

PLEASE REVIEW ZOOM INSTRUCTIONS BEFORE WE BEGIN

Joining Instructions

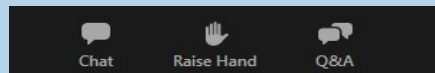
- Attendee phones have been placed on mute and video turned off
- **Monitor Chat Panel** for messages from the host located at bottom of your computer screen (see below)

Communication

- Use Q&A to ask the presenter questions
- Use the Chat window to communicate with hosts/panelists regarding logistical questions

Certificates of Attendance

- You will receive an LMS notification when attendance has been marked. A Certificate of Attendance will be available to all attendees that complete a post-session evaluation in LMS
– Search For RTC-BP3-S12-062022-WR



OSHA Requirements for HAZMAT First Receivers/Hospital Decontamination Teams

Presented By:
Ralph Estep Ph.D. R.N., CIH, CSP
Health Systems Safety, Inc.

Agenda

- Regulations
 - OSHA
 - Other (CMS/Accreditation)
- Hazardous Materials
- Practical Aspects

Regulations

OSHA Regulations

- 29 CFR 1910.120

Hazardous Waste Operations
and Emergency Response

What Level of Training is Required for Hospitals?

OSHA HAZWOPER STANDARD

Skilled Support Personnel

OSHA Regulations

29 CFR 1910.120 (q)

- First Responder Awareness Level
- First Responder Operations Level
- First Responder Technician and Specialist Levels
- Skilled Support Personnel
- Refreshers (Annual)

Questions?

Hazardous Materials

“See Bernie”

- Chemical
- Biological
- Radiological
- Nuclear
- Explosives

Chemical Hazards

“Classic” Hazmat vs WMD

- Flammability
- Reactivity
- Corrosivity
- Explosivity

Chemical Hazards

Lessons Learned From Chemical Mass Casualty Incidents



Bhopal Chemical Plant Fire





Ten months before the attack in Tokyo, Aum Shinrikyo committed the world's first known sarin gas terrorist attack in Matsumoto in central Japan, killing 7 and sickening more than 200 people



Eleven people died and more than 5,000 were injured in the Tokyo subway system attacks.



Cult founder Shoko Asahara is in jail

Chemical Hazards

- Most Victims are Exposed to Vapor
- Hospitals, EMS, Fire, Public Safety are overwhelmed
- Dry Decontamination Suitable for Most

Chemical Hazards

Victims Will Not Wait In Line to Shower

Most Decontamination will need to be done at the Hospital not the scene

Chemical Hazards

Mass Disaster Response Occurs With Local Resources

Ambulatory Patients Present Earliest and Overwhelm Resources

Chemical Hazards

Only 10%-15% of Patients Via EMS

Chemical Hazards - WMD

- Nerve agents
- Blister Agents/Vesicants
- Choking Agents
- Blood Agents
- Riot Control Agents

Chemical Hazards - WMD

- Principle Nerve agents
 - GA (Tabun)
 - GB (Sarin)
 - GD (Soman)
 - VX
 - Novichoks (A-series)

NERVE AGENTS

GA TABUN
GB Sarin
GD Soman
GF
VX
Novichoks (A-series)



Chemical Hazards

- Vesicants (Blister Agents)
 - HD (sulfur mustard)
 - HN (nitrogen mustard)
 - L (Lewisite)

Chemical Hazards-Vesicant

- Signs and Symptoms
 - Irritation, inflammation, blisters

Chemical Hazards –Choking Agents

- Chemical Choking Agents
 - CG (phosgene)
 - CL (chlorine)

Chemical Hazards - Choking Agents

- Signs and symptoms
 - “Dry land drowning”

Chemical Hazards – Blood Agents

- Chemical Asphyxiants
 - Hydrogen cyanide
 - Cyanogen chloride

Chemical Hazards - Blood Agents

- Signs and symptoms
 - Cherry red skin, gasping, cyanosis

Chemical Hazards- Riot Control

- Riot Control Agents (RCA)
 - CS (teargas)
 - OC (pepper spray)

Chemical Hazards-RCA

- Signs and symptoms
 - Temporary irritant

Chemical Hazards

Industrial chemicals

Questions?

