THOT Presents: Break to Educate

Texas’ Trauma System

Mr. George Hernandez; President & CEO; with Dr. Stewart & Leni Kirkman: University Health System

Jorie Klein, Parkland Hospital & Health System

Lori Upton – SouthEast Texas Regional Advisory Council
1. Overview of THOT
2. THOT hospitals’ commitment to proving lifesaving trauma care
3. Why is state funding is critical to the Texas Trauma System?
4. What is trauma and who needs the trauma system?
5. Disaster preparedness & the trauma system
6. Trauma system funding
   • Then & Now
   • Impact of the Driver Responsibility Program
   • Over $300 million in uncompensated trauma care provided in 2015
7. Trauma funding challenges today & next session
   • Working together for sustainable, dedicated funding
THOT – What we do

THOT % of All Hospital Activity Key Areas 2013

- **Trauma care** - 10 of the state’s 17 highest level, regional trauma centers (Level 1)
- **Waiver support** - 11 of the state’s 20 anchors for the 1115 Transformation Waiver
- **GME**: About 63 percent of Texas hospital systems’ Graduate Medical Education (GME) residency positions;
- **THOT member transferring hospitals** provide the majority of IGT (state match) supporting Medicaid DSH and Waiver payments to Texas hospitals
Context: Texas Ranks 1\textsuperscript{st} in % of uninsured
Context: Uninsured by County

PERCENTAGE OF POPULATION UNDER 65 WITHOUT HEALTH INSURANCE

- 27% - 37%
- 23% - 27%
- 21% - 23%
- 19% - 21%

Estimates (2005) by Texas State Data Center

Provided by CPPP
www.ccppp.org
Texas:
• 22 Regions (Regional Advisory councils)
• 17 Level I trauma centers

South Texas:
• Texas Trauma Services Area P
• 2 Level I trauma centers
• 26,770 square miles – larger than West Virginia
• 22 counties
• More than 2.4 million people

Source: Office of EMS/Trauma Systems Coordination
THOT hospitals’ commitment to trauma

University Health System in San Antonio.
$899 million investment to assure lifesaving trauma services are immediately available 24/7

State-of-the-art Sky Tower opened in 2014
Highly trained specialists & advanced technology
In the hospital every day around the clock

Lifesaving resources were available at University Hospital when Traci Lopez and her daughter Ava were hit by a drunk driver while gardening in their front yard. Ava has made a miraculous recovery from her traumatic brain injury.
What is Trauma?

Trauma includes injuries such as:

- Vehicular collisions
- Falls
- Gunshot wounds
- Burns

Traumatic injury is the leading cause of death of all Americans from birth through age 46.

- 192,000 deaths from trauma
- Annual societal cost of more than $671 billion
A network of acute care hospitals, personnel, and organizations that function in an organized and coordinated manner in a defined geographic area.

The trauma center and its surgical care team provide just one element in an inclusive and integrated system of “disease management” for injury.
The inclusive trauma system uses the full spectrum of acute care facilities to provide trauma care.
• Make best use of resources
• Match patient needs to facility resources
• Engage all hospitals in management of injured patients
• Ensure system is functioning in best interests of patients through performance improvement and patient safety activities
• Reduce the burden on the highest level trauma centers
• Improve surge capacity during mass casualty events
Trauma Care Continuum

Preinjury

Prehospital

Emergency department
Resuscitation guidelines
and triage transfer
guidelines to a trauma
center as needed

Trauma center
surgical teams
ready 24/7

Rehabilitation
care considered
on admission

Step down unit
or general
surgical floor for
continued care

Inpatient Trauma Care

ICU triage is a
continuous process,
protocols in place
and enforced

Adult and pediatric
surgical ICUs
maintain admission
capability 24/7

Mental, behavioral
health (substance
abuse), and social
services consults
as needed

