Community Hazard Vulnerabilty Assessment (CHVA)

Enclosed you will find an improved version of the Hazard Vulnerability Assessment (HVA) that many health care institutions are currently using. We hope you will find the improved tool valuable and that it will assist you in understanding/analyzing vulnerabilities affecting your organization and community. The updated Community Hazard Vulnerability Assessment (CHVA) is based on the work of many partners, including Children's Hospital Colorado and a Wisconsin workgroup consisting of state and local emergency management and public health departments and tribal health and hospital emergency planners. The CHVA incorporates the four phases of emergency management and takes an all hazards approach to address national and local planning scenarios.

Why was the HVA renamed the CHVA?

The HVA has been renamed the CHVA due to the many partnerships used to create the tool and its potential value for any industry to use.

Can I customize the tool for my own needs?

YES! The tool is **fully customizable**; however, we have given it a **General Public License** to prevent it from being sold.

Why was the old HVA revised?

Having used the old HVA model for many years, we identified several implementation barriers and sought to engineer them out. Significant issues addressed:

1. Did not reflect the current philosophy of the four phases of emergency management. **Columns were added to reflect an internal and external evaluation of the mitigation, preparedness, response, and recovery.**
2. Lack of a clear input from external partners. ***Added "external review" based on the four phases of emergency management.***
3. Need for automatic analysis of data and answer the question "What does it mean to me? " ***Automatically populates graphs and reports.***
4. Just because an event frequently occurs doesn't mean we have to respond. This may result in higher ratings from high frequency events. ***A new column based on Response was added to offset the emphasis on Occurrence.***
5. Some facilities do not like a percentage based rating. ***Added a non-weighted risk column.***
6. Not easy to sort top HVA items. ***A tab was created to automatically identify the top 20 items for Occurrence, Response, and Non-Weighted.***

What is the difference between Occurrence and Response?

Occurrence is defined as the likelihood of the event to occur. Response is defined as the likelihood that the organization would have to respond. Just because an event has a high probability of occurring does not mean that the organization would to have to respond. For example, tornados are common in many states. Due to their likelihood of occurrence in a 30 year period, a high rating of 3 may apply. Does your organization respond to every reported tornado in a 30 year period? Probably not, so a lower response rate of a 2 may apply.

Why are there three ways to rate the data?

The tool allows you to evaluate your events three different ways - Risk Occurrence, Risk Response or Non-weighted. It is up to the user to determine which rating scale or a combination thereof, they will use. (The non-weighted risk removes the weighting scale but provides a larger range of numbers).

Acknowledgments: While many partners were involved in the evolution of the CHVA, special thanks are given to:

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Joseph Wathen, MD – Children's Hospital Colorado. Aurora, Colorado

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Cindy Corsaro – Memorial Hospital. Colorado Springs, Colorado

Andrew Miller – Mercy Regional Medical Center. Durango, Colorado

Robert Ritger – WHEPP Region 4 Coordinator. Onalaska, Wisconsin

Instructions

These instructions are written to assist you in using the CHVA tool. They were not written to explain how to conduct a vulnerability assessment. You must enable **MACROS** in order for the refresh button to work .

Step 1: Enter the name of your organization in A1 on the red CHVA Tool – Data Entry tab. This will follow through on all of the remaining tabs.

Step 2: Review the events in column A and change as necessary. **WARNING** – Do not delete or add a row. The formulas and pivot tables are sensitive! Changes may result in inaccurate calculations.

Step 3: Enter your data to the right of each event. "White" cells are data entry cells and all other cells automatically calculate. Ignore the numbers in the last three total columns while you are entering your data. (The top 20 events in each total column turn red and will change while data is being entered).

Step 4: Once all data is entered, click on the green Top 20 Events tab. You must refresh the screen in the Excel Data Tab (top) or the REFRESH button (to the right) after making changes to the CHVA Tool.

Step 5: Evaluate your top five in each category to determine if the ratings are accurate and reassess as necessary.

NOTES: Throughout the different tabs, you will find notes near the top or the bottom to assist in using the tool.
WARNING: Don't delete or add a row in the CHVA Tool - Data Entry tab. The formulas and pivot tables are sensitive! Changes may result in inaccurate calculations.
Tabs:
Foreword: A few questions and answers along with acknowledgement of key partners.
Information: Useful instructions for completion of the tool.
CHVA Tool - Data Entry: Enter your data here. Remember to hit the refresh button to populate the remainder of the tabs.
Top 20 Events: Provides a one page summary of the top 20 events for three different ratings.
Top 30 Print: Provides a one page print out of the top 30 events.
Graphs: Ten graphs to assist in identifying gaps in your Emergency Management program.
High Risk Events: Summarizes your high occurrence 3's and High response 3's. These are your highest risk events.
High Occurrence and Response: Summarizes 3's based on either Occurrence or Response.
Documentation: Sample tools to assist with compliance. Customize based on your needs.

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Community Hazard Vulnerability Assessment

This document is the Community Hazard Vulnerability Assessment (CHVA) tool. It is not a substitute for a comprehensive emergency preparedness program. Individuals or organizations using this tool are solely responsible for any hazard assessment and compliance with applicable laws and regulations. When possible, use the most appropriate data available to guide your assessment. In the absence of applicable data, rely on the best judgment of your staff and partners.

INSTRUCTIONS:

Evaluate potential for event and response among the following categories using the hazard-specific scale. Please note specific score criteria on the worksheet to ensure accurate recording.

Issues to consider for **probability** include, but are not limited to:

1 Known risk
2 Historical data
3 Manufacturer/vendor statistics

Issues to consider for **human impact** include, but are not limited to:

1 Potential for death
2 Potential for injury requiring medical intervention

Issues to consider for **property impact** include, but are not limited to:

1 Cost to replace
2 Cost to set up temporary replacement
3 Cost to repair
4 Time to recover

Issues to consider for **business impact** include, but are not limited to:

1 Business interruption
2 Employees unable to report to work
3 Customers unable to reach facility
4 Company in violation of contractual agreements
5 Imposition of fines and penalties or legal costs
6 Interruption of critical supplies
7 Interruption of product distribution
8 Reputation and public image
9 Financial impact/burden

Issues to consider for **mitigation**, **preparedness, response, and recovery** include, but are not limited to:

1 Status of current plans
2 Frequency of drills
3 Training status
4 Insurance
5 Availability of alternate sources for critical supplies/services
6 Time to marshal an on-scene response
7 Scope of response capability
8 Historical evaluation of response success
9 Time to prepare and mitigate which may be event specific

Issues to consider for **internal resources** include, but are not limited to:

1 Types of supplies on hand/will they meet need?
2 Volume of supplies on hand/will they meet need?
3 Staff availability
4 Availability of back-up systems
5 Internal resources ability to withstand disasters/survivability

Issues to consider for **external resources** include, but are not limited to:

1 Types of agreements with community agencies/drills?
2 Coordination with local and state agencies
3 Coordination with proximal health care facilities
4 Coordination with treatment specific facilities
5 Community resources

