

# **Hazard Vulnerability Analysis (HVA)**

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# Hazard Vulnerability Analysis – Workshop Goals

- Understand the importance of planning process for emergencies
- Be able to develop an Hazard Vulnerability Analysis
- Become familiar with Emergency Management Considerations
- How to recognize specific hazard information

# What is an Emergency?

An emergency is any unplanned event that can cause deaths or significant injuries to employees, customers, or the public; or that can shut down your business, disrupt operations, cause physical damage, or threaten the facility's financial standing or public image.

# What is Emergency Management?

The dynamic process of preparing for, mitigating, responding to and recovering from an emergency.

# Emergency Management

- **When it comes to disaster readiness, can you ever be too prepared?**  
According to the Association of Small Business Development Centers, the effects of a disaster can be quite profound:
  - **More than 1 in 4 businesses will experience a significant crisis in a given year**
  - Of those businesses that experience a disaster and have no emergency plan, 43 percent never reopen
  - Of those that do reopen, only 29 percent are still operating two years later
  - Make no mistake about it. Disaster preparedness is central to business survival, particularly when it comes to protecting a company's most valuable and irreplaceable assets: its people and its data.
- Is your small business vulnerable? A recent study found that:**
- 71% of small businesses do not have a disaster plan in place
  - Nearly two-thirds (64%) stated that they do not need one; and
  - 63% are confident they would be able to resume business within 72 hours if impacted by a natural disaster - even though history shows this may be optimistic.

# Catastrophes Cost Money

- Katrina \$ cost: Insurers estimate the hurricane damage at \$9bn to \$50bn
- 2007 San Diego Fire Storm
- Fire at a food processing plant in results in 25 deaths and a company out of business, and the town devastated
- Blizzard shuts down much of East Coast for days 150 lives lost and millions of dollars in damage

# 4 Phases of Emergency Management

Emergency Management Plans usually cover 4 areas:

- Preparedness
- Mitigation
- Response
- Recovery (Next BERI Session)



# Disaster Planning



The key to surviving any disaster is to be prepared and to be informed about potential vulnerabilities to your organization . Planning ahead and providing for the needs of your organization can make the difference in your ability for your company's ability to respond to a major disaster/emergency .



# Planning

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- Establish a planning team
- Analyze capabilities and hazards (HVA)
- Develop the plan (Next BERI Session)
- Implement the plan (Next BERI Session)

# Planning: Establishing a Planning Team

- Form the team
  - Who should be on your team? Facilities, line/production workers, risk mgmt. safety reps.
- Establish authority
  - This should come from senior management
- Issue a mission statement
  - Very important as this send a corporate message
- Establish a schedule and budget
  - Preparedness is going to cost \$

# Planning: Analyze Capabilities and Hazards

- Review internal plans and policies
- Meet with outside groups: you local fire dept., Emergency Planning Agency (OES)
- Identify codes and regulations (Cal/OSHA Emergency Action Plan)
- Identify critical products, services and operations
- Identify internal resources and capabilities
- Identify external resources
- Do an insurance review
- Conduct a vulnerability analysis

# What is a Hazard Vulnerability Analysis (HVA)?

- The process of evaluating risk associated with specific hazard and defined in terms of: probability and frequency of occurrence, magnitude and severity.
- Develop an organized list of identified risk to your business



# HVA

- **The HVA**
  - **A key element of the EOP**
  - **Drives incident specific/threat planning**
    - Identifies, prioritizes and defines threats that may impact business operations
    - Guides specific steps to reduce the impact of threat occurrence
    - Ensures ongoing business functions

# HVA

- **The hazard analysis includes:**
  - **Probability**
    - The likelihood of an event occurrence
    - Calculated by retrospective assessment of event frequency
    - Predicted by estimation of risk factors
  - **Impact**
    - The severity or damage caused by a threat and the effect on
      - **Human lives**
      - **Business operations and infrastructure**
      - **Environmental conditions**

## HVA Terms cont...

- Magnitude – Is the strength or destructive power of a disaster.
- Severity – is a measure of an event's duration and impact to your business.

These two measurements go hand in hand with frequency and probability in identifying the order risk to your business.



# Prevention

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Having a sound contingency plan can help your business to successfully recover from a disaster - be that a catastrophic event, like a or fire, or a more regular occurrence like a blackout or flood. Being prepared will also help prevent disruptive events that can be anticipated and reduce the impact of events that are unavoidable.

# Preparedness

Activities, programs, and systems developed prior to a disaster/emergency used to support and enhance prevention, response and recovery.

- Emergency Management Plan
- Business Recover Plan
- Undertake a HVA



# Hazard Vulnerability Analysis

EVENT	PROBABILITY	SEVERITY = (MAGNITUDE - MITIGATION)			PREPAREDNESS	INTERNAL RESPONSE	EXTERNAL RESPONSE	RISK
		HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT				
	<i>Likelihood this will occur</i>	<i>Possibility of death or injury</i>	<i>Physical losses and damages</i>	<i>Interruption of services</i>	<i>Preplanning</i>	<i>Time, effectiveness, resources</i>	<i>Community/Mutual Aid staff and supplies</i>	<i>Relative threat*</i>
SCORE	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = High 2 = Moderate 3 = Low or none	0 = N/A 1 = High 2 = Moderate 3 = Low or none	0 = N/A 1 = High 2 = Moderate 3 = Low or none	0 - 100%



# Tri-City Medical Center

## SUMMARY OF MEDICAL CENTER HAZARDS ANALYSIS

	Natural	Technological	Human	Hazmat	Total for Facility
Probability	0.27	0.59	0.83	0.67	0.55
Severity	0.21	0.37	0.53	0.44	0.36
Hazard Specific Relative Risk:	0.06	0.22	0.44	0.30	0.20

# Emergency Management Activities

## **EMERGENCY MANAGEMENT ACTIVITIES FISCAL YEAR 06 (July 2007- June 2008)**

### **Background information:**

Tri-City Medical Center's Safety Officer, in conjunction with the Environment of Care Committee, completed a Hazard and Vulnerability Assessment (HVA) in June 2008. Each component of the HVA is addressed in our Emergency Management Plan, located in the Hospital Disaster Manual. Specific actions which address the four phases of emergency management activities (preparation/ training, mitigation, response and recovery) for areas identified at 30% risk or greater are detailed below.

### **Definition of Terms:**

Preparation: Specific steps taken to address plan of action

Response/Training: Specific Steps to Educate Staff to respond to any Disruptive Incident

Mitigation: Steps taken to lessen impact to the organization

Recovery: Steps to return function as much as possible



# Recovery



The task of rebuilding after a disaster can take several months to many years and may require financial assistance from a variety of sources

- Document recovery needs in a Business Recover Plan
- Record damages and losses
- Apply for assistance as needed
- Resume operations as quickly as possible
- Revise emergency management plan as needed

## For More Information...

- FEMA provides many resources on emergency management planning ([www.fema.gov](http://www.fema.gov))
  - Emergency Management Guide for Business and Industry ([www.fema.gov/library/biz1.shtm](http://www.fema.gov/library/biz1.shtm))
  - Emergency Preparedness Checklist ([www.fema.gov/rrr/emprep.shtm](http://www.fema.gov/rrr/emprep.shtm))
  - Standard Checklist Criteria for Business Recovery ([www.fema.gov/ofm/bc1\\_2.shtm](http://www.fema.gov/ofm/bc1_2.shtm))
- For definitions of each of the steps of emergency planning
  - [www.farmcentre.com/english/disasterplanning/emp.htm](http://www.farmcentre.com/english/disasterplanning/emp.htm)
- Federal Response Plan