EMS Response to Terrorism
41.1 Define key terms introduced in this chapter. Slides 13–16, 19, 38–39, 49–50, 61–64

41.2 List the “CBRNE” agents, also called weapons of mass destruction, that are often involved in terrorist incidents. Slide 16

41.3 Describe the risks to first responders in terrorism incidents. Slide 19

continued
41.4 Discuss clues, such as occupancy or location, type of event, timing of events, and on scene warning signs that help with identification of suspicious events. Slides 20–24
OBJECTIVES

41.5 Given a scenario involving a terrorism incident, predict the types of harm that may occur. Slides 25–26

41.6 Discuss the principles of time, distance, and shielding that may minimize exposure to harm from terrorism incidents. Slides 29–31
41.7 Discuss types of harm and self protection measures for each of the following: chemical incident, biological incident, radiological/nuclear incident, and explosive incident. Slides 33–47

41.8 Discuss how chemical and biological agents can be disseminated and weaponized. Slides 49–50

continued
41.9 Describe the characteristics associated with the following: chemical agents, biological agents, radiological/nuclear devices, and incendiary devices. Slides 52–59
41.10 Describe blast injury patterns and treatment for blast injuries. Slide 59

41.11 Discuss strategy, tactics, and self-protection with regard to a terrorist incident. Slides 61–64, 66–70
CORE CONCEPTS

- Types of terrorism and terrorist events
- How to identify the type of threat posed by a terrorist event
- Use of time/distance/shielding for protection at a terrorist event
CORE CONCEPTS

- How to respond to and deal with harms from a terrorist event
- Applying strategy and tactics at a terrorist event
- Self-protection at a terrorist event
Topics

- Defining Terrorism
- Terrorism and EMS
- Time/Distance/Shielding
- Responses to Terrorism
- Dissemination and Weaponization
- Characteristics of CBRNE Agents
- Strategy and Tactics
- Self-Protection at a Terrorist Incident
Defining Terrorism
Terrorism

• “The unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population or any segments thereof, in furtherance of political or social objectives”
Domestic Terrorism

• “Groups or individuals whose terrorist activities are directed at a government or population, without foreign direction”
  – Environmental terrorists
  – Survivalists
  – Militias
  – Racial-hate groups
  – Extreme political or religious groups
International Terrorism

• “Groups or individuals whose terrorist activities are foreign-based and/or directed by countries or groups outside the targeted country or whose activities cross national borders.”

• Growing trend toward loosely organized, international networks of terrorists (for example, Al Qaeda)
Types of Terrorism Incidents

- Weapons of mass destruction (CBRNE)
  - Chemical
  - Biological
  - Radiological
  - Nuclear
  - Explosive
  - Criminal activities
Terrorism and EMS
First Responders as Targets

- First responders often principle targets of terrorist attacks
- Safety of EMS provider is most important consideration when responding to potential terrorist incident
Identify Threat Posed by Event

• Incident that is a potential act of terrorism is also a crime scene
• Recognizing OTTO signs may help protect against secondary attack
  – Occupancy (or location)
  – Type of event
  – Timing of event
  – On-scene warning signs
Occupancy or Location

- Symbolic or historic targets
- Public buildings or assembly areas
- Controversial businesses
- Infrastructure systems
Type of Event

• Types of events with high suspicion of terrorist involvement
  – Explosions and/or use of incendiaries
  – Incidents involving firearms
  – Nontrauma mass casualty incidents
Timing of Event

- National holidays
- Anniversary dates of previous attacks
- Incidents occurring in major public areas at busy points of business day
On-Scene Warning Signs

- Unexplained patterns of illness or death
- Unexplained signs and symptoms or skin, eye, or airway irritation
- Containers that appear out of place
Recognize Harms Posed by Threat—TRACEM-P

- Thermal: caused by either extreme heat or extreme cold
- Radiological: from alpha particles, beta particles, or gamma rays, generally produced by nuclear events
- Asphyxiation: caused by lack of oxygen in atmosphere

continued
Recognize Harms Posed by Threat—TRACEM-P

- Chemical: caused by toxic or corrosive materials
- Etiological: caused by disease
- Mechanical: caused by physical trauma (gunshot, bomb fragments)
- Psychological: results from any violent event
Think About It

• How can I tell if I am responding to a terrorist incident?
Time/Distance/Shielding
Time

• Minimize time in dangerous area or exposed to hazardous material, biological agent, or radiation

• Execute rapid entries to perform reconnaissance or rescue
Distance

- Maximize distance from hazard area or projected hazard area
- Follow recommended guidelines regarding hazardous materials in *Emergency Response Guidebook*
Shielding

- Use appropriate shielding for specific hazards
- Can be vehicles, buildings, fire-protection clothing, hazmat suits, positive-pressure self-contained breathing apparatus, PPE
- Vaccinations against specific diseases
Responses to Terrorism
Chemical Incident

• Includes many classes of hazardous materials
  – Can be inhaled, ingested, absorbed, injected
  – Can include industrial chemical or warfare-type agents
Harms of Chemical Incident

