Decontamination Training
Finger Lakes Regional Resource Center
RA Lawrence Poison & Drug Information Center
University of Rochester Medical Center
Rochester, NY

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Hazard Recognition

Hazardous Substance
- Is any substance to which exposure may result in adverse effects on the health or safety of employees. (OSHA)
- Includes:
  - Substances defined by CERCLA
  - Biological agents with disease causing potential
  - US DOT substance listed as hazardous
  - Substances classified as hazardous waste

Chemical Hazards
- 75% occur at fixed sites (ATSDR)
- 91% involve one substance
- Most are liquid (40%) or vapors (41%)
  - Corrosives
  - Pesticides
  - Gases
  - Paints and dyes
  - Volatile organic hydrocarbons
  - Other inorganic chemicals
Contamination Event

- VERY common
- Patients go to CLOSEST hospital
- Risk to hospital
  - Contamination of staff and facilities
  - Need emergency plan
  - Need decontamination facility and team

Emergency Response Plan

- ASSUME all are contaminated
- Train everyone for RECOGNITION of patients presenting to ED with contamination
- ALERT charge nurse and/or decontamination team, AND activate “code decon”

Knowledge

- Recognition/awareness (everyone)
  - How to know if someone…
  - How to keep safe
  - How to alert
Knowledge
- Operations level (Decon Team)
  - Recognition of chemicals
  - PPE
  - Recognition of symptoms
  - Clean up

Labels/warnings…
- CAS numbers
  (Chemical Abstract Service #)
- Shipping manifesto/label
- Container label
- DOT placards
- Name of product on container

Other patient’s warning…
- It smelled like…
- It is used for…
- You HAVE TO USE A RESPIRATOR to…
- It tasted like…
- There’s a <color> warning/placard on it…
Initial ID/precautions

- Emergency Response Guidebook
- Quick guide
  - General ID
  - Occasional specific ID
  - General guidance for class of chemical

Placards and Labels

Notification System

- Notifies all in ED area
  - Specific responsibilities for all
- Activates Decon team
- Keeps patient at safe distance and outside
- Decontaminates as appropriate to circumstances
Notification System

- Decon Team Leader
  - Interviews patient from safe distance and OUTSIDE
  - Determines need for decon and PPE
    - Uses Poison Center as reference
    - Alerts and discusses with charge nurse/faculty MD
  - If in doubt: DECONTAMINATE

Notification System

- Decon Team members and support staff
  - Gets decon room ready
  - Gets partially dressed, except respirator
  - Finalizes PPE and decontaminates victim(s) upon final say of Decon Team Leader

Incident Command System

- ICS should be followed at ALL levels
- Hospital
  - Departmental
    - Specific team (i.e., Decontamination)
- At each level, designated person to communicate with.
ICS – Decon Team

- **Command** (Decon Team Leader)
- **Operations** (Decon team members)
- **Logistics** (Decon team suit/equipment support)
- **Liaison** (Decon Team Leader or designee)

CBRNE

- Define
  - WMD
  - NBC
  - CBRNE
- Nuclear Devices
- Biological Weapons
- Chemical Weapons

NBC/CBRNE Agent Sources

- Home production
- Laboratory / commercial production
- Industrial facilities
- Military sources
- Medical / university research facilities
The Fallacies

- It can’t happen to us
- NBC agents are so deadly the victims will all die anyway
- There is nothing we can do

End of Module 1

Complete Module 1 Questions

Chemical Agents
Tokyo Sarin Attack 1995

- Numbers seeking medical care:
  - Total: 5,510 at 278 healthcare facilities
  - Mild: 984
  - Moderate: 37
  - Severe: 17
  - Deaths: 12
  - Status unknown: >300

- No secondary contamination of healthcare workers, but 2 vapor-exposed physicians

Characteristics and Behavior

- Generally liquid (when containerized)
- Normally disseminated as aerosol or gas
- Present both a respiratory and skin contact hazard
- May be detectable by the senses (especially smell)
- Influenced by weather conditions

Routes of Entry

- Inhalation - vapor or aerosol
- Skin (percutaneous) - liquid or vapor (vapor if prolonged contact with skin)
- Ingestion - liquid or solid
- Injection - intravenous or intramuscular
Volatility
- Tendency of a liquid agent to form vapor
- Volatility proportional to vapor pressure
- Affected especially by:
  - temperature
  - wind
  - method of delivery

