

Exploring Environmental Hazards in Healthcare

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E×PLORE
HEALTHCARE SUMMIT

Speaker Bio

Ralph (Bud) Miller, Senior Environment of Care Consultant, Princeton/MedPro Group
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Ralph (Bud) Miller, a senior environment of care consultant, brings nearly 20 years of healthcare experience to Princeton Insurance/MedPro Group. He's responsible for conducting facility surveys, developing webinar content, senior care newsletter development, code research, and construction consulting (ICRA/ILSM).

Previously, Bud served in several roles in a multihospital healthcare system in southern New Jersey, including safety officer, project manager, hospital facility manager, and assistant regulatory manager. As assistant regulatory manager, he assisted in the development of the system's environment of care rounding tool that is currently being used by MedPro. As the chair of the system's fire/life safety committee, he was directly responsible for the development and implementation of the system's fire and life safety plans, life safety drawings, and fire response program and training. He also managed the assessment and enforcement of the system's infection control risk assessment/interim life safety measures (ICRA/ILSM) permits.

Bud successfully completed the Occupational Safety and Health Administration's (OSHA) 30-Hour General Industry Workplace Safety program, the OSHA and Environmental Protection Agency's (EPA) 40-Hour Asbestos Worker program, and the ECRI risk assessment for healthcare construction. He also completed several high-level incident management classes, adapted them for local use, and presented them to his coworkers at the healthcare system where he was formerly employed. He also had served on the township emergency management committee while working for that healthcare system as the healthcare liaison.

Bud obtained an associate's degree from Delaware Technical & Community College in fire protection engineering. He also holds numerous health and safety certifications. He is the training captain for his local fire department and serves as team leader of his county's technical rescue taskforce. His responsibilities include training logistical support and team management. He is a member of the National Fire Protection Association, American Society for Health Care Engineering and the local chapter of Hospital Facility Managers Association of Delaware Valley.



Overview and Learning Objectives

By the end of this presentation, we will:

- Review past examples of healthcare internal, external and weather emergency events and facility's mitigation, prevention / preparation, response and recovery efforts.
- Define Healthcare Emergency Preparedness and the All Hazards Style of management, view an example of a Hazard Vulnerability Assessment.
- We will provide examples of a safe environment and what may be considered an unsafe atmosphere.
- A building labeling and terminology sample will be shown to assist first responders and incident management staff in identifying parts of the building.
- We will also show the importance of Pre Construction Risk Assessments, Construction Risk Assessments and Alternative / Interim Life Safety Measures during a construction or renovation project.
- Provide a list of webpages designed to assist with loved ones during an emergency or event.



Healthcare Emergency Preparedness

- Healthcare Facilities have always had to prepare for disasters (fires, weather related emergencies and utility losses)
- Past Events
 - Fire in patient's room forcing the evacuation of several residents and (6) being transported to hospital, NJ
 - Superstorm Sandy evacuation of hospitals, nursing homes, and assisted living facilities, NJ/NY
 - Fire forces the evacuation of 140 residents from a Senior Care Facility, Maryland
 - Virginia earthquake felt in South Jersey, facilities along the east coast activate Emergency Operations Centers
 - Partial evacuation due to power-loss (HVAC issues)
 - Active shooter in Nursing Home kills 8, wounds 1, NC
 - Camp Fire – Paradise, CA – Total loss of facility, all residents evacuated – “well trained staff started packing bags days before being told to evacuate”
 - Golden Age Nursing Home – Area of Fitchville, Ohio, killing 63 residents – 0445 23-Nov-63



The Atria Paradise, a senior living facility, sustained heavy damage from the Camp Fire, Nov 8, 2018. Photo by Mark McKenna]



Golden Age Nursing Home

- Background Information
 - Concrete block, single story, roughly 186' x 65', flat wood roof
 - Early phone calls never connected to the fire department due to phone lines being burned through – a truck driver noticed sagging / arcing electrical lines in the trees, this is when they tried to make the call.
 - A staff member noticed a quick flash in the Lobby area, but thought it was headlights. After a 2nd look, she could see flames in the corner eaves, very close to the incoming electrical service line.
 - Early attempts for egress were hampered by thick smoke.
 - At FD's arrival (10 minutes after first alerted), building was "well off" with visible fire throughout the facility.
- Unconfirmed
 - Wheelchairs were wider than the clear-width of the doors.
 - Residents went back to bed instead of outside.
 - Undivided attic space, no sprinklers, (3) fire extinguishers, no manual fire alarm.
 - "Reported" some residents were restrained to their beds
- Aftermath
 - 3,300 man-hours of investigations
 - "IF" staff and residents were more familiar with evacuation plan and procedure, more lives would have been saved.



Under CMS standards the facility is responsible for:

- ▶ Emergency plans
- ▶ Safety training
- ▶ Safety inspections / drills (EOC rounds)
- ▶ Detection & extinguishment systems, notifications systems, critical utility systems
- ▶ Call systems, medical gas systems
- ▶ Clean linen supply
- ▶ Comfortable environment for residents, staff and public
 - FGI Guidelines (fgiguide.org), paid subscription
- ▶ Management of utilities, systems and equipment

▶ **Providing a Safe Environment**



Main entrance – receptionist – work stations

- ▶ First point of contact, access control point
- ▶ Volunteer or staff position?
- ▶ Emergencies
- ▶ Panic alarm button
- ▶ Switchboard / radio operator
- ▶ Deterrents (signage, metal detectors, wands)



Safe environment

- ▶ Under CMS standards, we are responsible to provide a safe and secure environment free of recognized hazards (if it is reported, we have a duty to act)
 - ▶ Safe environment can include
 - Security
 - Room temperatures / HVAC systems
 - Carbon Monoxide detection
 - Clean, Tempered water (HACCP Plans)
 - Light & Sound level (yup fire alarm too)
 - Cleanliness, safe walking surfaces, handrails / grab-bars
 - Pest control
 - Unobstructed Means of Egress
 - Nurse call systems – show stopper!!!!
 - Fire detection / annunciation / suppression
 - Hazard preparation
- ▶ How do we determine our hazards?
 - Rounding
 - HVA



Hazard and Vulnerability Assessment Tool

- ▶ Sets the foundation
 - ▶ Starting point for future EP/EM purchases, scheduled drills, EP/EM goals
 - ▶ Completed by key stakeholders in the System and Local/County Government
 - Who is sitting at the table when the assessment is being conducted (PD, FD, EMS, LEPC, County EPC, 911 center)
 - Ctrl-C, Ctrl-V?
 - Updated yearly or more frequently
 - ▶ Top 5 results clearly identified - drills based off top 5 risks



Assessing our vulnerabilities

- Hazard Vulnerability Analysis
 - Download from Kaiser Permanente – 2 versions
 - <https://www.calhospitalprepare.org/hazard-vulnerability-analysis>
 - Who completes HVA? When is it updated? Is it Ctrl-C / Ctrl-V?
 - Top 5 are identified and focused on
 - SJ vs FL



