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# Texas' Trauma Hospitals Are Integral to an Effective Trauma Care System

Protecting State Funding is Critical



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# Protecting State Funding is Critical

**283**  
**DESIGNATED  
TRAUMA  
FACILITIES**

**Level I**

**18**  
Facilities

**Level II**

**23**  
Facilities

**Level III**

**55**  
Facilities

**Level IV**

**187**  
Facilities

## Key Messages

- ▶ Trauma takes many forms.
- ▶ When traumatic injuries or incidents occur, quick and professional response can mean the difference between life and death.
- ▶ A growing Texas population requires a growing network of designated trauma hospitals.
- ▶ Achieving and maintaining trauma designation is expensive and resource-intensive for hospitals.
- ▶ Hospitals provide specialized trauma care to anyone needing it, regardless of ability to pay.
- ▶ Delivering high-quality trauma care in a no-notice event requires preparation, practice, drilling and coordination.
- ▶ Trauma hospitals are an integral part of a community's emergency preparedness and response responsibility.

Traumatic injuries from car crashes, falls, assaults or accidents can happen anywhere -- in towns of one-lane roads and no stop lights to those with thousands of miles of six-lane super highways.

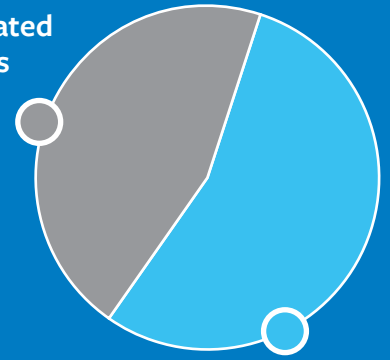
### **Access to specialized trauma care is something all Texans need.**

When a traumatic injury occurs, trauma care is needed quickly. And when a large-scale natural or manmade disaster occurs, the entire trauma care system is needed.

### **Texas trauma hospitals need continued state funding to support their life-saving work.**

Texas currently has 283 facilities that are staffed and equipped to handle trauma cases at any moment and ready to provide specialized care to any Texan needing it. However, a large amount of trauma care is not reimbursed. **Texas' trauma hospitals collectively incurred \$320 million in unreimbursed trauma care in 2016.** This unreimbursed care is in addition to the annual significant costs of maintaining the staff, services and equipment required for trauma designation. State funding dedicated to the state's trauma hospitals combined with federal matching funds offset approximately \$176.4 million of these costs, or just over half.

**Hospital Uncompensated  
Trauma Care Costs  
\$146.6 Million**



**Hospital Uncompensated  
Trauma Care Payments  
\$176.4 Million (all funds)**

Since 2003, this dedicated state funding has allowed more hospitals to achieve trauma designation and has put life-saving trauma care into communities across Texas. Just over a decade ago, there were 245 hospitals in Texas deemed appropriately equipped and staffed to deliver trauma care. Today, there are 283. This means that today, more Texans in more communities have access to life-saving care close to home when a trauma occurs.

However, because of the growing costs of building and maintaining trauma designation and the increasing burden of uncompensated trauma care costs, the number of designated trauma facilities is not keeping up with state's population growth.

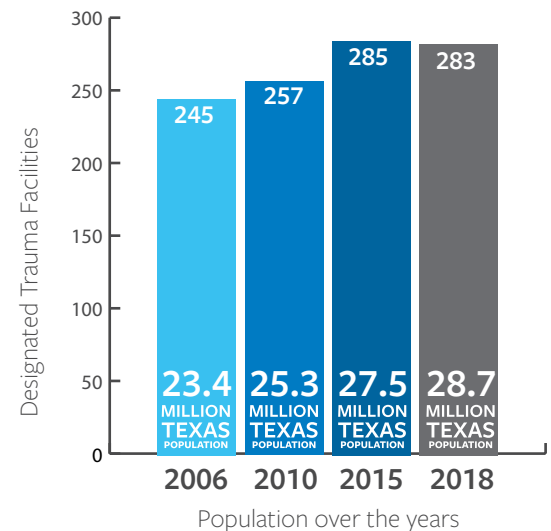
## Mass Shooting at First Baptist Church, Sutherland Springs, Nov. 5, 2017

On Sunday Nov. 5, 2017, shortly after worship began, the First Baptist Church in Sutherland Springs became the site of the state's worst mass shooting in history. Twenty-six parishioners, including nine children, died, nearly all at the scene.

The nearest hospital to the First Baptist Church is Connally Memorial Medical Center, a Level IV trauma center, in the neighboring town of Floresville, 20 miles to the southwest. The nearest Level I trauma center is Brooke Army Medical Center at Fort Sam Houston, 30 miles away. University Hospital, South Texas' other Level I trauma center and the only pediatric Level I trauma center, is 40 miles away.