Children's Hospital Colorado	Trauma Rating: 1					Four Phases of Emergency Management								Version 1.0 (8/13)		
Children's Hospital Colorado **COMMUNITY HAZARD VULNERABILITY ASSESSMENT TOOL**	**PROBABILITY**		**HUMAN IMPACT**	**PROPERTY IMPACT**	**BUSINESS IMPACT**	**MITIGATION**		**PREPAREDNESS**		**RESPONSE**		**RECOVERY**		**RISK Occurrence**	**RISK Response**	**Non Weighted**
	Likelihood of future occurrence and facility response		Percentage of population likely to be injured or killed under an average occurrence of the hazard	Percentage of properties likely to be affected under an average occurrence of the hazard	Percentage of businesses likely to be affected under an average occurrence of the hazard	**Internal (Jurisdic-tional)**	**External (Region/ State)**	**Internal (Jurisdic-tional)**	**External (Region/ State)**	**Internal (Jurisdic-tional)**	**External (Region/ State)**	**Internal (Jurisdic-tional)**	**External (Region/ State)**	Relative threat (increases with percentage)	Relative threat (increases with percentage)	Realtive threat (increases with number)
	0 = N/A (implausible) 1 = Low (0-1 event / 30 years) 2 = Moderate (2-3 events / 30 years) 3 = High (4+ events / 30 years)		0 = N/A (no impact expected) 1 = Low (<1% affected) 2 = Moderate (1-10% affected) 3 = High (>10% affected)	0 = N/A (no impact expected) 1 = Low (<1% affected) 2 = Moderate (1-10% affected) 3 = High (>10% affected)	0 = N/A (no impact expected) 1 = Low (<1% affected) 2 = Moderate (1-10% affected) 3 = High (>10% affected)	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	0 - 100%	0 - 100%	0 - 198
National Planning Scenarios	**Occurrence**	**Response**														
Biological Attack – Aerosol Anthrax	3	3	1	2	3	1	2	2	1	3	2	1	2	60%	60%	120
Biological Attack – Food Contamination	3	3	1	2	3	1	2	2	1	3	2	1	2	60%	60%	120
Biological Attack – Foreign Animal Disease	3	2	1	2	3	1	2	2	1	3	2	1	2	60%	40%	100
Biological Attack – Plague	3	2	1	2	3	1	2	2	1	3	2	1	2	60%	40%	100
Biological Disease Outbreak – Pandemic flu	1	2	1	2	3	1	2	2	1	3	2	1	2	20%	40%	60
Chemical Attack – Blister Agent	1	2	1	2	3	1	2	2	1	3	2	1	2	20%	40%	60
Chemical Attack – Chlorine Tank Explosion	1	2	1	2	3	1	2	2	1	3	2	1	2	20%	40%	60
Chemical Attack – Nerve Agent	1	2	1	2	3	1	2	2	1	3	2	1	2	20%	40%	60
Chemical Attack – Toxic Industrial Chemicals	1	2	1	2	3	1	2	2	1	3	2	1	2	20%	40%	60
Cyber Attack	1	2	1	2	3	1	2	2	1	3	2	1	2	20%	40%	60
Explosives Attack – Improvised Explosive	1	2	1	2	3	1	2	2	1	3	2	1	2	20%	40%	60
Natural Disaster – Major Earthquake	1	2	1	2	3	1	2	2	1	3	2	1	2	20%	40%	60
Natural Disaster – Major Hurricane	1	2	1	2	3	1	2	2	1	3	2	1	2	20%	40%	60
Nuclear Detonation – Improvised Device	1	2	1	2	3	1	2	2	1	3	2	1	2	20%	40%	60
Radiological Attack – Radiological Dispersal	1	2	1	2	3	1	2	2	1	3	2	1	2	20%	40%	60
														0%	0%	0
														0%	0%	0
Average:	1.53	2.13	1.00	2.00	3.00	1.00	2.00	2.00	1.00	3.00	2.00	1.00	2.00			
Naturally Occurring Events																
Avalanche	3	3	1	2	3	2	2	3	1	1	3	2	1	63%	63%	126
Dam Inundation	3	3	1	2	3	2	2	3	1	1	3	2	1	63%	63%	126
Drought	2	2	1	2	3	2	2	3	1	1	3	2	1	42%	42%	84
Earthquake	2	2	1	2	3	2	2	3	1	1	3	2	1	42%	42%	84
Epidemic/Pandemic	1	2	1	2	3	2	2	3	1	1	3	2	1	21%	42%	63
Flood (External)	1	2	1	2	3	2	2	3	1	1	3	2	1	21%	42%	63
Hail	1	2	1	2	3	2	2	3	1	1	3	2	1	21%	42%	63
High Winds	1	2	1	2	3	2	2	3	1	1	3	2	1	21%	42%	63
Hurricane	1	2	1	2	3	2	2	3	1	1	3	2	1	21%	42%	63
Ice Storm	1	2	1	2	3	2	2	3	1	1	3	2	1	21%	42%	63
Insect Infestation	1	2	1	2	3	2	2	3	1	1	3	2	1	21%	42%	63
Landslide	1	2	1	2	3	2	2	3	1	1	3	2	1	21%	42%	63
Severe Blizzard/Snow Fall	1	2	1	2	3	2	2	3	1	1	3	2	1	21%	42%	63
Severe Thunderstorm	1	2	1	2	3	2	2	3	1	1	3	2	1	21%	42%	63
Solar Flares	1	2	1	2	3	2	2	3	1	1	3	2	1	21%	42%	63

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Temperature Extreme (Cold)	1	2	1	2	3	2	2	3	1	1	3	2	1	**21%**	**42%**	63
Temperature Extreme (Hot)	1	2	1	2	3	2	2	3	1	1	3	2	1	**21%**	**42%**	63
Tidal Wave	1	2	1	2	3	2	2	3	1	1	3	2	1	**21%**	**42%**	63
Tornado	1	2	1	2	3	2	2	3	1	1	3	2	1	**21%**	**42%**	63
Volcano	1	2	1	2	3	2	2	3	1	1	3	2	1	**21%**	**42%**	63
Wild Fire	1	2	1	2	3	2	2	3	1	1	3	2	1	**21%**	**42%**	63
														0%	**0%**	0
														0%	**0%**	0
Average:	1.29	2.10	1.00	2.00	3.00	2.00	2.00	3.00	1.00	1.00	3.00	2.00	1.00			
Human Related Events																
Active Shooter	3	3	3	1	2	2	2	1	3	2	3	1	1	**63%**	**63%**	**126**
Bomb Threat	3	3	3	1	2	2	2	1	3	2	3	1	1	**63%**	**63%**	**126**
Civil Disturbance	2	2	3	1	2	2	2	1	3	2	3	1	1	**42%**	**42%**	84
Forensic Admission	2	2	3	1	2	2	3	1	3	2	3	1	1	**44%**	**44%**	88
Hostage Situation	2	1	3	1	2	2	2	1	3	2	3	1	1	**42%**	**21%**	63
Infant Abduction	2	1	3	1	2	2	2	1	3	2	3	1	1	**42%**	**21%**	63
Labor Action	2	1	3	1	2	2	2	1	3	2	3	1	1	**42%**	**21%**	63
Mass Casualty (Trauma)	2	1	3	1	2	2	2	1	3	2	3	1	1	**42%**	**21%**	63
Missing Child	2	1	3	1	2	2	2	1	3	2	3	1	1	**42%**	**21%**	63
Staffing Shortage	2	1	3	1	2	2	2	1	3	2	3	1	1	**42%**	**21%**	63
Violence in the ED	2	1	3	1	2	2	2	1	3	2	3	1	1	**42%**	**21%**	63
VIP Situation	2	1	3	1	2	2	2	1	3	2	3	1	1	**42%**	**21%**	63
Workplace Violence	2	1	3	1	2	2	2	1	3	2	3	1	1	**42%**	**21%**	63
														0%	**0%**	0
														0%	**0%**	0
Average:	2.15	1.46	3.00	1.00	2.00	2.00	2.08	1.00	3.00	2.00	3.00	1.00	1.00			
Hazardous Materials Events																
Decontamination	3	3	2	3	1	2	2	1	1	2	2	3	3	**67%**	**67%**	**132**
HAZMAT Spill (Internal)	3	3	2	3	1	2	2	1	1	2	2	3	3	**67%**	**67%**	**132**
HAZMAT Spill (External)	2	1	2	3	1	2	2	1	1	2	2	3	3	**44%**	**22%**	66
Indoor Air Quality Issues	2	1	2	3	1	2	2	1	1	2	2	3	3	**44%**	**22%**	66
Large Internal Spill	2	1	2	3	1	2	2	1	1	2	2	3	3	**44%**	**22%**	66
Radiologic Exposure (Internal)	2	1	2	3	1	2	2	1	1	2	2	3	3	**44%**	**22%**	66
Radiological Incident (External)	2	1	2	3	1	2	2	1	1	2	2	3	3	**44%**	**22%**	66
Small-Medium Sized Internal Spill	2	1	2	3	1	2	2	1	1	2	2	3	3	**44%**	**22%**	66
Unknown Explosion	2	1	2	3	1	2	2	1	1	2	2	3	3	**44%**	**22%**	66

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														0%	**0%**	0
														0%	**0%**	0
Average:	2.22	1.44	2.00	3.00	1.00	2.00	2.00	1.00	1.00	2.00	2.00	3.00	3.00			
Technologic Events																
Communications Failure	3	3	3	2	2	2	3	1	2	2	2	3	3	**75%**	**75%**	**150**
Infant Security Alarm Failure	3	3	3	2	2	2	3	1	2	2	2	3	3	**75%**	**75%**	**150**
Information Systems Failure	2	3	3	2	2	2	3	1	2	2	2	3	3	**50%**	**75%**	**125**
Magnetic Resonance Imaging (MRI) Incident	2	3	3	2	2	2	3	1	2	2	2	3	3	**50%**	**75%**	**125**
Network Failure	2	2	3	2	2	2	3	1	2	2	2	3	3	**50%**	**50%**	100
Pharmacy Medication Dispenser Failure	2	2	3	2	2	2	3	1	2	2	2	3	3	**50%**	**50%**	100
Security Card Access Failure	2	2	3	2	2	2	3	1	2	2	2	3	3	**50%**	**50%**	100
Security Video Surveillance	2	2	3	2	2	2	3	1	2	2	2	3	3	**50%**	**50%**	100
														0%	**0%**	0
														0%	**0%**	0
Average:	2.25	2.50	3.00	2.00	2.00	2.00	3.00	1.00	2.00	2.00	2.00	3.00	3.00			
Utility Events																
Broken Water Main (Internal)	3	3	2	3	1	1	2	1	2	3	1	2	2	**60%**	**60%**	**120**
Broken Water Main (External)	3	3	2	3	1	1	2	1	2	3	1	2	2	**60%**	**60%**	**120**
Compressed Gas Cylinder Leak/Failure	2	3	2	3	1	1	2	1	2	3	1	2	2	**40%**	**60%**	100
Electrical Failure	2	3	2	3	1	1	2	1	2	3	1	2	2	**40%**	**60%**	100
Elevator Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Fire (Internal)	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Fire Detection/Alarm Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Fire Suppression Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Flood (Internal)	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Fuel Shortage	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Generator Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
HVAC Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Loss of Bulk Oxygen	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Medical Gas Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Medical Vacuum Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Natural Gas Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Natural Gas Leak	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Oxygen Leak	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Potable Water Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Process Water Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60