Sample HVA – Nature / Environmental Events

HAZARD AND VULNERABILITY ASSESSMENT TOOL
NATURALLY OCCURRING EVENTS

EVENT	SEVERITY = (MAGNITUDE - MITIGATION)							RISK
	PROBABILITY	HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	PREPAREDNESS	INTERNAL RESPONSE	EXTERNAL RESPONSE	
	<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>	
SCORE	0 = Not 1 = Low 2 = Moderate 3 = High	0 = Not 1 = Low 2 = Moderate 3 = High	0 = Not 1 = Low 2 = Moderate 3 = High	0 = Not 1 = Low 2 = Moderate 3 = High	0 = Not 1 = High 2 = Moderate 3 = Low or none	0 = Not 1 = High 2 = Moderate 3 = Low or none	0 = Not 1 = High 2 = Moderate 3 = Low or none	0 - 100%
Hurricane	2	1	2	3	2	2	2	44%
Tornado	1	1	1	1	3	3	3	22%
Severe Thunderstorm	3	1	2	1	2	1	2	50%
Snow Fall	3	1	2	2	2	1	3	61%
Blizzard	2	1	2	2	2	1	2	37%
Ice Storm	2	1	2	2	2	2	2	41%
Earthquake	2	1	1	1	3	2	3	41%
Tidal Wave	0	0	0	0	0	0	0	0%
Temperature Extremes	2	2	2	2	2	1	2	41%
Drought	2	1	1	0	2	2	2	36%
Flood, External	2	1	2	2	2	2	2	41%
Wild Fire	1	1	1	1	3	3	1	19%
Landslide	0	0	0	0	0	0	0	0%
Dam Inundation	0	0	0	0	0	0	0	0%
Volcano	0	0	0	0	0	0	0	0%
Epidemic	2	2	1	1	1	1	1	26%
AVERAGE SCORE	1.50	0.88	1.19	1.13	1.63	1.31	1.56	21%

increases with percentage.

RISK = PROBABILITY * SEVERITY		
0.21	0.50	0.43

Natural Event

Snow Fall – all of South Jersey shuts down, we get so panicked, we spread road salt / brine on 50% days – yes this is true.



Sample HVA – Technological Events

HAZARD AND VULNERABILITY ASSESSMENT TOOL

TECHNOLOGIC EVENTS

EVENT	SEVERITY * (MAGNITUDE - MITIGATION)							RISK
	PROBABILITY	HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	PREPAREDNESS	INTERNAL RESPONSE	EXTERNAL RESPONSE	
	Likelihood this will occur	Possibility of death or injury	Physical losses and damages	Interruption of services	Preplanning	Time, effectiveness, resources	Community/Mutual Aid staff and supplies	
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%
Electrical Failure	3	1	2	2	2	1	2	54%
Generator Failure	3	1	2	2	3	1	2	36%
Transportation Failure	1	0	0	1	3	2	3	17%
Fuel Shortage	1	1	1	1	3	1	3	24%
Natural Gas Failure	1	1	1	1	3	1	3	18%
Water Failure	3	2	1	3	2	1	1	54%
Sewer Failure	1	1	1	1	2	1	2	32%
Steam Failure	3	2	1	3	3	1	3	48%
Fire Alarm Failure	1	1	1	1	3	1	1	15%
Communications Failure	1	2	1	3	2	1	2	26%
Medical Gas Failure	1	2	1	1	2	1	2	17%
Medical Vacuum Failure	1	2	1	3	1	1	2	18%
HVAC Failure	3	1	2	3	2	1	2	61%
Information Systems Failure	2	1	1	3	1	1	2	33%
Fire, Internal	2	2	2	2	1	1	1	33%
Flood, Internal	2	1	3	2	2	1	2	41%
Hazmat Exposure, Internal	2	2	1	2	1	1	2	33%
Supply Shortage	3	1	1	2	1	1	2	44%
Structural Damage	2	2	3	2	3	1	2	48%
AVERAGE SCORE	1.79	1.47	1.42	2.21	2.11	1.21	2.05	35%

at increases with percentage.

RISK = PROBABILITY * SEVERITY		
0.35	0.60	0.58

Has this value changed for your facility?

Tech Event

HVAC Failure – numerous RTU's, muggy summers, RTU's not on Emergency Power. We had a unit fail at night and our OR's began to rain. Not a great call to get in the middle of the night.



Sample HVA – Human Events

HAZARD AND VULNERABILITY ASSESSMENT TOOL

HUMAN RELATED EVENTS

EVENT	SEVERITY = (MAGNITUDE - MITIGATION)							RISK
	PROBABILITY	HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	PREPARED-NESS	INTERNAL RESPONSE	EXTERNAL RESPONSE	
	Likelihood this will occur	Possibility of death or injury	Physical losses and damages	Interruption of services	Preplanning	Time, effectiveness, resources	Community/ Mutual Aid staff and supplies	
SCORE	0 = Not 1 = Low 2 = Moderate 3 = High	0 = Not 1 = Low 2 = Moderate 3 = High	0 = Not 1 = Low 2 = Moderate 3 = High	0 = Not 1 = Low 2 = Moderate 3 = High	0 = Not 1 = High 2 = Moderate 3 = Low or none	0 = Not 1 = High 2 = Moderate 3 = Low or none	0 = Not 1 = High 2 = Moderate 3 = Low or none	0 - 100%
Mass Casualty Incident (Trauma)	2	3	1	3	2	1	1	41%
Mass Casualty Incident (med/infectious/pandemic)	2	2	1	3	2	1	2	41%
Terrorism, Biological	2	2	1	2	2	1	1	33%
VIP Situation	1	1	0	1	2	1	1	11%
Infant Abduction	1	2	0	3	1	1	1	15%
Hostage Situation	2	3	2	3	3	1	1	48%
Civil Disturbance	2	1	0	0	0	0	0	4%
Labor Action	1	0	0	1	0	0	0	2%
Forensic Admission	3	1	1	1	1	1	1	33%
Bomb Threat	1	1	1	2	2	1	1	15%
AVERAGE	1.70	1.60	0.70	1.90	1.50	0.80	0.90	26%

at increases with percentage.