**On Nov. 5, all three of those hospitals, and their partners in EMS and law enforcement, had an instrumental role to play in saving lives as part of the region's comprehensive trauma system.** While 26 individuals died at the church, 20 additional people survived yet had massive injuries and required immediate and long-term trauma care. Of the 20 victims cared for at the scene and transferred to the area's trauma hospitals, one pediatric patient succumbed to her injuries.

**Number of Designated Trauma Facilities vs. Texas Population, 2006-2018**



# Mass Shooting at First Baptist Church

**Less than an hour after the shooting began, all three hospitals had initiated their emergency response plans** that included calling in extra physicians and surgeons, opening up trauma bays, alerting the blood banks, preparing resources and supplies and setting up security. Within 15 minutes of initiating its emergency response plan, five ER nurses and one technician showed up for duty at Connally Memorial Medical Center. Within 30 minutes of being notified of the shooting, Brooke Army Medical Center prepared 10 operating rooms and called in 30 surgeons and physicians from various other departments. University Hospital notified its trauma teams of nurses, anesthesiologists, technicians and surgeons and rescheduled all elective surgeries so that every operating room would be available for the shooting victims. As Level I trauma hospitals, Brooke Army Medical Center and University Hospital are required to have functional, robust blood banks. As part of trauma team activation, these blood banks were notified so that they could activate their protocols and alert their local and regional partners in the event more blood than was available would be required.



Connally Memorial as the closest hospital received eight patients, almost all with gunshot wounds. Its first patient, a child, arrived with approximately five gunshot wounds, a shattered femur and hip and multiple wounds to her abdomen and extremities. One of her injuries was a large exit wound that exposed her spine and hip. The ER team immediately packed her wounds with quick-clot and administered crash blood and medications. Once stabilized, she was transferred to University Hospital for more extensive trauma care. Over the next two hours, Connally Memorial received six adult patients with multiple extremity gunshot wounds and abdominal injuries. Another arrived via EMS with a head injury. Three of these adult patients were transferred to University Hospital for a higher level of trauma care. One patient underwent surgery and was admitted. Three were stable enough to be released late in the afternoon.

Brooke Army Medical Center received eight patients, all adults. All survived. One, a 56-year old man, had multiple gunshot wounds that required five surgeries to repair over more than three weeks in the hospital. BAMC trauma surgeons repaired his right arm using a vein from his leg to reconstruct one of two blood vessels in his forearm. Following reconstruction by the vascular team, an orthopedic surgical



team performed nerve reconstruction. Physical and occupational rehabilitation therapy continued for months afterwards.

University Hospital received nine patients. As the only pediatric Level I trauma center in the region, University received the four critically injured children. In fact, University Hospital’s first patient from First Baptist was a five-year old with a broken femur, bullet fragments buried in his abdomen and a severed blood vessel in his arm. Within the next hour, three other children would join him, two of whom had extensive damage from gunshot wounds and the other with injuries from being trampled. Five adults, all bleeding from multiple gunshot wounds, also arrived. One of the pediatric patients died in the operating room. The rest underwent multiple surgeries and rehabilitation over the next several weeks and months. The last patient, a six-year-old boy, finally left the hospital more than two months later, on Jan. 11.

**Rapid response, coordination and effectiveness in events like this can occur only with planning, preparation, collaboration and communication.**

Just a few months earlier, under the auspices of the Southwest Texas Regional Advisory Council, University Hospital and Brooke Army Medical Center, and their EMS and law enforcement partners completed a joint mass casualty drill. The drill posed a hypothetical scenario that 60 people had been shot and needed care. With simulated patients, first responders and hospitals practiced their response. This type of community-wide exercise is designed to maintain the readiness of hospital and emergency response staff to be able to respond and react to any all-hazard emergency. These regular drills are in addition to monthly meetings of all regional trauma stakeholders and to table top exercises where decision makers talk about what will happen – where patients will go, who will care for them, who is responsible for what – in case of a mass casualty event.

And, as a reminder that trauma injuries occur in homes, on highways, at workplaces on scales large and small every day and that the trauma system responds to all of them, University Hospital annually provides trauma care to more than 5,600 adults and nearly 2,000 children each year.



Trauma  
Costs

Hospital	Trauma Level Designation	Uncompensated Trauma Care Costs, 2016
Brooke Army Medical Center	Level I	Not available
University Hospital	Level I and Level I pediatric trauma center	\$21,255,720
Connally Memorial Medical Center	Level IV	\$44,051

# Explosion at Coryell Memorial Healthcare System

## Explosion at Coryell Memorial Healthcare System, Gatesville, June 26, 2018



On June 26, 2018, Coryell Memorial Healthcare System, a 25-bed critical access hospital and Level IV trauma facility in Gatesville, about 38 miles west of Waco, became the site not only for trauma and disaster response but the site of disaster itself.