Discharge from
hospital with plans
for follow-up care

Postacute Care

Inpatient rehabilitation
facility

Home with or
without rehabilitation

Death

TRAUMA DATA COLLECTION

Enhanced 9-1-1
standardized
dispatch protocols,
and bystander
care guidelines

Standardized
triage and transport
protocols reflective
of patient needs,
facility resources,
and bypass

EMS Prehospital
standardized
protocols and
medical direction

Injury prevention

TRAUMA SYSTEM PERFORMANCE IMPROVEMENT

Community reintegration
plans in place
Mass Casualty Response

Jorie Klein, RN, BSN
Director, Trauma Program - Rees-Jones Trauma Center
Parkland Memorial Hospital

Eric Epley, LP, Executive Director, STRAC
San Antonio, Texas
Disaster Response brings our worlds together

- **Acute Healthcare**
  - Trauma/Emergency Care

- **Public Health**
  - Surveillance, Education, Vaccination

- **Human Services**
  - Social Services, Sheltering, Functional Needs

- **Emergency Management**
  - Planning, Response, Recovery, Mitigation

- **Epidemiologists, Preventionalists, Sanitarians, etc**

- **Hospitals, EMS, Pvt MDs, etc**

- **Red Cross, Salvation Army, Behavioral Health**

- **Coordinators, Homeland Security, Planners**

**TEACHING HOSPITALS of TEXAS**
ESF-8 Health & Medical Orgs

- Public Health System
- Health System
- EMTF
- Emergency Management Systems

Additional organizations include:
- Community-Based Organizations (Non-profit Organizations)
- Local public health departments
- Schools of Public Health
- Faith Based Organizations
- Regional public health departments
- Clinics
- Health care providers
- Dialysis Centers
- Academic Health Centers
- Health System
- Doctors
- Hospitals
- Nurses
- RTAC
- LMHA
- Emergency Management Systems
- Law Enforcement (Fire, EMS, Police)
- EMTF
- ESF-8 Health & Medical Orgs
Emergency Response Preparedness & Planning

• **Regional leaders in emergency response preparedness and planning**
  • Community Leaders
  • Administrative Leaders
  • Nursing
  • Physicians
  • EMS
  • Public Health
  • Volunteer Organizations

• **Collaboration with regional planners**

• **Collaborates and integration with medical partners**

• **Education**
  • National Framework role of health care
  • Administrative response – Incident Command System / Chain of Command
  • Clinical response – Changes in patient care flow / resource management (ADLS, DMEP)
  • All hazard response

• **Focus on hospital preparedness**
  • Preparing every patient care unit; every first responder
  • Bystander training
Facility Designation Level

- I (n=17)
- II (n=15)
- III (n=55)
- IV (n=198)

Source: Texas Department of State Health Services, Office of EMS/Trauma Systems Coordination. 9th April 2016
## Participation in Hazard Vulnerability Assessment

### Natural Hazards

**PARKLAND HAZARD VULNERABILITY ANALYSIS TOOL Year 2014**

**NATURALLY OCCURRING HAZARDS**

<table>
<thead>
<tr>
<th>EVENT</th>
<th>PROBABILITY</th>
<th>SEVERITY = (MAGNITUDE - MITIGATION)</th>
<th>RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Likelihood this will occur</td>
<td>Possibility of death or injury</td>
<td>Physical losses and damages</td>
</tr>
<tr>
<td>Score</td>
<td>0 = N/A 1 = Low 2 = Moderate 3 = High</td>
<td>0 = N/A 1 = Low 2 = Moderate 3 = High</td>
<td>0 = N/A 1 = Low 2 = Moderate 3 = High</td>
</tr>
<tr>
<td>Tornado</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Flu Outbreak</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Epidemic</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Severe Thunderstorm</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Drought</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Flood, External</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Preparing Hospital Patient Care Units

