M Health Science Center, and University of Texas Medical Branch at Galveston)

In order to obtain the DSHS staff perspective, The Litaker Group conducted focus groups with staff who worked at the DSHS Emergency Support Center (ESC) and at the State Operations Center (SOC), the Joint Field Office (JFO) and with the DSHS Departmental Leadership Teams (DLT). Each focus group had from 10 to 30 participants.

Two facilitators led each focus group session. One facilitator moderated the discussion and one recorded responses on easels. In addition, up to two note-takers were present at each session to capture details of the discussions.

The Litaker Group identified six major themes from the survey data (discussed in Section 3.2) and from a review of pertinent documents provided by DSHS prior to the focus group sessions. These themes were used to categorize participant responses into the following six categories. A seventh category labeled "Other" was designated to include issues that did not fall into any of the above six themes.

1. Direction and Control
2. Information Management
3. Resource Management
4. Preparedness
5. Roles and Responsibilities
6. Continuity of Operations

Input provided during the focus group sessions was recorded in such a manner as to ensure anonymity and to promote a frank and open discussion. Each focus group lasted approximately three hours, except for the DLT focus group, which lasted two hours.

3.4 Personal Interviews

3.4.1 Participant Selection

Personal interviews were conducted with 17 individuals representing state and federal agencies who could provide specific insight on the agency's response to the two hurricanes. Interviewed individuals included representatives from the State Operations Center, the Department of Aging and Disability Services, the Department of Family and Protective Services, the Texas Joint Field Office, the Texas Department of Public Safety, the Texas A&M Health Science Center, the Centers for Disease Control and Prevention, the U.S. Department of Health and Human Services, and the Department of Defense.

These individuals were selected by DSHS to represent a cross-section of partner organizations. Interviews were conducted primarily by telephone and lasted from 30 to 60 minutes. Information obtained from personal interviews was assessed and considered with data obtained from survey analyses and the focus groups.

4 Major Issues

Based on data and information collected from the survey, focus groups, and personal interviews, five major areas of improvement were identified.

1. Information management, including:
   - Information flow
   - Communication among emergency response structures
   - Issue and request tracking
   - Patient and evacuee tracking

2. Roles and responsibilities, including:
   - Roles of the State Operations Center and the DSHS Emergency Support Center
   - Multiple local, regional, and state response structures
   - The DSHS role under the Texas Emergency Management Plan Annex H

3. Resource management, including:
   - Volunteer coordination and credentialing
   - Acquiring, tracking, and deploying resources
   - Emergency procurement of supplies
   - Use of human resources during an emergency

4. Preparedness, including:
   - Special needs populations
   - Responding to the variety of needs at shelters
   - Medical support to the evacuees during a mandatory evacuation
   - Assisting in nursing home evacuations
   - Reimbursement for nongovernmental service providers
   - Planning with the private sector
   - Training in the Incident Command System and the National Incident Management System
   - Addressing the capacity to assimilate animals during an emergency
   - Hospital surge capacity

5. Continuity of operations, including:
   - Identifying DSHS essential functions
   - Preparing to support long-term operations

4.1 Response Efforts That Worked Well

The Litaker Group uncovered numerous stories of people working above and beyond reasonable expectation to care for hurricane victims or to protect their communities. The State of Texas can be proud of its citizens, government officials, and state personnel.

In particular, The Litaker Group identified several best practices or response areas that worked well.

- Interviewees and focus group participants commented that the Joint Field Office (JFO) operated well. JFO representatives communicated well and coordinated resource requests and acquisition.

- Texas relied on nongovernmental agencies and the private sector for assistance and support. Texas integrated public, private, government, and volunteer resources into its response efforts.

- Relationships between local responders and between local and state personnel fostered a sense of trust. Many of these relationships were forged during previous events, emergency planning sessions, or during emergency drills and exercises. These relationships greatly enhanced the speed with which Texas responded to the hurricanes.

- DSHS regional shelter teams worked very well. DSHS developed teams of epidemiologists, social workers, nurses, and other public health professionals to visit shelter residents. The team structure met many needs of evacuees and allowed team members to share information and identify problems more quickly. The team used just-in-time training from the Centers for Disease Control and Prevention prior to visiting shelters. This training prepared them for their visits.

- During the focus groups, representatives from local health departments commented that the epidemiological services provided by DSHS were excellent.

- The Texas State Board of Pharmacy ruled that it would not enforce the 72-hour supply limit for emergency prescription refills under Section 662.054 of the Texas Pharmacy Act due to the hurricanes. Pharmacists were allowed to use their professional judgment to dispense up to 30 days of medication for refills without prescriber approval.

- In College Station, the Department of Aging and Disability Services used its Retired Seniors Volunteer Program (RSVP) to coordinate volunteers recruited via the 211 information line. Whenever 211 received a call from an individual wanting to volunteer, he or she was referred to RSVP. RSVP subsequently worked with the individual to match him or her with an appropriate organization.

- During the Rita evacuation, Corpus Christi officials were surprised at the number of special needs evacuees from private homes. The officials developed a good method for identifying these individuals. The Regional Transportation Authority has a list of clients who require daily para-transport service. Corpus Christi officials called the clients on this transit list to ask if they needed evacuation assistance. The RTA was not bound by the Health Insurance Portability and Accountability Act (HIPAA) and was thus able to provide this list to the city.

- San Antonio participants indicated that having a Regional Medical Operations Center (RMOC) benefited them greatly. The RMOC coordinated all health and medical requests for the region. Unlike other regional medical coordinating centers, the San Antonio RMOC included all facets of a medical response—EMS, public health, mental health, and medical providers—as well as social support agencies, such as Child Protective Services.

- In Houston, medical triage and local law enforcement collaborated to triage and disarm arriving Katrina patients. Upon arrival, many evacuees needed medical treatment prior to entering shelters. Additionally, many evacuees were armed with weapons. EMS teamed with local law enforcement to simultaneously triage evacuees for medical problems or injuries and disarm them of their weapons. This partnership worked well.

- College Station used the Texas A&M University College of Veterinary Medicine animal hospital as a medical shelter. The facility worked well as a shelter.

- The DSHS Strategic National Stockpile (SNS) exercise in August 2005 helped prepare DSHS employees and partners for their emergency response roles during the hurricanes.

- DSHS focus group participants in Austin expressed positive views about the location of the Emergency Support Center. The ESC is located in the State Laboratory Building. This facility had parking and full-time security. The ESC also had information technology and logistical support staff.

5 Information Management

5.1 Information Flow

5.1.1 Emergency Management Channels

Information flow often did not follow established emergency management channels. City and county agencies that were accustomed to sending and receiving requests through recognized emergency management channels (local Emergency Operations Center to District Disaster Committee to State Operations Center), became confused and frustrated by ad hoc communications paths promulgated by personnel at all levels. According to focus group participants, the DSHS Emergency Support Center (ESC) often did not follow existing emergency management communications protocols. Rather than funneling information back through the State Operations Center (SOC) to the regional and local levels, ESC personnel appeared to be communicating directly with many responders in the field without SOC coordination. As a result, there were:

- Duplicate requests for assistance;
- Duplication of effort to provide requested assistance; and
- Wasted time and effort by personnel at all levels to sort through the status of tasks and issues.

While information flow problems appeared to emanate from the relationship between the SOC and ESC, other issues were identified at the local level. County and city agencies were confused about what resources they could request directly versus resources what should be coordinated through the District Disaster Committee (DDC). In areas where there existed a strong relationship between local health departments and regional DSHS offices, local health departments viewed the regional office as a local resource. They felt they should have the ability to deal directly with the regional office to meet local needs. However, dealing directly with the regional offices often resulted in the lack of a coordinated response through the SOC and ESC.

Some local focus group participants were concerned that the existing emergency management structure was unable to respond quickly to health and medical requests. Local health and medical personnel felt that their requests were urgent and could not be subject to delay. As such, unofficial communication channels were used because they operated more quickly. For example, when locals could not get what they needed in a timely manner following established emergency management channels, they used unofficial channels to contact DSHS directly for assistance (either at the regional level or in Austin). Locals bypassed the DDC because they feared their requests would take too long to process, again highlighting the urgency of medical and health requests.

Focus group feedback indicated that while some DDCs operated effectively, others were not well organized, were poorly staffed, and appeared less effective in processing information and responding to critical needs.

5.1.2 Emergency Support Center Reliance on Email Communication

The DSHS Emergency Support Center (ESC) used email as a primary means of communication. In itself, email may be an essential communication tool; however, using email as both an information channel and tracking system created some problems. For example:

- Emails were often sent out to all agencies in a "blanket" system to ensure wide distribution. This created problems with responding entities in that all other entities were copied on the response. This increased email traffic and required resources to be dedicated to reviewing, cataloging, and responding to emails. Focus group participants noted that the deluge of emails was overwhelming and they were unable to properly attend to each message.

- Since emails were used to coordinate requests, not all resources were properly matched to the intended recipient. DSHS used emails to request resources and assistance from state and federal partners. DSHS accepted resource offers on a first come, first serve basis but were not always able to appropriately match the resource with the need.

- Using emails created a problem in tracking requests since email systems are not designed to track and record tasks.

- Personal email addresses were sometimes used in order to ensure direct contact with an individual. However, this created problems after shift or role changes. The primary contact email address should be the role, not the individual.

- The ESC focused primarily on email correspondence at the expense of other communications tools. Representatives in the Joint Field Office (JFO) faxed documents to the ESC when email servers did not work. However, not all faxed documents were acted on by the ESC in a timely manner or given equal priority status as emails sent from the JFO.

5.1.3 Poor Information Tracking

Regional and local responders did not know the status of their requests to the DSHS representatives at the State Operations Center (SOC) or to the DSHS Emergency Support Center (ESC). Requests made to the SOC and / or ESC were received but feedback on the resolution was not always available. This may be due to the following.

- Requests bypassed telephone controllers and went directly to SOC / ESC members. The ESC planned to use telephone controllers to answer all calls and log requests. This did not occur consistently.

- Information tracking systems were not coordinated. Local and regional response entities and the DSHS ESC used grant funding to purchase emergency management information systems. However, some of these systems work independently of each other. For example, San Antonio, Corpus Christi, and Galveston, all use WebEOC in their local city Emergency Operations Centers. Their individual WebEOC licenses currently do not allow them to receive and post messages to state or regional WebEOC systems. Furthermore, the Regional Advisory Committees use "EM Systems," which do not integrate with WebEOC.

Use of WebEOC was sporadic at the SOC and ESC. Not everyone was using WebEOC to load in data, making the availability of information inconsistent. ESC and SOC responders were not able to maintain information on WebEOC because of the speed at which information was received.

5.1 Recommendations for Information Flow

- DSHS should revise plans and procedures to clarify the relationship and role of the DSHS Emergency Support Center (ESC) in relation to the State Operations Center (SOC).

- DSHS and the Governor's Division of Emergency Management should review current processes and procedures to identify the most efficient way to address critical health and medical needs at the local level.

- DSHS should review the relationship between local health departments and the DSHS Health Service Regions to clarify how local agencies should access regional assets.

- DSHS should promote targeted, rather than blanket, email as an efficient means to communicate with internal and external partners.

- DSHS should promote the use of standard "role" email addresses (e.g., person.in.charge@dshs.state.tx.us) rather than send email to a specific individual's email account. However, email should not be used to track tasks; this role should be fulfilled by WebEOC or another appropriate tracking system.

- The State of Texas should adopt a single emergency management tracking system to be used at all levels of emergency management. This system should allow for multiple agencies to view and post information. DSHS and local health agencies must be fully integrated and able to communicate in such a system. Houston focus group participants noted that an effort is in progress to combine the various versions of WebEOC, then combine WebEOC with EM Systems. However, the data fields in the various systems are inconsistent, and it is uncertain whether EM Systems can be combined with WebEOC.