At 2:30 that afternoon, a large explosion decimated new construction underway to expand the hospital. The building partially collapsed, and the explosion ignited a large fire. Fifteen construction workers were inside the building under construction during the explosion and were severely burned and injured. One additional worker was on the roof at the time of the blast and died at the scene.

Coryell hospital and clinic physicians and nurses immediately attended to the 15 wounded workers. Onsite paramedics were able to quickly begin transporting the injured. **Minutes after the explosion, with one phone call from the hospital to the regional advisory council, emergency transport was routed to the hospital and the 15 injured workers were triaged and within an hour sent to higher level trauma centers as far away as Dallas and Austin** -- Baylor Scott & White Temple, Baylor Scott & White Hillcrest, Parkland Burn Center, Brooke Army Medical Center and Dell Seton Medical Center. The RAC activated the state's Emergency Medical Task Force to ensure the availability of rapid professional medical assistance and resources, including ambulances.

Of the 15 critically injured and burned construction workers transferred to hospitals, 13 survived. Because of this well-established, highly functioning trauma system and the integration of the EMS system as part of the health care team, Coryell Memorial was able to provide immediate on-the-ground care and arrange for appropriate transfer of the injured to other designated trauma facilities that could provide a higher level of trauma care and then turn its attention to caring for existing patients and other individuals affected by the explosion.

## Trauma Costs

Hospital	Trauma Level Designation	Uncompensated Trauma Care Costs, 2016
Brooke Army Medical Center	Level I	Not available
Coryell Memorial Healthcare System	Level IV	\$65,408
Goodall-Witcher Hospital Authority	Level IV	\$36,132
Baylor Scott & White Temple	Level I	\$3.7 million
Baylor Scott & White Hillcrest	Level II	\$3.2 million
Brooke Army Medical Center	Level I	Not available
Dell Seton Medical Center	Level I	\$14.8 million
Parkland Hospital & Health System	Level I	\$23 million

Because the hospital itself was the site of the disaster, it not only had to care for the wounded, it also had to manage the care of patients already in the hospital. At the time of the explosion, the hospital had 10 inpatients. All 10 of those patients, as well as one patient in the hospital's emergency department, were transferred to Goodall-Witcher Hospital in Clifton, about 30 miles away. As rural and critical access hospitals, Coryell and Goodall-Witcher have a longstanding relationship that was absolutely essential for Coryell to be able to quickly and seamlessly transfer its patients to another trusted facility without interruptions in care. Coryell nurses, physicians and physical therapists accompanied the transferring patients and stayed with them for the first two days to ensure continuity of care and familiarity. Five other patients in Coryell's ER were transported to different facilities.

In addition to managing the care and transfer of inpatients, Coryell Hospital had to transfer the residents of an adjacent nursing home and assisted living center. Nearly 110 elderly residents from both of these facilities were transferred to other facilities in Gatesville or Clifton or to family homes.

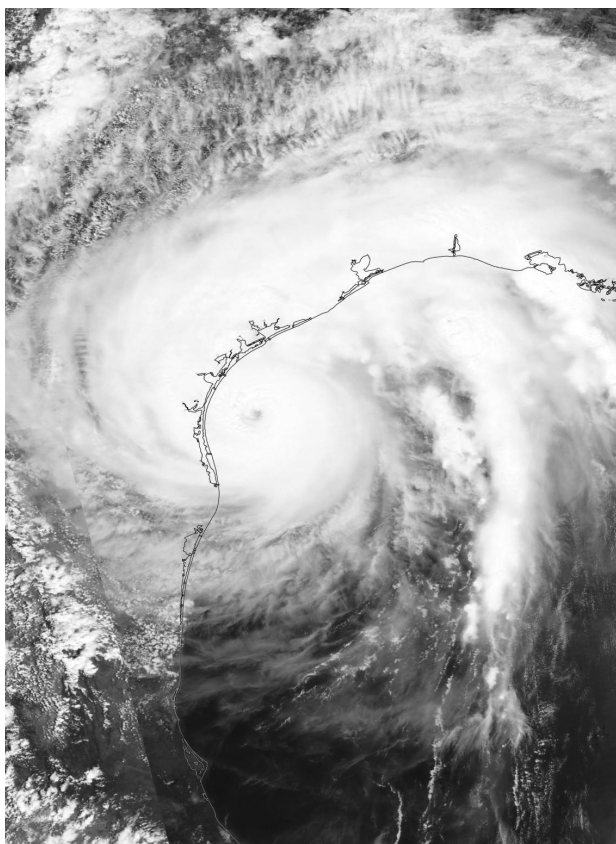
**Despite the devastation, just four days later, by June 30, Coryell's urgent care clinic was reopened;** the emergency room by July 1 and the full hospital by July 3. Residents of the nearby long term care facilities were able to return by July 2.