Persistence
- Tendency of a liquid agent to remain on terrain, other surfaces, material, clothing, skin
- Affected especially by:
  - temperature
  - surface material
- Persistence is inversely proportional to volatility

Examples
- Non-persistent agents (less than 24 hours)
  - tabun, sarin, soman, cyanide, phosgene
- Persistent agents (greater than 24 hours)
  - mustard, VX
PULMONARY AGENTS

- Chlorine and Phosgene classic examples
  - Gases at STP
  - Mechanism: pulmonary
    - Non-cardiogenic pulmonary edema
    - Adult Respiratory Distress Syndrome (ARDS)
  - Treatment: supportive

CHLORINE CYLINDERS

Ypres, Belgium, April 1915

CHLORINE - Civilian Uses

- Chlorinated lime (bleaching powder)
- Water purification
- Disinfection
- Synthesis of other compounds
  - synthetic rubber
  - plastics
  - chlorinated hydrocarbons
PHOSGENE
- 42 y/o female
- 2 hrs post exposure
- rapidly inc. dyspnea
- PaO2 40 torr (room air)
- CXR: infiltrates -
  - perihilar
  - fluffy
  - diffuse interstitial

PHOSGENE - Uses/Sources
- Chemical industry
  - foam plastics (isocyanates)
  - herbicides, pesticides
  - dyes
- Burning st:
  - plastics
  - carbon tetrachloride
  - methylene chloride (paint stripper)
  - degreasers

“BLOOD” AGENTS (CYANIDE)
- Hydrogen Cyanide (AC)
- Cyanogen Chloride (CK)
CYANIDE (BLOOD AGENTS)

- Hydrogen Cyanide (AC), Cyanogen Chloride (CK)
- Gas at STP, lighter than air
- Mechanism: blocks cell utilization of oxygen
- Old treatment: amyl/sodium nitrite and sodium thiosulfate
- New treatment: hydroxocobalamin

Cyanide treatment

Nitrites + Hemoglobin $\rightarrow$ MetHemoglobin

$\text{metHgb} + \text{CN} \rightarrow \text{cyanomethemoglobin}$

$\text{CNmetHgb} + \text{thiosulfate} \rightarrow \text{Hgb} + \text{thiocyanate}$

Thiocyanate eliminated renally!

Cyanide treatment

$\text{CN} + \text{hydroxocobalamin} \rightarrow \text{cyanocobalamin (vit. B12)}$

Expensive
Easier to use
Less toxic
Eliminated renally
But interferes with some blood tests x 24 hours!
BLISTER AGENTS (VESICANTS)
- Sulfur Mustard (H, HD)
- Nitrogen Mustard (HN1, HN2, HN3)
- Lewisite = chlorovinyldichloroarsine (L)
- Mustard / Lewisite mixtures (HL, HT, TL)
- Phosgene oxime (CX)

VESICANTS: SULFUR MUSTARD
- Sulfur Mustard, Nitrogen Mustard, Lewisite
- Oily liquid, heavier than air and water, persistent
- Mechanism: alkylating agent, DNA and proteins most sensitive targets
- Treatment: supportive

BLIND LEADING THE BLIND
Convalescence 2wks-6months
MUSTARD TOXICITY

Liquid
Blister 10ug
Death 100 mg/kg
7 gm/70 kg (on skin surface)
(350 mg absorbed)

MUSTARD: EYE

VESICANT EFFECTS

Iran/Iraq War: 90-95% burns, pulmonary injury, bone marrow suppression, sepsis, and eventually died.
NERVE AGENTS (ANTICHOLINESTERASES)
- Tabun (GA)
- Sarin (GB)
- Soman (GD)
- GF
- VX (3 LD)

NERVE AGENTS
- Sarin (GB), VX (persistent)
- All liquids initially at STP
- Mechanism: inhibits acetylcholinesterase, causes massive cholinergic crisis
- Treatment: atropine, oxime, diazepam

Normal (cholinergic) synapse

But why does the acetylcholine disappear?
…because of acetylcholinesterase!