Children's Hospital Colorado **COMMUNITY HAZARD VULNERABILITY ASSESSMENT TOOL**	**PROBABILITY**		**HUMAN IMPACT**	**PROPERTY IMPACT**	**BUSINESS IMPACT**	**MITIGATION**		**PREPAREDNESS**		**RESPONSE**		**RECOVERY**		**RISK Occurrence**	**RISK Response**	**Non Weighted**
	Likelihood of future occurrence and facility response		Percentage of population likely to be injured or killed under an average occurrence of the hazard	Percentage of properties likely to be affected under an average occurrence of the hazard	Percentage of businesses likely to be affected under an average occurrence of the hazard	**Internal (Jurisdic-tional)**	**External (Region/ State)**	**Internal (Jurisdic-tional)**	**External (Region/ State)**	**Internal (Jurisdic-tional)**	**External (Region/ State)**	**Internal (Jurisdic-tional)**	**External (Region/ State)**	Relative threat (increases with percentage)	Relative threat (increases with percentage)	Realtive threat (increases with number)
	0 = N/A (implausible) 1 = Low (0-1 event / 30 years) 2 = Moderate (2-3 events / 30 years) 3 = High (4+ events / 30 years)		0 = N/A (no impact expected) 1 = Low (<1% affected) 2 = Moderate (1-10% affected) 3 = High (>10% affected)	0 = N/A (no impact expected) 1 = Low (<1% affected) 2 = Moderate (1-10% affected) 3 = High (>10% affected)	0 = N/A (no impact expected) 1 = Low (<1% affected) 2 = Moderate (1-10% affected) 3 = High (>10% affected)	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	0 - 100%	0 - 100%	0 - 198
Sewer Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Steam Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Structural Damage	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
Tube System Failure	2	1	2	3	1	1	2	1	2	3	1	2	2	**40%**	**20%**	60
														0%	**0%**	0
														0%	**0%**	0
Average:	2.08	1.33	2.00	3.00	1.00	1.00	2.00	1.00	2.00	3.00	1.00	2.00	2.00			
Geographic Events																
Proximity to nuclear power plants	3	3	2	2	2	3	2	2	2	1	1	2	2	**63%**	**63%**	**126**
Proximity to Bridges	3	3	2	2	2	3	2	2	2	1	1	2	2	**63%**	**63%**	**126**
Proximity to bus terminals	2	2	2	2	2	3	2	2	2	1	1	2	2	**42%**	**42%**	84
Proximity to Civic/Sports Events	2	2	2	2	2	3	2	2	2	1	1	2	2	**42%**	**42%**	84
Proximity to companies that produce, store, use, or transport hazardous materials	2	2	2	2	2	3	2	2	2	1	1	2	2	**42%**	**42%**	84
Proximity to Federal buildings	2	2	2	2	2	3	2	2	2	1	1	2	2	**42%**	**42%**	84
Proximity to Festivals	2	2	2	2	2	3	2	2	2	1	1	2	2	**42%**	**42%**	84
Proximity to flood plains, faults, and dams	2	2	2	2	2	3	2	2	2	1	1	2	2	**42%**	**42%**	84
Proximity to local schools and universities	2	2	2	2	2	3	2	2	2	1	1	2	2	**42%**	**42%**	84
Proximity to major trans. routes and airports	2	2	2	2	2	3	2	2	2	1	1	2	2	**42%**	**42%**	84
Proximity to Parks	2	2	2	2	2	3	2	2	2	1	1	2	2	**42%**	**42%**	84
Proximity to train stations	2	2	2	2	2	3	2	2	2	1	1	2	2	**42%**	**42%**	84
														0%	**0%**	0
														0%	**0%**	0
Average:	2.17	2.17	2.00	2.00	2.00	3.00	2.00	2.00	2.00	1.00	1.00	2.00	2.00			
Physical Events																
Asbestos release during const. or renovation	3	3	3	1	2	3	1	1	2	1	2	2	2	**60%**	**60%**	**120**
Building/parking structure failure	3	3	3	1	2	3	1	1	2	1	2	2	2	**60%**	**60%**	**120**
Layout of the equipment	2	2	3	1	2	3	1	1	2	1	2	2	2	**40%**	**40%**	80
The physical construction of the facility	2	2	3	1	2	3	1	1	2	1	2	2	2	**40%**	**40%**	80
Evacuation routes and exits	2	2	3	1	2	3	1	1	2	1	2	2	2	**40%**	**40%**	80
Hazardous processes or byproducts	2	2	3	1	2	3	1	1	2	1	2	2	2	**40%**	**40%**	80
Proximity of shelter areas	2	2	3	1	2	3	1	1	2	1	2	2	2	**40%**	**40%**	80
Facilities for storing biohazardous wastes	2	2	3	1	2	3	1	1	2	1	2	2	2	**40%**	**40%**	80
Facilities for storing combustibles	2	2	3	1	2	3	1	1	2	1	2	2	2	**40%**	**40%**	80
Facilities for storing hazardous chemical waste	2	2	3	1	2	3	1	1	2	1	2	2	2	**40%**	**40%**	80
Lighting	2	2	3	1	2	3	1	1	2	1	2	2	2	**40%**	**40%**	80

COMMUNITY HAZARD VULNERABILITY ASSESSMENT TOOL	PROBABILITY		HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	MITIGATION		PREPAREDNESS		RESPONSE		RECOVERY		RISK Occurrence	RISK Response	Non Weighted
	Likelihood of future occurrence and facility response		Percentage of population likely to be injured or killed under an average occurrence of the hazard	Percentage of properties likely to be affected under an average occurrence of the hazard	Percentage of businesses likely to be affected under an average occurrence of the hazard	Internal (Jurisdic-tional)	External (Region/ State)	Internal (Jurisdic-tional)	External (Region/ State)	Internal (Jurisdic-tional)	External (Region/ State)	Internal (Jurisdic-tional)	External (Region/ State)	Relative threat (increases with percentage)	Relative threat (increases with percentage)	Realtive threat (increases with number)
	0 = N/A (implausible) 1 = Low (0-1 event / 30 years) 2 = Moderate (2-3 events / 30 years) 3 = High (4+ events / 30 years)		0 = N/A (no impact expected) 1 = Low (<1% affected) 2 = Moderate (1-10% affected) 3 = High (>10% affected)	0 = N/A (no impact expected) 1 = Low (<1% affected) 2 = Moderate (1-10% affected) 3 = High (>10% affected)	0 = N/A (no impact expected) 1 = Low (<1% affected) 2 = Moderate (1-10% affected) 3 = High (>10% affected)	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	0 - 100%	0 - 100%	0 - 198
														0%	0%	0
														0%	0%	0
Average:	2.18	2.18	3.00	1.00	2.00	3.00	1.00	1.00	2.00	1.00	2.00	2.00	2.00			
Other Events																
Airplane Crash	3	3	3	3	3	2	3	1	2	1	2	2	3	72%	72%	150
Evacuation	3	3	3	3	3	2	3	1	2	1	2	2	3	72%	72%	150
Helicopter Incident	2	1	3	3	3	2	3	1	2	1	2	2	3	48%	24%	75
Intentional Vehicular Incident	2	1	3	3	3	2	3	1	2	1	2	2	3	48%	24%	75
Isolation Capacity	2	1	3	3	3	2	3	1	2	1	2	2	3	48%	24%	75
Loss of Key Supplier	2	2	3	3	3	2	3	1	2	1	2	2	3	48%	48%	100
Supply Shortage	2	2	3	3	3	2	3	1	2	1	2	2	3	48%	48%	100
														0%	0%	0
														0%	0%	0
														0%	0%	0
														0%	0%	0
														0%	0%	0
Average:	2.29	1.86	3.00	3.00	3.00	2.00	3.00	1.00	2.00	1.00	2.00	2.00	3.00			
Overall Average:	2.02	1.91	2.22	2.11	2.11	2.00	2.12	1.44	1.78	1.78	2.00	2.00	2.11			

Revised: 8/5/2013

NOTE: The top 20 events automatically turn red in the last three columns.
NOTE: If you do not use an Event, clear out all of the data -- including the zero -- as it will impact the Average rating.
NOTE: Weighting is X2 for the four phases of emergency management planning.

WARNING: Do NOT delete or add Rows in the spreadsheet. The formulas and pivot tables are sensitive! Changes may result in inaccurate calculations. To change an event, simply delete or replace the events in Column A.

RECOMMENDATION: Hide the three end columns when conducting the assessment with your partners.
RECOMMENDATION: When meeting with your community partners to complete your site CHVA, only allow them to modify the external columns in the four phases of EM. If you are conducting a regional assessment, then allow all of the other columns to be modified.
RECOMMENDATION: Additional columns could be added to the right of the form to document justification/notes for each rating.

Children's Hospital Colorado

Must refresh the screen in the Data Tab or Press the REFRESH Button to the right after making changes to the CHVA Tool.