- DSHS should consistently log and track all issues and requests.
  - Train and exercise Controllers to answer phones, log all calls, and route calls to the most appropriate individual
  - Train and exercise DSHS staff in the use of WebEOC
  - Customize WebEOC to incorporate task tracking forms

5.2 Patient and Evacuee Tracking

5.2.1 Tracking of Special Needs Patients

During the evacuation, identification and tracking became both a logistics and medical issue for special needs patients. Specific concerns include:

- Lack of identification (e.g., name, age);
- Lack of family member contact details (e.g., whom to contact);
- Inadequate information on where a resident or patient originated (e.g., from which nursing home or hospital); and
- Lack of medical information (e.g., medical history, current illnesses, current medications, etc).

The lack of basic patient information also created problems during transport and movement from shelter to shelter. Patients often became separated from family members. As a result, state and local responders spent significant amounts of time trying to match family members in Red Cross shelters with their loved ones in special needs shelters or hospitals.

5.2.2 Patient Repatriation

Poor patient tracking made it difficult to repatriate patients after the disaster. Local officials and family members did not know where evacuated patients were sheltered, and therefore had difficulty with repatriation. Health and medical representatives in the State Operations Center spent many hours speaking with family members and searching for

evacuated patients. Focus group participants noted that repatriation costs were a concern. They further noted, however, that no patients were denied repatriation because of the cost issue. Participants interviewed stated that some individual family members paid for the return of their evacuated family members. Occasionally, it became the responsibility of the host locality to pay for repatriation of evacuated persons back to their homes.

5.2.3 Inaccurate Information to Recipients of Special Needs Evacuees

Inaccurate and / or incomplete information was provided to localities regarding arriving evacuees. For example:

- Information on the number, types, and injuries or medical needs of patients evacuating to local, inland communities was not clear. Dallas and Fort Worth, for example, were told to expect "2,000 injured patients by plane."

- Patients either never arrived or arrived in fewer numbers than was communicated to the local regions. Recipient cities sent many ambulances, doctors, and nurses to the airports to meet patients, expending resources waiting for them to arrive.

- State hospitals operated by DSHS faced similar circumstances. One such hospital was told to expect a "bus load of patients." To prepare, staff were called in, supplies readied, and hospital resources mobilized. However, patients did not arrive. This is not only inefficient, but costly – in both economic and opportunity costs.

Greater and more accurate detail about arriving evacuees would have freed up resources for use elsewhere.

5.2 Recommendations for Patient and Evacuee Tracking

- DSHS must work with other state agencies to develop a patient tracking system. Several communities are in the process of developing their own tracking systems. The State of Texas needs to ensure that these systems are integrated. Patients evacuating from Corpus Christi, for example, need to be recognized by the system used in San Antonio. Furthermore, evacuee and patient tracking systems should coexist with systems used by the American Red Cross.

- A system needs to be established for improved communications of patient evacuations to recipient communities. Recipient communities must know:
  - Accurate numbers of patients to expect;
  - Types of injuries and medical conditions to expect;
  - Expected arrival time; and
  - If any evacuee is a known criminal, sex offender, etc. so that law enforcement could be part of the group meeting evacuees.

5.3 Medical Records of Evacuees

Medical special needs evacuees arrived to recipient facilities with no medical records. Local focus group participants stated that many patients who evacuated from hospitals or nursing homes arrived with little or no documentation. Recipient doctors and nurses did not know the conditions or current treatment of arriving patients. This hindered their treatment of evacuees and the standard of care. Additionally, patients who were deemed well (i.e., with a chronic, stable medical condition) at the onset of the evacuation, but who might have needed treatment later on, could not provide information on their conditions or treatment (e.g., disease severity, type of medications currently prescribed).

5.3 Recommendations for Medical Records of Evacuees

- DSHS should develop standards for patient evacuation that include the transfer of pertinent medical information with evacuating patients. Standards should be created in conjunction with appropriate stakeholder groups. The standards of patient evacuation should address multiple facility types (e.g., hospitals, nursing homes, group homes, mental health facilities) as well as home bound patients. Pertinent medical information to consider in these standards includes:
  - Most recent physician's assessment,
  - Most recent order sheet,
  - Most recent medication administration record (MAR),
  - Most recent patient history with physical documentation.

- DSHS should review the current U.S. Department of Health and Human Services and Department of Homeland Security initiative to foster interoperable electronic healthcare records systems and review the Presidential Executive Order: *Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator*, April 27, 2004.

6 Roles and Responsibilities

6.1 State Operations Center and DSHS Emergency Support Center Roles and Responsibilities

6.1.1 State Operations Center (SOC) and DSHS Emergency Support Center (ESC) Relationship

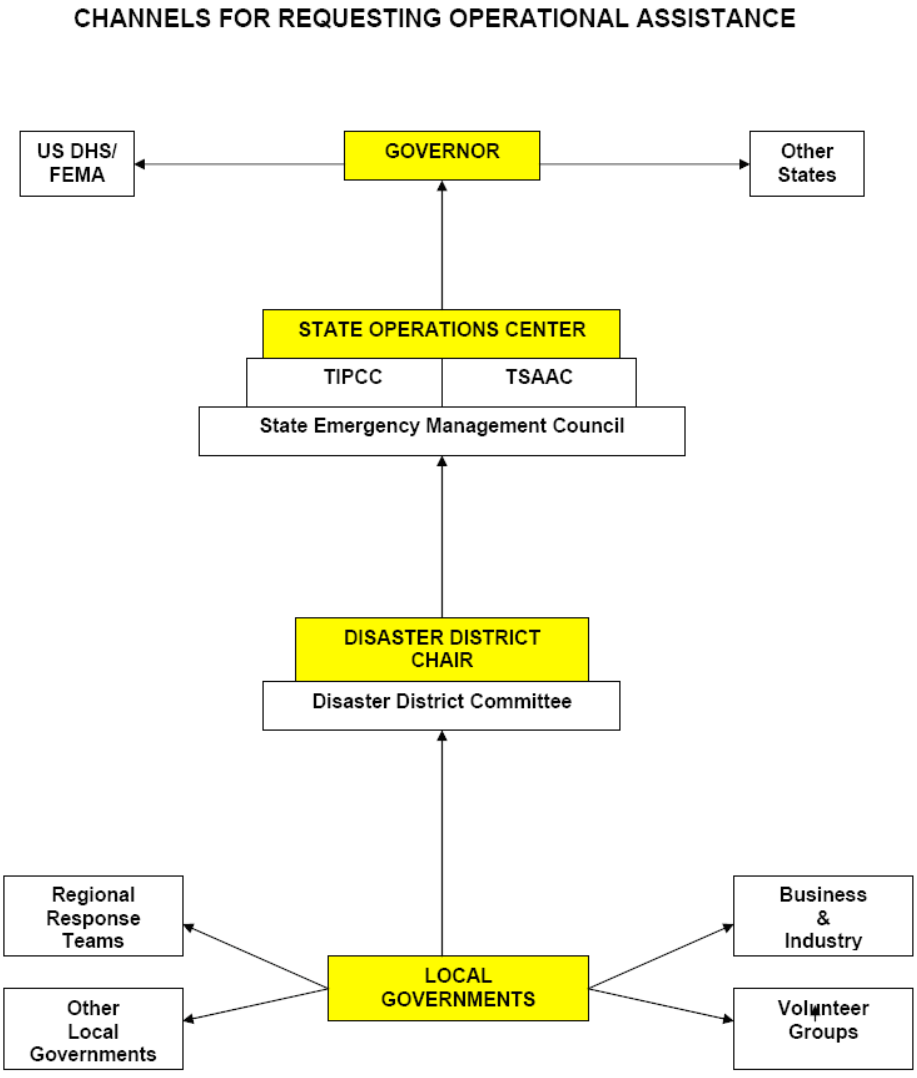
The Texas State Emergency Management Plan clearly establishes the State Operations Center (SOC) as the state level entity for coordinating state resources during an emergency. It serves as the focal point for matching local needs with state resources. Figure 4, an excerpt from the State plan, depicts these organizational relationships.

The DSHS Emergency Support Center (ESC) was conceived as an adjunct to the SOC and as a location to consolidate and coordinate the many medical and health resources that support an emergency response. Although the ESC is reflected in recent DSHS emergency plan updates, the Katrina and Rita response was the first practical application of the newly designed ESC structure.

The representatives in the SOC indicated that the ESC lost sight of its role as a support function to the SOC. The ESC duplicated tasks performed by the SOC, and oftentimes communicated with local agencies without coordinating with the SOC and Disaster District Committees. As a result, effective direction and control of response operations on the health and medical front may have been delayed.

Since there was the perception that there were multiple groups at the state level handling health and medical issues, the regions and locals did not know which group to contact for resource and information requests. Local responders were confused by the apparent overlap in ESC and SOC roles and responsibilities. This is discussed in more detail in section 6.2.1.

Figure 4: Organizational relationship among the SOC and state agencies



6.1.2 ESC Support Role

Nearly all local focus group locations indicated frustration that the DSHS Emergency Support Center issued commands or directives for information or response activities, but was not always helpful in obtaining state or federal resources for the local level. Local government representatives stated that:

- They were inundated with multiple requests for the same information from multiple state agencies (and sometimes from different divisions within the same agency); and

- Routine program requirements were mandated while local agencies were in the midst of a disaster response.

Participants also expressed concern that the ESC staff did not have situational awareness of the local response. Many local jurisdictions operated with minimal infrastructure and reduced capabilities. There are several examples where focus group participants felt that the ESC disregarded or minimized the gravity of the local situation.

There was also broad consensus among focus group participants that many staff in the ESC had no previous emergency response experience and had no "ground" experience for making operational or tactical decisions, taking actions, or making requests that were outside their areas of expertise.

6.1.3 Agency Sharing of Resources

Focus group participants suggested that the coordinated sharing of resources across the Health and Human Services Commission Enterprise would improve future response efforts. DSHS accepted most of the responsibility in responding to the health and medical needs during the response, as the Texas Emergency Management Plan Annex H stipulates. However, DSHS representatives at the State Operations Center stated that DSHS was involved heavily with many issues associated with nursing home evacuations, a regulatory function that is managed by the Department of Aging and Disability Services (DADS).

With respect to Enterprise involvement in the Emergency Support Center (ESC), only DADS had a representative there. However, other Enterprise agency heads had a standing invitation to join the ESC if the situation warranted. (Note: Each Enterprise agency had staff assigned to the State Operations Center to carry out their designated response and recovery functions.)

During the hurricanes, ESC staffing was primarily the responsibility of the Community Preparedness Section, at least in the initial stages of the event. Focus group participants identified the need for a coordinated effort across the Enterprise to provide technical and administrative resources to support the lead agency (in this case, DSHS). The ability of

Enterprise agencies to have pre-designated and pre-trained staff to provide resources to sister agencies during a disaster would ensure continuity of operations for essential functions while sharing the workload across multiple groups.

6.1 Recommendations for SOC / ESC Roles and Responsibilities

- DSHS should revise plans and procedures to clarify the relationship and role of the DSHS Emergency Support Center (ESC) in relation to the State Operations Center (SOC). In particular, DSHS may want to formalize the ESC as the operation center for the Health and Medical Emergency Support Function (ESF-8).

- DSHS should review ESC staffing assignments, define required skill sets, and identify minimum experience and training requirements. Training should go beyond the basics of the Incident Command System and present specifics on the Texas Emergency Management Plan and the National Response Plan.

- DSHS must be cognizant of local emergency response efforts and seek to minimize requests for routine program requirements while local agencies are responding to a disaster.