- Job Action Sheet Notebook
- Disaster Supplies
  - Flashlight / batteries for each patient (if patient care area)
  - Flashlight / batteries for average number of staff on-duty at peak volume hours
  - 1 bottle of water (16.9 oz. or greater) per patient
  - 1 bottle of water (16.9 oz. or greater) average number of staff on-duty at peak volume hours
  - Evacuation bag for patient care areas
  - Portable radio / charger / backup battery (radio must be charged)

- HICS Forms
  - 213 Communication / Message Form
  - 214 Activity / Documentation Log
  - 254 Patient Tracking Log (Only Patient Treatment Areas)
  - 260 Patient Evacuation Tracking Log (Only Patient Treatment Areas)
**Parkland Evacuation Bag Contents**

**Evacuation Bag (qty 1)**
Used to hold evacuation supplies. May be carried or worn as a backpack. Has area on top flap for evacuation maps, notes and/or labels.

**Resealable Plastic Bag (Ziplock) (qty 1)**
This bag has most of the contents packed into this bag. The bag and contents can be removed and the orange nylon bag can be loaded with charts or other information and supplies that is important to bring during an evacuation.

**Flashlight (min qty 10)**
Flip up lights to activate. To be used by staff to provide hands free care.

**Yellow Light sticks - 12 hour (Cyalume® safety light stick) (min qty 5)**
Chemical light stick activated by bending until you hear a snap, then shake. Can be used to lay in floor to light the area or way out. Can be used for general lighting or to assist in marking designated area after evacuation has occurred.

**Silver Mylar "survival blanket" (qty 24)**
This thin silver colored blanket can be used to shield bed bound patients from cold or sun. They are also water-resistant.

**Poncho - red, yellow or blue plastic (qty 24)**
Rain poncho - may be used to protect from rain, or wind.

**Battery Powered Megaphone (qty 1)**
Uses 6 "D" cell or 6 "C" cell batteries. Verify which type you have and stock appropriate batteries. Megaphone can be used to communicate to groups evacuating while inside or outside the hospital. Do not pick up the the megaphone unless you are planning to take charge of your group.
Emergency Food and Water

Hospital has approximately 11,000 employees
• 14,000 emergency self heating meals
• 14,000 16.9 oz. bottles of water
  • Deployed by Code Yellow activation at direction of Incident Command
Triage

Triage Team Deployed in Full Medical Decon Gear

• **Patient Receiving**
  - I - Immediate (red)
  - D - Wait 1 hr. (yellow)
  - M - Minimal (green)
  - E - Expectant To Die

• **Hospital Triage**
  - Medical Control Officer
  - Patient Flow Coordinator
  - ED
  - Trauma Resuscitation Bays
  - ICU
  - OR
  - General Unit

**Altered/Disaster Standards of Care**

**Greatest Good Greatest # of Casualties**
Surge Management

• **Emergency Department / Trauma Capacity**
  - Discharge Patients
  - Dispositions for all Patients
  - Move Non-Critical Patients to Alternate Locations for Work-up
  - Address Staffing Patterns – Stretcher Teams
  - *Unidirectional Flow*
  - Red Area / Yellow Area/ Green Area
  - Medical Controllers
  - Patient Flow Coord.

• OR / ICU

• Inpatient units

• Special Populations
Disaster Supply Carts

 Stored in MRD
 Pushed out to pre-designated units when Code Yellow I or II

• Different carts for different areas.
  • ABC Carts
  • Procedure carts
  • Wound managements
  • Infection prevention
  • Expanded isolation equipment
Altered Standards of Care

• Clinical Exam
• CT Head  GCS $\geq 13$
• Chest Film / Pelvic Film
• FAST Procedure
• H / H, Blood Typing, ABG
• Suturing / Splinting – Damage Control
• OR – Damage Control
• ICU Admission – Patients with chronic illness, anticipated long term ICU ventilation, poor prognosis – last admission ICU
• Note: Medical Staff Committee / Ethics Committee / Legal Team
Casualty Patient/Family

- Staff sharing
- Patient tracking system
  - Move through the units
  - Condition / status / family
- Casualty Family Response Unit
  - Trauma psychosocial team
    - Social workers, chaplains, volunteers
- Fatality management team
Staff Preparedness

