Hoping for the best while preparing for the worst- A Step forward in health system disaster preparedness
Problem Statement

DISASTER IMPACTS / 2000-2012

$1.7 TRILLION DAMAGE (USD)
2.9 BILLION AFFECTED
1.2 MILLION KILLED

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Problem Statement
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Billion-dollar disasters of 2017 in the US

- Northern California fires, October: $9.4B
- California flooding, March: $1.5B
- Western wildfires, Summer-fall: $2.5B
- Midwest severe weather, June: $2.5B
- Midwest severe weather, May: $2.2B
- Missouri and Arkansas flooding, April: $1.2B
- Southeast severe weather, March: $1.7B
- Southeast severe weather, March: $2.1B
- Southern tornado outbreak, January: $1.8B
- Central tornado outbreak, March: $1.8B
- Midwest tornado outbreak, March: $2.1B
- Hurricane Harvey, August: $198B
- Hurricane Irma, September: $65B
- Hurricane Maria, September: $102B

Sources: NOAA, Ball State University Center for Business and Economic Research (for Harvey), Reuters (for Maria), and CoreLogic (for Irma)
Burden on the health systems

Memorial Medical Center after Hurricane Katrina
Trial to Open in Lawsuit Connected to Hospital Deaths After Katrina

SHERI FINK       MARCH 20, 2011

A jury trial set to open on Monday will weigh whether one of America’s largest health care corporations should be held accountable for deaths and injuries at a New Orleans hospital marooned by floodwaters after Hurricane Katrina.
The suit, brought on behalf of people who were at the hospital during the disaster, alleges that insufficiencies in Memorial’s backup electrical system and failed plans for patient care and evacuation, among other factors, caused personal injury and death.

The complaint also focuses attention on the lack of comprehensive emergency preparedness requirements for the nation’s hospitals. Proposed regulations aimed at addressing “systemic gaps” identified after Katrina were scheduled for release by the federal Centers for Medicare and Medicaid Services in January, but have been delayed. President Obama’s budget proposal trims spending on a national hospital preparedness program by $42 million, or about 10 percent from current levels.
The Bargain:

- The World Bank and U.S. Geological Survey calculate that a predicted $400 billion in economic losses from natural disasters over the 1990s could be reduced by $280 billion with a $40 billion investment in prevention, mitigation and preparedness strategies.

- World Bank is purported to have calculated that Disaster Risk Reduction saves $7 for every $1 invested.

- Preparedness is best thought of as insurance: paying a small regular amount to protect from the severe consequences of a disaster.
Efforts:

Health Resources and Services Administration (HRSA)

2002: National Bioterrorism Hospital Preparedness Program (NBHPP)

2003: Funding $515 million

Assistant secretary of Preparedness and Response (ASPR)

2006: Hospital Preparedness Program

Now: Funding reduced 50%
Our Efforts

Operation Unplugged

Operation Time To Go

EMERGENCY DRILL IN PROGRESS

JOHNS HOPKINS MEDICINE

JOHNS HOPKINS MEDICINE OFFICE OF EMERGENCY MANAGEMENT
Operation Unplugged- April 11

• Exercise to test resiliency to a major interruption of information technology and communications throughout the Johns Hopkins Health System, Johns Hopkins Health Care System and Johns Hopkins University School of Medicine

• It gave the opportunity to test and validate plans and capabilities. Identified preparedness and response gaps which were targeted post - exercise to increase resiliency.
Operation Unplugged- April 11
Operation Unplugged - April 11
Operation Unplugged- April 11
Lessons Learned

• Optimism bias

• Need of increased involvement of clinical units in emergency management process

• Improved communication both vertically and horizontally

• Improving downtime procedures
Operation Time To Go- May 3

• Exercise to test Maryland Region III Health and Medical Coalition’s Surge Capacity

• It was designed to support the coalition in identifying strengths, gaps, and corrective actions.

• Multiple stakeholder involvement
Operation Time To Go- May 3
Operation Time To Go - May 3
Operation Time To Go - May 3
### Operation Time To Go - May 3

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<th>Med Surg</th>
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## Operation Time To Go - May 3

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<tr>
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<th>Johns Hopkins Hospital</th>
<th>Sinai Hospital</th>
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<tr>
<td>Total census of patients</td>
<td>938</td>
<td>335</td>
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<td># Discharged</td>
<td>258</td>
<td>58</td>
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<tr>
<td># Moved</td>
<td>26</td>
<td>101</td>
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<tr>
<td>% of acute care patient’s placed</td>
<td>3.82%</td>
<td>36.46%</td>
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Lessons Learned

• Evacuation of a big hospital like JHH or multiple hospitals would exhaust the local resources very quickly.

• City and State health agencies were actively participating, however, they were issues identified about the following the appropriate chain of command.

• A need for a more centralized bed locating and allocating system in case of multi hospital evacuation to prevent competition between facilities for the same beds.
Lessons Learnt

• Grey areas in policies about moving the nursing staff with the patients to the receiving hospital were identified.

• The importance of physician-physician acceptance and hence, greater involvement of clinicians was identified.

• Technical and training issues with WebEOC (web-based emergency operations center) and MEMRAD were identified and brought to MIEMSS and MEMA’s attention.
Implications

• Re-iterated the need to maintain an updated region wise detailed list of hospitals and their capacity along with contact numbers of bed capacity commanders.

• Review of the regional MOU and existent surge plans and exercises.

• Better collaboration with city and state health agencies and maintaining communication with federal agencies.

• Improving collaboration with out of region facilities and policy for early mobilization of air ambulances.
Limitations

- Involving all stakeholders to participate in full capacity during the drill was challenging.
- Players were aware of the time frame of the drill and hence, it was not a ‘No Notice Drill’ in the truest sense.
- The relative lack of medical knowledge in emergency managers and lack of knowledge about emergency procedures in the clinical staff made the process complicated.
- The uncertainty, magnitude and seriousness associated with real events could not be simulated.
Acknowledgements

- Johns Hopkins Office Of Emergency Management
  - Bob Maloney
  - Mary Brown
  - Penny Pearce
  - Fred Klapetzky
References


References


References


“Every person who prepares is one less person who panics in a crisis”