- All Enterprise agencies (i.e., Health and Human Services Commission, Department of State Health Services, Department of Aging and Disability Services, Department of Assistive and Rehabilitative Services, and Department of Family Protective Services) should support emergency operations efforts of the lead agency (i.e., the agency charged with supporting the State Operations Center during an emergency as directed by the Texas Emergency Management Plan). Essential functions for each Enterprise agency should be identified in advance and appropriate steps taken to ensure training across the organization for completing these essential functions.

- Essential administrative functions in DSHS should be identified, and staff from sister agencies should be pre-designated and pre-trained to assist in these functions in an emergency. Likewise, healthcare professionals (e.g., physicians, nurses, pharmacists, and nutritionists) throughout the Enterprise should be identified and pre-designated to assist with essential emergency medical operations either in Austin or in the field.

6.2 Multiple and Duplicate Response Organizations and Regional Groups

6.2.1 Multiple Local, Regional, and State Response Entities

Several local focus group participants expressed their confusion over the various response organizations. On the local level, there is a city or county EOC while at the regional level there was the:

- Disaster District Committee, which is made up of regional state agency representatives to coordinate disaster resources at a regional level;

- RESC (Regional Emergency Support Center) or ROC (Regional Operations Center), which is the DSHS regional operating center;

- RAC (Texas Regional Advisory Councils), which coordinates trauma services in the region, including air medical, EMS, hospital, and bioterrorism preparedness activities on a local level;

At the state level, there was the:

- Governor's Division of Emergency Management (GDEM) State Operations Center (SOC); and

- DSHS Emergency Support Center (ESC).

With so many facilities, local responders were uncertain as to where to go for resources. For example, local health responders contacted the regional DSHS office. They did not make requests through the DDC, which is the standard channel to request assets.

From a regional perspective, the state (including the ESC) needs to maintain a support role during disaster response. DSHS requested multiple data from the local level. Many of these requests came directly from the ESC to the local entity. This put unnecessary pressure on the local response structure because the requests often duplicated other requests coming from the established command structure. Local responders complained of having multiple requests for the same information from multiple agencies, whereas if it had come through proper channels, duplicate requests may have been eliminated.

Local focus group participants expressed misunderstanding about the DDC role and operations. The DDC is the first contact to request state resources for local jurisdictions once local assets have been exhausted. However, local jurisdictions often used "back channels" to contact the ESC directly for resources.

6.2.2 Inconsistent Regional Boundaries Across Agencies

Within the Department of State Health Services, there are differing statewide service regions. For example:

- The Trauma Service Area (TSA) regions, which provide emergency medical service oversight and hospital coordination support, do not always align with DSHS Health Service Regions. In some instances this required local DSHS regional representatives to coordinate and communicate activities with two separate TSAs.

- The DSHS Health Services Regions and TSA regions do not share consistent boundaries with the Disaster District Committees (DDC).

6.2 Recommendations for Multiple and Duplicate Response Organizations

- DSHS should establish a standardized reporting mechanism or structure for asset requests and interagency communications. As much as possible, DSHS representatives should integrate their response efforts with the established Governor's Division of Emergency Management asset request structure.

- The HHSC Enterprise should consider integrating regional boundaries for all agencies. Within DSHS, Health Service Regions should coincide or overlap with Trauma Service Areas. In instances where a Health Service Region contains multiple trauma service areas, a TSA should not overlap into an adjacent HSR.

- During any future regional restructuring, DSHS should consider aligning regions to be consistent with the Governor's Division of Emergency Management regions. This would:
  - Make coordination of Disaster District Committee activities with DSHS regions much clearer; and
  - Improve coordination of the Strategic National Stockpile emergency dispensing functions.

6.3 Annex H

6.3.1 Annex H Clarification

According to the Texas State Emergency Management Plan, the Department of State Health Services is the lead state agency for implementing Annex H, the Health and Medical Emergency Support Function. However, in its current version Annex H does not reflect the agency consolidation resulting from House Bill 2292. Specifically, Annex H was developed prior to the HHSC consolidation in 2004 that merged 12 agencies into five agencies.

Focus group participants noted that the DSHS was tasked with many items related to community evacuation because of the Division of Emergency Management interpretation of the general language of the Annex. For example, Annex H does not specifically list special needs sheltering as a role for DSHS. However, DSHS acquired the role of special needs sheltering under the "community evacuation, health and medical support" function. This function needs clarification.

Furthermore, DSHS has support assignments in other Annexes of the state plan which were previously assigned to legacy agencies that became integrated into DSHS as a result of House Bill 2292 (e.g., Texas Department of Health, Texas Department of Mental Health and Mental Retardation, Texas Commission on Alcohol and Drug Abuse, and Health Care Information Council). Annexes where DSHS has a supporting role include:

- Annex B: Communications
- Annex C: Sheltering and Mass Care
- Annex D: Radiological Emergency Response
- Annex F: Firefighting
- Annex I: Emergency Public Information
- Annex H: Recovery (mental health support role)
- Annex N: Direction and Control
- Annex Q: Hazardous Materials
- Annex R: Search and Rescue
- Annex S: Transportation
- Annex T: Donations
- Annex V: Food and Water

6.3 Recommendations for Annex H

- DSHS should revise Annex H to reflect the current roles and responsibilities of DSHS post consolidation and to acknowledge and include HHSC Enterprise agencies and federal partners as additional participants providing health and medical disaster support. DSHS must define agency assignments and resource capabilities more clearly.

- DSHS should give consideration to the development of agency-specific operating procedures that reflect all assignments delegated to it throughout the Texas Emergency Management Plan.

7 Resource Management

7.1 Volunteer Coordination and Credentialing

7.1.1 Volunteer Coordination

Local and regional coordinators spent many resource hours trying to manage volunteers. The 211 information system was inundated with offers from citizens and professionals willing to volunteer. DSHS created a hotline for medical and mental health volunteer recruitment. The hotline successfully recruited medical volunteers. However, both the 211 system operators and the DSHS hotline staff were unable to match volunteers with a specific service need. Furthermore, not all recruited volunteers possessed skills in demand at the local level. For example, while physicians and nurses volunteered through the DSHS hotline, local needs oftentimes required different skill sets (e.g., certified nursing assistants to provide lower level patient care activities).

Due to a general lack of volunteer coordination, DSHS dispatched volunteers to facilities that did not need additional support. Therefore, these resources were lost to facilities that actually required support. Furthermore, volunteers often traveled upwards of 12 hours to provide assistance. When they arrived, they were told they were not needed. This was disheartening and frustrating to volunteers. Focus group participants fear this may deter volunteers from assisting in the future.

Several communities developed workable solutions for matching volunteers with service needs. For example, College Station used the Department of Aging and Disability's Retired Senior Volunteer Program (RSVP). RSVP coordinated all volunteers recruited through the 211 system for the College Station area. RSVP matched volunteers with an appropriate response organization.

7.1.2 Medical Volunteer Credentialing

The Texas Medical Association (TMA) and Texas Nurses Association (TNA) coordinated medical volunteers identified from their memberships. These organizations verified licensure of out of state doctors and nurses. It was the responsibility of medical care shelters to determine the scope of practice of arriving medical volunteers. For example, some volunteers who were licensed to practice medicine specialized in pediatrics and may not have had appropriate delineation of privileges to treat certain adult internal medicine patients (or vice versa). This challenged shelters. In particular, it was difficult to verify the scope of practice of medical professionals in order to know where best to place them to provide medical care.

DSHS expedited the credentialing of out of state mental health practitioners early in the Katrina response. The mental health needs within shelters were extensive. There were

insufficient numbers of available mental health workers in the shelter communities to provide all of the assistance needed. DSHS eventually was able to credential mental health counselors from other geographic areas to assist.

7.1 Recommendations for Volunteer Coordination and Credentialing

- DSHS should work with nongovernmental and state partners to develop a mechanism for placing volunteer doctors, nurses, pharmacists, and mental health counselors with the appropriate service needs during a disaster. DSHS should coordinate this effort with organizations that possess existing volunteer systems, such as the Texas Medical Association (TMA) and Texas Nurses Association (TNA).

7.2 Resource Coordination

7.2.1 Uneven Resource Acquisition

Due to the nature of the two storms, the resources of certain communities along the coast were stretched to the maximum. In particular, sheltering Katrina evacuees required a significant health and medical response. As a result, when Rita threatened the Texas coast, these communities were left with little additional resources to respond to Rita. Staff were forced to manage evacuating their own population, as well as evacuating the Katrina population. This situation put undue pressure on DSHS to allocate resources, sometimes unevenly.

For example, DSHS requested ambulances from coastal cities to respond to Louisiana. The process in which ambulances were requested and dispatched (e.g., dispatching an entire fleet of ambulances from jurisdiction A to jurisdiction B) often left the originating jurisdiction unable to meet its own needs. For example, during Katrina, ambulances from one gulf coast community were dispatched to Louisiana. When Rita threatened this same community, there was little local ambulance service available to provide evacuation support.

In practice, DSHS provides regulatory oversight to ambulance companies operating in Texas. DSHS does not own or have ready access to a fleet of ambulances that can be used during an emergency. Therefore, it became the role of DSHS to request services from private providers and to match ambulance availability with the local service needs.

Additionally, several hub communities further inland first received Katrina patients, and then opened more shelters to receive Rita evacuees. This effort exhausted staff and stressed shelter facilities.

7.2.2 DSHS Understanding of Resources

DSHS needs increased understanding of the capabilities of sister state agencies and federal partners. For example:

- DSHS assigned missions to partner agencies based on a first come, first serve basis rather than assigning missions to the most suitable resource supplier. For example, DSHS would request resources via a blanket email. Whoever responded first was given the mission. However, the first responding organization was not always the best suited for the mission. If DSHS better understood the resource capabilities of their state and federal partners, they could have matched resources more appropriately with needs.

- Medical resources were not always matched appropriately with the need. Houston requested buses to transport special needs patents. Buses were sent that could not transport wheelchairs. As a result, time and resources were used inefficiently. However, this may be due partially to the lack of specific requests for resources and partially due to DSHS not clarifying the request.

- DSHS requested resources only to have them go unused. For example, special needs patients refused to board buses in an east Texas city because they did not know where the buses were going, thus these resources were not used. DSHS must ensure that when fulfilling requests, all aspects of the requests are understood, not just one piece.

7.2.3 DSHS Understanding of Local Medical Capabilities

Focus group participants would like for DSHS to monitor local medical capacities on a regular basis. DSHS developed a system for monitoring local medical capacity, but this was a reactive system developed during the hurricane response. Stronger understanding of local hospital capability earlier on would have allowed DSHS:

- To determine the potential resource needs of affected jurisdictions earlier; and

- To match better the resources with the need.

7.2 Recommendations for Resource Coordination

- DSHS needs to work with resource providers to ensure that no community is entirely without resources, especially locally held assets. All the resources from one community should not be dispatched to assist another. This is particularly true of ambulance resources. A regional emergency medical services mutual aid plan would facilitate the planning of ambulance resource reallocation for disasters of any kind.

- DSHS should be cognizant of the geographic locations from which it requests additional resource assistance. Many focus group participants suggested that resource collection and deployment should start from the north of Texas and move progressively southeast towards the gulf coast. Northern Texas had a limited risk of being affected directly by the hurricane and, therefore, should have been the communities from which DSHS first acquired resources.

- Localities requesting resource assistance should clearly articulate and specify their needs to ensure an appropriate and accurate resource response from DSHS. This effort would be assisted by having health and medical representatives in all local Emergency Operations Centers (EOC).