• Staff - family response plan
• Resources for family center at hospital
Mental Health

- Mental Health Unit Leader
- Staff Debriefing / Critique End of Shift
- House-wide Debriefing
- Screen Signs Stress
  - Physiological
  - Cognitive
  - Emotional
  - Behavioral
- CISM / Post Traumatic Stress Referral
- Coordination of Behavioral Medicine
Volunteer Management

- Licensed Independent Practitioners
- Medical Staff Bylaws – Granting Disaster Privileges
- Identifying Volunteer Independent Practitioners
- Oversight / Supervision
- Government ID/ License
- DMAT, MRC, ESAR-VHP
- 72 Hour Follow Through
- Planning & Preparedness
Katrina - Mass Shelter - Medical Operation Center

Dallas Convention Center - September 2005
Ebola Screening Process

• Initial Screening
  • Last 21 Days, did patient travel to West African Countries
    • Guinea
    • Sierra Leone
    • Liberia
    • Lagos
    • Nigeria
    • Democratic Republic of Congo
    • Senegal
  • Last 21 days, individual has been in direct contact with an Ebola infected individual in Dallas?

• If yes – Immediately place mask on patient and don personnel protective equipment, notify physician of positive exposure history screening

• Physician will evaluate patient

Trauma Level I Kit with impermeable gown, booties, bonnet, N95 respirator, safety glasses and double gloves
Hospital Response Practice - Performance

- Realistic Exercises
- HVA Assessment
- Measurable Outcomes
- Community / Regional
- Simulator Exercises
- All Plans
  - Mass Casualty
  - Utility Interruptions
  - Evacuation
  - Alternate Care Site
- After Action Review
  - Performance Improvement
# Texas Disaster Declarations 2000 – 2016
(www.fema.gov/disaster/grid/state)

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-19-16</td>
<td>Severe Weather, Tornadoes, Flooding</td>
</tr>
<tr>
<td>2-9-16</td>
<td>Severe Weather, Storms, Flooding, Straight Winds</td>
</tr>
<tr>
<td>12-26-16</td>
<td>Tornadoes, Severe Weather</td>
</tr>
<tr>
<td>11-25-15</td>
<td>Severe Weather, Storms, Flooding</td>
</tr>
<tr>
<td>12-20-13</td>
<td>Severe Storms</td>
</tr>
<tr>
<td>8-2-13</td>
<td>Explosion</td>
</tr>
<tr>
<td>9-9-11</td>
<td>Wildfire</td>
</tr>
<tr>
<td>7-1-11</td>
<td>Wildfire</td>
</tr>
<tr>
<td>8-3-10</td>
<td>Hurricane Alex</td>
</tr>
<tr>
<td>9-13-08</td>
<td>Hurricane Ike</td>
</tr>
<tr>
<td>7-24-08</td>
<td>Hurricane Dolly</td>
</tr>
<tr>
<td>10-2-07</td>
<td>Tropical Storm Erin</td>
</tr>
<tr>
<td>6-39-07</td>
<td>Severe Weather, Storm, Flooding</td>
</tr>
<tr>
<td>5-1-07</td>
<td>Severe Storms, Tornadoes</td>
</tr>
<tr>
<td>8-15-06</td>
<td>Flooding</td>
</tr>
<tr>
<td>1-11-05</td>
<td>Extreme Wildfire Threat</td>
</tr>
<tr>
<td>9-24-05</td>
<td>Hurricane Rita, Consequences of Katrina</td>
</tr>
<tr>
<td>7-17-03</td>
<td>Hurricane Claudette</td>
</tr>
<tr>
<td>11-5-02</td>
<td>Severe Storms, Flooding, Tornadoes</td>
</tr>
<tr>
<td>9-26-02</td>
<td>Tropical Storm Fay</td>
</tr>
<tr>
<td>7-4-02</td>
<td>Severe Storms, Flooding</td>
</tr>
<tr>
<td>6-9-01</td>
<td>Severe Storm, Flooding</td>
</tr>
<tr>
<td>1-8-01</td>
<td>Severe Winter Storm</td>
</tr>
<tr>
<td>4-7-00</td>
<td>Severe Storms, Tornadoes, Flooding</td>
</tr>
</tbody>
</table>
Real Events