Signs and Symptoms
- Diarrhea
- Urination
- Miosis
- Bradycardia
- Bronchospasm
- Rhinorrhea
- Emesis
- Lacrimation
- Salivation
- and:
  - Seizures
  - Coma
  - Death

Gland…
MARK I Kit (atropine use)

- Take out contents
- Hold in left hand
- Use #1 first (atropine)
- When pulled from base, ARMED
- Stick into lateral thigh, and hold 10 sec.
- Dispose

MARK I Kit

- Take out contents
- Hold in left hand
- Use #1 first (atropine)
- When pulled from base, ARMED
- Stick into lateral thigh, and hold 10 sec.
- Dispose

Rx with atropine
Rx with atropine…

MARK I Kit (pralidoxime use)

MARK I Kit
- Hold base in left hand
- Use #2 next (pralidoxime)
- When pulled from base, ARMED
- Stick into lateral thigh, and hold 10 sec.
- Dispose
How 2-Pam works

Aging
- Permanent damage to Ache
- Onset varies with agent

Aging and NA/OP
MARK I Kit
- Finish decontamination
- Observe for further symptoms
- If needed repeat with another kit
- Children
  - Will need size appropriate dosing
  - No autoinjectors at this time

Follow up care
- Notify Decon team leader
- Receiving team and rest of ED should be ready with:
  - IV
  - Atropine
  - Pralidoxime
  - Benzodiazepine
  - (airway)

Other use
- IF YOU OR YOUR DECON TEAM LEADER SYMPTOMATIC:
  - Notify Decon team leader
  - Use MARK I kit
  - Assist member to decon
  - Assist member out of decon for further care
COMPARATIVE TOXICITY OF AGENTS

End of Module 2

Complete Module 2 Questions

Biological Agents
Biological Agent Characteristics

- Produce delayed effects
- Do not penetrate unbroken skin
- Do not evaporate
- More toxic than chemicals by weight
- Undetectable by senses
- Difficult to detect in the field

Biological Agent Characteristics (continued)

- Most effectively disseminated as aerosols
- Range of effects
- Obtained from nature
- Multiple routes of entry
- Destroyed by environment
- Some are contagious

Classes of Biological Agents

- Biological Warfare Agents
  - Bacteria
  - Viruses
  - Toxins
Agents Considered for BW

- Bacteria and Rickettsiae
  - Anthrax spores, Tularemia, Plague, Brucella, Q Fever
- Viruses:
  - Smallpox, VEE, Hemorrhagic fevers
- Toxins:
  - Botulinum toxin, SEB, Ricin, Saxitoxin

Acquisition of Etiological Agents

- Multiple culture collections
- Universities
- Commercial biological supply houses, e.g. Iraq
- Foreign laboratories
- Field samples or clinical specimens, e.g. Ricin

Biological Agents

- Most toxic per weight
- Production technology is easily accessible
- Inhalation threat – 1 to 5 micron aerosol
- Undetected until numerous casualties
- Incapacitating to lethal effects
BW General Properties
- Not volatile, must be dispersed as an aerosol
- Silent, odorless, tasteless
- Relatively inexpensive to produce
- Simple delivery technology
  - Point source - aerosol generator
  - Line source - moving aerosol generator: auto, airplane, etc

BW - General Properties 2
- Inhalation is the most significant route of transmission for BW
- Aerosol - 1 to 5 microns ideal size
- Other routes of entry: oral, dermal abrasion, or intentional percutaneous

Impact of a BW Release
- Extensive and prolonged need for medical services
- Increased need for PPE in hospitals
- Possibility of a quarantine for BW agents
- Problems handling remains/mortuary facilities
- Multiple jurisdictional challenges in disaster response
- Responding to a “hoax” can be expensive
Physical Protection
- Only foolproof means of protection
- Present equipment is effective
- Problem is knowing when to put protective mask on
- No universal protection for civilian populations
- Limited education programs for civilian populations

Possible Epidemic Syndromes in BW
- Influenza syndrome
- Pulmonary syndrome
- Jaundice syndrome
- Encephalitis syndrome
- Rash syndrome or cutaneous lesions
- Unexplained death or paralysis
- Septicemia/toxic shock

Cutaneous Anthrax
Anthrax - Prevention

- No documented cases of person-to-person transmission of inhalational anthrax have ever occurred
- Cutaneous transmissions are possible
- Universal precautions required

Plague - Pathogenesis

- Humans develop disease from either the bite of an infected flea or by inhaling the organism
  - Bubonic - infection of a lymph node (usually lower legs)
  - Pneumonic - infection of the lungs
  - Septicemia - generalized infection from bacteria escaping from the lymph node: toxic shock
  - Orophangeal infections are rare, but reported

Pneumonic Plague Prevention

- Secondary transmission is possible
- Standard, contact, and aerosol precautions for at least 48 hrs until sputum cultures are negative or pneumonic plague is excluded
Tularemia - Pathogenesis
- Infectious via inhalation, ingestion, or absorption
- Inhaling only 10 to 50 organisms produces most lethal form of disease, typhoidal form
- Ingestion or absorption causes ulceroglandular form of disease

Q Fever - Pathogenesis
- Causes disease in animals (sheep, cattle, goats)
- Humans acquire disease by inhaling aerosols contaminated with the organism.

