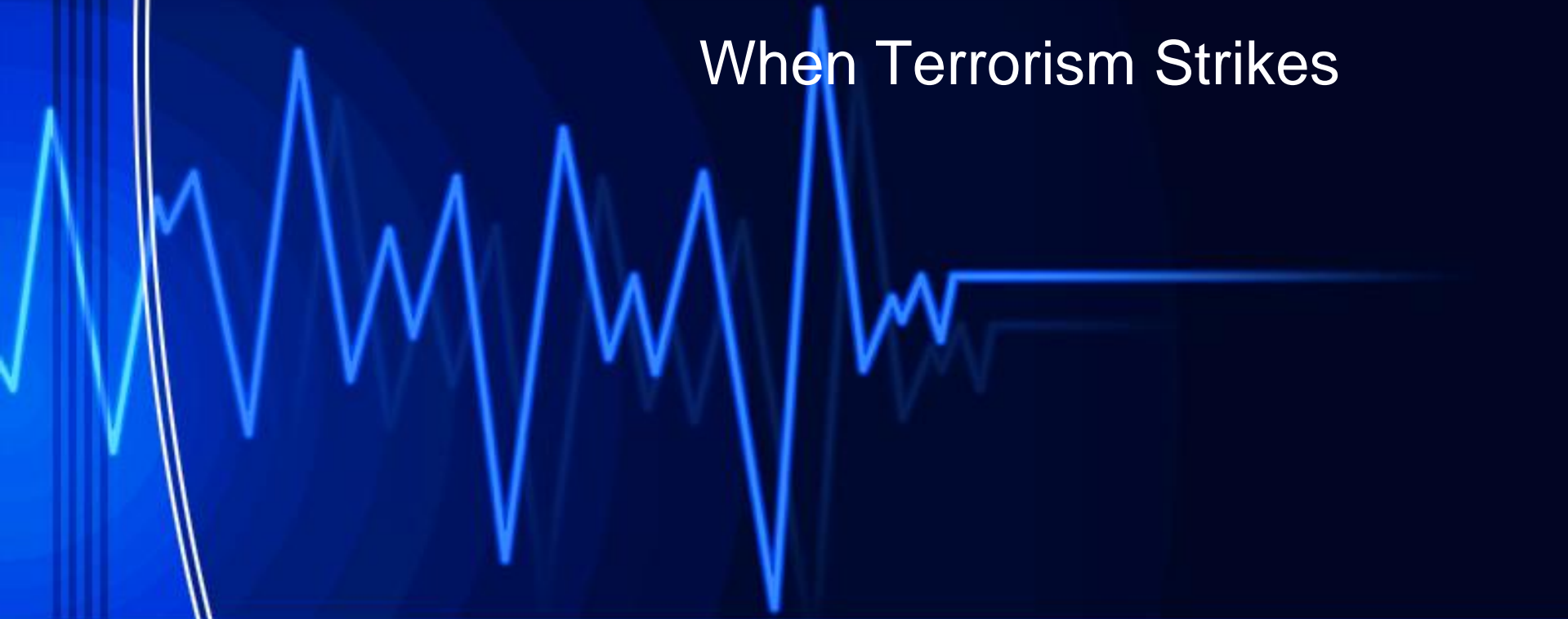


# Medical Transportation

When Terrorism Strikes



# Objective

- Discuss various personal protective considerations to enable medical personnel to transfer lifesaving assets to their destination during a weapons of mass destruction event.

# Personal Protective Equipment Definition

“Specialized clothing or equipment worn by an employee for protection against infectious materials.”