# Hurricane Harvey

## Hurricane Harvey, Texas Gulf Coast, August 2018

In the parlance of emergency preparedness professionals, a hurricane is a “notice event.” There is advance warning and time, however brief, to prepare. Distinguished from a “no-notice event,” such as a mass shooting that occurs without warning, a hurricane, particularly one of the size and longevity of Hurricane Harvey challenges not only the immediate medical response to treat traumatic injuries, such as broken bones, lacerations and bites from snakes and other animals seeking higher ground from floodwaters, it also requires the entire emergency preparedness and response system, of which trauma hospitals are an integral part, to be functioning at the highest level and capacity.



While all hospitals along the Gulf Coast were impacted by Hurricane Harvey, one system's experience provides insight into the depth and scope of preparation and response the storm required. HCA has 13 hospitals in the greater Houston area and an additional five in Corpus Christi, all in the path of Harvey. **When the weather forecast predicted Harvey's landfall near Corpus Christi, HCA immediately initiated its pre-deployment activities for its five Corpus hospitals.** 120 to 96 hours before landfall, these activities included evacuating the most vulnerable patients and those dependent on electricity for ventilator or other mechanical life support – those in the NICU and in the ICU – via air and ground ambulance to other HCA facilities. Sixteen helicopters and five airplanes were deployed. The system also assembled supplies, pharmaceuticals, linens, generators, fuel, drinking water and food to accompany “ride out” teams of hospital clinical and facilities staff who would stay at the hospital for the duration of the storm to ensure continuity of care for existing patients and care for anyone who needed it during the storm. These activities follow a detailed playbook of guidance and instruction written with the knowledge, wisdom and practical experience gleaned from HCA's hospitals around the country having weathered other hurricanes and storms. The system also initiated its command center operations – at the system's corporate headquarters in Nashville, at the division level and at each impacted hospital. These command centers maintain open lines of communication 24 hours a day to facilitate immediate problem solving.



When it became clear that Harvey would make a second landfall right on the city of Houston, HCA initiated the same pre-deployment activities for its 13 Houston-area hospitals. One facility was completely evacuated because it was in a flood prone area, and its main power source was in the basement. Within three hours, all 111 patients were successfully transferred. In total, 660 patients were transferred to other hospitals or facilities, nearly all of which were HCA facilities to maintain continuity of patient care.

Nearly 3,000 patients were cared for at HCA's Gulf Coast hospitals during the storm, and nearly 8,000 patients, physicians, staff and family members were sheltered within the hospitals for the length of the storm. **No lives were lost.**

Once the rain stopped and flood waters slowly began to recede, patients started presenting in hospital emergency departments for care for once-chronic conditions that had turned acute because of the lack of accessible, community-based care during the storm. Patients needing oxygen, dialysis and medications sought care at the only sites that were open – hospitals. Other patients with injuries incurred from rescue and repair accidents also needed treatment. At the same time, hospital staff had been on duty and in the hospitals for five straight days. Exhaustion had set in. HCA flew in nurses from other hospitals around the country to provide indispensable relief for their exhausted staff who needed not only rest but to assess damage at their own homes. For three more weeks, the HCA hospitals continued modified command operations as staffing challenges persisted and damage to buildings and equipment emerged. HCA also provided Employee Assistance Program (EAP) services to their employees impacted by the storm. Support for the employees ranged from financial through its HOPE fund, gift cards for rideshare to allow clinical staff to return to work, assistance in completing FEMA applications and social work services to support their ongoing needs.

Causing nearly \$200 billion in damages, Hurricane Harvey remains one of the most expensive natural disasters in U.S. history. Hospitals incurred some of those costs in addition to hundreds of millions in costs in staff overtime, security, lost revenue and supplies and resources from air transport to bed linens. **For a once-in-a-century storm of the size and devastation of Harvey, it is a testament to the decades of hospital investment in emergency preparedness and response and in being a part of a trauma response system that minimized the storm's death toll and ensured that only 20 hospitals total were evacuated or closed, and all but one just temporarily.** All hospitals help form this vital infrastructure, but having a strong trauma system that plans, prepares and practices for disasters of all types is absolutely critical.





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