- DSHS should improve the understanding of partner agency resource capability and document capabilities in emergency plans. DSHS should include the National Guard and military in all medical resource lists with the understanding that some military resources may not always be available. One way to accomplish this would be for DSHS to involve state and federal partner agencies in drills and exercises.

- Localities must make specific needs requests instead of direct asset requests. DSHS should submit requests for assistance to state and federal partners by expressing their capacity needs. For example, instead of requesting a mobile hospital with three doctors and eight nurses, the specific need should be identified and communicated: "We need enough resources to triage and treat 50 patients per hour with minor injuries and enough resources to triage, treat, and hospitalize up to 20 patients for up to four days in a medical / surgical ward."

- DSHS should understand and document specific medical capabilities at the local level before a disaster situation. This would include documenting the capabilities (e.g., decontamination capability, number of beds in ICU, surge capacity, radiology capabilities, and lab capabilities) of all medical facilities which are able to provide hospital-based care.

- DSHS should strengthen the local relationship with hospitals in areas where there are no local public health departments. This would include working with the Regional Advisory Councils to understand the local medical capability in these areas.

7.3 Emergency Procurement

Local and regional focus group participants expressed extreme frustration in the ability to purchase supplies in an emergency situation. In particular, many participants felt constrained in purchasing for several reasons.

- An inability to identify an appropriate short-term funding source. For example, most local and state agencies do not have a dedicated emergency fund that can be tapped to purchase supplies in an emergency.

- Concern about how to make an emergency procurement that would satisfy legal requirements for competitive tender and, more importantly, would show good value for taxpayers.

- An inability to identify a single source list of potential service and good providers who had been pre-identified or pre-contracted to provide goods and services during an emergency.

The Centers for Disease Control and Prevention recognized early in the hurricane response that CDC grant money for bioterrorism could be used for response activities. However, not all localities were aware of this.

7.3 Recommendations for Emergency Procurement

- HHSC and Texas Building and Procurement Commission (TBPC) contracting specialists should develop contingency contracts with pre-identified manufacturers that meet quality and performance standards in providing specific goods and services in an emergency situation.

- DSHS should work with state and federal partners to create an emergency funding source that can be used during the initial stages of an emergency situation to procure goods and services.

- DSHS contracting specialists should review purchasing guidelines for emergency situations and educate DSHS staff on how to best obtain goods that satisfy purchasing requirements while also ensuring good value for taxpayers.

- DSHS should educate localities on the funding available through the Centers for Disease Control cooperative agreements for bioterrorism and how this funding can be used to support emergency medical response activities.

- DSHS should consider pre-positioning medical supplies in hub cities throughout Texas to provide quick access by emergency medical providers. Additionally, DSHS should consider developing memoranda of understanding with local private industry providers of health and medical supplies to facilitate acquisition during an emergency.

8 Preparedness

8.1 Medical Special Needs

8.1.1 Medical Special Needs Definition

There is no agreed upon definition for special needs. As a result, the number of patients defined as such grew throughout the event. Agencies at every level of government had their own definition or interpretation of what constituted special needs. For example, Annex C of the Texas Emergency Management Plan says special needs should include the elderly, disabled, those who are medically fragile, and those with cognitive impairments. The emergency management community has traditionally viewed special needs individuals as those who need some sort of assistance in an emergency, such as those requiring assistance for evacuation. This may include the transportation dependent, the elderly, the homeless or individuals with mobility impairment. It has not typically included the chronically ill or residents housed in a facility (e.g., a nursing home or mental health facility). The lack of a single recognized definition among all agencies resulted in a broad range of "special needs" patients.

During the response to Hurricanes Katrina and Rita, DSHS became responsible for coordinating support for medical special needs individuals. Eventually, this became a population with significant health and medical needs. Power outages in east Texas caused some shelter residents to become medical special needs patients due to the intense heat and lack of basic necessities. Medical resources had to cover all shelters for special needs evacuees.

A large number of people were identified as special needs patients during the evacuation process. They ultimately required medical attention. Examples include nursing home residents, mental health residents, home health patients, and the chronically ill. A physician at a local focus group commented that one of the "harsh realities highlighted by response to these events was the overall poor level of health of our general population." He noted that the percentage of the population suffering from obesity and diabetes "was astounding" and that these normally chronic diseases were exacerbated during the evacuation. The medical community in host areas was overwhelmed by the degree of medical needs of evacuees.

8.1.2 Responsibilities for Special Needs

DSHS became the primary agency for dealing with all special needs (rather than health and medical special needs) because of its function under the Texas Emergency Management Plan Annex H. DSHS also is a support agency under Annex C: Sheltering and Mass Care, as it relates to providing first aid.

During the response to these events, local focus group participants felt that the American Red Cross too narrowly interpreted and too strictly enforced its rules against sheltering individuals with medical requirements or physical impairments. This further increased the need for special needs shelters. As noted earlier, evacuated nursing home residents also constituted a significant portion of the population which eventually required support in a special needs shelter. Yet, Annex C of the Texas Emergency Management Plan states:

> "Institutions [which] support special needs populations need to develop appropriate evacuation plans designating appropriate shelter for residents of nursing homes, rehabilitation centers, personal care/assisted living facilities and special care facilities for the mentally challenged."

Participants in one focus group located in an evacuation zone stated they felt that home health care agencies "abandoned their clients and left them to fend for themselves." This population of homebound individuals became the responsibility of local communities to evacuate and of the State and host communities to meet their medical needs.

8.1.3 Varying Needs of Shelter Populations

Because of the broad spectrum of cases classified as special needs, the types of care and facilities required to address the needs varied greatly. Some of those designated as special needs only required assisted living accommodations, whereas others required hospice care. Furthermore, many special needs evacuees did not want to be separated from their caregivers and/or family members.

Shelter residents required significant mental health services. Mental health issues ranged from grief-stricken evacuees to substance abuse patients requiring methadone. While there were mental health counselors available to assist these patients, there was no mechanism for matching counselors with individuals who needed assistance.

8.1.4 Evacuation to Hubs

As reported by local focus group participants, spending long hours in evacuation traffic jeopardized the health and safety of evacuees, especially nursing home residents. Residents were subjected to extremes in heat with minimal sanitary services and did not have adequate hydration. Due to medical problems from temperature extremes and poor hydration, many bus loads of residents could not make the trip to planned inland relocation sites and stopped along the road at the first opportunity for medical care and shelter. As a result:

- Some east Texas hospitals became the recipients of traveling nursing home residents. This further burdened the hospitals' already overwhelmed emergency departments.

- In one focus group, the administrator of a rural hospital, itself already directly impacted by Hurricane Rita, described receiving an unplanned busload of nursing home residents who could go no farther without medical assistance. Some of these individuals were in very serious medical condition. They were accommodated as well as possible under the circumstance. Hospital staff cared for these individuals in the hallways.

- Communities along the routes to evacuation hubs also cared for evacuating residents.
  - School gymnasiums, church basements—whatever facility a community could identify—were used to provide sheltering and medical services on an ad hoc basis.

8.1 Recommendations for Medical Special Needs

- DSHS should coordinate with the Governor's Division of Emergency Management and with other agencies and organizations playing major roles in shelter operations to agree on a definition for medical special needs. DSHS needs to share this definition with other state agencies and local jurisdictions.

- DSHS should encourage the American Red Cross to review its policies and procedures with regard to accommodating medical special needs in general population shelters when appropriate.

- Consistent with the Governor's Task Force on Evacuation, Transportation and Logistics and with focus group participant recommendations, future evacuation planning should include provisions for emergency medical way stations and medical care personnel along evacuation routes.

- Institutions responsible for care of patients or residents must be held responsible for continuing care in a disaster situation. Emergency plans should be required.

- Individuals with medical special needs should be cared for, to the extent possible, at alternate host facilities—similar to the institutions from which they were evacuated.

- DSHS needs to plan for the varying mental health needs at general population shelters as well as at medical shelters.

8.2 Nursing Homes

8.2.1 Nursing Home Emergency Plans

As stated earlier, a significant portion of patients populating special needs shelters was evacuated from nursing homes. One local focus group participant stated that the state and local level responders spent approximately a third of their response time on coordinating nursing home evacuations and caring for evacuees at relocation sites.

While nursing homes have regulatory requirements for emergency planning, local focus group participants stated that there appeared to be little oversight and enforcement of the details of the plans. Nursing home evacuations became problematic when many of the nursing homes planned to evacuate their residents to the same facilities or use the same ambulance services to transfer them. According to participants in Corpus Christi, local emergency management agencies review nursing home evacuation plans. However, there are no "teeth" for emergency management agencies to enforce any recommended improvements to the nursing home evacuation plan.

8.2 Recommendations for Nursing Homes

- Texas should review requirements for nursing home emergency preparedness plans. In particular, officials should review nursing home emergency preparedness plans to ensure that resources identified by a particular nursing home are not the same resources identified by other nursing homes in the region. In addition provisions for maintenance of minimum evacuation resources should be required. Nursing home evacuation plans should include provisions to:
  - Have a reasonable supply of medication on hand for all patients;
  - Maintain and transfer medical records for evacuees;
  - Be able to verify transportation assets;
  - Have sufficient staff to accompany evacuees;
  - For high risk geographical areas, have a guaranteed acceptance facility; and
  - Conduct annual drills and exercises.

- The State should enhance the authority of local government to carefully review and approve nursing home, group home, and assisted living facility evacuation plans.

- The State should develop and publish recommended emergency planning guidelines for nursing home facilities.

- The State of Texas should review emergency planning legislation recently adopted by the State of Florida related to hurricane response. This legislation included provisions to enforce nursing home emergency plans (Chapter 59-A-4.126 Florida Administrative Code).

8.3 Reimbursement

8.3.1 Federal Emergency Management Agency Reimbursement Application Assistance

Based on information provided by the Federal Emergency Management Agency (FEMA), DSHS officials told healthcare providers that they would be reimbursed for expenses incurred. Many private companies and local agencies had not been reimbursed for services provided during the response as of February 2006. In fact, many companies and local agencies believe that they will never receive full reimbursement, especially privately owned and operated hospitals, which historically have not received reimbursement funds from FEMA. Local emergency planners and healthcare providers are concerned that private companies and local agencies, which supported Rita and Katrina responses, may not respond to future crises because they have not received reimbursement. The following compounded this problem.

- There is a lack of clarity about the entity that has the responsibility to assist organizations in obtaining reimbursement from FEMA. Clear federal reimbursement guidelines are needed. DSHS received requests for reimbursement. However, DSHS does not have the mandate to assist other organizations with filing for reimbursement. Some participants suggested that it was the Governor's Division of Emergency Management's responsibility to coordinate reimbursement requests. Many focus group participants expressed the need to pre-establish a funding mechanism to cover expenses upfront, as well as to determine what will be reimbursable.

- There is a need for better understanding of the federal reimbursement process. All levels of government need education on FEMA reimbursement policies and process. Many local focus group participants expressed the need for simpler, clearer reimbursement guidelines that offer a timeline for when payment will be received.

8.3 Recommendations for Reimbursement

- DSHS and other state agencies need to understand reimbursement policies and procedures prior to disasters. The state should consider identifying a lead agency for managing federal reimbursement for health and medical providers.

- DSHS should work with FEMA to ensure an understanding exists as to what services are eligible for reimbursement and what information from providers is needed to ensure a speedy reimbursement process. State agencies should also establish a mechanism to provide prompt feedback to applicants on the status of their request.

- The State should consider establishing an emergency fund to pay local or private entities quickly during the initial stages of an emergency.

8.4 Planning with the Private Sector

The private sector and nongovernmental agencies are important partners during a crisis. For example, during the hurricanes churches ran shelters, pharmacies assisted with medication disbursement, and the Texas Medical Association coordinated volunteer medical staff support. State partner focus group participants were able to assist DSHS in meeting some of its needs. State partner focus group participants, however, expressed concern that they were not utilized as fully as possible by DSHS.