Biological Hazards

Biological Hazards

Most likely your response would be to a
“White Powder” incident

Biological Hazards

Infectious Patient
Versus
Biologically Contaminated
Victim

Biological Hazards

- Infectious Patient
- Ebola
 - Measles
 - Influenza

Biological Hazards

Biologically Contaminated Victim

- Anthrax (hoax)
- Anthrax (real)
 - Ricin

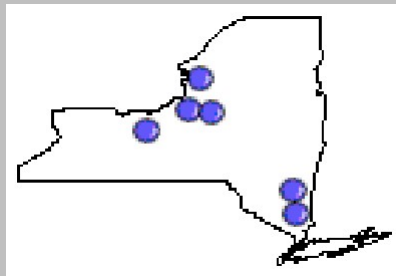


Biological Hazards

- Signs and Symptoms
 - Disease dependent
 - Rash, pustules, nausea, vomiting, paralysis, etc.

Questions?

Radiological/Nuclear Hazards



Nuclear Power Plant Locations

- FitzPatrick, Oswego, NY
- Ginna, Rochester, NY
- Indian Point 2-3, Buchanan, NY
- Nine Mile Point 1-2, Oswego, NY

Radiological/Nuclear Hazards

Radiation vs Contamination

Radiological/Nuclear Hazards

- Nuclear Incidents
- Radiological Dispersal Devices (RDD)
- Medical Isotopes
- Industrial Isotopes



Chernobyl



Fukushima Daiichi

Indian Point



Questions?

Practical Aspects

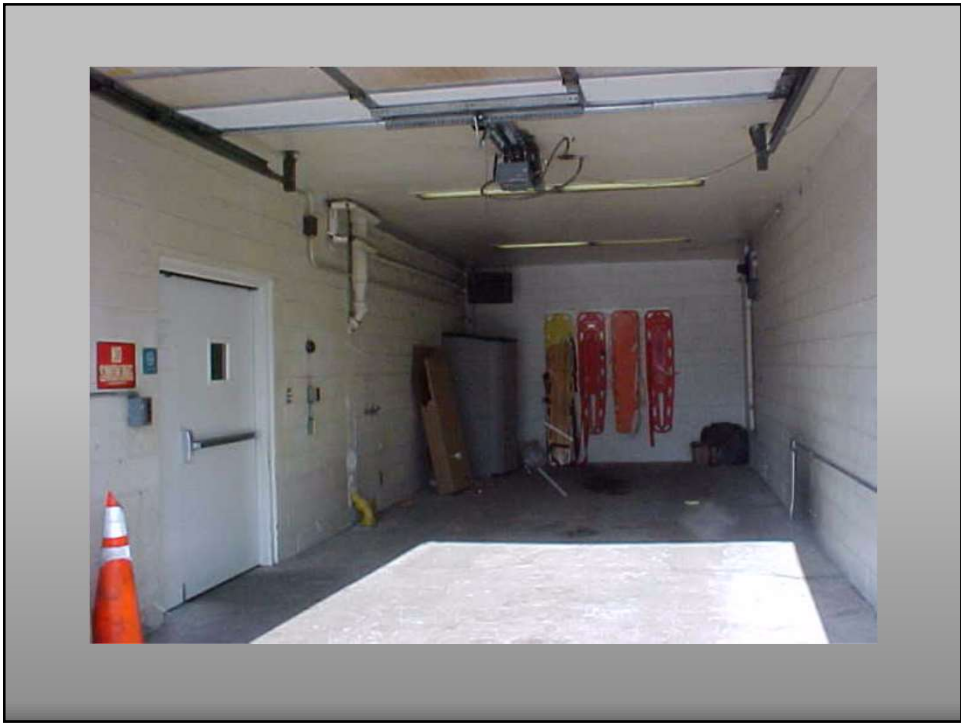
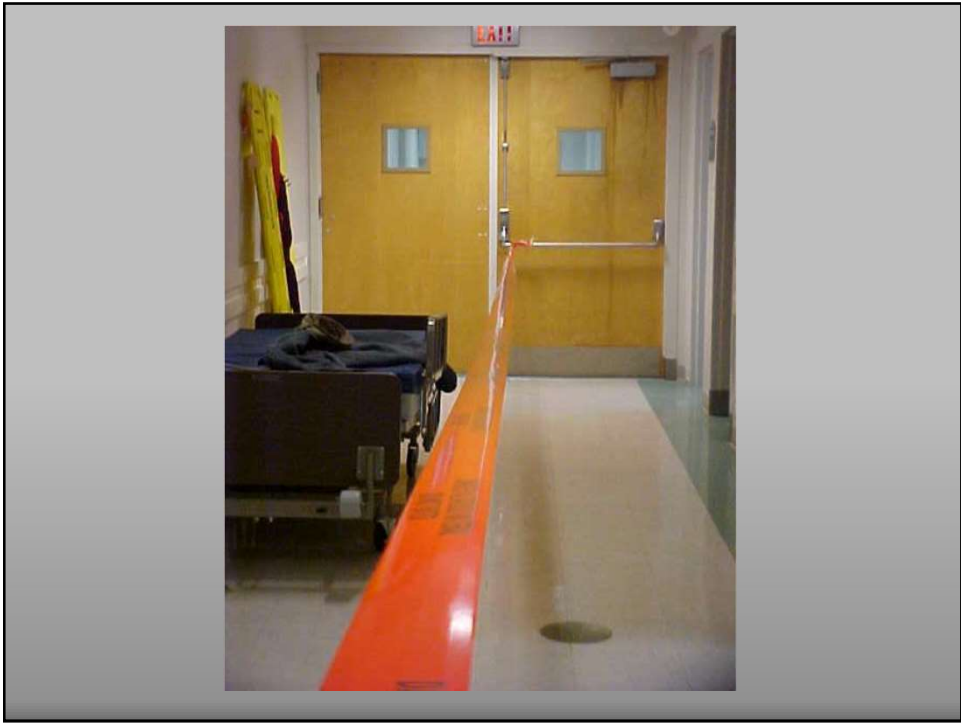