Children's Hospital Colorado

	Risk Occurrence			Risk Response			Non Weighted Risk	
1	Communications Failure	75%	1	Information Systems Failure	75%	1	Airplane Crash	150
2	Infant Security Alarm Failure	75%	2	Magnetic Resonance Imaging (MRI) Incident	75%	2	Infant Security Alarm Failure	150
3	Evacuation	72%	3	Communications Failure	75%	3	Communications Failure	150
4	Airplane Crash	72%	4	Infant Security Alarm Failure	75%	4	Evacuation	150
5	HAZMAT Spill (Internal)	67%	5	Evacuation	72%	5	Decontamination	132
6	Decontamination	67%	6	Airplane Crash	72%	6	HAZMAT Spill (Internal)	132
7	Proximity to nuclear power plants	63%	7	HAZMAT Spill (Internal)	67%	7	Avalanche	126
8	Avalanche	63%	8	Decontamination	67%	8	Dam Inundation	126
9	Dam Inundation	63%	9	Bomb Threat	63%	9	Bomb Threat	126
10	Active Shooter	63%	10	Proximity to nuclear power plants	63%	10	Proximity to Bridges	126
11	Proximity to Bridges	63%	11	Dam Inundation	63%	11	Active Shooter	126
12	Bomb Threat	63%	12	Active Shooter	63%	12	Proximity to nuclear power plants	126
13	Asbestos release during const. or renovation	60%	13	Avalanche	63%	13	Magnetic Resonance Imaging (MRI) Incident	125
14	Biological Attack – Plague	60%	14	Proximity to Bridges	63%	14	Information Systems Failure	125
15	Broken Water Main (Internal)	60%	15	Compressed Gas Cylinder Leak/Failure	60%	15	Broken Water Main (External)	120
16	Biological Attack – Food Contamination	60%	16	Broken Water Main (External)	60%	16	Biological Attack – Aerosol Anthrax	120
17	Broken Water Main (External)	60%	17	Building/parking structure failure	60%	17	Asbestos release during const. or renovation	120
18	Building/parking structure failure	60%	18	Electrical Failure	60%	18	Building/parking structure failure	120
19	Biological Attack – Foreign Animal Disease	60%	19	Biological Attack – Aerosol Anthrax	60%	19	Biological Attack – Food Contamination	120
20	Biological Attack – Aerosol Anthrax	60%	20	Asbestos release during const. or renovation	60%	20	Broken Water Main (Internal)	120

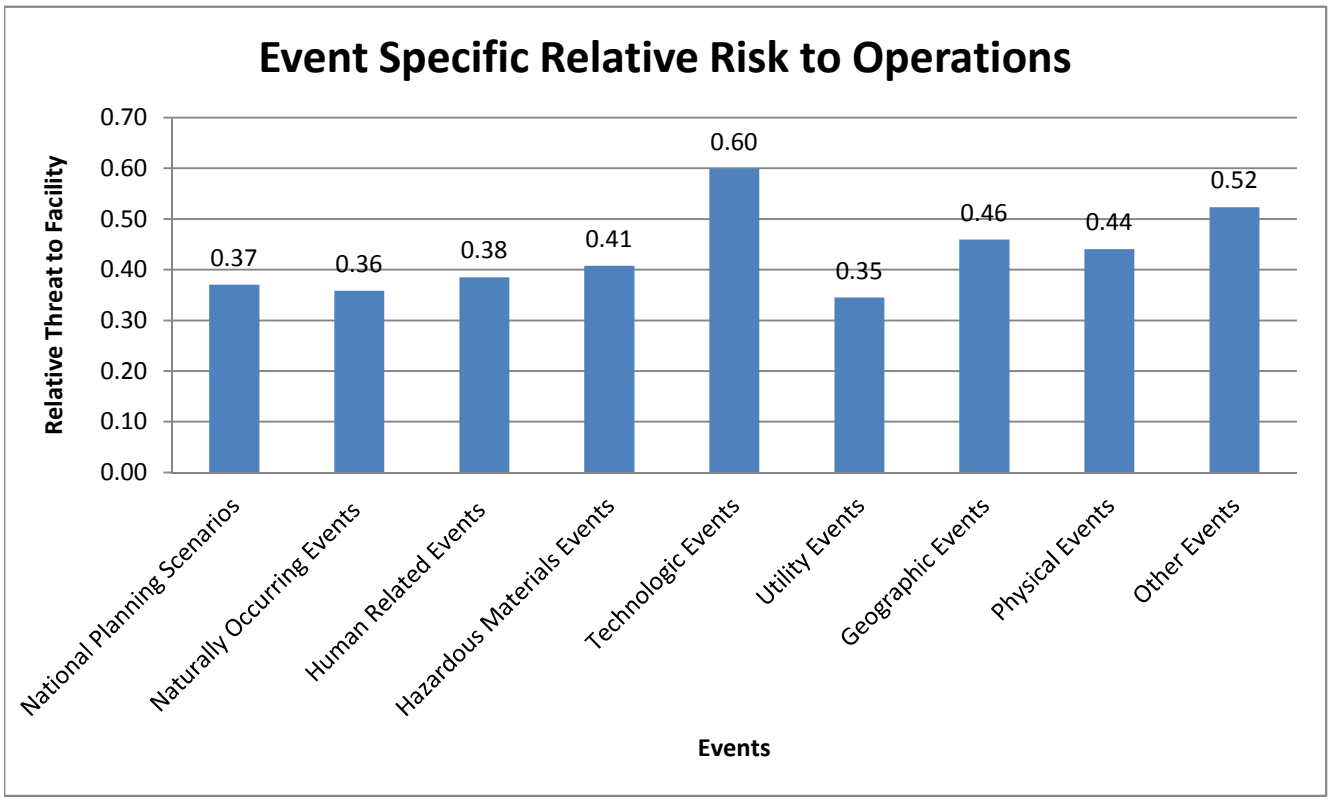
NOTE: The top 20 events on the CHVA are listed with the top five in each risk category highlighted yellow.
NOTE: If an event is not listed in your top 20, but is highlighted red on the Data Entry tab, it means that the event has the same ratings as your number 20 event.
NOTE: You must enable MACROS in order for the refresh button to work.

HVA Based on Risk Occurrence

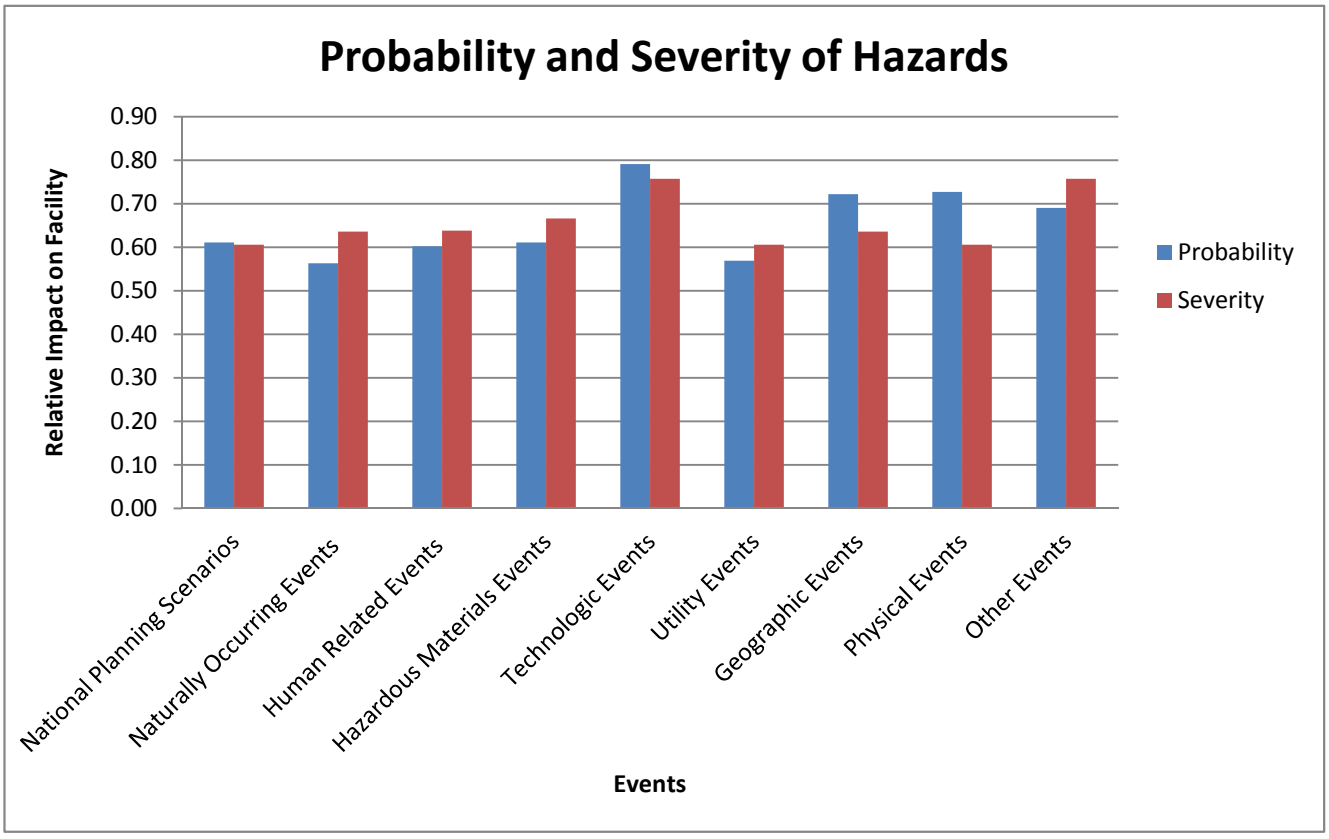
Children's Hospital Colorado	Trauma Rating: 1					Four Phases of Emergency Management										
COMMUNITY HAZARD VULNERABILITY ASSESSMENT TOOL	PROBABILITY		HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	MITIGATION		PREPAREDNESS		RESPONSE		RECOVERY		RISK Occurrence	RISK Response	Non Weighted
	Likelihood of future occurrence and facility response		Percentage of population likely to be injured or killed under an average occurrence of the hazard	Percentage of properties likely to be affected under an average occurrence of the hazard	Percentage of businesses likely to be affected under an average occurrence of the hazard	Internal (Jurisdictional)	External (Region/State)	Internal (Jurisdictional)	External (Region/State)	Internal (Jurisdictional)	External (Region/State)	Internal (Jurisdictional)	External (Region/State)	Relative threat (increases with percentage)	Relative threat (increases with percentage)	Realtive threat (increases with number)
	0 = N/A (implausible) 1 = Low (0-1 event / 30 years) 2 = Moderate (2-3 events / 30 years) 3 = High (4+ events / 30 years)		0 = N/A (no impact expected) 1 = Low (<1% affected) 2 = Moderate (1-10% affected) 3 = High (>10% affected)	0 = N/A (no impact expected) 1 = Low (<1% affected) 2 = Moderate (1-10% affected) 3 = High (>10% affected)	0 = N/A (no impact expected) 1 = Low (<1% affected) 2 = Moderate (1-10% affected) 3 = High (>10% affected)	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	1 = Substantial 2 = Moderate 3 = Limited or none	0 - 100%	0 - 100%	0 - 198
	Occurrence	Response														
Infant Security Alarm Failure	3	3	3	2	2	2	3	1	2	2	2	3	3	75%	75%	150
Communications Failure	3	3	3	2	2	2	3	1	2	2	2	3	3	75%	75%	150
Airplane Crash	3	3	3	3	3	2	3	1	2	1	2	2	3	72%	72%	150
Evacuation	3	3	3	3	3	2	3	1	2	1	2	2	3	72%	72%	150
HAZMAT Spill (Internal)	3	3	2	3	1	2	2	1	1	2	2	3	3	67%	67%	132
Decontamination	3	3	2	3	1	2	2	1	1	2	2	3	3	67%	67%	132
Dam Inundation	3	3	1	2	3	2	2	3	1	1	3	2	1	63%	63%	126
Avalanche	3	3	1	2	3	2	2	3	1	1	3	2	1	63%	63%	126
Active Shooter	3	3	3	1	2	2	2	1	3	2	3	1	1	63%	63%	126
Bomb Threat	3	3	3	1	2	2	2	1	3	2	3	1	1	63%	63%	126
Proximity to nuclear power plants	3	3	2	2	2	3	2	2	2	1	1	2	2	63%	63%	126
Proximity to Bridges	3	3	2	2	2	3	2	2	2	1	1	2	2	63%	63%	126
Broken Water Main (External)	3	3	2	3	1	1	2	1	2	3	1	2	2	60%	60%	120
Broken Water Main (Internal)	3	3	2	3	1	1	2	1	2	3	1	2	2	60%	60%	120
Biological Attack – Aerosol Anthrax	3	3	1	2	3	1	2	2	1	3	2	1	2	60%	60%	120
Biological Attack – Foreign Animal Disease	3	2	1	2	3	1	2	2	1	3	2	1	2	60%	40%	100
Biological Attack – Food Contamination	3	3	1	2	3	1	2	2	1	3	2	1	2	60%	60%	120
Biological Attack – Plague	3	2	1	2	3	1	2	2	1	3	2	1	2	60%	40%	100
Asbestos release during const. or renovation	3	3	3	1	2	3	1	1	2	1	2	2	2	60%	60%	120
Building/parking structure failure	3	3	3	1	2	3	1	1	2	1	2	2	2	60%	60%	120
Information Systems Failure	2	3	3	2	2	2	3	1	2	2	2	3	3	50%	75%	125
Pharmacy Medication Dispenser Failure	2	2	3	2	2	2	3	1	2	2	2	3	3	50%	50%	100
Security Video Surveillance	2	2	3	2	2	2	3	1	2	2	2	3	3	50%	50%	100
Security Card Access Failure	2	2	3	2	2	2	3	1	2	2	2	3	3	50%	50%	100
Network Failure	2	2	3	2	2	2	3	1	2	2	2	3	3	50%	50%	100
Magnetic Resonance Imaging (MRI) Incident	2	3	3	2	2	2	3	1	2	2	2	3	3	50%	75%	125
Loss of Key Supplier	2	2	3	3	3	2	3	1	2	1	2	2	3	48%	48%	100
Intentional Vehicular Incident	2	1	3	3	3	2	3	1	2	1	2	2	3	48%	24%	75
Supply Shortage	2	2	3	3	3	2	3	1	2	1	2	2	3	48%	48%	100
Helicopter Incident	2	1	3	3	3	2	3	1	2	1	2	2	3	48%	24%	75