Viruses as Biological Agents
- Smallpox
- Venezuelan Equine Encephalitis (VEE)
- Viral Hemorrhagic Fevers
Smallpox - Clinical Course

- 7-17 day incubation period followed by myalgias, fever, rigors, vomiting, HA, and backache
- May have mental status changes
- Discrete rash with pustules develops over face and extremities and spreads to trunk
- Infectious until all scabs healed over
- All contacts quarantined for at least 17 days

Smallpox

Terrorist Use of Infectious BW Agents

- Provisional diagnosis needs to be made quickly
- High index of suspicion that BW agents have been used
- No time to wait on laboratory results to establish a definitive diagnosis
- The time course of the epidemic may aid in diagnosis
Toxins as Biological Agents

- Think of them as chemicals!
  - Botulinum
  - Ricin
  - Staphylococcal Enterotoxin B

Toxins
General Characteristics
- Poisons produced by living organisms that cause effects in humans, animals or plants
- More toxic per weight than chemical agents
- Not volatile and minimal absorption in intact skin
- Not prone to person-to-person transmission
- Sudden onset of symptoms, prostration or death
- Effects: interfere with nerve conduction; interact with immune system; inhibit protein synthesis
- THINK OF IT AS A CHEMICAL!!!!

Botulism Poisoning - Epidemiology
- Most outbreaks of foodborne botulism result from eating improperly preserved home-canned foods, with vegetables canned in oil being the most common source.
- 34 cases were reported in the U.S. in 1994.
- Toxin can be harvested and delivered as aerosol
Botulinum Toxin - Pathogenesis

- Neurotoxins produced by Clostridium botulinum - Botulism
- Most lethal compounds per weight - 15,000 times more toxic than VX
- Similar effects whether inhaled or ingested
- Onset of neurologic symptoms:
  - After inhalation, 24-72 hours
  - After ingestion, 12-36 hours

Botulism - Pathogenesis 2

- Blocks the release of ACh at the presynaptic terminal of the neuromuscular junction and autonomic nervous system
- Bulbar palsies and skeletal muscle weakness occur

Botulism - Signs & Symptoms

- Descending paralysis
- Bulbar palsies first
  - blurred vision
  - mydriasis
  - diplopia
  - ptosis
  - photophobia
  - dysphagia
  - dysarthria
Botulism - Signs & Symptoms 2

- Soon skeletal muscles become weak, starting in the upper body and moving symmetrically downward
- Symptoms progress acutely to respiratory failure in 24 hours to 2 days (try to obtain antitoxin)
- Patients usually awake and alert

“Floppy” baby flaccid paralysis

Ricin - Pathogenesis

- Potent cytotoxin - a by-product of castor oil production: 5% of mash after oil removed
- Over a million tons of castor beans are processed yearly into castor oil
- 200 times more toxic by weight than VX
- Blocks protein synthesis within the cell and thus tissue death
- Causes airway necrosis and edema when inhaled

Ricin - Pathogenesis

- Toxic by multiple routes of exposure
- Can be dispersed as an aerosol
- Effective by inhalation, ingestion, injection
**Ricin - Signs & Symptoms**

- Fever, chest tightness, cough, SOB, nausea, and joint pain 4 to 8 hours after inhalation
- Airway necrosis and edema leads to death in 36 to 72 hours
- Ingestion causes N.V, severe diarrhea, GI hemorrhage, and necrosis of the liver, spleen, and kidneys - shock and death within 3 days
- Injection causes necrosis of muscles and lymph nodes with multiple organ failure leading to death