ED Hazardous Materials Incidents

- Contamination control
 - Secure the facility
 - Pre-designated entry points
 - Clean stays clean
 - Segregate contaminated patients
 - Physical and visual separation

ED Hazardous Materials Incidents

- Contamination reduction
 - Gross decontamination
 - Prevent cross contamination
 - Use of negative pressure rooms
 - Change gloves frequently





Personal Protective Equipment

Important Agencies

NIOSH

National Institute for Occupational Safety and Health

– research & recommendations

ANSI

American National Standards Institute

– research & recommendations

OSHA

Occupational Safety and Health Administration

– sets and enforces standards

Protective Clothing & Equipment

Personal Protective Equipment
(EPA Standards)

Level A

Level B

Level C

Level D

Protective Clothing & Equipment

Level A

SCBA

Respiratory Protection Against: Gases,
Vapors, Aerosols, Oxygen Deficient
Atmospheres

Vapor-protective Fully Encapsulated Suit

Clothing Protection Against: Gas, Vapor,
Liquid, Solid

Protective Clothing & Equipment

Level B

SCBA or SAR (Supplied Air Respirator) with
Escape

Respiratory Protection: Gas, Vapor, Aerosol,
O₂ Deficient Atmospheres

**Splash Protective Chemical Resistant
Suit**

Protective Clothing & Equipment

Level C

Air-Purifying Respirator (APR)

Respiratory Protection:

Carefully Selected Vapors and Aerosols

**Hooded, Splash Protective Chemical
Resistant Suit**

Clothing Protection: Liquids and Solids

NERVE AGENTS

GA TABUN
GB Sarin
GD Soman
GF
VX
Novichoks (A-series)



Protective Clothing & Equipment

Level D

No Respiratory Protection

Normal Work Clothes – No Chemical Protection

Protective Clothing & Equipment

- Full Body Protection
- Head Protection
- Eye Protection
- Hand Protection
- Foot Protection
- Hearing Protection