Revised: 8/5/2013

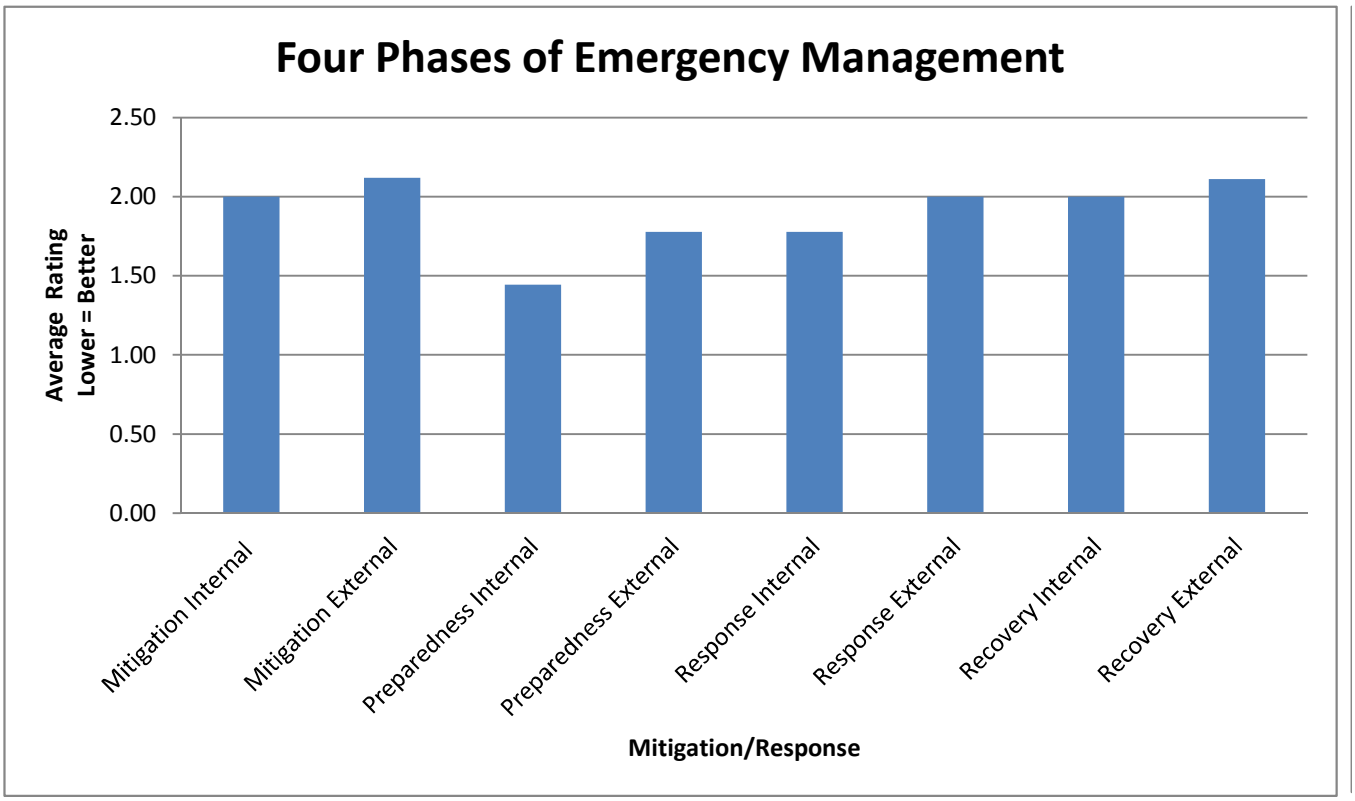
NOTE: The top 30 are printed based on the traditional risk occurrence model. You can resort based on the response or non weighted risk by highlighting the data and sorting. (May have to add more lines to capture the top risks).
NOTE: You can add additional rows for printing by copying the last line and pasting it below the last line.