8.4 Recommendations for Planning with the Private Sector

- DSHS should identify all potential nongovernmental partners for the health and medical response, including private sector vendors, charitable organizations, and professional associations. DSHS should involve nongovernmental organizations in the state emergency planning process. DSHS should identify the resources that nongovernmental partners can provide and, where feasible, develop memoranda of understanding at the state level with these organizations to solidify their support during an emergency.

- DSHS should consider including nongovernmental representatives within their emergency response structure to facilitate private resource acquisition.

8.5 Training

8.5.1 Incident Command System and National Incident Management System Training

In accordance with Homeland Security Presidential Directive 5 (PDD-5), DSHS emergency plans and procedures implemented in 2004 and 2005 incorporated concepts of the National Incident Management System (NIMS) and the Incident Command System (ICS).

Although DSHS personnel who staffed the Emergency Support Center (ESC) had received basic ICS training, their ability to operate within the prescribed incident command structure for the agency proved ineffective. After only a few hours of trying to make the organizational structure work in response to Hurricane Katrina, ESC staff deviated from existing plans and procedures in order to accomplish assigned missions.

According to focus group participants, the reason for this was twofold.

- ICS training was generic, and while it addressed the basic concepts, it addressed neither DSHS-specific plans and procedures nor how to apply ICS to the DSHS operational environment.

- The organizational structure seemed to be forced into an ICS format and was not operationally effective.

This latter issue is not unique to DSHS. Congressional assessments of the federal response to Katrina highlighted this problem with the National Response Plan. Other state agencies also struggled with how to appropriately incorporate ICS concepts at the state level for a support role, since ICS is primarily intended for tactical field operations.

8.5.2 ICS and NIMS Training for Executive Management

Focus group participants recognized that there is an important role in the DSHS response organization for senior leadership. During response to Katrina and Rita, senior management made decisions on regulatory and policy matters that facilitated the health and medical response. However, there were times when senior leadership appeared to be unnecessarily focused on operational details. Some executive leaders and elected officials called the local level and requested information from them. Local responders in focus groups expressed great frustration at this. It distracted them from their response roles and prioritized managements' requests over other potentially greater needs. Local responders also expressed concern that senior management bypassed the Incident Command System structure and contacted them directly. This was confusing and wasted resources.

According to focus group participants, senior managers did not always seem to be well-informed on basic tenets of incident command, like chain of command or unified command. Some focus group participants commented that there were times when senior managers appeared to be "shooting from the hip."

Additionally, elected officials need information and training in the Emergency Support Function (ESF) for health and medical response (ESF-8). This would improve decision making during disaster response.

8.5 Recommendations for Training

- DSHS should evaluate the effectiveness of the Emergency Support Center in its current form.
- DSHS should provide its response staff—including senior management—with training and exercising on the Incident Command System basics at least annually.
- DSHS should provide additional, customized Incident Command System training specific to DSHS plans and procedures.
- Training is needed for state and local responders on the National Response Plan, as well as on federal guidelines for reimbursement.
- Elected officials need information and training in the Emergency Support Function on health and medical response (ESF-8) as well as in the basics of the Incident Command System. This would improve decision making during disaster response and would ensure that the established chain of command is allowed to function as designed without undue influence.

8.6 Addressing Animals During an Emergency

The Texas Emergency Management Plan should address the subject of animals. Many evacuees brought pets with them to the shelters. While pets typically are not permitted in shelters, shelter managers made provisions to care for pets. Separating owners from their pets created the potential for mental health anguish and the potential to have evacuees refuse services if it meant being without their pets.

College Station focus group participants believed they developed a good system for addressing the problems of evacuees and their pets. Along with area veterinarians, kennels, and private animal caregivers, they developed several animal shelters where the pets of evacuees could be placed.

8.6 Recommendation on Addressing Animals During an Emergency

- The Texas Emergency Management Plan should address how to handle animals during an emergency. DSHS should be involved in this process to address the emotional impact on shelter residents of being separated from their pets. Many focus group participants suggested that Texas develop an annex in the Texas Emergency Management Plan concerning animals.

8.7 Evacuations

The decision to institute a mandatory evacuation for counties in east Texas impacted health and medical services. According to focus group participants along the coastal region, the mandatory evacuation burdened health services in several ways.

- Key personnel evacuated the area. For example, some nursing home staff evacuated, leaving residents behind. For personnel who remained, this made conforming to the evacuation order more difficult.

- Emergency and health care workers did not have access to some support services needed for evacuation. For example, gas station attendants, bus drivers, food service employees, and other private sector personnel evacuated ahead of those with special medical needs.

- Even though evacuations were geographically tiered, citizens in the evacuation zone attempted to evacuate at the same time as individuals with medical special needs. This left vulnerable persons with medical needs in large traffic jams along the highway. This caused the frail, the elderly, and other persons with special needs to decompensate en route to their final destination, thus requiring acute care upon arrival.

8.7 Recommendations for Evacuations

- The State of Texas should work with local communities, including private sector entities, to identify:
  - Essential services during an evacuation; and
  - Personnel required to support essential services.
- The State of Texas should identify mechanisms to encourage essential personnel to remain in the evacuation area long enough to assist in the evacuation effort.
- The State of Texas should prioritize healthcare and nursing facility evacuation ahead of the general population during mandatory evacuations.
- DSHS should participate in a statewide exercise on evacuation taking responsibility for health and medical evacuation. The Governor's Taskforce on Evacuation, Transportation, and Logistics recommends an annual statewide hurricane evacuation exercise "to improve coordination and readiness at all levels."

8.8 Surge Hospital Plan

Hospital surge capacity was an issue during the hurricane response. Overall, Texas had sufficient hospital capacity to care for hurricane victims and evacuees requiring medical care. However, not all persons involved in the medical response were aware of available hospital beds. As a result, some focus group participants commented that hospitals were burdened excessively with evacuees requiring treatment. Some areas created medical shelters to support the surge event (e.g., Texas A&M at College Station).

Texas must be prepared to handle surge patients, both in areas directly impacted by the storm as well as in areas inland that accept evacuees. This includes ensuring that current hospitals have adequate ability and plans to surge beyond their normal operating capacity and that cities and communities have plans in place to create short-term field hospitals to provide hospital care that cannot be accommodated by current facilities.

8.8.1 Current Hospital Surge Capacity Plans

Current hospital surge capacity plans must be prepared to handle large volumes of patients due to an all-hazard event. This not only includes having available beds, but also includes having available medical, nursing, and ancillary staff to provide direct medical care and ancillary services. These plans must include protocols to identify patients who need hospitalization in an established hospital (e.g., with an ICU) versus those patients who need medical care but could be treated at an alternate location (e.g., a medical shelter that could handle a lower level of care).

8.8.2 Creation of Federal Medical Shelters

During the emergency, some communities created temporary medical shelters to accommodate the surge in patients. For example, Texas A&M University College of Veterinary Medicine created a medical shelter by converting its animal hospital into a federal medical shelter. Other cities throughout the state provided medical care in special needs shelters.

8.8 Recommendations for Surge Hospital Plan

- DSHS should better communicate to facilities the availability of hospitals beds during a disaster. Some hospitals had capacity and capability to accept hurricane patients. However, DSHS did not clearly communicate this information to those in the field who could have benefited from knowing this information.

- DSHS should establish clear directives on how to provide basic care for evacuees en-route (e.g., medical special needs) in order to prevent patients from requiring hospitalization once they arrive at their shelter location. For example, elderly nursing home residents should receive food, water, and basic medical care en-route in order to prevent minor ailments from becoming more serious ones, and thus requiring a higher level of care at the destination point.

- DSHS should work with local communities to identify locations for temporary medical shelters (e.g., Texas A&M University). Issues such as level of care, equipment needs, service needs (e.g., pharmacy, dietary, nursing care), physical plant needs (e.g., backup power), cost sharing, and what rules can be relaxed during an emergency (e.g., HIPAA) must be discussed and clarified in advance of an emergency.

8.9 Medical Care Issues

8.9.1 Continuum of Care

Focus group participants expressed concern that all evacuees should continue to receive care once they leave a shelter. This was especially a concern for Katrina evacuees from Louisiana who received Medicaid benefits. Initially, Medicaid benefits from Louisiana were applied to Texas, but for evacuees remaining in Texas, Louisiana benefits eventually lapsed requiring evacuees to seek Texas Medicaid benefits.

Many evacuees have chronic medical conditions that could be adequately treated while they were sheltered. However, at some point evacuees required more permanent shelter in their evacuated community, but did not have access to primary care once they left the

shelters. It is essential that these evacuees have access to primary care in order to prevent chronic conditions from eventually needing acute attention at an emergency department.

8.9 Recommendations for Medical Care Issues

- DSHS should work with the state's academic medical community to provide medical support at hub locations during an emergency response.
- DSHS should work with hospitals, nursing homes, group homes, and mental health centers to ensure that similar facility transfer plans are established prior to an evacuation and that these plans do not over-commit a welcoming facility to more transfers than it could reasonably be expected to handle during a surge event.
- DSHS should work with policy makers to identify the long-term healthcare options for evacuees from other states (e.g., Louisiana) with regard to Texas Medicaid.

9 Continuity of Operations

9.1 Continuity of Operations Planning for DSHS

9.1.1 Prioritization of Agency Essential Functions

State agencies need to prioritize their essential functions. Some daily tasks should not continue during emergency response. Many DSHS staff worked 12- or 16-hour shifts for weeks on end to fulfill their emergency roles in addition to continuing their day-to-day workload.

Emergency Support Center (ESC) responders, as well as DSHS regional staff, commented that they felt obligated to continue daily work while still responding to the hurricane emergency. One ESC member remarked that she worked the night shift in the ESC and then stayed most of the next day to fulfill her regular duties. When employees tried to juggle emergency tasks and day-to-day duties, mental fatigue occurred, thus impacting the ability of employees to do their work effectively.

DSHS lacks a systematic system to provide staff to the ESC while also covering day-to-day duties of staff assigned to the ESC. Therefore, staff not only served in their emergency capacity, but also had day-to-day activities waiting for them. In addition, staff who provided extra duty hours did not receive compensation commensurate with time put in at the ESC. Many exempt DSHS employees received compensation time. However, compensation time is capped at a certain level – which many DSHS staff reached – and it must be used during a certain period of time. Staff are finding it difficult to use compensation time, even after the hurricane response, because of a backlog of other work duties.

9.1.2 Long-term Response Planning

DSHS must develop plans for long-term response staffing. During the response period, staff became fatigued and burned out. Many emergencies will be of short duration, but for situations that are expected to last longer than two weeks, DSHS must have policies and procedures in place to rotate staff into the ESC, increase the ability for day-to-day activities to be completed, and promote time off and / or other compensation to preserve the mental health of staff serving an emergency response role.

9.1 Recommendations

- The State of Texas and DSHS should develop Continuity of Operations (COOP) plans that address:
  - Essential agency functions: DSHS should identify its essential functions as the basis for COOP planning. Essential functions are those functions that enable DSHS to provide vital services and maintain the safety and well-being of the general population. DSHS should consider the need to reprioritize routine work duties so that response personnel can focus on emergency duties. Emergency response personnel must have mandated off periods unencumbered by daily work responsibilities.
  - Delegation of authority: To ensure rapid response to any emergency situation, DSHS should pre-delegate authority for making policy determinations and decisions.
  - Orders of succession: DSHS should establish, promulgate, and maintain orders of succession to key positions. Such orders of succession are an essential part of any COOP plan. Orders should be of sufficient depth to ensure DSHS' ability to perform essential functions while remaining a viable part of the State government through any emergency.
  - Alternate facilities: DSHS should designate alternate operating facilities (e.g., in Arlington) as part of its COOP plans, and prepare its personnel for the possibility of unannounced relocation of essential functions. Facilities may be identified from existing agency local or field infrastructures, or external sources.
  - Interoperable communications: DSHS should ensure redundant critical communication systems to support connectivity to internal organizations, other agencies, and the public.
  - Vital records: DSHS should protect and make readily availability electronic and hardcopy documents, references, records, and information systems needed to support essential functions.
  - Testing, training, and exercising: Testing, training, and exercising of COOP capabilities are essential to demonstrate and improve the ability of DSHS to execute its COOP plans.

