Hurricane Katrina
Maximum Sustained Winds 175 mph
Minimum Central Pressure 902 mb
08/23 - 08/30 2005

Katrina
LSU HCSD Hospitals
GOALS

- Share *Lessons Learned* from a true disaster
- Review elements of the Disaster Cycle
- Provide insightful information for consideration in developing your Disaster mitigation, planning/preparedness, response, and recovery plan.
DISASTER CYCLE

MITIGATION
MITIGATION: *The Known*

Leadership has participated and coordinated the development of an emergency management plan that includes internal and external organizations with similar interest.
The Plan has been approved, distributed, and implemented.

Staff members have been educated regarding their roles and responsibilities.

Staff competencies include assessment of these roles.

Critiques of drills.
MITIGATION: Lessons Learned
Evacuate vs. Shelter-in-Place

Evacuation:

- When? When not?
- Where do you go? How do you go?
  - Agreements for transportation & sheltering
- Allow for variables – economics, contra flow, traffic
- Who stays & who goes?
- What goes? Supplies, medical charts, medications
MITIGATION: Lessons Learned
Evacuate vs. Shelter-in-Place

Shelter-in-Place:

- Emergency Command Center Structure
  - Add Depth
    - Cross training of roles
    - Backup personnel for designated roles
  - Prepare for 8 days of self-sufficiency
    - Non-perishables for 2-3 weeks
    - Vendor Disruptions
    - Staff Rotation - TEAMS
MITIGATION: Lessons Learned
Evacuate vs. Shelter-in-Place

Shelter-in-Place:
- Communication
  - Limited to none
  - 4 - 5 days
  - Redundant systems – LAN lines, cellular, satellite, HAM Radio, Voice Over Internet, OEP Radio, Courier Service
  - Portable radios & television (with an antenna!)
Shelter-in-Place:

- Electrical
  - Sustained Outages
  - Generator Capacity
  - What is on Emergency Power?
    - HVAC system
  - Assess need for Redundant Systems
  - Clinical Contingency Plans
- Sewer systems
- Water systems
MITIGATION: Lessons Learned

Other Tips:
- Information Technology Infrastructure
- Pre & Post Photos of Buildings
- FEMA Regulations
- Special Needs Shelters
- Medical Gas Supply
MITIGATION: Lessons Learned

- Medical Suppliers
- Food Suppliers
- Medical Gas Suppliers
- Telephone
- Linen Suppliers
- Enforcement
- Law
- Pharmaceutical & Blood Suppliers
- HH, DME, PH
# HAZARD VULNERABILITY ANALYSIS

**LKMC 2005 Hazard Vulnerability Analysis**

<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 to occur</td>
<td>Human Impact</td>
<td>Property Impact</td>
</tr>
<tr>
<td></td>
<td>Possibility of death</td>
<td>Physical losses &amp; damage</td>
<td>Interruption of services</td>
</tr>
<tr>
<td>Hurricane</td>
<td>18/2.25</td>
<td>18/2.25</td>
<td>19/2.375</td>
</tr>
<tr>
<td>Chemical Exposure, external</td>
<td>19/2.375</td>
<td>18/2.25</td>
<td>12/1.5</td>
</tr>
<tr>
<td>Transportation Interruption</td>
<td>19/2.375</td>
<td>18/2.25</td>
<td>13/1.625</td>
</tr>
<tr>
<td>Tornado</td>
<td>16/2.00</td>
<td>16/2.00</td>
<td>18/2.25</td>
</tr>
<tr>
<td>Flood, adjacent area and facility</td>
<td>16/2.00</td>
<td>15/1.875</td>
<td>18/2.25</td>
</tr>
<tr>
<td>Mass HAZMAT incident</td>
<td>17/2.125</td>
<td>16/2.00</td>
<td>12/1.5</td>
</tr>
<tr>
<td>Flood, external</td>
<td>15/1.875</td>
<td>15/1.875</td>
<td>17/2.125</td>
</tr>
<tr>
<td>Outage of major source or generator</td>
<td>15/1.875</td>
<td>14/1.75</td>
<td>12/1.5</td>
</tr>
<tr>
<td>Terrorism, biological</td>
<td>11/1.375</td>
<td>18/2.25</td>
<td>13/1.625</td>
</tr>
<tr>
<td>Ice Storm</td>
<td>10/1.25</td>
<td>13/1.625</td>
<td>11/1.375</td>
</tr>
</tbody>
</table>
DISASTER CYCLE