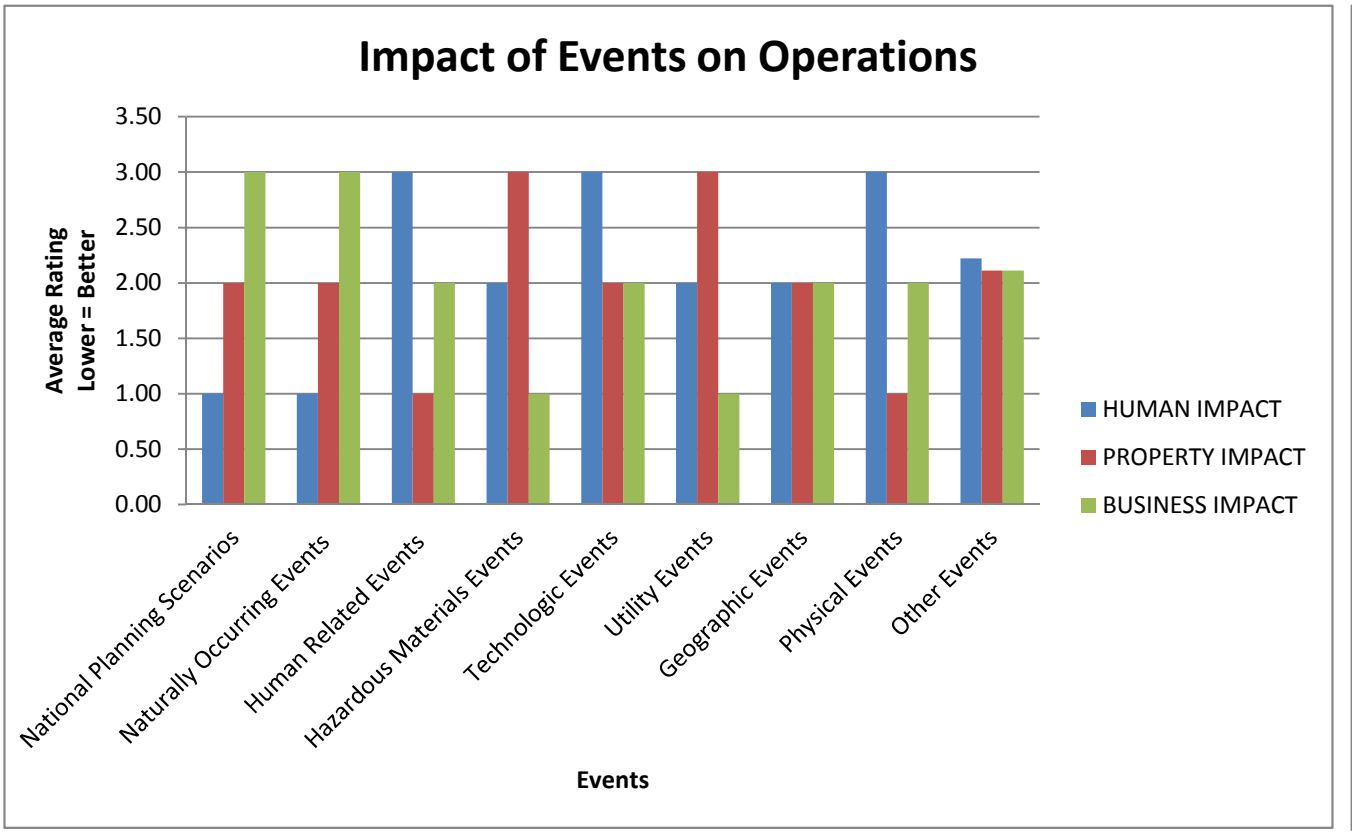
Note: **Lower the bar, less impact on operations.** **Higher the bar, greater impact on operations.**



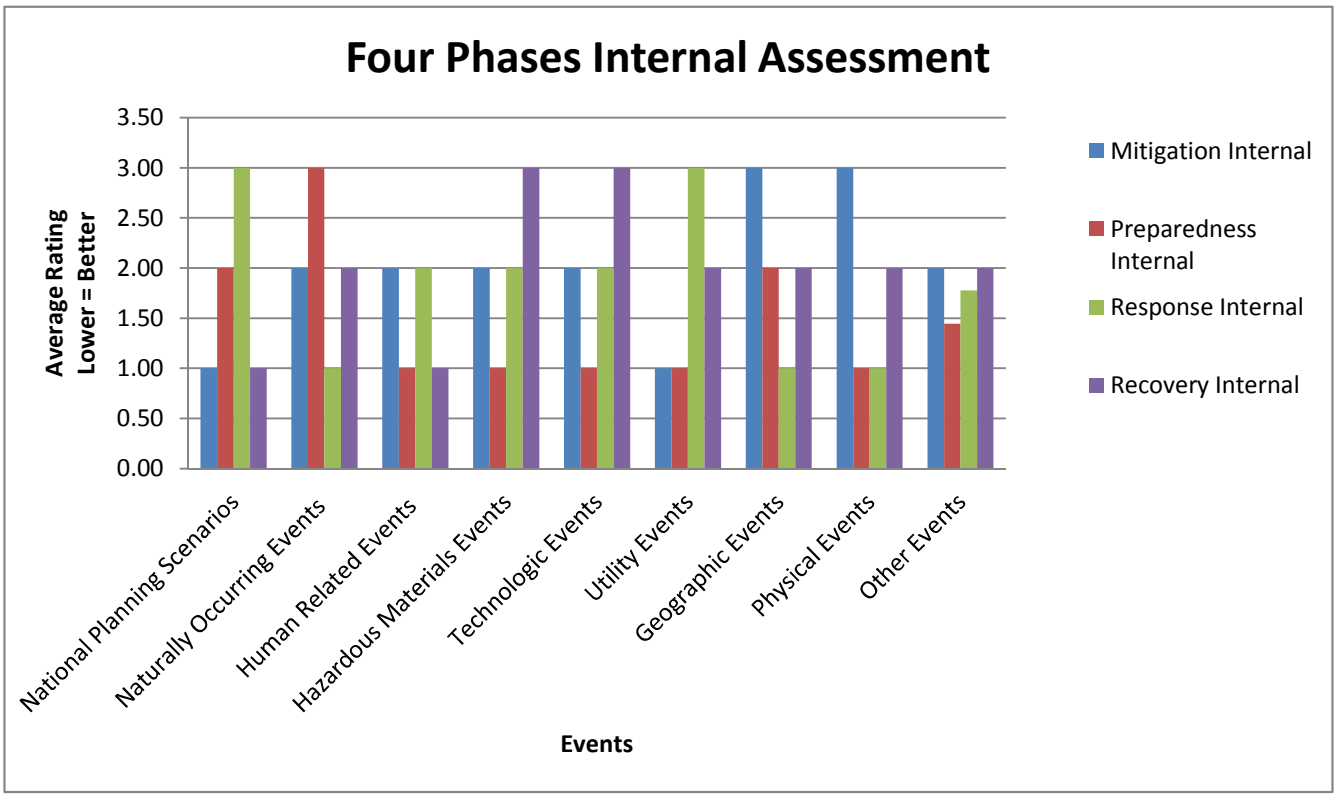
Note: **Lower the bar, less impact on operations.** **Higher the bar, greater impact on operations.**



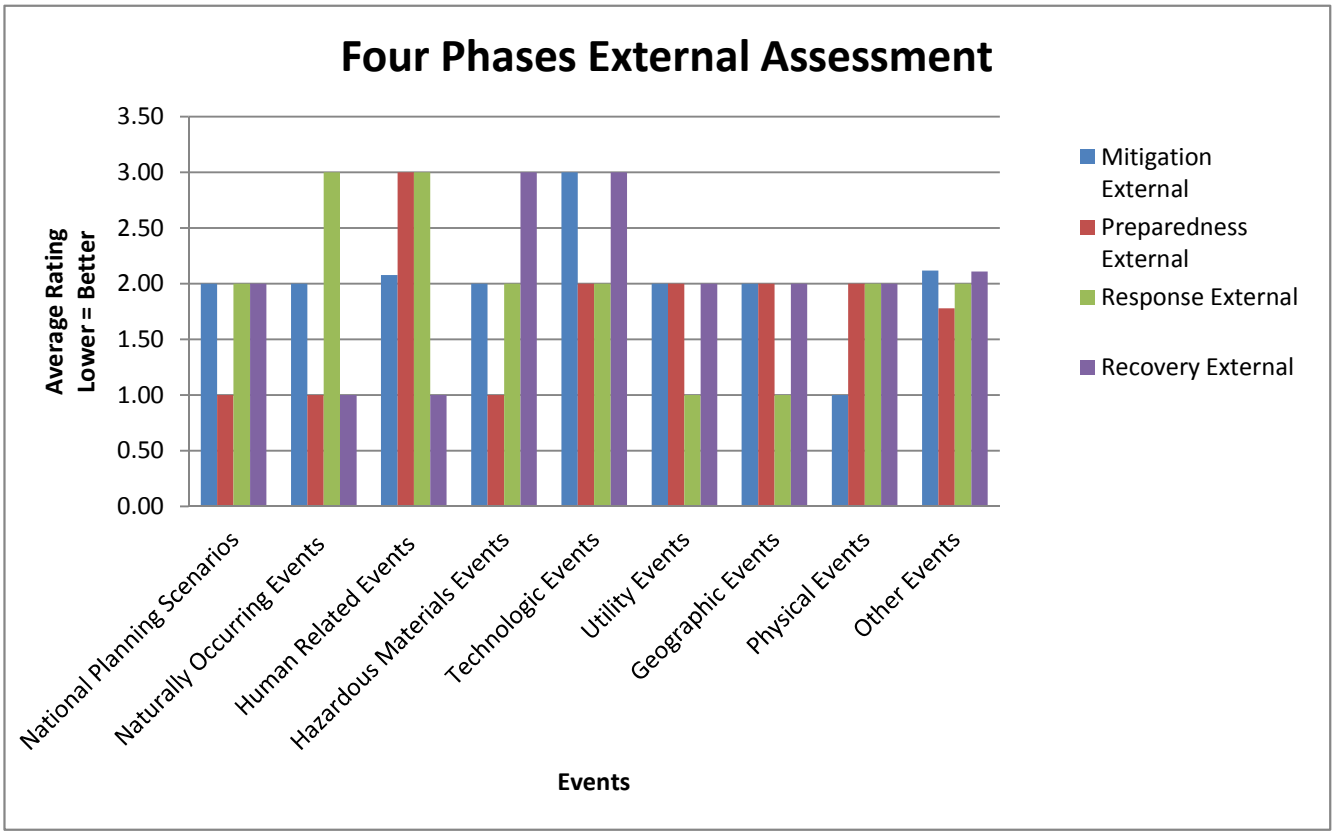
Note: **Lower bar, the stronger the phase.** **Higher the bar, weaker the phase.**