RISK = PROBABILITY * SEVERITY		
0.26	0.57	0.46

Human Event

Hostage Situation –mid range on probability, but high in possible death and low in preplanning



Sample HVA – HazMat Events

HAZARD AND VULNERABILITY ASSESSMENT TOOL EVENTS INVOLVING HAZARDOUS MATERIALS

EVENT	SEVERITY = (MAGNITUDE - MITIGATION)							RISK
	PROBABILITY	HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	PREPARED-NESS	INTERNAL RESPONSE	EXTERNAL RESPONSE	
	Likelihood this will occur	Possibility of death or injury	Physical losses and damages	Interruption of services	Preplanning	Time, effectiveness, resources	Community/ Mutual Aid staff and supplies	
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%
Mass Casualty Hazmat Incident (From historic events at your MC with >= 5 victims)	1	1	3	2	2	2	2	22%
Small Casualty Hazmat Incident (From historic events at your MC with < 5 victims)	1	1	3	2	2	2	2	22%
Chemical Exposure, External	2	2	0	0	2	2	0	22%
Small-Medium Sized Internal Spill	1	1	1	1	1	1	2	13%
Large Internal Spill	1	1	1	1	1	1	2	13%
Terrorism, Chemical Radiologic Exposure, Internal	2	3	1	3	2	1	1	41%
Radiologic Exposure, External	1	1	1	2	1	1	0	11%
Terrorism, Radiologic	1	2	1	2	3	1	1	19%
AVERAGE	1.22	1.67	1.56	1.78	1.89	1.33	1.22	21%

at increases with percentage.

RISK = PROBABILITY * SEVERITY

0.21

0.41

0.52

Haz Mat Event

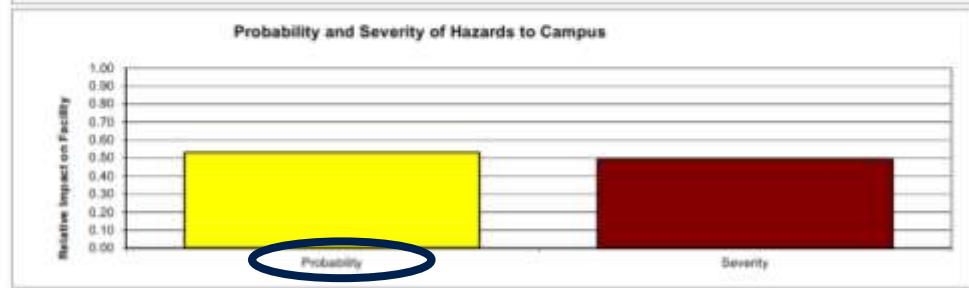
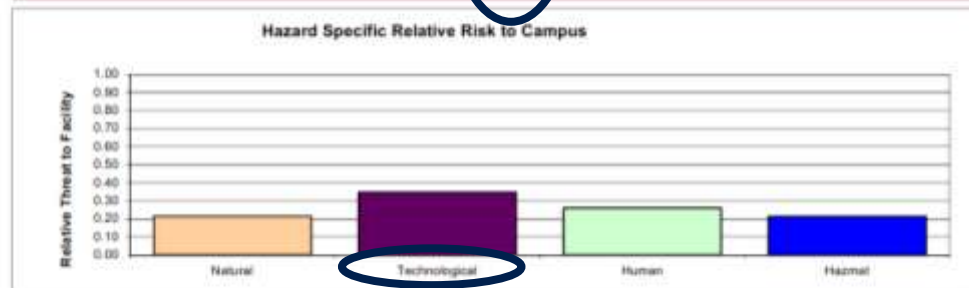
Terrorism – Chemical – close to several river ports and chemical manufacturing plants



Sample HVA - Results

- Facility Top 4
 - #1 Technological - HVAC Failure
 - #2 Natural - Snow fall
 - #3 Human - Hostage Situation
 - #4 HazMat - Terrorism - Chemical

SUMMARY OF HAZARDS ANALYSIS					
	Natural	Technological	Human	Hazmat	Total for Facility
Probability	0.50	0.60	0.57	0.41	0.53
Severity	0.43	0.58	0.46	0.52	0.49
Hazard Specific Relative Risk	0.21	0.35	0.26	0.21	0.26



Let's compare notes....

- Does our HVA match the community HVA?
 - Does it matter if it does?
- How many HVA's have you completed?
 - Corporate / campus / building
- How many HVA's do you have to complete?
 - Multiple HVA's should be completed if multiple campus system.
 - One per campus/building, One for system, One for community (to be compared with community HVA)



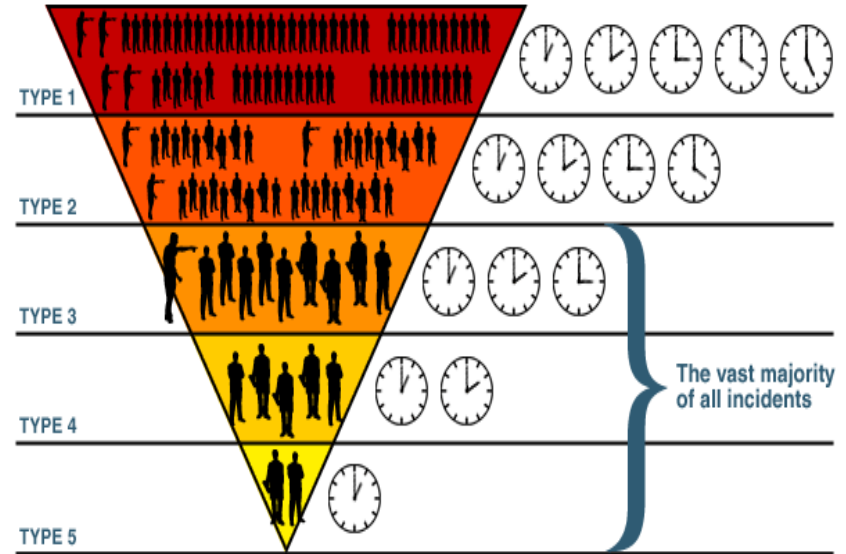
Disasters, Emergencies and the President told me to do what?

- WTF (What the FEMA)????
 - HSPD 5
 - ICS
 - HICS
- What is an emergency?
 - Unforeseen combination of circumstances that calls for immediate action.
 - Situation that poses an immediate threat to health, life, property or environment.
- What is a disaster?
 - Sudden event bringing damage, loss or destruction.
 - Serious disruption over a short or long time period that causes loss which exceeds the community resources.



Types / Sizes of Emergencies / Disasters

- Type 1 – largest event, very long duration, regional area is effected, cascading event may happen
- Type 2 – larger event, much longer in duration, effect on local and surrounding area, likelihood of a cascading event are high
- Type 3 – mid sized event, longer duration, locally effecting population, some possibility of a cascading event
- Type 4 – small scale, a bit longer in duration, some effect on population, still no real signs of a possible cascading event
- Type 5 – small scale, short duration, almost no effect to population, no indications of a cascading event



Possible Examples of Disaster Typing

- Type 1 – Hurricane (Cat 3 or higher), Tornado with mass destruction over community / state lines (Superstorm Sandy)
- Type 2 – Tornado in a community, flood in a city
- Type 3 – Tornado in a small section of community, Cat 1 or 2 hurricane
- Type 4 – Localized flooding in a neighborhood, large warehouse fire
- Type 5 – Fire in a single family dwelling, car accident



