The First Use of the Term WMD

- The first use of the term “Weapons of Mass Destruction” on record is from *The Times* (London) in 1937 in reference to the aerial bombardment of Guernica, Spain with this new incenderary bomb.
WMD Threats

- Chemical agents
- Biological agents
- Radiological materials
- Nuclear
Chemical Agents

• Characteristics
  – Incapacitating versus lethal agents
  – Persistent versus non-persistent

• Categories
  – Blister agents
  – Choking agents
  – Blood agents
  – Nerve agents
  – Toxic Industrial Chemicals

Newport Chemical Depot
Newport, Indiana
Blisters

• Recognition

  – Symptoms for some are not right away. Red Skin.

  – Common names – Sulfur Mustard, Lewisite, HD.

  – Vesicants mix with our DNA and cause cellular change.

  – They are liquid, so you can disperse them several ways.
Choking Agents

• Recognition
  – They are Dispersed by air.
  – Common names
    • Chlorine
    • Phosgene
    • Tear gas
Blood Agents

• Recognition


  – Common names - Hydrogen Cyanide and Carbon Monoxide, CK (for cyanogen chloride).

  – Dispersal – The most
Nerve Agents

• Recognition
  – SLUDGEM
  – Common names

• Sarin, Soman, Tabun, VX

• Dispersal is done in liquid form,

• like with blister agent.
Nerve Agents

- Recognition
  - SLUDGEM
  - Common names

- Sarin, Soman, Tabun, VX

- Dispersal is done in liquid form,

- like with blister agent.
Incapacitating Versus Lethal Agents

• Recognition

  – Less than lethal – police use of force.

  – Common names – Mace

    pepper spray, OC
Toxic Industrial Chemicals (TIC)

• Recognition
  – Many kinds
  – Easy to obtain. What is in your jurisdiction?

• ERG – Protection, Decontamination, First aid
Chemical Agents

- Advantages
  - Uniqueness
  - Hard to detect
  - Response cost and technical difficulty
  - Psychological aspects

- Disadvantages
  - Swift and forceful retaliation
  - Casualties
  - Damage to the terrorists’ public image
Persistent Versus Non-persistent

- Recognition
  - Oil vs. Gasoline
  - VX vs. Sarin
  - Lewisite vs. Mustard
  - Pepper vs. tear gas

Deacon: Chemical specific (soap & water).
Biological Agents

• Recognition
  • Categories
    – Bacteria
    – Rickettsia
    – Viruses
    – Toxins
  • Routes of entry
    – Enter body through respiration, ingestion, dermal penetration, absorption (rare)
Biological Agents

• Detection
  – Incubation period
  – On-site detection currently not reliable

  Note the blood auger

  – Victims likely asymptomatic initially

  – First real indicators come later, which may include 9-11 calls and the influx of patients with similar symptoms into medical care facilities.
Biological Agents

• Additional characteristics
  – Deadly
  – Obtained from nature
  – Relatively easy to produce
  – Invisible to the senses
  – Delayed effects
Biological Agents

- Anthrax
- Plague
- Smallpox
- Venezuelan Equine Encephalomyelitis (VEE)
BACTERIA: ANTHRAX

Among the most likely Bio Warfare agents
• Cheap and Easy
• Aerosolized
• Odorless, colorless, tasteless
• Inhalational anthrax is highly lethal
• Delayed onset
Normal Brain

Brain of a person who died from inhalational anthrax
Smallpox

- Synchronous Pustules all over body
- Develop on hands and feet
- Highly contagious
  - Quarantine for 17 days
  - Infectious before skin lesions appear & until scabs heal
  - Scab material remains infectious
Biological Agents

• Advantages
  – Far-reaching effects
  – Difficult to detect
  – Long incubation
  – Naturally-occurring
  – Easily transported
  – Diverse delivery means

• Disadvantages
  – Temperature
  – Precipitation
  – Wind speed
  – Urban areas and
• Larry Wayne Harris

Yersinia Pestis

Deacon: Bleach & Water – up to 30 min kill time.
Radiological Materials

- Radiological exposure symptoms and medical aspects
- Nuclear weapons

Alpha Beta Gamma Neutron

Radioactive Dispersal Device (RDD)
Radiological Materials

• Advantages
  – Easily weaponized
  – Deprives others of using property
  – Safely handled
  – Significant impact

• Disadvantages
  – Potency
  – More explosive charges
  – Inadvertent contamination

Dirty Bomb
Nuclear Weapons

- Expensive & Difficult to Manufacture
- Components Are Difficult to Acquire
- Many Key Components Are Watched
- Programs Not Easily Hidden
- Low Yield Can Be Achieved With a “Portable” Nuclear Device (40-120 lbs)
- Larger Yield Requires Large (i.e. heavy) Bomb
- Can Achieve Large Area Coverage
- High Casualties
- Triggers an Immediate Response
Suitcase Nuke
Radiation can be used as a poison.

Polonium 210
Alexander Litvinenko

RDD’s can spread radioactive dust, causing an inhalation hazard.
Acute Radiation Syndrome (ARS)

• Must Have:
  • High Dose
  • Penetrating
  • Entire Body
  • Short Time

From exposure not necessarily inhalation or injection

Deacon – Wash it off!
With all WMD’s HARM is the same

- **TRACEM**
  - Thermal
  - Radiation
  - Asphyxiation
  - Chemical
  - Etiological
  - Mechanical
Reducing Harm

- **R A I N**
  - Recognize
  - Avoid
  - Isolate
  - Notify
We Have Covered

1. The basic categories of WMD’s
2. Signs and Symptoms
3. Dispersal
4. Deacon for WMD’s
Swinging Meters