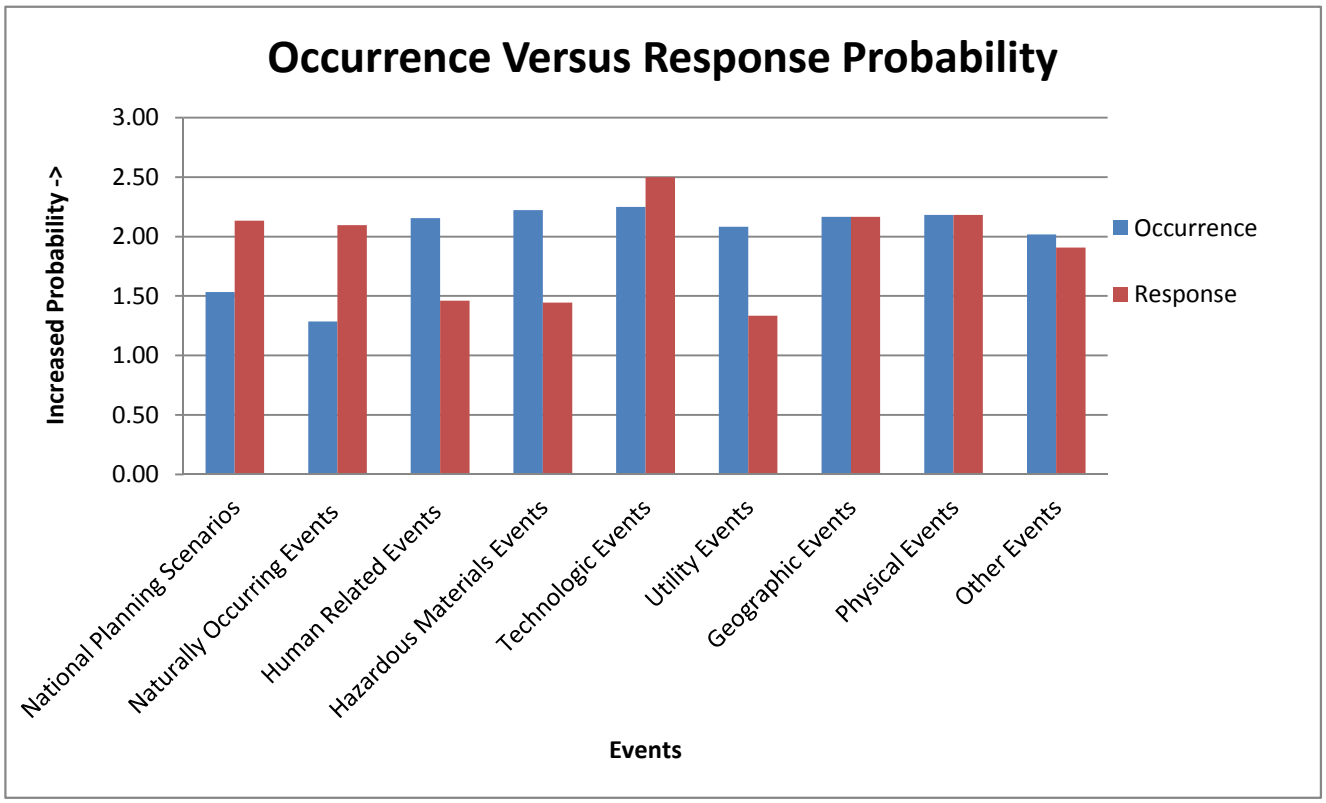
Note: **Lower bar, the less Impact on operations.** **Higher bar, the greater Impact on operations.**



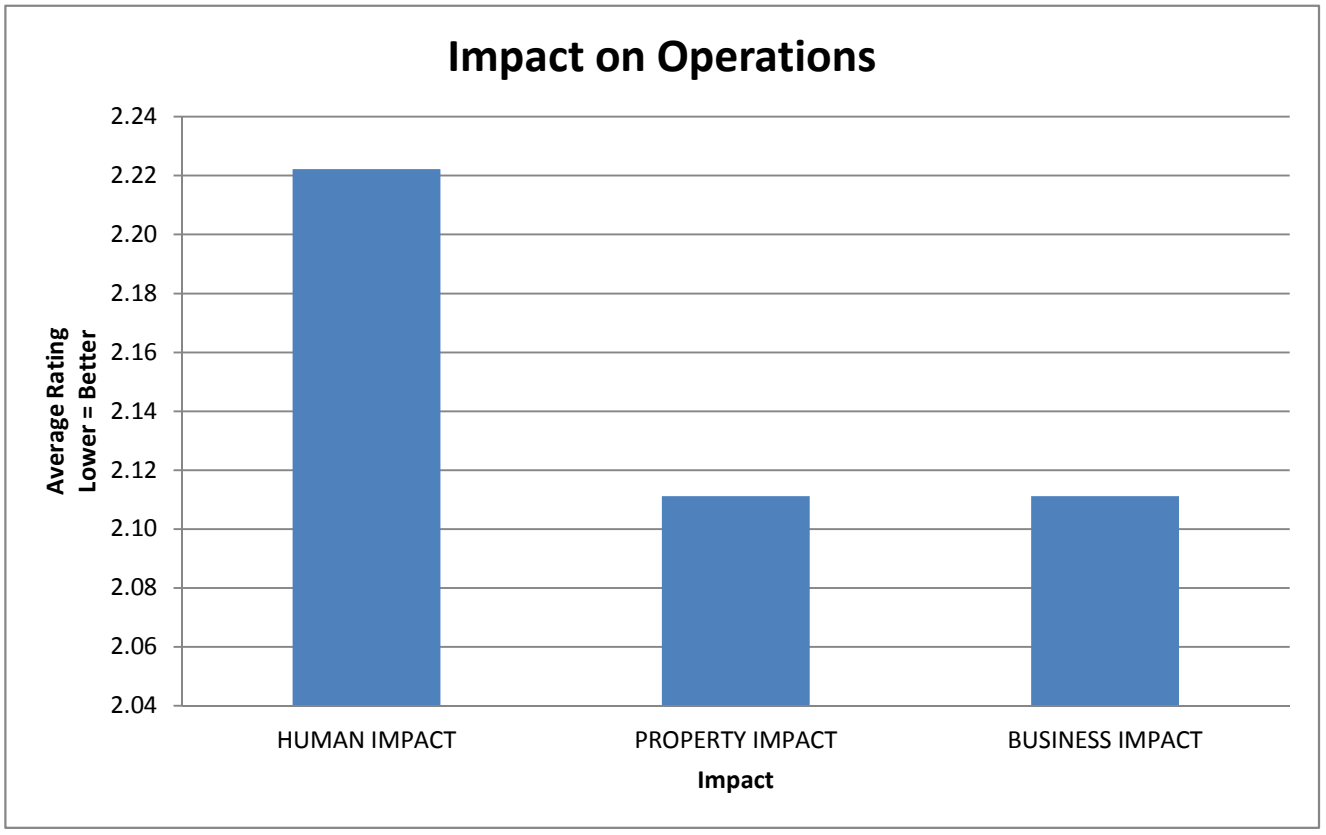
Note: **Lower bar, the better the EM phase.** **Higher bar, the weaker the EM phase.**



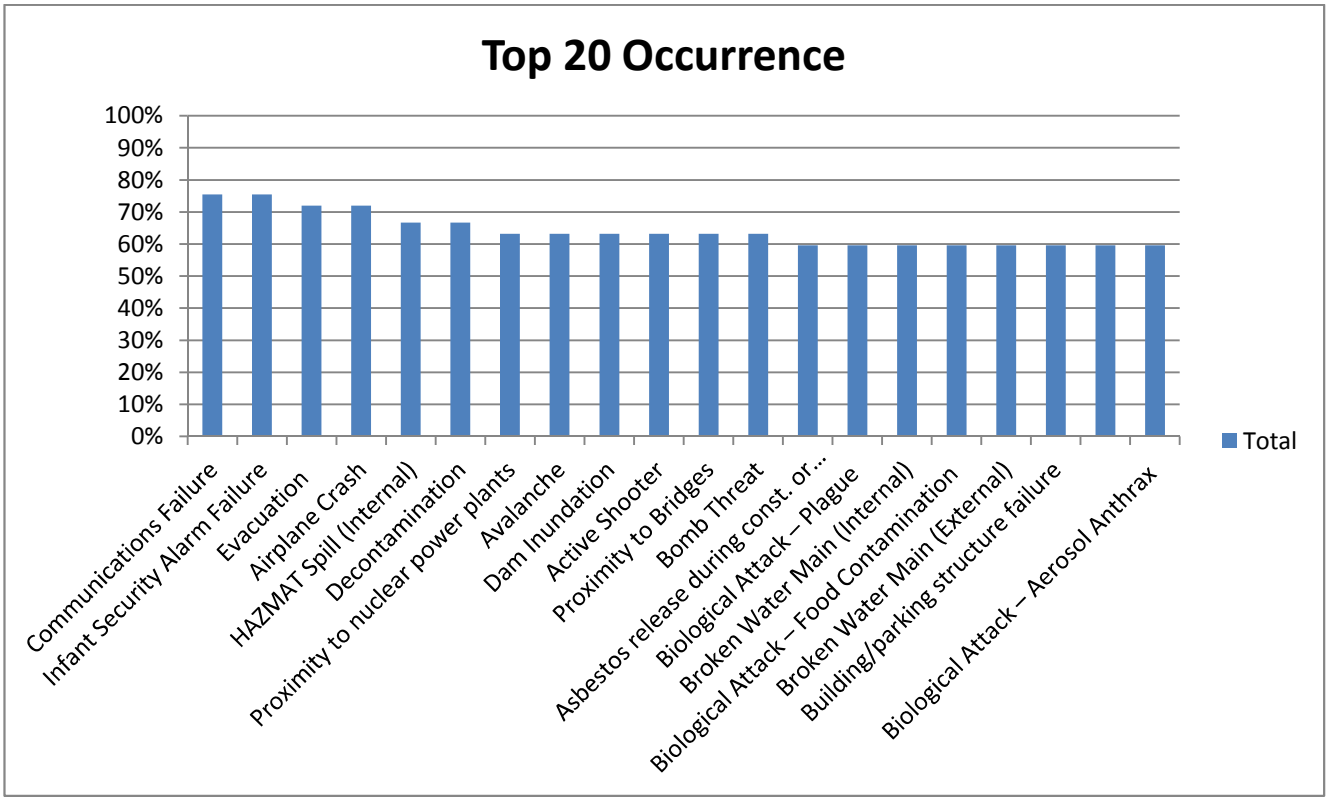
Note: **Lower bar, the better the EM phase.** **Higher bar, the weaker the EM Phase.**