-OSHA

## RAND, 2008

One of the most significant findings from our discussions with the responder community on the topic of hazmat and terrorism protection is:

Departments are proceeding down the path of acquiring chemical and respiratory protection

**without having a clear understanding of what exactly they are preparing for and how to prepare for it.**

# Regulations and Recommendations for PPE

- OSHA issues workplace health and safety regulations. Regarding PPE, employers must:
  - Provide appropriate PPE for employees
  - Ensure that PPE is disposed or reusable PPE is cleaned, laundered, repaired and stored after use
  - Specifies circumstances for which PPE is indicated
- CDC recommends when, what and how to use PPE
- **Armed Services Blood Program (ASBP) Operational Procedures**
- International Standards Organization (ISO)
- North Atlantic Treaty Organization (NATO)
- NFPA chemical protection clothing
- NIOSH Respiratory protection

# Mode of Transportation

- Ground vs Air
- If airspace has been closed this will limit your options to ground or water bound travel
- If airspace is open what method of air travel will be used
  - Fixed wing or rotor wing

The amount of supplies to be transported

- The amount of supplies

Size and type of vehicle

- Type of supplies to be transported
  - Do the supplies require refrigeration or external power?
- Amount of supplies to be transported
  - Determine size of vehicle
    - Tractor trailer, ambulance, police cars, or cargo van
- Use of hospital or medical typed vehicles will generally be identified as such. Consider the use of unmarked vehicles such as cargo vans etc..

# Ground Transportation

- Distance of transport
  - Impact PPE selection due to time in equipment and equipment limitations
  - Supplied air vs filtered air systems
- Route of travel: Urban vs. Rural
  - Alternate route established in case of contact
  - Consider forward deployment of security force for recon
    - Consideration of possible ambush locations along routes
  - Weapons systems
    - Small weapons systems, long range weaponry
  - Consider forward deployment of security force to recon route

# Considerations

- Security considerations
  - The adversary
  - Training and composition of staff
  - Staff availability and selection
  - Forward deployment of security detail
  - Weapons systems to be utilized
  - PPE to be employed
    - Limitations to visibility, movement
- Commonly exposed body systems
  - Respiratory
  - Skin



# Personal Protective Equipment Considerations

- Type of chemical or product that security detail may come in contact with
- Determine potential routes of exposure
- Length of time in PPE
- Experience and training of security detail
- Physical condition of individuals in security
- Decontamination capabilities of security detail

# Self Contained Breathing Apparatus

- Advantages
  - Highest level of respiratory protection
  - Supplied air
- Disadvantages
  - Additional weight
  - Limited time of operation
  - Requires fit testing



# Air Purifying Respirator



- Advantages
  - Allows for extended operational time
  - Provides a high level of respiratory protection
- Disadvantages
  - Limited by filter life and type
  - Requires more effort to breath
  - Requires fit testing

# Powered Air Purifying Respirators

- Advantages
  - Allows for extended operational periods
  - Continues airflow
  - Requires NO fit testing
- Disadvantages
  - Battery duration
  - Cumbersome
  - Provides limited respiratory protection



# Level A Ensemble – Totally Encapsulated

- Advantages
  - Maximum respiratory protection
  - Maximum splash/contact protection
- Disadvantages
  - Difficult to don
  - Limited operational time
  - Significant impaired visibility
  - Must use Self Contained Breathing Apparatus

# Level A Ensemble – Totally Encapsulated

Technically, Level-A protection is required for an unknown hazmat environment.

But we still need to do our job, and there's no way that we can do that in a Level-A suit.



# Level B Ensemble



- Advantages
  - Maximum respiratory protection
  - Significant splash/contact protection
- Disadvantages
  - Difficult to don
  - Limited operational time
  - Impaired visibility
  - Must use Self Contained Breathing Apparatus

# Level C Ensemble



- Advantages
  - Limited respiratory protection
  - Significant splash/contact protection
  - Donn Easily
  - Easily transported
  - Extended operational time
- Disadvantages
  - Impaired visibility
  - Limited Respiratory protection
    - Limited to filter capability and type



# Realistically speaking...

- Fundamental uncertainty revolves around how well the available protective technologies will work for the anticipated situations.
  - Training
  - Planning
  - Exercising

# Conclusion

- We have looked at the following areas:
  - Potential type of incident encountered
  - Security detail makeup
  - Respiratory protection
  - Splash/ Contact exposures
  - Need to plan, equip, train, and exercise for such scenarios