- Before the Texas Department of Health (TDH) reorganization in 2003 (HB 2292), TDH developed a draft business continuity plan in April 2003. DSHS should review this plan and adopt portions of the plan that remain applicable to the current organization.

- DSHS should consult the Federal Preparedness Circular (FPC) 65 for guidance in developing a continuity of operations plan.
  - FPC-65 provides guidance to Federal agencies, but it is a useful tool for all levels of government.
  - FPC-65 provides guidance "in developing viable and executable contingency plans for the continuity of operations (COOP). COOP planning facilitates the performance of department/agency essential functions during any emergency or situation that may disrupt normal operations."

- DSHS should work with legislative partners to identify appropriate policies to compensate employees for emergency response duties. In particular, policies should ensure that exempt employees receive appropriate compensation for time served in response to an emergency situation.

10 Conclusion

The Texas response to hurricane Katrina has been described by some as a "remarkable humanitarian operation." Communities all across the state of Texas sheltered and cared for nearly 500,000 Katrina evacuees.

The state of Texas was further tested when hurricane Rita threatened the gulf coast in late September 2005. Both Texas residents and approximately 146,000 Katrina evacuees living in east Texas hotels and shelters were evacuated from 22 counties. On September 24, 2005, Hurricane Rita came ashore at Sabine Pass, Texas causing widespread destruction in both Texas and Louisiana.

The State of Texas responded by mobilizing its resources to support the medical and emergency needs of individuals impacted by both hurricanes.

Overall, Texans can be proud of its health and medical response to hurricanes Katrina and Rita. However, as with any incident of such extreme magnitude, problems arose. The Texas Department of State Health Services sought to identify and resolve these problems by calling for the development of an After Action Report. The Litaker Group met with approximately 250 people across Texas at both the local, state and federal levels through focus groups and in personal interviews. The goal was to understand the past response and to learn how to better able provide a much stronger health and medical response in the future.

11 Health and Medical Response Summit

11.1 Introduction

On Tuesday April 18, 2006 the Department of State Health Services (DSHS) convened a one-day summit to discuss the policy issues related to health and medical disaster response in Texas. This summit brought together over 150 partners and stakeholders from across the state to review findings from the recently completed After Action Report (AAR) and to participate in breakout sessions to provide solutions to some of the issues identified in the report. Participants included local, regional, and state public health officials, business leaders, community partners, government officials, university health science centers, and professional organization leaders (e.g., Texas Medical Association).

During the summit, participants raised questions about the lack of information in the AAR concerning the evacuation and sheltering of children and adolescents. These comments are summarized in Section 12.3.

11.2 Breakout Sessions

The purpose of the breakout sessions was to give participants the opportunity to provide solutions on topics identified in the After Action Report. The four topics covered during the breakout sessions were:

1. Preparedness
2. Evacuation
3. Special Needs
4. Partnerships

Each breakout session was repeated, thus affording participants the opportunity to attend two breakout sessions. Each breakout session had a primary facilitator and co-facilitator. The breakout sessions included two subject matter experts from DSHS who were familiar with the topic and were able to provide context and analysis concerning ongoing initiatives within the agency. Solutions provided by participants were captured, recorded, and presented to DSHS for further review and consideration. Summary information for each breakout session is presented below. Please note that the summary information is based on participant comments and does not represent actual policy implementation.

11.2.1 Preparedness

- Children are part of the special needs population but have specific needs for medical care. Existing care in shelters is not always appropriate.
- Issues discussed in this forum, although hurricane focused, should be expanded to include an all hazards approach.

- Participation on the part of any agency and / or private organization in a disaster response will hinge on some level of funding.
- Sheltering is a massive problem and requires extensive planning to include:
  - Pre-designated shelters
  - Special needs shelters
  - Pet friendly shelters
  - Shelter distribution hubs
- There is a need to clearly define the "special needs population."
- There is a need to clearly define parameters of a "mandatory evacuation."

11.2.2 Evacuation

- Any national patient tracking system that is established must be used daily and adapted during a disaster to aid in patient tracking.
- Nursing homes, assisted living, and related facilities must maintain a level of responsibility for themselves. They must have appropriate evacuation plans and viable transportation contracts that can be executed in time of evacuation. These facilities cannot evacuate to shelters; they should evacuate to "like" or "sister" facilities. These plans should be updated and exercised on a regular basis. The lack of due diligence on the facility's part must be accompanied by some penalty.
- Evacuation plans for essential personnel must make provisions for essential personnel to care for their families prior to mass evacuation. Appropriate identification / badges should be used to identify essential personnel who can be allowed into restricted or evacuated areas post-disaster.
- Areas vulnerable to hurricanes should construct hardened facilities for the protection of assets and the protection of essential personnel that may be in harms way.
- Reimbursement is a great concern. Private industry and local agencies cannot support the increased costs of supplies and personnel associated with a response and / or sustained aid to the community without some level of compensation.

11.2.3 Special Needs

- During a disaster, a centralized resource tracking "clearinghouse" that can assist in identifying and distributing resources is needed. The clearinghouse should track the following.
  - Surge capacity of hospitals not in evacuation zones
  - Surge capacity of nursing homes not in evacuation zones
  - Bed counts at shelters
  - Availability of doctors and nurses forced to evacuate and who are available for reallocation
  - Regional Advisory Council (RAC) resources and staffing availability
  - Stockpiles of supplies
  - Availability of established oxygen fill stations

- Resources to help local communities meet state expectations
- Home health patients

11.2.4 Partnerships

- Partner organizations should be active, participative stakeholders before, during, and after an emergency situation.
  - Identify new collaborative relationships with partners and foster current relationships
  - Conduct ongoing annual emergency preparedness training that includes partner organizations
  - Develop directories and web-based interfaces that allow partner resource capabilities to be immediately accessible during an emergency

11.3 Needs of Children and Adolescents

After the summit, participants provided comments regarding the report and its findings. Most comments focused on the lack of specific information and findings related to child and adolescent health.

Issues specifically mentioning pediatrics were not included in the draft copy of the After Action Report because they were not identified as a major issue in focus groups or personal interviews. To ensure that concerns regarding children and adolescents were captured, a series of meetings and interviews with interested pediatricians were conducted after the summit. The issues and comments raised during this process are reported below.

11.3.1 Introduction

Children and adolescents represented nearly 30% of all evacuees cared for in shelters during the response to Hurricanes Katrina and Rita. Despite this number, pediatric and adolescent care was not consistently recognized as a distinct medical need in the early stages of the evacuation.

11.3.2 General Concerns

Pediatricians indicated that they were not initially invited to be involved with the health and medical response at many evacuation shelters. They noted that their experience, not only in dealing with pediatric-specific issues, but also in recognizing specific needs of children is extremely important, but was lacking in the initial stages of the response. They noted that children manifest both medical and mental health problems in ways a physician trained in adult medicine may not recognize. Additionally, some infection control issues that occurred in the shelters (e.g., norovirus outbreaks, previously known

as Norwalk agent, in Houston and Dallas) started in pediatric patients, before spreading to all ages. Appropriate infection control measures, like hand washing, hand sanitizer use, appropriate immunization updates, and isolation of patients with infectious diseases (like acute diarrheal diseases) must be instituted immediately in shelter settings. Shelters should have access to ImmTrac, the Texas state immunization registry, or to immunization registries from other states if evacuees come from outside Texas, to document what immunizations are given, and to avoid giving duplicate or unnecessary immunizations to children.

Pediatricians also noted a general lack of age-appropriate supplies. For example, pediatric dosing and formulations of medications and immunizations were not available. Specific supplies, like infant formula, diapers, oral electrolyte solution, g-tubes for children, and other pediatric-specific emergency supplies, were not readily available in the initial stages of shelter medical care. It is important for pediatric-appropriate supplies to be available to treat children.

Several interview participants raised the subject of home health care and special needs children. In particular, home health care for children was a concern. Many children with chronic conditions are cared for in their homes by parents, with supplemental care provided by home health care agencies. During the hurricane, many home health care providers evacuated, thus leaving parents to care for their children alone. In this situation, parents who were unable to meet the health needs of their children took their children to the hospital. This created concern due to the unknown number of children who might require such hospital care and because of the general lack of pediatric bed surge capacity in most hospitals. Many of these children are dependent on technology and must have access to electrical or battery power for ventilators, suction machines, nebulizers, and IV pumps.

Individuals interviewed also expressed concern about what constitutes a “special needs child.” In particular, they noted that children with special needs are different than adults with special needs. Interview participants noted that there is no pediatric special needs registry and that such a registry, operating at the state level, should be created. Data for such a registry could be populated not only by home health care agencies and parents but also by pediatric clinics from around the state that provide physician or nursing oversight for children who are treated for chronic conditions in their homes. Data in the registry should include identifying information and contact information for the patient, responsible caretakers, doctors, hospitals / clinics, home health care, and information on patient diagnosis and medication use.

11.3.3 Children

Children have distinct medical needs that are different from adult medical needs. For children, the right treatment paradigm includes having age-appropriate equipment, appropriate medication formulations and dosages, and the availability of healthcare providers with specific training to recognize and treat pediatric illnesses and injuries. It is important that pediatric-specific supplies be made available. In addition, treatment of children by physicians trained in adult medicine was a concern. It is important that pediatric trained physicians, nurses, and mental health counselors evaluate children because children often present differently than adults. For example, a young child may present with crying, but have no obvious symptoms. The crying child may be frightened, have unrecognized trauma, or a serious illness like meningitis. Likewise, a young child may seem to be "quiet" while in reality he or she may be disengaged or depressed, lethargic, poisoned, dehydrated, or in shock. The lack of individuals in shelters trained to recognize and to respond to these signs and symptoms can lead to immediate medical crises for children or to future potential mental health problems (e.g., depression and Post-Traumatic Stress Disorder).

Children need a safe space and opportunity to play in the shelter setting with appropriate child care or mental health workers. Such a setting not only provides parents some respite to deal with their own emotions without their children witnessing this turmoil, but it also provides the children an early opportunity to begin to work through their own feelings about what they have just experienced. Children must be protected from repetitive media coverage, which most adults crave after a disaster, but which only reinforces traumatic experiences for children.

Evacuation of critically ill children, premature infants, and newborns from hospitals occurred in areas threatened by Hurricane Rita. To ensure an efficient process of evacuation, emergency transport functions and pediatric tracking mechanisms should be in place prior to such evacuations. Such evacuations should also consider the availability of pediatric surge beds in other hospitals to ensure capacity to receive these patients. Interview participants noted that contacts from both specialty children's hospitals and pediatricians worked well to coordinate ongoing care for children evacuated from hospitals. They would encourage the Department of State Health Services to be aware of this effort and to support these efforts in future evacuations.