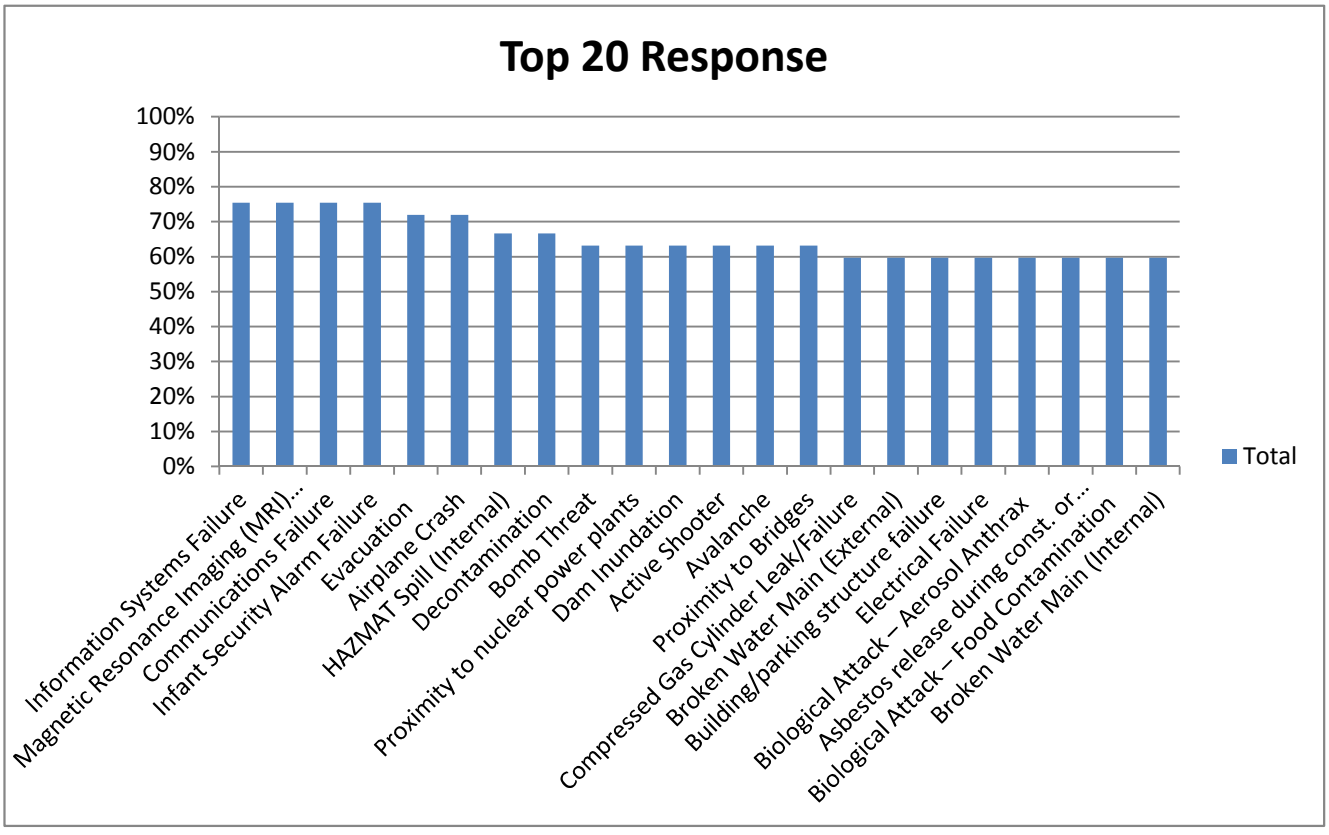
Note: **Lower bar, the less likely to occur or respond.** **Higher bar, more likely to occur or respond.**



Note: **Lower bar, less impact on operations.** **Higher bar, greater impact on operations.**



Note: Top 20 events graphed by likelihood to occur.



Note: Top 20 events graphed by likelihood to respond.

Children's Hospital Colorado

The events listed below (Occurrence = 3, Response = 3) have the highest potential for occurrence and the highest potential for response. Additional attention should be provided to these events to ensure that the facility is prepared.

Recommendation: Compare with the Top 20 Events when selecting exercise scenarios.
Recommendation: Use the Action columns to document what you have done to for each event.

High Risk Occurrence and Response Events	Mitigation Actions	Preparedness Actions	Response Actions	Recovery Actions
Active Shooter				
Airplane Crash				
Asbestos release during const. or renovation				
Avalanche				
Biological Attack – Aerosol Anthrax				
Biological Attack – Food Contamination				
Bomb Threat				
Broken Water Main (External)				
Broken Water Main (Internal)				
Building/parking structure failure				
Communications Failure				
Dam Inundation				
Decontamination				
Evacuation				
HAZMAT Spill (Internal)				
Infant Security Alarm Failure				
Proximity to Bridges				
Proximity to nuclear power plants				

Children's Hospital Colorado

The events listed below have the highest potential for **occurrence** at your facility.

Recommendation: Use the Action columns to document what you have done to for each event.

High Risk Occurrence Events	Mitigation Actions	Preparedness Actions	Response Actions	Recovery Actions
Active Shooter				
Airplane Crash				
Asbestos release during const. or renovation				
Avalanche				
Biological Attack – Aerosol Anthrax				
Biological Attack – Food Contamination				
Biological Attack – Foreign Animal Disease				
Biological Attack – Plague				
Bomb Threat				
Broken Water Main (External)				
Broken Water Main (Internal)				
Building/parking structure failure				
Communications Failure				
Dam Inundation				
Decontamination				
Evacuation				
HAZMAT Spill (Internal)				
Infant Security Alarm Failure				
Proximity to Bridges				
Proximity to nuclear power plants				

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The events listed below have the highest potential for **response** at your facility.

Recommendation: Use the Action columns to document what you have done to for each event.

High Risk Response Events	Mitigation Actions	Preparedness Actions	Response Actions	Recovery Actions
Active Shooter				
Airplane Crash				
Asbestos release during const. or renovation				
Avalanche				
Biological Attack – Aerosol Anthrax				
Biological Attack – Food Contamination				
Bomb Threat				
Broken Water Main (External)				
Broken Water Main (Internal)				
Building/parking structure failure				
Communications Failure				
Compressed Gas Cylinder Leak/Failure				
Dam Inundation				
Decontamination				
Electrical Failure				
Evacuation				
HAZMAT Spill (Internal)				
Infant Security Alarm Failure				
Information Systems Failure				
Magnetic Resonance Imaging (MRI) Incident				
Proximity to Bridges				
Proximity to nuclear power plants				

SAMPLE Approvals

Documentation to support participation in the review of the CHVA.

Date	Reviewed By
8/5/2013	Emergency Management Manager
8/5/2013	Senior Hospital Leader
8/5/2013	Emergency Management Committee
8/5/2013	Community Partners
8/5/2013	Environment of Care Committee
8/5/2013	Quality/Risk Management Committee
8/5/2013	Governing Board
8/5/2013	Approving Body
	Others…

NOTE: Each facility should determine who should review the CHVA.
RECOMMENDATION: Document review date with appropriate partners.

SAMPLE Sign off Sheet

List all participants who reviewed the CHVA

Name	Organization	Date
Tom Jones	*Emergency Management*	8/5/2013

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SAMPLE Grid

Documentation on drills/events affecting the Top 10

OCCURRENCE EVENTS	DATE
Communications Failure Infant Security Alarm Failure Evacuation Airplane Crash HAZMAT Spill (Internal)	
Decontamination Proximity to nuclear power plants Avalanche Dam Inundation Active Shooter	
RESPONSE EVENTS	**DATE**
Information Systems Failure Magnetic Resonance Imaging (MRI) Incident Communications Failure Infant Security Alarm Failure Evacuation	
Airplane Crash HAZMAT Spill (Internal) Decontamination Bomb Threat Proximity to nuclear power plants	
NON-WEIGHTED TOTAL EVENTS	**DATE**
Airplane Crash Infant Security Alarm Failure Communications Failure Evacuation Decontamination	
HAZMAT Spill (Internal) Avalanche Dam Inundation Bomb Threat Proximity to Bridges	

Note: The top ten are linked to the Top 20 Assessment tab and will change if updated.
Recommendation: Use this form ONLY when you are done with your changes.

Recommendation: Use the highlighted events to tie your CHVA into drills/planning initiatives. Use multiple events when designing a drill - challenge your program!

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