Hazard Vulnerability Assessments

Identifying and Quantifying Hazards and Risks to Healthcare Facilities

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Introductions

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Emergency Preparedness and Community Resilience Practice

Tetra Tech Inc.
Leading provider of specialized management consulting and technical engineering services

18,000 employees worldwide
350 offices internationally
$2.5 billion in revenue

The nation's largest state and local government emergency management and continuity practice
Dedicated healthcare and public health sub-practice
Preferred vendor endorsed by MHA Ventures
Administrative Issues

- Phones on vibrate
- Fire alarms and nearest exits
- Restrooms
- Questions during presentation are encouraged within time constraints and 15 minutes has been reserved for Q&A at the end.
- Bob and I are happy to stay after the session to answer questions and I will be available throughout the day tomorrow
- Copies of the slides will be available on the conference website
- Show of hands for facility types represented

Objectives

1. Introduce an HVA
2. Discuss importance and applicability of an HVA
3. Outline different types of HVAs and the process to produce one.
4. Outline how the HVA directs future planning, training and exercise efforts

New CMS Healthcare Facility Emergency Preparedness Requirements

- Each facility type has specific standards and requirements and they vary by facility type. Facilities should go to www.asprtracie.hhs.gov to review the emergency preparedness requirements for their facility type.
- The final CMS rule was published September 16, 2016, and is effective November 11, 2017.
- Compliance with the regulations is a “Condition of Participation” of the Medicare and Medicaid Programs.
CMS Health Care Emergency Preparedness Regulated Facilities

Religious Non-Medical Health Care Institution (RNMHCI)
Ambulatory Surgical Services (ASS)
Hospice Care
Psychiatric Residential Treatment Facility (PRTF)
Programs of all-Inclusive Care for the Elderly (PACE)
Hospitals
Transplant Center
Long-Term Care Facilities (LTCF)
Intermediate Care Facility for Individuals with Intellectual Disabilities (ICF-IID)
Home Health Services

CMS Health Care Emergency Preparedness Regulated Facilities

Comprehensive Outpatient Rehabilitation Facility (CORF)
Critical Access Hospital (CAH)
Clinics, Rehabilitation Agencies, and Public Health Agencies as Providers of Outpatient Physical Therapy/Speech-Language Pathology (POPT/SP)
Community Mental Health Center (CMHC)
Organ Procurement Organization (OPO)
Rural Health Clinic (RHC)/Federally Qualified Health Center (FQHC)
End-Stage Renal Diseases Facilities (ESRDF)

CMS Health Care Emergency Preparedness Regulated Facilities

Risk Assessment and Planning
Policies and Procedures
Emergency Preparedness Program
Communication Plan
Training and Testing
What is a Hazard Vulnerability Assessment (HVA)

An HVA is an evaluation of vulnerability to specific hazards and results in an HVA document. It categorizes hazards by applying a standard methodology.

Factors include:
- Probability of occurrence
- Human impact
- Property and business impact
- Response

Creates numeric value quantifying the relative threat.

It is a living document that should be updated at least yearly.

Potential Hazards

<table>
<thead>
<tr>
<th>Active Shooter</th>
<th>External Flood</th>
<th>Fire</th>
<th>Internal Fire</th>
<th>Power Outage</th>
<th>Tornado</th>
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</thead>
<tbody>
<tr>
<td>Acts of Terror</td>
<td>Flood</td>
<td>Forensic Admission</td>
<td>Gas / Emissions Leak</td>
<td>Generator Failure</td>
<td>Internal Incident</td>
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<td>Building Move</td>
<td>Chemical Exposure, External</td>
<td>Civil Unrest</td>
<td>Communication / Information Failure</td>
<td>Dark Failure</td>
<td>Drought</td>
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<td>Chemical Exposure, External</td>
<td>Hostile Event with East Coast Connections</td>
<td>Hostage Situation</td>
<td>Interest Incident</td>
<td>Natural Gas Disruption</td>
<td>Natural Gas Failure</td>
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<td>Civil Unrest</td>
<td>Hurricane</td>
<td>Internal Incident</td>
<td>Inclement Weather</td>
<td>Infectious Disease Outbreak</td>
<td>Infecting Disease Outbreak</td>
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<td>Communication / Information Failure</td>
<td>Internal Incident</td>
<td>Inclement Weather</td>
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<td>Interest Incident</td>
<td>Natural Gas Disruption</td>
<td>Natural Gas Failure</td>
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<td>Drought</td>
<td>Hurricane</td>
<td>Indoor Incident</td>
<td>Inclement Weather</td>
<td>Infectious Disease Outbreak</td>
<td>Infecting Disease Outbreak</td>
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<td>Earthquake</td>
<td>Epidemic</td>
<td>Evacuation</td>
<td>Explosions</td>
<td>Infectious Disease Outbreak</td>
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Purpose of an HVA?