MITIGATION

PLANNING / PREPARDNESS
PLANNING/PREPAREDNESS:

The KNOWN

- Creating an inventory of resources that may be needed in an emergency, including prearranged agreements with vendors and other appropriate service providers
- Maintaining an ongoing planning process
- Holding staff orientation on basic response actions
- Implementing initial table-top drill test, followed by regular drills (stay with identified high hazards from the HVA Process)
PLANNING/PREPAREDNESS: Lessons Learned

- ICE!
- Statewide Drills
  - Participate!
- Healthcare Leadership Course in Anniston, AL
DISASTER CYCLE

MITIGATION

PLANNING / PREPAREDNESS

RESPONSE
RESPONSE: The KNOWN

- Leaders initiating the plan, assessing the situation, issuing warning, notification announcements, setting objectives and priorities, activation contacts with external individuals (EMS) and groups, and giving direction to staff
- Monitoring the effectiveness of response actions staff must take in the emergency
- Implementing backup plans to deliver patient medication when interrupted; reducing the secondary impact to the service system
RESPONSE: *Lessons Learned*

- Staff functioned well during the actual time of the disaster
- Your best asset and strongest link during a hurricane is your staff.
- Euthanasia issues
DISASTER CYCLE

- MITIGATION
- PLANNING / PREPAREDNESS
- RECOVERY
- RESPONSE

DISASTER CYCLE - MITIGATION - PLANNING / PREPAREDNESS - RECOVERY - RESPONSE - DISASTER CYCLE
RECOVERY: The KNOWN

- Restoring full service delivery and assessing effectiveness of actions taken to accomplish full recovery; implement ongoing monitoring and maintain as long as needed to affirm full recovery
- Assessing and addressing staffing issues with actions as appropriate
- Assessing the financial impact with actions as appropriate
RECOVERY: Lessons Learned

- Message Boards for communicating with staff
  - Assign staff to constantly monitor radio / TV for updates. Post updates.
- Security
  - National Guards with M16s
  - Marshall Law
  - Loiterers
  - Limit access to buildings
  - Identify sensitive buildings & remove signage
    (i.e. Pharmacy, Warehouse)
  - Color band employees/visitors/patients each day
  - Keep account of all persons in the building(s)
  - Use of force
- Chaos / Rumors
RECOVERY:
Lessons Learned

- Community Response
  - Distressed, Needy & Unpredictable people
  - Plan for and utilize volunteers
  - Collaborate with local pharmacists
- Doing those things to protect life and limb
- Democracy goes out of the window – Dictatorship/survival
- National Drug Reserve
- Mental health for employees & community
  - Assess staff ability to fulfill their obligations
- Reorganization of services to meet your new population needs
- Fuel for employees, hospital fleet, sustained generator use
RECOVERY: Lessons Learned

- Disaster Credentialing
- Transportation
  - Ambulance
  - Resource Delivery
  - Ground Transportation
  - Carrier Pigeon / Smoke Signals
- Public Health Issues
  - No water, sewer
  - Immunization needs – frequent CDC policy changes
- Change in the delivery of care
  - Medical health professional evacuated & permanently relocated
  - Assess your new patient population
  - Numerous inquiries regarding services offered
DISASTER CYCLE

1. MITIGATION
2. RESPONSE
3. PLANNING / PREPARDNESS
4. RECOVERY

DISASTER CYCLE
HCSD System Visits

FY 2005 = 1,214,929

FY 2006 = 971,580