Joplin Missouri May 22, 2011
Active Shooter Response

• Active Shooter – Individual actively engaged in killing or attempting to kill people in defined area

• 2000 – 2010: 84 Active Shooter Events

• 2000 – 2013: FBI Identified 160 Active Shooter Events
  • 486 Deaths; 557 Casualties
  • 60% Ended Before Law Enforcement Arrived
  • 64 Events 3 or More Killed
  • Highest Number Of Deaths – 32
  • 2 Events – More Than One Shooter
  • 2006 to 2013 Defined Increase From 6.4 to 16.4
  • 9 Officers Killed; 28 Wounded
  • Most Events Less Than 5 Minutes

• CONSTANT READINESS

• PREPARE BYSTANDERS
• Combat Medical Response Integrated With Current EMS / Trauma System
  
  T
  hreat Suppression  
  H
  emorrhage Control  
  R
  apid E
  xtrication To Safety  
  A
  ssessment by Medical Providers  
  T
  ransport to Definitive Care

The ‘Stop the Bleed’ campaign was initiated by a federal interagency workgroup convened by the National Security Council Staff, The White House. The purpose of the campaign is to build national resilience by better preparing the public to save lives by raising awareness of basic actions to stop life threatening bleeding following everyday emergencies and man-made and natural disasters. Advances made by military medicine and research in hemorrhage control during the wars in Afghanistan and Iraq have informed the work of this initiative which exemplifies translation of knowledge back to the homeland to the benefit of the general public. The Department of the Defense owns the ‘Stop the Bleed’ logo and phrase - trademark pending.
Preparedness Cost Money
SYSTEMS SAVE LIVES
Current Environment

- Constant alert
- Stand Ready
- All Hazard Response Planning
- System Integration
- Regional Sharing and Tracking
- Regional Communication/Coordination
Disaster Response in Action: Houston Responds

Lori Upton, RN BSN MS CEM
Regional Director of Preparedness and Operations
Southeast Texas Regional Advisory Council
Preparedness and Response Region

- 25 Counties - 277 cities
- 9.3 Million* (36%)
- 877,000/disabilities* (24%)
- 170+ hospitals
- 900+ nursing homes
First Challenge
Tropical Storm Allison - June 2001

• 30-40” rainfall over 5 days
• All freeways underwater
2005 Hurricanes Katrina and Rita

• Regional coordinating entity for health and medical called into service for first time
  • Leap of Faith
    • No formal plan – concept
    • No formal structure
    • No recognized authority
  • Commitment
    • Commitment to succeed
    • Commitment to mission
    • Commitment to medical community
Hurricane Ike September 2008
Orange Flooding
March 13-19, 2016
Houston 500-year Flooding
April 2016
Funding for the Texas Trauma System

• 1989: Statewide trauma system established with no funding
• 1992: Rules adopted to create 22 trauma service areas (22 nonprofit 501c3 RACs)
• 1997: State legislature allocated $4 million in 911 revenue to fund the RACs and EMS.
• 1999: 911 dollars were decreased and replaced with interest ($3 million/year) from endowment fund created with state tobacco settlement dollars.
  • RACs administrative infrastructure, bolstering the TS.
  • Did not cover the estimated $200 million in uncompensated trauma care provided annually by trauma system hospitals.
  • Uncompensated burden largely borne by county hospital district taxpayers in urban counties with Level I trauma centers.
• 2003: the state legislature passed Driver Responsibility Program (DRP)
  • Driver points/fees for driving infractions including DWI.
Texas Driver Responsibility Program

May 22, 2003
Governor Perry
Press Conference at University Hospital

Support for HB 3588 to establish the Texas Driver Responsibility Program and generate up to $1 billion to fund Texas trauma system
Trauma programs save lives & increase quality of life.