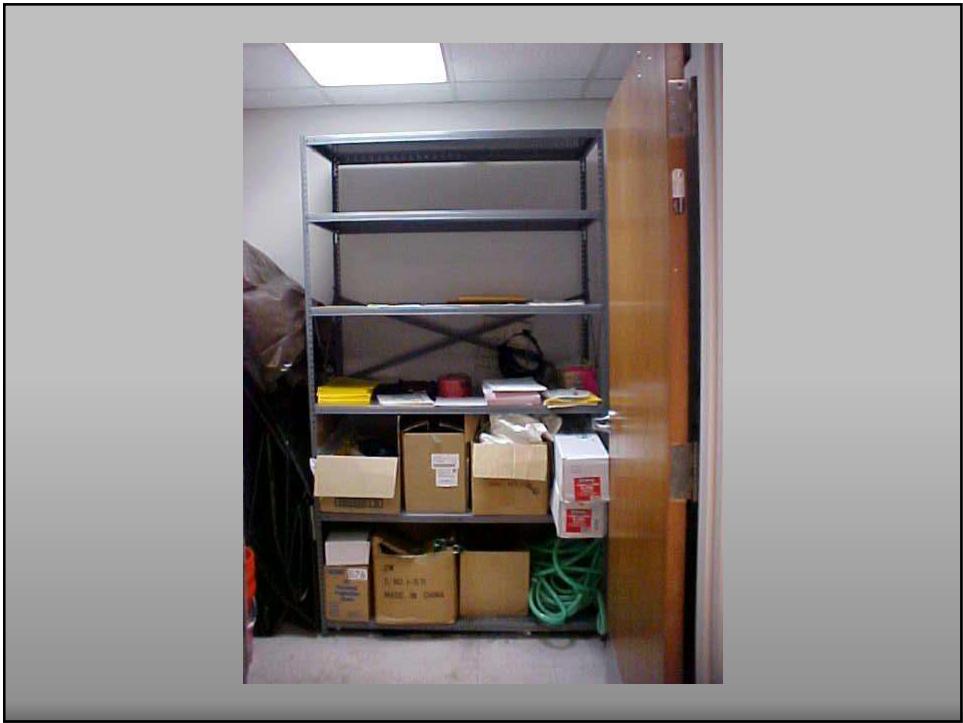
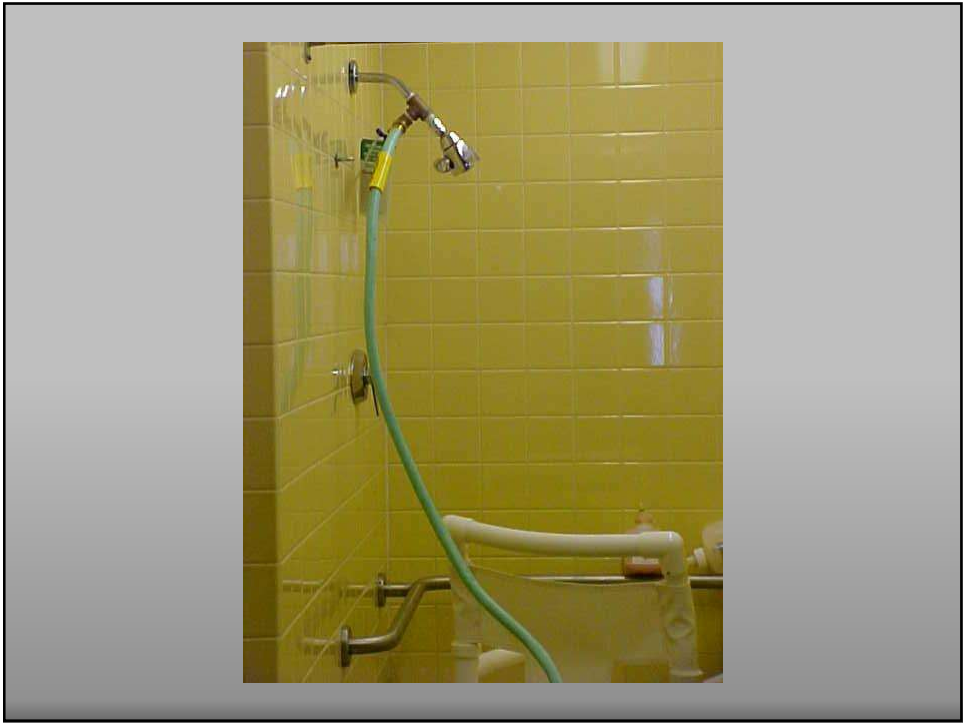
Donning/Doffing Protective Clothing

Respiratory Protection Program (OSHA 29 CFR 1910.134)

Respiratory Protection Program (OSHA 29 CFR 1910.134)

- written standard operating procedures
- medical evaluations
- fit testing
- procedures for use
- procedures for cleaning/
disinfect/storage/inspecting and repairing
- ASR flow, quality verification
- training on respiratory hazards
- training on respirator use
- program evaluation
- approved or accepted respirator

Decontamination Equipment







Patient Decontamination



Patient Decontamination

- Privacy
 - Removal of clothing
- Warm water and soap
 - Gentle scrubbing

Patient decontamination

- Towels/blankets/gowns
- Treat on clean side
 - Still wear gloves during contact

Training, Drills and Exercises

Training, Drills and Exercises

Training –learning skills

Drills – practicing every chance you can get

Exercises – formal evaluation of how well you're doing

COMMUNITY INVOLVEMENT

- Local Emergency Planning Committee (LEPC)
- Hazardous Material Advisory Council (HMAC)
- National Disaster Medical System (NDMS)
- Specialized Medical Assistance Response Team (SMART)
- MOUs with other hospitals and agencies
- Critical Incident Stress resources

Questions?

Thank you for your
Participation !