Planning

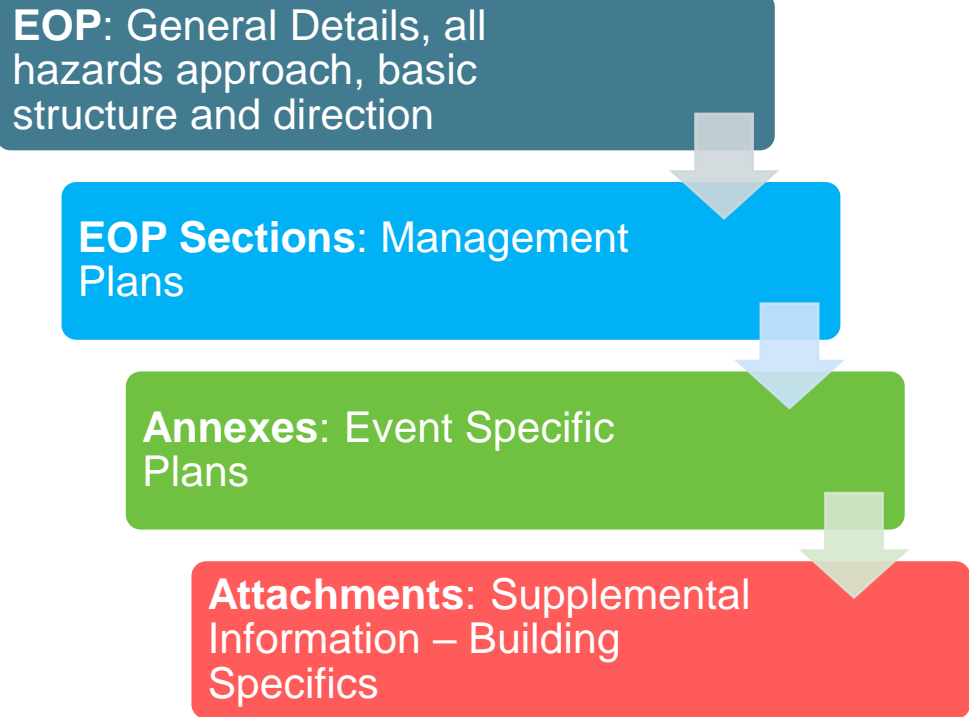
- Back to the sample HVA, our top 4 are physically highlighted
- SOP's / SOG's / EM Purchases
 - HVAC Failures – new units included emergency power run to them or they were run to stand-by transfer switches
 - Snow – hired a shoveling crew that was onsite once the snow started – main focus was Emergency Department, then all Emergency Exits – did not do internal courtyards, snow-melt system for the building helipad.
 - Hostage Situation – un-blouse the pants!!! De-escalation techniques for security, nursing and all behavioral health staff. Conduct yearly tours of facility with ALL first responders (becoming familiar with facility)
 - Terrorism – through grants, we were able to purchase different decontamination options – added Decontamination Room to Emergency Department renovation.
- Emergency Operations Plan



Planning / Preparedness / Response

- Building vs Campus vs System EOP
 - Bow Echo of 2015 – South Jersey
 - Wind event lasted maybe 4 minutes and rain for about 3 hours
- 3 Campus system
 - (2) Counties
 - (2) Campuses in County “A”
 - (1) Campus in County “B”
 - Southern side of the street vs the Northern side of the street.
- The EOP and Sections were good
- The Annexes & Attachments needed help

EOP: General Details, all hazards approach, basic structure and direction



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graph TD; EOP[EOP: General Details, all hazards approach, basic structure and direction] --> EOP_S[EOP Sections: Management Plans]; EOP_S --> Annexes[Annexes: Event Specific Plans]; Annexes --> Attachments[Attachments: Supplemental Information – Building Specifics];
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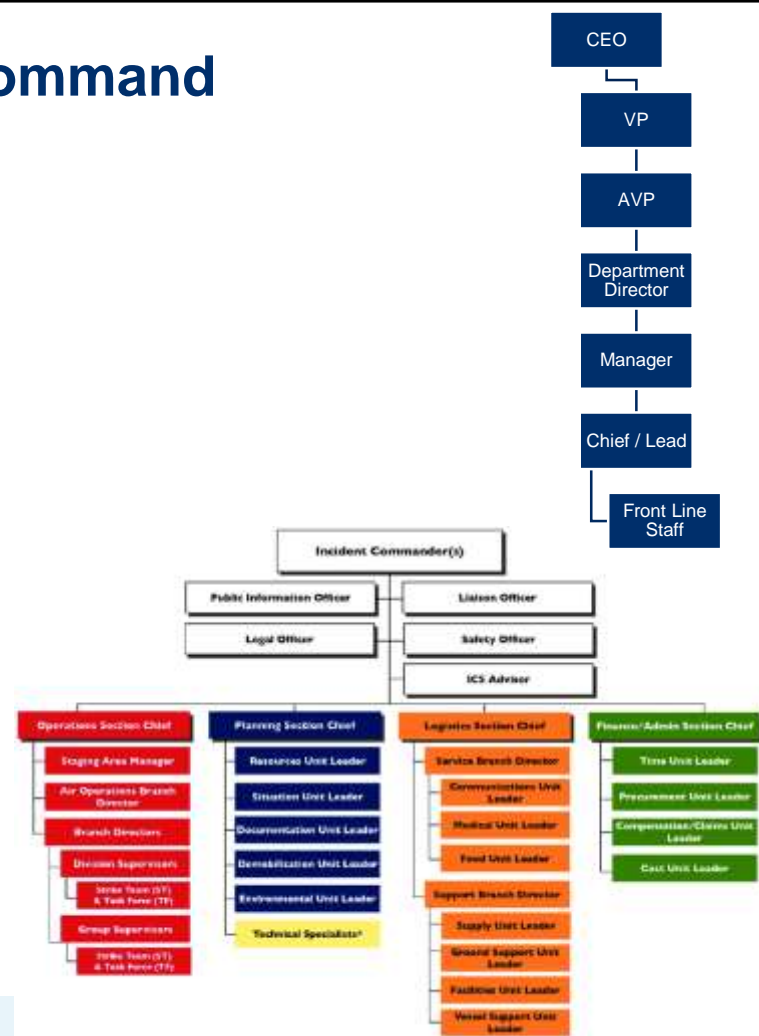
EOP Sections: Management Plans

Annexes: Event Specific Plans

Attachments: Supplemental Information – Building Specifics

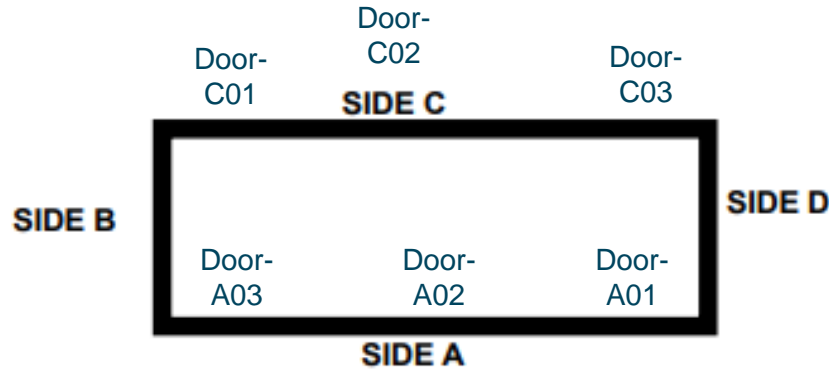
Emergency Preparedness & Incident Command