Trauma funding resulted in a 57% increase in the number of Texas trauma centers between 2000 and 2015. From 181 centers to 284 centers.

![Bar chart showing the increase in trauma centers from 2000 to 2015]
Texas’ Investment in Trauma: Texas Trauma Mortality lower than National

Trauma Mortality Rates By Age: Texas & National (2013)

Source 2015 GETAC report
Uninsured 20% of Trauma Hospitalizations

Trauma Hospitalizations by Payer 2013

20% of total trauma hospitalizations are self-pay
Increasing Trend of Unfunded Trauma Costs

Unfunded Trauma costs

Before State UC Payments

**THA Estimates

2013 2014 2015 2016** 2017**

Unfunded Trauma costs

Millions

230 240 250 260 270 280 290 300 310 320

Trauma Add On
Trauma Fund Payments are ~ 1/3 of Unfunded Trauma Costs
2016 – 2017 Trauma Add-on

Thank you

Increase:
• $9 M/YR GR from DRP
• $32 M/YR from HB 7
• $97M AF

Trauma Approps 2015
Trauma Approps 2016
Trauma Approps 2017
Trauma funding needed to maintain existing capacity and lower trauma mortality rates

70% Increase In O.R.s Needed for Harris Health to keep Level I intact.
Ben Taub Hospital

County approves funds to upgrade Ben Taub trauma center
By Gabrielle Banks and Markian Hawryluk
November 10, 2015 Updated: November 10, 2015 9:50pm

Harris County commissioners Tuesday approved spending $70 million for upgrades intended to preserve the Level 1 status of Ben Taub Hospital's trauma center, a vital component of the area's scarce high-level emergency care.

Harris Health needed to add 7 new operating rooms to existing 11 rooms to maintain Level 1 Trauma Certification.
$70 Million for construction alone.
The state’s population increased 4.3M since 2000.

That’s like adding the combined 2010 populations of six states.

Source: U.S. Census Bureau.
Trauma Funding Essential to Keep up with Increased Needs and Threats.

EMERGENCY UPDATE: HOUSTON BEARS HISTORIC FLOODING
DRP Supports Trauma & GR Funding

- Trauma $ from DRP
- Trauma $ from State Traffic Fines
- GR Generated from DRP
- GR Generated From Traffic Fines

Funding Option for State Highway Fund

LBB 9.10.2015 ID 2567
DRP: Three Core Themes

Need Continued Trauma Funding
- Trauma Costs Exceed Payments
- Continued State Funding Critical to Texas
- Dedicated, sustainable, recurring funding

Current System - Flawed
- "Web of fines & fees and consequences"
- Hurts low income Texans
- Double Jeopardy?
- Judicial & Criminal System Burdens

Accountable For Behavior
- System must enforce accountability
Replace or Reform?

Replace with alternate funding sources that are dedicated, sustainable and recurring. Past analyses:

- Soda or Beverage Fees; Bullet Fee; Drivers License add on; Automobile Registration fee; etc.

Reform the program options:

- Include fines in current judicial process
- Focus on egregious driving behavior (moving violations)
- Eliminate DRP related loss of license for no insurance
- Improve indigency program
- Improve communication
- Broader judicial discretion
- Streamline conditional drivers’ license options
- Implement one year fine with payment plans (vs. 3 year)
Working Together for Solutions

Continue Working with Key Players

• Governor
• Legislature
• State Agencies
• Texas EMS Trauma & Acute Care Foundation
• Texas Criminal Justice Coalition
• Judges
• Commissioners
• Law Enforcement
• Counties
• Hospitals
• Texas RACs

THOT Goal: Maintain dedicated, sustainable and recurring funding