11.3.4 Adolescents

Adolescents often have distinct medical and mental health needs as compared to young children and adults. During evacuation and sheltering, adolescents sometimes were asked to shoulder certain responsibilities by family members without explicit thought of the needs adolescents themselves may have. For example, adolescents may have taken on the responsibility for caring for younger siblings or an elderly adult. Generally speaking, many adolescents are able to handle this responsibility in the initial stages of an event, but may require counseling or treatment during the next stages of the event if the

situation becomes prolonged. Pediatricians and adolescent health experts noted that mental health care should have the same priority as medical needs and that there must be mental health experts on site who are trained in adolescent and pediatric issues. Adolescents who become overwhelmed or stressed during an event may present with irritability, outbursts, or other inappropriate behavior.

Attention to adolescent needs and ensuring that they are accommodated during an emergency response can not only prevent outbursts and inappropriate behavior, but can also be used as a tool to encourage additional responsible behavior from adolescents. For example, during a non-acute sheltering situation that occurred in Houston, adolescents did not have a sense of belonging. A key resource for adolescents is often their peer group. Contact with these friends is essential to their retaining a sense of normality (e.g., contact can be maintained through text messaging, email, etc.). It is also important for adolescents to have a safe space independent of young children and adults, which would allow adolescents a chance to be with others of a similar age. Such a space could include activities suitable for the age group (e.g., sports, movies, video games, etc.).

11.3 Recommendations That Emerged From Interviews with Pediatricians

- DSHS needs to promote the use of pediatric specialties in medicine, nursing, and mental health in providing health and medical care during a disaster, including the availability of these specialties at shelters in which medical care is provided.
- Emergency responders must utilize pediatric-specific emergency care guidelines.
- Emergency responders should avoid separating children from their caretakers when possible.
- Emergency medical care facilities should provide age-appropriate medical supplies to accommodate the needs of children. Such supplies should include:
  - Pediatric strengths and formulations of medications
  - Pediatric vaccinations and access to state immunization registries
  - Infant formula, baby food, and oral electrolyte solutions
  - Diapers
  - Age-specific medical supplies (e.g., blood pressure cuffs and g-tubes)
  - Awareness of appropriate infection control procedures and supplies
- The Department of Family and Protective Services (DFPS) should be involved at shelter locations to deal with issues related to children in protective custody, abuse, neglect, or separation from families.
- The parents or caregivers of children with special health care needs should establish emergency plans to ensure appropriate care when usual sources of support are not available to the child.
- Children with special health care needs should be included and tracked in a statewide registry.
- The mental health needs of children must be considered and provided for. Children have different mental health needs and abilities to cope with adverse events. Mental health professionals trained in assessing and treating the mental health needs of children should be made available at shelter locations.
- Local emergency management must ensure that all homebound special needs children are registered with the proper authorities to ensure that emergency personnel are aware of their location, condition, and specific needs and are able to evacuate these individuals.
- Consideration should be given at the shelter level concerning the provision of separate safe "spaces" to children and adolescents. This space would be an area where adolescents could be away from children and adults and have activities to help keep them occupied (e.g., sports, video games, text messaging, email). A separate supervised area for children to play away from their parents in a secure setting would provide an opportunity for "normal" activities of childhood as well as provide a chance for children to work through feelings about their experiences. In addition, appropriate mental health support should be available for children and adolescents in these areas.

12 Appendices

12.1 Acronyms Used in This Report

COOP	Continuity of Operations Plan
DADS	Texas Department of Aging and Disability Services
DDC	District Disaster Committee
DLT	Departmental Leadership Team (DSHS)
DMAT	Disaster Medical Assistance Team
DSHS	Texas Department of State Health Services
EOC	Emergency Operations Center (operated by a county or city Emergency Management Department)
ESC	Emergency Support Center (operated by the Texas Department of State Health Services)
FEMA	Federal Emergency Management Agency
HHS	U.S. Department of Health and Human Services
HHSC	Texas Health and Human Services Commission
HIPAA	Health Insurance Portability and Accountability Act
HSR	Health Services Region (DSHS)
ICS	Incident Command System
JFO	Joint Field Office
NDMS	National Disaster Medical System
NIMS	National Incident Management System
RAC	Regional Advisory Council
RMOC	Regional Medical Operations Center
SAMHSA	Substance Abuse and Mental Health Administration
SNS	Strategic National Stockpile
SOC	State Operations Center
TMA	Texas Medical Association
TNA	Texas Nursing Association

12.2 Recommendations Matrix

Section No.	Section Name	Recommendation
5.1	Information Management: Information Flow	• DSHS and the Governor's Division of Emergency Management should review current processes and procedures to identify the most efficient way to address critical health and medical needs at the local level.
5.1	Information Management: Information Flow	• DSHS should review the relationship between local health departments and the DSHS Health Service Regions to clarify how local agencies should access regional assets.
5.1	Information Management: Information Flow	• DSHS should promote targeted, rather than blanket, email as an efficient means to communicate with internal and external partners.
5.1	Information Management: Information Flow	• DSHS should promote the use of standard "role" email addresses (e.g., person.in.charge@dshs.state.tx.us) rather than a specific individual's email account. However, email should not be used to track tasks; this role should be fulfilled by WebEOC or another appropriate tracking system.
5.1	Information Management: Information Flow	• The State of Texas should adopt a single emergency management tracking system to be used at all levels of emergency management. This system should allow for multiple agencies to view and post information. DSHS and local health agencies must be fully integrated and able to communicate in such a system. Houston focus group participants noted that an effort is in progress to combine the various versions of WebEOC, then combine WebEOC with EM Systems. However, the data fields in the various systems are inconsistent, and it is uncertain whether EM Systems can be combined with WebEOC.
5.1	Information Management: Information Flow	• DSHS should consistently log and track all issues and requests. ➢ Train and exercise Controllers to answer phones, log all calls, and route calls to the most appropriate individual ➢ Train and exercise DSHS staff in the use of WebEOC ➢ Customize WebEOC to incorporate task tracking forms
5.2	Information Management: Patient and Evacuee Tracking	• DSHS must work with other state agencies to develop a patient tracking system. Several communities are in the process of developing their own tracking systems. The State of Texas needs to ensure that these systems are integrated. Patients evacuating from Corpus Christi, for example, need to be recognized by the system used in San Antonio. Furthermore, evacuee and patient tracking systems should coexist with systems used by the American Red Cross.
5.2	Information Management: Patient and Evacuee Tracking	• A system needs to be established for improved communications of patient evacuations to recipient communities. Recipient communities must know: ➢ Accurate numbers of patients to expect; ➢ Types of injuries and medical conditions to expect; ➢ Expected arrival time; and ➢ If any evacuee is a known criminal, sex offender, etc. so that law enforcement could be part of the group meeting evacuees.

5.3	Information Management: Medical Records for Evacuees	• DSHS should develop standards for patient evacuation that include the transfer of pertinent medical information with evacuating patients. Standards should be created in conjunction with appropriate stakeholder groups. The standards of patient evacuation should address multiple facility types (e.g., hospitals, nursing homes, group homes, mental health facilities) as well as home bound patients. Pertinent medical information to consider in these standards includes: ➢ Most recent physician's assessment, ➢ Most recent order sheet, ➢ Most recent medication administration record (MAR), ➢ Most recent patient history with physical documentation.
5.3	Information Management: Medical Records for Evacuees	• DSHS should review the current U.S. Department of Health and Human Services and Department of Homeland Security initiative to foster interoperable electronic healthcare records systems and review the Presidential Executive Order: *Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator*, April 27, 2004.
6.1	Roles & Responsibilities: SOC / ESC Roles and Responsibilities	• DSHS should revise plans and procedures to clarify the relationship and role of the DSHS Emergency Support Center (ESC) in relation to the State Operations Center (SOC). In particular, DSHS may want to formalize the ESC as the operation center for the Health and Medical Emergency Support Function (ESF-8).
6.1	Roles & Responsibilities: SOC / ESC Roles and Responsibilities	• DSHS should review ESC staffing assignments, define required skill sets, and identify minimum experience and training requirements. Training should go beyond the basics of the Incident Commend System and present specifics on the Texas Emergency Management Plan and the National Response Plan.
6.1	Roles & Responsibilities: SOC / ESC Roles and Responsibilities	• DSHS must be cognizant of local emergency response efforts and seek to minimize requests for routine program requirements while local agencies are responding to a disaster.
6.1	Roles and Responsibilities: SOC / ESC Roles and Responsibilities	• All Enterprise agencies (i.e., Health and Human Services Commission, Department of State Health Services, Department of Aging and Disability Services, Department of Assistive and Rehabilitative Services, and Department of Family Protective Services) should support emergency operations efforts of the lead agency (i.e., the agency charged with supporting the State Operations Center during an emergency as directed by the Texas Emergency Management Plan). Essential functions for each Enterprise agency should be identified in advance and appropriate steps taken to ensure training across the organization for completing these essential functions.
6.1	Roles and Responsibilities: SOC / ESC Roles and Responsibilities	• Essential administrative functions in DSHS should be identified, and staff from sister agencies should be pre-designated and pre-trained to assist in these functions in an emergency. Likewise, healthcare professionals (e.g., physicians, nurses, pharmacists, and nutritionists) throughout the Enterprise should be identified and pre-designated to assist with essential emergency medical operations either in Austin or in the field.
6.2	Roles and Responsibilities: Multiple and Duplicate Response Organizations	• DSHS should establish a standardized reporting mechanism or structure for asset requests and interagency communications. As much as possible, DSHS representatives should integrate their response efforts with the established Governor's Division of Emergency Management asset request structure.

6.2	Roles and Responsibilities: Multiple and Duplicate Response Organizations	• The Health and Human Services Commission (HHSC) Enterprise should consider integrating regional boundaries for all agencies. Within DSHS, Health Service Regions should coincide or overlap with Trauma Service Areas. In instances where a Health Service Region contains multiple trauma service areas, a TSA should not overlap into an adjacent HSR.
6.2	Roles and Responsibilities: Multiple and Duplicate Response Organizations	• During any future regional restructuring, DSHS should consider aligning regions to be consistent with the Governor's Division of Emergency Management regions. This would: ➢ Make coordination of Disaster District Committee activities with DSHS regions much clearer; and ➢ Improve coordination of the Strategic National Stockpile emergency dispensing functions.
6.3	Roles and Responsibilities: Annex H	• DSHS should revise Annex H to reflect the current roles and responsibilities of DSHS post-consolidation and to acknowledge and include HHSC Enterprise agencies and federal partners as additional participants providing health and medical disaster support. DSHS must define agency assignments and resource capabilities more clearly.
6.3	Roles and Responsibilities: Annex H	• DSHS should give consideration to the development of agency-specific operating procedures that reflect all assignments delegated to it throughout the Texas Emergency Management Plan.
7.1	Resource Management: Volunteer Coordination and Credentialing	• DSHS should work with nongovernmental and state partners to develop a mechanism for placing volunteer doctors, nurses, pharmacists, and mental health counselors with the appropriate service needs during a disaster. DSHS should coordinate this effort with organizations that possess existing volunteer systems, such as the Texas Medical Association (TMA) and Texas Nurses Association (TNA).
7.2	Resource Management: Resource Coordination	• DSHS needs to work with resource providers to ensure that no community is entirely without resources, especially locally held assets. All the resources from one community should not be dispatched to assist another. This is particularly true of ambulance resources. A regional emergency medical services mutual aid plan would facilitate the planning of ambulance resource reallocation for disasters of any kind.
7.2	Resource Management: Resource Coordination	• DSHS should be cognizant of the geographic locations from which it requests additional resource assistance. Many focus group participants suggested that resource collection and deployment should start from the north of Texas and move progressively southeast towards the gulf coast. Northern Texas had a limited risk of being affected directly by the hurricane and, therefore, should have been the communities from which DSHS first acquired resources.
7.2	Resource Management: Resource Coordination	• Localities requesting resource assistance should clearly articulate and specify their needs to ensure an appropriate and accurate resource response from DSHS. This effort would be assisted by having health and medical representatives in all local Emergency Operations Centers (EOC).
7.2	Resource Management: Resource Coordination	• DSHS should improve the understanding of partner agency resource capability and document capabilities in emergency plans. DSHS should include the National Guard and military in all medical resource lists with the understanding that some military resources may not always be available. One way to accomplish this would be for DSHS to involve state and federal partner agencies in drills and exercises.