- ICS or HICS - Incident Command or Hospital Incident Command
 - ICS - Used by First Responders, “Known” Language
 - Organized by levels, similar to a corporate structure
 - Allows (1) person to be in charge but can control an entire incident
 - Command Staff and General Staff
 - Scalable - not all positions need to be filled
- ICS Courses offered online
 - ICS-100: Introduction to the Incident Command System
 - ICS-200: ICS for Single Resources and Initial Action Incidents
 - IS-700: National Incident Management System, An Introduction
 - IS-800: National Response Framework, An Introduction



Doors, exterior, and first responder building lingo

- ▶ Doors uniquely identified



Address Side of the Building



- ▶ How do we decide this one????
 - Ask the Local First Responders



Doors, exterior, and first responder building lingo

- ▶ Floors uniquely identified
- ▶ “Buildings” Identified



Address Side of the Building where you enter
is usually Floor 1

Floor 2

Basement

Building C
Winthorpe
Pavillion

Building B
Valentine
Building

Building D
Griswold
Tower



Building A

Bueller Lobby



Access

- ▶ Where is the primary incident management location or meeting point with first responders?
 - ▶ A location that is continuously staffed?
 - ▶ I'd recommend leaving it in one location – don't move it depending on the time of day, day of week or cycle of the moon.
- ▶ Knox Boxes are known by first responders
 - ▶ They hold keys only accessible by the FR when proper credentials are presented. The FR carry's a Knox Key in a controlled access lock box in their vehicle.
 - ▶ Pictured is a Large Box big enough for plans and building drawings.
 - ▶ We mounted this box on the outside of our ambulance entrance for easy access by the FD and PD



EM – Job Action Sheets

- Key positions
- Multiple response time periods
- Used for drills and events



PUBLIC INFORMATION OFFICER (PIO)

Documents and Tools
<input type="checkbox"/> HICS 203 - Organization Assignment List
<input type="checkbox"/> HICS 204 - Assignment List
<input type="checkbox"/> HICS 205A - Communications List
<input type="checkbox"/> HICS 213 - General Message Form
<input type="checkbox"/> HICS 214 - Activity Log
<input type="checkbox"/> HICS 215A - Incident Action Plan (IAP) Safety Analysis
<input type="checkbox"/> HICS 221 - Demobilization Check-Out
<input type="checkbox"/> HICS 252 - Section Personnel Time Sheet
<input type="checkbox"/> Hospital Emergency Operations Plan
<input type="checkbox"/> Incident Specific Plans or Annexes
<input type="checkbox"/> Crisis and Emergency Risk Communication Plan (hospital and, if available, community plan)
<input type="checkbox"/> Hospital organization chart
<input type="checkbox"/> Hospital telephone directory
<input type="checkbox"/> Telephonic/rail phone/satellite phone/internet/mobile radio/2-way radio for communication
<input type="checkbox"/> Community and governmental Public Information Officer (PIO) and Joint Information Center (JIC) contact information
<input type="checkbox"/> Social media contact information

PUBLIC INFORMATION OFFICER (PIO)

Mission: Serve as the conduit for information to internal and external stakeholders, including hospital personnel, visitors and families, and the news media, as approved by the Incident Commander.

Position Reports to: Incident Commander		Command Location: _____	
Position Contact Information: Phone: () - _____		Radio Channel: _____	
Hospital Command Center (HCC) Phone: () - _____		Fax: () - _____	
Position Assigned to: _____	Date: / /	Start: _____ hrs.	
Signature: _____	Initials: _____	End: _____ hrs.	
Position Assigned to: _____	Date: / /	Start: _____ hrs.	
Signature: _____	Initials: _____	End: _____ hrs.	
Position Assigned to: _____	Date: / /	Start: _____ hrs.	
Signature: _____	Initials: _____	End: _____ hrs.	

Immediate Response (0 - 2 hours)	Time	Initial
Receive appointment <ul style="list-style-type: none"> Obtain briefing from the Incident Commander on: <ul style="list-style-type: none"> Size and complexity of incident Expectations of the Incident Commander Incident objectives Involvement of outside agencies, stakeholders, and organizations The situation, incident activities, and any special concerns Assume the role of Public Information Officer (PIO) Review this Job Action Sheet Put on position identification (e.g., position vest) Notify your usual supervisor of your assignment 		
Assess the operational situation <ul style="list-style-type: none"> Attend all briefings and Incident Action Plan (IAP) meetings to gather and share incident and hospital information Establish contact with local or national media outlets to access and assess current situation Provide media, internal, and external messaging information to Hospital Incident Management Team (HMT) staff as appropriate 		
Determine the incident objectives, tactics, and assignments <ul style="list-style-type: none"> Develop response strategy and tactics and outline an action plan Designate times for briefings to media, patients, and hospital personnel 		
Activities <ul style="list-style-type: none"> Establish a designated media staging and media briefing area located away from the Hospital Command Center (HCC) and patient care activity areas, coordinating with the Operations Section Security Branch Director as needed Brief public information team members, if assigned, on current situation, incident objectives, and their assignments Inform on site media of the physical areas to which they have access and those that are restricted 		



HICS 204 (Page 1 of 5)



EM Incident Response Guides

- Several high priority incidents
- PDF or Word version – can be adapted to fit your needs

Position	Immediate	Intermediate	Extended	Recovery
Incident Commander	X	X	X	X
Public Information Officer	X	X	X	X
Liaison Officer	X	X	X	X
Safety Officer	X	X	X	X
Operations Section Chief	X	X	X	X
Medical Care Branch Director	X	X	X	X
Security Branch Director	X	X	X	X
Law Enforcement Interface Unit Leader	X	X	X	X
Patient Family Assistance Branch Dir.		X	X	X
Planning Section Chief	X	X	X	X
Resources Unit Leader		X	X	X
Situation Unit Leader	X	X	X	X
Documentation Unit Leader		X	X	X
Logistics Section Chief	X	X	X	X
Support Branch Director	X	X	X	X
Finance /Administration Section Chief		X	X	X
Time Unit Leader		X	X	X