**Ricin - Diagnosis & Treatment**

**DIAGNOSIS**
- Difficult
- Routine labs are nonspecific

**TREATMENT**
- Supportive - oxygenation and hydration
- No antitoxin or vaccine available

**Staphylococcal Enterotoxin B (SEB) Pathogenesis**

- Fever producing exotoxin secreted by Staphylococcus aureus - has endotoxin effects
- Common cause of food poisoning in improperly handled foods
- Symptoms vary by route of exposure
- Causes proliferation of T-cells and massive production of various interleukins and cytokines, which mediate the toxic effects
SEB - Pathogenesis 2
- Incapacitating - even at sublethal doses
- 80% of exposed develop symptoms
- May be aerosolized and inhaled
- May be introduced into the food supply and ingested

SEB - Signs & Symptoms
- 3 to 12 hours after inhalation
  - Sudden onset of high fever, HA, chills, myalgias, and nonproductive cough
  - Severe SOB and chest pain with larger doses
  - Chest x-ray usually nonspecific - ARDS in severe cases
- Ingestion - Nausea, vomiting and diarrhea develops, which may be severe

Defense Against BA – Self-Protection
- Treat every patient with respiratory complaints, a rash or open wounds as an “Infectious Source”
- Normal standard universal precautions for most biological agents
- HEPA filter mask upgrade for Pneumonic Plague/Smallpox/VHF
- Special protective garments are not necessary
- Precaution upgrades in areas of the hospital where aerosols could be generated: Lab centrifuges, autopsy facilities.
Defense Against BA - Triage

- Initial triage of all biological casualties is Immediate
- Highest priority will be allocating existing resources
  - Isolation rooms away from other patients
  - Mechanical ventilators
  - Personal protective equipment for staff
  - Medications

Key Points

Medical Approach to BA Attack

- Mandatory universal precautions with all infectious patients prevents spread of infection by containing all bodily fluids and utilizing barrier-protection nursing procedures
- Decontamination as appropriate (toxins)
- Initiate therapy for what is treatable, but do not delay for infectious identification
- Report concerns to HOSPITAL ICS (they will report to Public Health Officials, Law Enforcement, and FBI)

End of Module 3

Complete Module 3 Questions
Radiological Materials

Terms and Definitions
- Ionizing Radiation
- Radioactive material
- Rem
- Contamination
- Exposure

Ionizing Radiation
- Alpha particles
- Beta particles
- Gamma rays
- Neutrons
Ionizing Radiation - Alpha
- Alpha particles only travel 1 to 2 inches in air and microns in tissues
- Cannot penetrate the dead layer of the skin
- Can be shielded by a sheet of paper
- Greatest danger is from inhalation or ingestion

Ionizing Radiation - Beta
- Free electrons
- Penetrate skin but not vital organs
- Shielded by thick clothing or aluminum
- Greatest danger is through inhalation or absorption of beta emitters

Ionizing Radiation - Gamma Rays
- High energy rays
- Penetrate deep into tissue; require dense shielding
- Primary cause of radiation sickness
- Produced from radioactive decay and are a by-product of a nuclear weapon explosion or reactor accident
Ionizing Radiation - Neutrons
- Uncharged particles
- Can damage cells on contact
- Can make material they strike radioactive
- Result of a nuclear weapon explosion
- Penetrates extensively; require special shielding

Radiation Exposures

<table>
<thead>
<tr>
<th>Radiation Exposure</th>
<th>Chronic</th>
<th>Acute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Annual Exposure</td>
<td>360 mrem per year</td>
<td></td>
</tr>
<tr>
<td>Chest x-ray</td>
<td>10 to 30 mrem</td>
<td></td>
</tr>
<tr>
<td>Flight</td>
<td>0.5 mrem every hour</td>
<td></td>
</tr>
<tr>
<td>Smoking 1.5 packs per day</td>
<td>16,000 mrem per year</td>
<td></td>
</tr>
<tr>
<td>Mild radiation sickness*</td>
<td>200,000 mrem</td>
<td></td>
</tr>
<tr>
<td>Lethal Dose*</td>
<td>450,000 mrem</td>
<td></td>
</tr>
</tbody>
</table>

DOE maximum annual occupational limit = 5,000 mrem
DOE maximum emergency dose (for saving property) = 10,000 mrem
Maximum emergency dose (for saving life) = 25,000 mrem

Health Risks
- Risks depend on:
  - Amount
  - Rate
- Categorized as:
  - Acute
  - Chronic
Exposure Protection