“Facilities will plan in accordance with facility-based and community-based risk assessment” – New CMS Requirements

Fulfills regulatory requirements

Allows informed risk-based choices

Provides perspective on the scale of events most likely to impact the facility

Ensures preparedness efforts and funding are being used efficiently

Aligns facilities with regional priorities

Most importantly, an HVA helps identify which emergency response capabilities are most needed
FEMA Core Capabilities

<table>
<thead>
<tr>
<th>Core Capabilities</th>
<th>Preparedness</th>
<th>Protection</th>
<th>Mitigation</th>
<th>Response</th>
<th>Recovery</th>
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<td>Planning</td>
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<td>Public Information and Warning</td>
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<td>Protective Measures</td>
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<td>Preparedness and Response</td>
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<td>Mitigation and Enforcement</td>
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<td>Intergovernmental Coordination</td>
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<td>Later and Higher Level Emergency</td>
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<td>Joint Emergency Operations</td>
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<td>Security and Protection</td>
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<td>Access Control and Identity Verification</td>
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<td>Environmental Protection and Mitigation</td>
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<td>Supply Chain Integrity and Resilience</td>
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<td>Community Resilience</td>
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<td>Long-term Natural Hazards Resilience</td>
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<td>Risk and Climate Resilience Assessment</td>
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<td>Threats and Impact Identification</td>
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Importance of an HVA

Without an HVA preparedness efforts would be unfocused and inefficient

Some potential threats would be overlooked or improperly minimized while others are given too much attention

Facilities may be out of sync with community efforts to plan for largest threats

The HVA process often uncovers unknown potential impacts and may provide validation of budget requests

An HVA can support federal mitigation grant requests

Incorporating Mitigation

Mitigation is a foundational element in the quantitative analysis of hazards during an HVA

Mitigation allows facilities to buy down their risk

By analyzing the probability of occurrence and the potential impacts, a cost/benefit analysis can be done

Findings may provide additional business justification to invest in mitigation projects of all sizes, types and investment

For some facilities, mitigation grants may be available through the federal government
Lessons Learned:
2011 Lourdes Hospital

Previously flooded in early 2000s
- Millions of dollars in damage and lost revenue
- Hospital is the region’s largest medical center

Applied for and received mitigation grants to help fund retaining wall
- Built to 500 year flood event
- Facility was protected during record breaking floods
- Evacuated but not damaged during flood
- Reopened shortly after picture was taken
- Minimized loss of revenue and regional impacts

Finding Relevant HVA Data

Community Data
- Local/County
  - Hazard Vulnerability Assessment (HVA)
  - Mitigation Plan
- State
  - Threat and Hazard Identification and Risk Assessment (THIRA)
  - State Hazard Mitigation Plan
  - Healthcare Coalition
  - Hazard Vulnerability Assessment (HVA)

Facility Data
- Historical occurrences
- Specific facility impacts
- Preparedness and mitigation efforts factored in

Montana Specific Data

2013 Montana Hazard Mitigation Plan
http://readyandsafe.mt.gov/Portals/105/Full%202013%20Mitigation%20Plan.pdf

2015 Montana THIRA and SPR

2012 Yellowstone County Pre-Disaster Mitigation Plan
http://co.yellowstone.mt.gov/des/plans/
Developing an HVA

An HVA should be collaborative with representation from all facility departments including:
- Medical/operations staff
- Facilities personnel
- Senior leadership
- Risk management
- Finance
- Legal

The HVA is often conducted by the same planning team that addresses preparedness issues and the process is closely interwoven with planning and exercises

The HVA can be revisited as often as hazards change or amplify
- e.g. in Hawaii there was a sudden increased threat of radiological exposure from North Korea Threat

Lessons Learned:
Rehabilitation Center of Hollywood Hills

- No flooding and minimal damage
- Failure of a single transformer resulted in partial power loss to the facility
- Backup system worked as designed
- Existing generator had capacity for critical needs, lights, fridge, freezer, etc. but not the A/C
- Facility was in compliance with State and CMS regulations in effect at that time
- Conflicting accounts of attempts to request assistance
  - Notified local OEM of power outage
  - Spoke to several state and local agencies as well as the power company
  - May not have identified any pressing medical needs or emergencies
- Fatalities believed to be heat related
  - 8 deaths and 200+ evacuated with signs of heat related distress
  - Governor vowed to punish anyone culpable in the deaths and a criminal investigation is underway

Choosing an HVA Tool

A number of existing HVA tools are available on the internet from:
- State and Local Governments
- Hospital Associations
- Hospital Networks
- Private Companies

Today we will be using a tool developed by Kaiser Permanente Health System and available on the California Hospital Association website:
https://www.calhospitalprepare.org/hazard-vulnerability-analysis

This tool was updated in 2017 and has a long history of being widely used. While not perfect, it is easy to use and provides a solid methodology. Quantification is valued on a 0 – 4 scale and mitigation and preparedness actions are factored in.
HVA Tool Demonstration

Q & A

Thank You!

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