Documents and Tools	
Emergency Operations Plan, including:	
<input type="checkbox"/> Missing Persons Response Plan (MPP) Abduction Response Plan/Infant Abduction Response Plan <input type="checkbox"/> Search policy and procedures <input type="checkbox"/> Behavioral Health Support Plan <input type="checkbox"/> Lockdown Plan <input type="checkbox"/> Security Plan <input type="checkbox"/> Patient, staff, and equipment tracking procedures <input type="checkbox"/> Business Continuity Plan <input type="checkbox"/> Risk Communication Plan <input type="checkbox"/> Inoperable Communications Plan <input type="checkbox"/> Demobilization Plan	
Forms, including:	
<input type="checkbox"/> HICS Incident Action Plan (IAP) Quick Start <input type="checkbox"/> HICS 200 – Incident Action Plan (IAP) Cover Sheet <input type="checkbox"/> HICS 201 – Incident Briefing <input type="checkbox"/> HICS 202 – Incident Objectives <input type="checkbox"/> HICS 203 – Organization Assignment List <input type="checkbox"/> HICS 205A – Communications List <input type="checkbox"/> HICS 214 – Activity Log <input type="checkbox"/> HICS 215A – Incident Action Plan (IAP) Safety Analysis <input type="checkbox"/> HICS 221 – Demobilization Checklist	
Job Action Sheets	
Access to hospital organization chart	
Security Closed Circuit Television (CCTV) system	
Hospital and campus floor plans, maps, and diagrams	
Television/radio/Internet to monitor news	
Telephone/fax phone/textable phone/Internet/monitor radio/2-way radio for communication	

Immediate Response (0 – 2 hours)				
Section	Officer	Time	Action	Initials
Incident Commander	Incident Commander		Confirm that a missing person incident has occurred.	
			Activate Emergency Operations Plan, the Missing Person Plan, Lockdown Plan, Hospital Incident Management Team, and Hospital Command Center.	
			Notify Hospital Chief Executive Officer, Board of Directors, and other appropriate internal and external officials of situation status.	
			Notify law enforcement and provide details of the incident.	
			Establish operational periods, objectives, and regular briefing schedule. Consider using the Incident Action Plan Quick Start for initial documentation of the incident.	
Command	Command		Establish a media staging area; coordinate its location with law enforcement.	
			Establish information release and messaging within the Joint Information Center.	
			As indicated, use social media to inform patients, staff, families, and stakeholders.	
			Develop information for release to the media with law enforcement. Ensure the family of the lost or abducted person is aware prior to the release of any information.	
			Monitor media outlets for updates on the incident and possible impacts on the hospital. Communicate information via regular briefings to Section Chiefs and Incident Commander.	
	Liaison Officer		Notify community partners in accordance with local policies and procedures (e.g., consider local Emergency Operations Center, other area hospitals, local emergency medical services, public safety officials, and healthcare coalition coordinator), to determine incident details, community status, and establish contacts for requesting supplies, equipment, or personnel not available in the hospital.	

Sprinkler & sandpipe systems

- ▶ Barclay Friends Fire – sprinklers were turned off
 - ▶ West Chester PA – mid November, 2017 – 10:45 pm
 - 4 dead. 27 injured, 130 evacuated
 - Responders faced multiple issues
 - Very cold, fast moving wind driven fire, rear of building by Garden Room and outdoor patio located under an overhang, the exact point could not be located.
 - Residents trapped
 - Rescue and medical treatment for residents was priority.
 - ▶ Toaster Oven fire in an ICU – sprinklers activated and held fire in check
 - ▶ 6 ICU patients transferred to another hospital, 11 ICU patients evacuated off wing
 - ▶ Annual FD / First Responder tours?
 - ▶ Critical control valves should be part of the initial and reoccurring education for the “Support Services” & Management



Sprinkler & standpipe systems continued...

► Hospital Parking Garage

- FD drill in open air garage in September flowing water from standpipes
- FD walks through garage in February prior to simulated water flowing drill and finds ice from standpipe lines
- External standpipes did not drain, Security not rounding in garage, employees not reporting ice from pipes – many failures.
- We have the duty to react
- ALSM / ILSM?
- What is your fire-watch policy?



Weather Events

- ▶ Prep from your HVA
 - ▶ SJ prep for a volcano vs a hurricane in Southern Florida
- ▶ Hardening your facilities
 - ▶ What is your plan – is it announced over the PA
- ▶ Are egress points locked or secured?
- ▶ How much time do you have to prepare?



Facility construction and modifications

▶ PCRA

▶ Pre Construction Risk Assessment

- GC, IC, End User, Safety, FM, PM

▶ ICRA

▶ Infection Control Risk Assessment

- PM, GC, IC, FM

▶ ALSM / ILSM

▶ Alternate / Interim Life Safety Measures

- Safety, FM, PM, GC

▶ BIG TICKET ITEM during your accrediting organization inspection



Alternative or Interim Life Safety Assessment

Question:		NO	YES
A.	Will this work restrict EGRESS from the affected space?	PROCEED TO QUESTION B	ILSM REQUIRED
B.	Is the equipment, component, etc., part of a building LIFE SAFETY system?	ILSM NOT REQUIRED	PROCEED TO QUESTION C
C.	Is the activity in a PATIENT CARE AREA or will it affect a PATIENT CARE AREA?	ILSM NOT REQUIRED	ILSM REQUIRED

Unless otherwise noted below, these requirements apply to impairments of a duration extending beyond the current shift (greater than 8 hours)		ILSM1	ILSM2	ILSM3	ILSM4	ILSM5	ILSM6	ILSM7	ILSM8	ILSM9	ILSM10	ILSM11	ILSM12	ILSM13	ILSM14
Check all that apply.															
Any impairment of a required egress less than 4 hours							X					X			X
Any impairment of a required egress greater than 4 hours		X		X		X	X	X	X	X	X	X	X	X	
Fire detection ALARM system impairment greater than 4 hours ***		X	X			X	X	X	X	X	X	X		X	
Fire SUPPRESSION system impairment greater than 10 hours		X				X	X	X	X	X	X	X		X	
Problem with a single fire or smoke door hardware							X					X			
Fire or smoke barriers with unprotected penetrations							X					X			
Missing or incomplete fire or smoke barriers				X			X	X		X		X			
Missing or impaired NFPA 101 required fire or smoke dampers				X			X	X		X		X			
Hazardous use areas not properly separated from corridors				X			X	X		X		X			
Accumulation of combustibles and/or materials		X		X	X		X					X			
Temporary construction doors not latching or missing hardware				X			X					X			
Activity involving ignition sources (welding, torching)		X		X			X	X				X		X	
Major utility failure or outage affecting a life safety system greater than 4 hours			X	X		X	X	X		X	X	X	X	X	
Multiple LS impairments within the same fire or smoke zone		X		X		X	X	X	X	X	X	X	X	X	

***Requires review by Facility Manager or Safety Officer prior to ILSM commencement.



Interim or Alternative Life Safety Implementation Measures

INTERIM LIFE SAFETY IMPLEMENTATION MEASURES

ILSM1 Inspect exits in affected areas on a daily basis and resolve problems immediately.

ILSM2 Provide temporary but equivalent fire alarm and detection systems for use when a fire system is impaired.

ILSM3 Provide additional firefighting equipment as needed.

ILSM4 Use temporary construction partitions that are smoke-tight, or made of noncombustible or limited-combustible material that will not contribute to the development or spread of fire.