- **Time**
- **Distance**
- **Shielding**

### Time

- **Source**

  100 mrem per hour \times 15 minutes (0.25 hour) = 25 mrem

### Distance

- **Source**

  100 mrem/hr \rightarrow 25 mrem/hr

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Paper lead

- **Alpha**
- **Beta**
- **Gamma**

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Result

Dose 25 mrem
Shielding

- Alpha
- Beta
- Gamma

Contaminated vs. Exposed

- Contaminated victims pose a risk to others
- If you are contaminated, you are also exposed
- Exposed victims are not necessarily contaminated
- Geiger counter to determine if victims are contaminated

End of Module 4

Complete Module 4 Questions
Decontamination Team

Decon Team Duties
- Decon Team Leader (senior RN, maintenance, etc)
  - Interview patient (if already arrived without notification)
  - Brief team
  - Organize response
- Decon Operations Team (2, must have training)
  - At least one clinical person
  - Other member
- Suit/equipment Support Team (2-4, all must have training)
  - Help dress/undress team members
  - Equipment assistance

Decon Team Leader
- Direct patient(s)
  - to staging area
  - remove clothes
- Brief Team
- Monitor team
  - Operations Team
  - Suit/equipment support
  - Chemical ID (use poison center)
- Decon team member ONLY communicate with Team Leader!
Decon Team members (2)
- Pre-entry assessment
- Inspect equipment
- Don PPE
- Decontaminate as needed
- Provide BLS
- Clean self/room
- Doff PPE
- Post-entry assessment
- Shower
- Debrief

Suit/equipment support
- Utilize appropriate PPE (splash protection)
- Prepare PPE
- Assist donning/doffing PPE
- Monitor team
- Assist moving cleaned patients
- Assist in PPE removal and exit of Decon team

Key questions prior to decon
- Water compatibility of substance
  - Most OK
- Level of PPE required
- Signs and symptoms of acute exposure
  - So you can detect symptomatic patients
  - So you can detect contaminated team members!
- Cleanup and disposal requirements
Chemical ID

- What was chemical(s)?
- Was it gas, liquid or solid?
- What did container look like?
- Label or placards?
- What is chemical used for?
- Where did incident occur?
- What did chemical look, smell or taste like?
- Contact poison center with above information.

Poison Center will...

- ID chemical
  - Based on placard information you find
  - Based on signs and symptoms displayed
- Healthcare information
  - Signs and symptoms to watch out for
  - Treatments that may be needed
- 585-275-3232 or 1-800-222-1222

Level A

Required when the highest potential for exposure to hazards exists and the highest level of skin, respiratory, and eye protection is called for.
**Level B**

Required when the highest level of respiratory protection but a lesser level of skin protection is needed.

Can be encapsulating or non-encapsulating.

**LIQUID SPLASH PROTECTION**

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**Level C**

Required under circumstances that call for lesser levels of respiratory and skin protection.

Can be used with SCBA's or APR's.

**DUST & SOLIDS PROTECTION**

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**Level D**

Appropriate when minimal skin protection and no respiratory protection is required.

**SUPPORT PROTECTION**

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Levels of Protection

- Greater Hazard
- Level A
- Level B
- Level C
- Level D
- Bunker Gear
- Higher Burden

Equipment Needs

- Crash cart in hallway or near tent
  - Pass to clinical team member when needed
    - Medication
    - Intubation equipment
- Maintain personnel protection!

Radios

- Must go on UNDER PPE (for those wearing PPE)
- Make sure all on ONE channel
- Test before putting on, after dressed
- Have backup procedures for communication should radios fail
  - Hand on top of head = OK
  - Hand(s) to neck = can’t breathe
Cautions

- Risks to person in decon room!
- PPE survey & exam
- Personnel: vital signs before & after!
- Risks:
  - Heat
  - Chemical
  - Equipment malfunction

Patient Flow

- Special door from outside (ONLY!)
- “Hot” zone: by exterior door
  - Undress
  - Collect contaminated clothing
- “Warm” zone: under shower, on stretcher
  - Shower or wash
- “Cool” zone: by door to hallway
  - Pass to clean stretcher, etc
  - Assistants to help

Patient Flow diagram:

- Enter decon
- Undress (contaminated)
- Shower/hose (decontaminating)
- Dry/re-dress
- Exit to hospital
- Enter decon
Tent (if applicable)

- Additional training in setting up
- Know your facilities policy!

Conclusion

- Keep yourself safe!
- Keep institution safe!
- Only in this manner can we take care of patients.
- What is appropriate PPE?
- What is our appropriate response?

End of Module 5

Complete Module 5 Questions