7.2	Resource Management: Resource Coordination	• Localities must make specific needs requests instead of direct asset requests. DSHS should submit requests for assistance to state and federal partners by expressing their capacity needs. For example, instead of requesting a mobile hospital with three doctors and eight nurses, the specific need should be identified and communicated: "We need enough resources to triage and treat 50 patients per hour with minor injuries and enough resources to triage, treat, and hospitalize up to 20 patients for up to four days in a medical / surgical ward."
7.2	Resource Management: Resource Coordination	• DSHS should understand and document specific medical capabilities at the local level before a disaster situation. This would include documenting the capabilities (e.g., decontamination capability, number of beds in ICU, surge capacity, radiology capability, and lab capabilities) of all medical facilities which are able to provide hospital-based care.
7.2	Resource Management: Resource Coordination	• DSHS should strengthen the local relationship with hospitals in areas where there are no local public health departments. This would include working with the Regional Advisory Councils to understand the local medical capability in these areas.
7.3	Resource Management: Emergency Procurement	• HHSC and Texas Building and Procurement Commission (TBPC) contracting specialists should develop contingency contracts with pre-identified manufacturers that meet quality and performance standards in providing specific goods and services in an emergency situation.
7.3	Resource Management: Emergency Procurement	• DSHS should work with state and federal partners to create an emergency funding source that can be used during the initial stages of an emergency situation to procure goods and services.
7.3	Resource Management: Emergency Procurement	• DSHS contracting specialists should review purchasing guidelines for emergency situations and educate DSHS staff on how to best obtain goods that satisfy purchasing requirements while also ensuring good value for taxpayers.
7.3	Resource Management: Emergency Procurement	• DSHS should educate localities on the funding available through Centers for Disease Control cooperative agreements for bioterrorism and how this can be used to support emergency medical response activities.
7.3	Resource Management: Emergency Procurement	• DSHS should consider pre-positioning medical supplies in hub cities throughout Texas to provide quick access by emergency medical providers. Additionally, DSHS should consider developing memoranda of understanding with local private industry providers of health and medical supplies to facilitate acquisition during an emergency.
8.1	Preparedness: Medical Special Needs	• DSHS should coordinate with the Governor's Division of Emergency Management and the other agencies and organizations playing major roles in shelter operations to agree on a definition for medical special needs. DSHS needs to share this definition with other state agencies and local jurisdictions.
8.1	Preparedness: Medical Special Needs	• DSHS should encourage the American Red Cross to review its policies and procedures with regard to accommodating medical special needs in general population shelters when appropriate.
8.1	Preparedness: Medical Special Needs	• Consistent with the Governor's Task Force on Evacuation, Transportation and Logistics and with focus group participant recommendations, future evacuation planning should include provisions for emergency medical way stations and medical care personnel along evacuation routes.

8.1	Preparedness: Medical Special Needs	• Institutions responsible for care for patients or residents must be held responsible for continuing care in a disaster situation. Emergency plans should be required.
8.1	Preparedness: Medical Special Needs	• Individuals with medical special needs should be cared for, to the extent possible, at alternate host facilities—similar to the institutions from which they were evacuated.
8.1	Preparedness: Medical Special Needs	• DSHS needs to plan for the varying mental health needs at general population shelters and at medical shelters.
8.2	Preparedness: Nursing Homes	• Texas should review requirements for nursing home emergency preparedness plans. In particular, officials should review nursing home emergency preparedness plans to ensure that resources identified by a particular nursing home are not the same resources identified by other nursing homes in the region. In addition provisions for maintenance of minimum evacuation resources should be required. Nursing home evacuation plans should include provisions to: ➢ Have a reasonable supply of medication on hand for all patients; ➢ Maintain and transfer medical records for evacuees; ➢ Be able to verify transportation assets; ➢ Have sufficient staff to accompany evacuees; ➢ For high risk geographical areas, have a guaranteed acceptance facility; and ➢ Conduct annual drills and exercises.
8.2	Preparedness: Nursing Homes	• The State should enhance the authority of local government to carefully review and approve nursing home, group home, and assisted living facility evacuation plans.
8.2	Preparedness: Nursing Homes	• The state should develop and publish recommended emergency planning guidelines for nursing home facilities.
8.2	Preparedness: Nursing Homes	• The State of Texas should review emergency planning legislation recently adopted by the State of Florida related to hurricane response. This legislation included provisions to enforce nursing home emergency plans (Chapter 59-A-4.126 Florida Administrative Code).
8.3	Preparedness: Reimbursement	• DSHS and other state agencies need to understand reimbursement policies and procedures prior to disasters. The state should consider identifying a lead agency for managing federal reimbursement for health and medical providers.
8.3	Preparedness: Reimbursement	• DSHS should work with FEMA to ensure an understanding exists as to what services are eligible for reimbursement and what information from providers is needed to ensure a speedy reimbursement process. State agencies should also establish a mechanism to provide prompt feedback to applicants on the status of their request.
8.3	Preparedness: Reimbursement	• The State should consider establishing an emergency fund to pay local or private entities quickly during the initial stages of an emergency.
8.4	Preparedness: Planning with the Private Sector	• DSHS should identify all potential nongovernmental partners for the health and medical response, including private sector vendors, charitable organizations, and professional associations. DSHS should involve nongovernmental organizations in the state emergency planning process. DSHS should identify the resources that nongovernmental partners can provide and, where feasible, develop memoranda of understanding at the state level with these organizations to solidify their support during an emergency.

8.4	Preparedness: Planning with the Private Sector	• DSHS should consider including nongovernmental representatives within their emergency response structure to facilitate private resource acquisition.
8.5	Preparedness: Training	• DSHS should provide its response staff—including senior management—with training and exercising on the Incident Command System basics at least annually.
8.5	Preparedness: Training	• DSHS should provide additional, customized Incident Command System training specific to DSHS plans and procedures.
8.5	Preparedness: Training	• Training is needed for state and local responders on the National Response Plan, as well as federal guidelines for reimbursement.
8.5	Preparedness: Training	• Elected officials need information and training in the Emergency Support Function on health and medical response (ESF-8) and in the basics of the Incident Command System. This would improve decision-making during disaster response and would ensure that the established chain of command is allowed to function as designed without undue influence.
8.6	Preparedness: Addressing Animals During an Emergency	• The Texas Emergency Management Plan should address animals during an emergency. DSHS should be involved in this process to address the emotional impact on shelter residents of being separated from their pets. Many focus group participants suggested that Texas develop an annex in the Texas Emergency Management Plan concerning animals.
8.7	Preparedness: Evacuations	• The State of Texas should work with local communities, including private sector entities, to identify: ➢ Essential services during an evacuation; and ➢ Personnel required to support essential services.
8.7	Preparedness: Evacuations	• Texas should identify mechanisms to encourage essential personnel to remain in the evacuation area long enough to assist in the evacuation effort.
8.7	Preparedness: Evacuations	• The State of Texas should prioritize healthcare and nursing facility evacuation ahead of the general population during mandatory evacuations.
8.7	Preparedness: Evacuations	• DSHS should participate in a statewide exercise on evacuation with responsibility for health and medical evacuation. The Governor's Taskforce on Evacuation, Transportation, and Logistics recommends an annual statewide hurricane evacuation exercise "to improve coordination and readiness at all levels."
8.8	Preparedness: Surge Hospital Plan	• DSHS should better communicate to facilities the availability of hospitals beds during a disaster. Some hospitals had capacity and capability to accept hurricane patients. However, DSHS did not clearly communicate this information to those in the field who could have benefited from knowing this information.
8.8	Preparedness: Surge Hospital Plan	• DSHS should establish clear directives on how to provide basic care for evacuees en-route (e.g., medical special needs) in order to prevent patients from requiring hospitalization once they arrive at their shelter location. For example, elderly nursing home residents should receive food, water, and basic medical care en-route in order to prevent minor ailments from becoming more serious ones, and thus requiring a higher level of care at the destination point.

8.8	Preparedness: Surge Hospital Plan	• DSHS should work with local communities to identify locations for temporary medical shelters (e.g., Texas A&M University). Issues such as level of care, equipment needs, service needs (e.g., pharmacy, dietary, nursing care), physical plant needs (e.g., backup power), cost sharing, and what rules can be relaxed during an emergency (e.g., HIPAA) must be discussed and clarified in advance of an emergency.
8.9	Preparedness: Medical Care Issues	• DSHS should work with the state's academic medical community to provide medical support at hub locations during an emergency response.
8.9	Preparedness: Medical Care Issues	• DSHS should work with hospitals, nursing homes, group homes, and mental health centers to ensure that like facility transfer plans are established prior to an evacuation and that these plans do not over-commit a welcoming facility to more transfers than they could reasonably be expected to handle during a surge event.
8.9	Preparedness: Medical Care Issues	• DSHS should work with policy makers to identify the long-term healthcare options for evacuees from other states (e.g., Louisiana) with regard to Texas Medicaid.
9.0	Continuity of Operations	• The State of Texas and DSHS should develop Continuity of Operations plans that address: ➢ Essential agency functions: DSHS should identify its essential functions as the basis for COOP planning. Essential functions are those functions that enable DSHS to provide vital services and maintain the safety and well being of the general population. DSHS should consider the need to reprioritize routine work duties so that response personnel can focus on emergency duties. Emergency response personnel must have mandated off periods unencumbered by daily work responsibilities. ➢ Delegation of authority: To ensure rapid response to any emergency situation, DSHS should pre-delegate authorities for making policy determinations and decisions. ➢ Orders of succession: DSHS should establish, promulgate, and maintain orders of succession to key positions. Such orders of succession are an essential part of any COOP plan. Orders should be of sufficient depth to ensure DSHS's ability to perform essential functions while remaining a viable part of the State government through any emergency. ➢ Alternate facilities: DSHS should designate alternate operating facilities (e.g., in Arlington) as part of their COOP plans, and prepare their personnel for the possibility of unannounced relocation of essential functions. Facilities may be identified from existing agency local or field infrastructures, or external sources. ➢ Interoperable communications: DSHS should ensure redundant critical communications systems to support connectivity to internal organizations, other agencies, and the public. ➢ Vital records: DSHS should protect and make readily availability electronic and hardcopy documents, references, records, and information systems needed to support essential functions. ➢ Testing, training, and exercising: Testing, training, and exercising of COOP capabilities are essential to demonstrating and improving the ability DSHS to execute its COOP plans.
9.0	Continuity of Operations	• Before the Texas Department of Health (TDH) reorganization in 2003 (HB 2292), TDH developed a draft business continuity plan in April 2003. DSHS should review this plan and adopt portions of the plan that remain applicable to the current organization.

9.0	Continuity of Operations	• DSHS should consult the Federal Preparedness Circular (FPC) 65 for guidance in developing a continuity of operations plan. ➢ FPC-65 provides guidance to Federal agencies, but it is a useful tool for all levels of government. ➢ FPC-65 provides guidance "in developing viable and executable contingency plans for the continuity of operations (COOP). COOP planning facilitates the performance of department/agency essential functions during any emergency or situation that may disrupt normal operations."
9.0	Continuity of Operations	• DSHS should work with legislative partners to identify appropriate policies to compensate employees for emergency response duties. In particular, policies should ensure that exempt employees receive appropriate compensation for time served in response to an emergency situation.