ILSM5 Increase surveillance of buildings, grounds, and equipment, giving special attention to construction areas and storage, excavation, and field offices.

ILSM6 Enforce storage, housekeeping, and debris-removal practices that reduce the buildings flammable and combustible fire load to the lowest feasible level.

ILSM7 Provide additional training on use of firefighting equipment, impaired structural or fire safety features, temporary measures implemented, construction hazards, and building deficiencies.

ILSM8 Conducts one additional fire drill per shift per quarter as called for by policy, best practice, or at the discretion of the Safety Officer.

ILSM9 Inspect and test ILSM systems monthly or once per project if the duration is less than one month.

ILSM10 Notify the local fire department and internal responders of the ILSM steps in place using the Interim Life Safety Measures form as required.

ILSM11 Notify the occupants in the area of the deficiency and the ILSM steps in place using the Interim Life Safety Measures form as required.

ILSM12 Install signage identifying the location of alternate exits to everyone affected.

ILSM13 Refer to Fire Watch Policy / Procedure

ILSM14 Blocked egress paths are never left unattended.



Common survey findings

- ▶ Maintaining Fire Extinguishing Systems
- ▶ Utility System Risks
- ▶ Maintaining a safe, functional environment
- ▶ Maintains means of egress
- ▶ Facility reduces the risk of infections associated with medical equipment, devices, and supplies
- ▶ Facility inspects, tests, and maintains medical gas and vacuum systems
- ▶ Facility implements its infection prevention and control plan



Common survey findings continued...



Eyewashes & drench showers

- Big on the Accreditation Organization & CMS radar
 - OSHA – 29 CFR 1910.151(c)
 - ANSI Z358.1
 - Paragraph (c) of 29 CFR 1910.151 requires the employer to provide suitable facilities for quick drenching or flushing of the eyes and body when exposed to injurious corrosive materials.



- Secondary/Personal System
 - Will this provide 15 minutes of continuous flush?
 - Is this Tepid water?
 - Can this be operated by the injured person?
 - Can this be tested weekly?

Personal eye wash units can provide immediate flushing when they are located near the workstations. Personal eye wash equipment does not meet the requirements of plumbed or gravity-feed eye wash equipment. Personal eye wash units can support plumbed or gravity-feed eye wash units, but cannot be a substitute.

Personal eye wash can be delivered through bottles of saline solution designed to simulate human tears. Individual bottles can be carried by workers and provide relief until in the crucial seconds until an approved eye wash station installation can be reached.



Eyewashes & risk assessment

- ▶ Eyewash stations need to be accessible
- ▶ Inspected weekly, documents kept in secure area
 - ▶ AO will look for these – CAPS IN PLACE & UNIT IS CLEAN
- ▶ Perform a “documented” risk assessment for existing and proposed locations
- ▶ Required when “the eyes or any body part may be exposed to corrosive materials”
- ▶ We can assist with Eyewash Assessments if needed



Eyewash life jacket



Eyewash & risk assessment example

RISK ASSESSMENT									
1. SEVERITY CLASSIFICATION:						2. PROBABILITY ESTIMATE:			
Class I - Caustic or Corrosive Materials being dispensed						Estimate A - Caustic or Corrosive Materials in Department			
Class II - Caustic or Corrosive Materials being stored						Estimate B - No Caustic or Corrosive Materials in Department			
RISK ASSESSMENT DETERMINATION:									
						Probability Estimate			
						A	B		
				Severity Class	I	1	2		
					II	1	2		
If the results of the evaluation determine that the RA is 1 an eyewash or shower is required. If the results of the evaluation determine that the RA is 2 an eyewash or shower is not required.									
If the Department requests an eyewash, it will be the department's responsibility for weekly inspection and maintaining compliance.									



Water & water management plan

▶ CMS radar (any AO)

- ▶ Hospital - The facility must provide a sanitary environment to avoid sources and transmission of infections and communicable diseases. There must be an active program for the prevention, control, and investigation of infections and communicable diseases
- ▶ Skilled Nursing and Nursing Facilities - The facility must establish and maintain an infection prevention and control program designed to provide a safe, sanitary, and comfortable environment and to help prevent the development and transmission of communicable diseases and infections
- ▶ Surveyors will review policies, procedures, and reports documenting water management implementation results

▶ Beware of automatic faucets!!!!!!



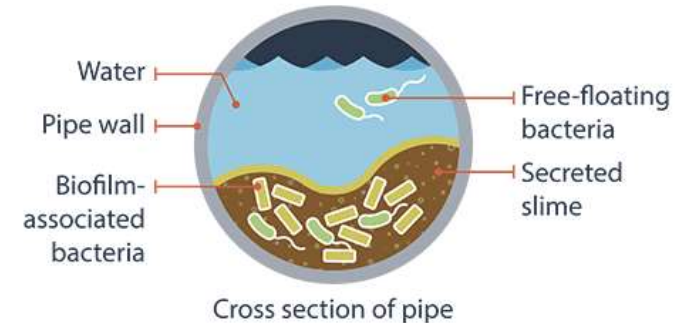
Water & water management plan continued...

- Surveyors will review policies, procedures, and reports documenting water management implementation results to verify that facilities:
 - Conduct a facility risk assessment to identify where Legionella and other opportunistic waterborne pathogens could grow and spread in the facility water system.
 - Implement a water management program that considers the ASHRAE industry standard and the CDC toolkit, and includes control measures such as physical controls, temperature management, disinfectant level control, visual inspections, and environmental testing for pathogens.
 - Specify testing protocols and acceptable ranges for control measures, and document the results of testing and corrective actions taken when control limits are not maintained
- Water features in the buildings?
 - Hot tubs
 - Showers
- Ice machines/water dispensers
- Cooling towers



Legionella grows best within a certain temperature range (77°F-108°F).

Legionella can live and grow in biofilm



Business plan for emergencies

- OSHA's [[29 CFR 1910.157](#)] requires you to have an Emergency Action Plan.
- Business Plan for emergencies
 - If fire extinguishers are required or provided in your workplace, and if anyone will be evacuating during a fire or other emergency, then OSHA's [[29 CFR 1910.157](#)] requires you to have an Emergency Action Plan.
 - OSHA.gov - search EAP
 - OSHA.gov – search EAP
 - Means of reporting fires and other emergencies
 - Evacuation procedures and emergency escape route assignments
 - Procedures to be followed by employees who remain to operate critical plant operations before they evacuate
 - Procedures to account for all employees after an emergency evacuation has been completed
 - Rescue and medical duties for those employees who are to perform them
 - Names or job titles of persons who can be contacted for further information or explanation of duties under the plan
- Emergency Response Plan
 - [FEMA.gov/business/implementation/emergency](#)
 - Emergency Response Plan Template for Business



Business Plan

- OSHA's webpage: Am I required to have an emergency action plan (EAP)?

https://www.osha.gov/SLTC/etools/evacuation/require_eap.html

- Step by step process for determining if an EAP is needed.

eTools

Evacuation Plans and Procedures eTool

Emergency Action Plan Emergency Standards Expert Systems Additional Assistance

Emergency Action Plan (EAP) » Create Your Own EAP

Step 1 Step 2 Step 3 Step 4 Step 5 Step 6 Step 7 Step 8 Step 9 Step 10
Company Alerts Policy Routes Signifiers Operations Duties Assembly Accounting More

Step 1 of 10

Company	Company Contact
Name: <input type="text"/>	Name: <input type="text"/>
Street Address: <input type="text"/>	Title: <input type="text"/>
City: <input type="text"/>	Telephone/Cell: <input type="text"/>
State: <input type="text"/>	Email: <input type="text"/>
Zip Code: <input type="text"/>	

Next

[Home](#) | [Emergency Action Plan](#) | [Emergency Standards](#) | [Expert Systems](#) | [Additional Assistance](#)
[Site Map](#) | [Credits](#)



Web links - business

- Preparedness Action FREE Publications – (LOTS OF RESOURCES)
 - <https://orders.gpo.gov/icpd/ICPD.aspx>
- California Emergency Medical Services Authority:
<https://emsa.ca.gov/hospital-incident-command-system-incident-response-guides-2014/>
- Hospital Hazard Vulnerability Analysis
<https://www.calhospitalprepare.org/post/hazard-vulnerability-analysis-tool>
- Hospital Incident Command System forms
<https://training.fema.gov/icsresource/icsforms.aspx>
- HICS Guidebook and Appendices
<https://emsa.ca.gov/disaster-medical-services-division-hospital-incident-command-system/>
- Emergency Response Plan Template for Business
https://www.fema.gov/media-library-data/1388775706419-f977cdebbefcd545dfc7808c3e9385fc/Business_EmergencyResponsePlans_10pg_2014.pdf



Have your associates planned for events?

- We survey our insureds, and make recommendations, but have we checked on ourselves?
 - Family Plans – Ready.gov – pdf's of family communication plan, hazard information sheets, etc...
 - September is National Preparedness Month
 - Week 1 – make a plan – download from www.ready.gov
 - Week 2 – build a kit
 - Week 3 – low cost / no cost preparedness – sign up for alerts, safe guard documents
 - Week 4 – teach youth preparedness – talk to kids about preparing for emergencies and what to do in case you are separated, phone stalker apps are awesome.
- The Kit: Who has a go bag / box? Not a bug out bag, but a go bag?
 - There's a difference!!!
 - Waterproof / weatherproof box with identification, medications, water, food, extra clothing/shoes/socks, chargers, fuel rods, solar charger, candles, lighter, weather radio, phone numbers (on paper), first aid kit, flashlight(s), batteries, can opener, whistle, lifestraw, glow in the dark light sticks / necklaces, toilet paper, tissues
 - Good recommendation for facility EM and EP (all) personnel as well.
- Weather apps – do they provide weather alerts?
- Do you have a weather safe room? Basement, interior room or hallway? Extra water and food near-by – the rule of 3's – 3 minutes without air, 3 hours without shelter (exposure to heat/cold), 3 days without water and 3 weeks without food. Store your go bag / box here – dual purpose!
 - “Dad, this will never be needed – you are such a dork” – the kids ate their words on September 1st – South Jersey had an EF3 tornado rip through neighboring towns. 12 mile long and 400 yard wide path of pure destruction.
 - Long story short, I'm still a dork, but they understand why I had water and flashlights by the basement steps.

LifeStraw[®] 
waterstraw

Filtration Performance Sheet
LifeStraw – Personal Water Filter

Independently Tested:

LifeStraw Filters are rigorously tested by independent labs and our own ISO certified lab to meet protocols established by the US Environmental Protection Agency (EPA) and NSF International (ANSI).

- Membrane Microfilter pore size – 0.2 micron
- Meets US EPA & NSF P231 standards for the removal of bacteria and parasites

Removes 99.99999% of Bacteria

- ✓ *Bacillus anthracis*
- ✓ *Campylobacter jejuni*
- ✓ *Francisella tularensis*
- ✓ *Paratuberculosis paratuberculosis*
- ✓ *Shigella*
- ✓ *Staphylococcus aureus*
- ✓ *Vibrio cholerae (Cholera)*
- ✓ *Vibrio parahaemolyticus*
- ✓ *Yersinia enterocolitica*
- ✓ *Yersinia pestis*
- ✓ *Enteropathogenic Escherichia coli (E. coli)*
- ✓ *Neisseria meningitidis*
- ✓ *Yersinia pseudotuberculosis*
- ✓ *Legionella pneumophila*
- ✓ *Mycobacterium tuberculosis*
- ✓ *Mycobacterium paratuberculosis*
- ✓ *Bordetella pertussis*
- ✓ *Salmonella enterica*
- ✓ *Salmonella typhi (Typhoid)*
- ✓ *Streptococcus pneumoniae*
- ✓ *Streptococcus pyogenes*

Removes 99.999% of Parasites

- ✓ *Ascaris lumbricoides*
- ✓ *Cryptosporidium spp.*
- ✓ *Entamoeba histolytica*
- ✓ *Giardia lamblia (Beaver Fever)*
- ✓ *Naegleria fowleri*
- ✓ *Schistosoma mansoni*
- ✓ *Taenia saginata*

Removes 99.999% of Microplastics

- ✓ Reduces turbidity (silt, sand, dust/mud)

Membrane Microfilter
Leads up to
1,000 gal.
(3,800 L)



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Family plan for emergencies

- ▶ We plan for business, do we have a plan for our family?
 - ▶ Emergency Response Plan Template for Family
 - <https://www.ready.gov/plan>
 - ▶ Family Communications Plan (kids)
 - https://www.ready.gov/sites/default/files/2019-06/family_communications_plan_kids.pdf
 - ▶ Family Communications Plan (adult)
 - https://www.ready.gov/sites/default/files/2019-06/family_communications_plan_parents.pdf
 - ▶ Pet Plan - PETS ACT (in response to Hurricane Katrina)
 - <https://redrover.org/resource/pet-disaster-preparedness-2/>
 - <https://www.ready.gov/pets>
 - <https://www.avma.org/pets-act-faq>
 - ▶ Go Box
 - Waterproof container
 - Important documentation
 - Water / MRE
 - Personal care items / clothing
 - Flashlights / batteries / cell phone cables / fuel rods / solar charger



Disclaimer

The information contained herein and presented by the speaker is based on sources believed to be accurate at the time they were referenced. The speaker has made a reasonable effort to ensure the accuracy of the information presented; however, no warranty or representation is made as to such accuracy. The speaker is not engaged in rendering legal or other professional services. The information contained herein does not constitute legal or medical advice and should not be construed as rules or establishing a standard of care. Because the facts applicable to your situation may vary, or the laws applicable in your jurisdiction may differ, if legal advice or other expert legal assistance is required, the services of an attorney or other competent legal professional should be sought.



Questions – Please feel free to email your questions to the presenter

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