- Thermal (secondary): reactions create heat
- Asphyxiation (secondary): reactions deplete oxygen
- Chemical (primary): systemic effects
- Mechanical (secondary): corrosive chemicals weaken structures
- Psychological (secondary)
Self-Protection Measures

- Respiratory protection
- Protective clothing
- Be aware of possible contamination from patients
Biological Incident

- Presents as focused emergency or public health emergency
  - Focused emergency: potential or actual point of origin located; attempts made to prevent or minimize damage and spread
  - Public health emergency: sudden demand upon public health infrastructure with no apparent explanation

continued
Biological Incident

• Causative agents
  – Bacteria
  – Viruses
  – Toxins

continued
Biological Incident

• Four major routes of entry to body
  – Absorption: skin contact
  – Ingestion: by mouth
  – Injection: from needles or projectiles
  – Inhalation: by breathing
Exposure/Contamination

• Exposure: substance taken into body through route of exposure
• Contamination: substance clings to surface areas of body or clothing
Harms of Biological Incident

- Chemical (secondary): scene of clandestine laboratory
- Etiological (primary): agents classified as poisons
- Mechanical (secondary): explosives used to disperse agents
- Psychological (secondary)
Self-Protection Measures

- PPE and respiratory protection
- Get as much information as possible
- Prioritize protective measures
  - Self-protection
  - Buddy system
  - Availability of rapid intervention teams
  - Civilian protection
Radiological/Nuclear Incident

- Small nuclear devices ("suitcase bombs") stockpiled in foreign nations
- Radiologic dispersion more practical and difficult to detect as radiation symptoms are delayed for hours or days
  - Sickness treatable if detected early
Harms of Radiological/Nuclear Incident

- Thermal (primary): nuclear explosion
- Radiological (primary): radiological materials (ongoing hazard)
- Chemical (secondary): radiological substances also chemical hazards
- Mechanical (primary): explosion
- Psychological (secondary)
Self-Protection Measures

- Time, distance, shielding
- Radiologic detecting equipment helps determine effectiveness of measures
- Assume dissemination of radiological, biological, or chemical materials
- Follow decontamination procedures
Explosive Incident

- Wide variety of devices from small pipe bombs to large vehicle bombs
- May involve attacks on a fixed target or group of people
- May be designed to disperse biological, chemical, or radiological materials
Harms of Explosive Incident

- **Thermal (primary):** heat of detonation
- **Asphyxiation (secondary):** possibility of extremely dusty conditions
- **Chemical (secondary):** result of explosive reaction from chemicals present at detonation site
- **Mechanical (primary):** typically seen at bombing incidents
- **Psychological (secondary):**
Self-Protection Measures

- Responder needs both preblast and postblast protection
  - Preblast: operations occurring after written or verbal warning received but before explosion takes place
  - Postblast: operations occurring after at least one detonation
Dissemination and Weaponization
Dissemination of CBRNE Materials

- Respiratory route
  - Most effective, most common means
- Ingestion route
- Dermal route
- Human-to-human contact
Weaponization of CBRNE Materials

- Most effective when targeted through inhalation route
- Particles in 3–5 micron size
- Such airborne dissemination can be created by applying energy to material
- Heat, explosives, sprayers can aerosolize materials
Characteristics of CBRNE Agents
Chemical Agents

• Can be gaseous, liquid, or solid
• Vapor pressures and densities can vary across the spectrum
• Volatility
  – Low boiling point and high vapor pressure will evaporate more readily
  – Allows agent to have greater airborne release potential
Classes of Chemical Agents

• Choking agents
  – Predominately respiratory

• Vesicating (blister) agents
  – Cause chemical changes in cells of exposed tissue

• Cyanides
  – Prevent use of oxygen within cells

continued
Classes of Chemical Agents

- Nerve agents
  - Inhibit enzyme critical to proper nerve transmission, causing out-of-control parasympathetic nervous system

- Riot control agents
  - Irritating materials and lacrimators (tear-flow increasers)
Nerve Agents—SLUDGEM

• Signs and symptoms of exposure
  – Salivation
  – Lacrimation
  – Urination
  – Defecation
  – GI Upset
  – Emesis
  – Miosis
Biological Agents

• Role of EMS primarily supportive
• Some material can replicate itself creating greater potential for transmission from person to person
Radioactive/Nuclear Devices

- Military nuclear device
- Improvised nuclear device
- Radiological dispersal device (dirty bomb)
- Sabotage
Effects of Radiation

- Radiologic exposure affects bone marrow, gastrointestinal system, central nervous system.
Incendiary Devices

- Blast injury patterns
  - Lung injury: bradycardia, apnea, and hypotension from blast wave
  - Ear injury: rupture of tympanic membrane
  - Abdominal injury: rupture of gas-containing section of intestine
  - Brain injury: concussion or mild traumatic brain injury (MTBI) from blast wave
Strategy and Tactics
Isolation

- Controlling scene, isolating hazards, and attempting to conduct controlled evacuation is resource-intensive and requires law enforcement personnel.
- Law enforcement must establish and control perimeter throughout incident.
Notification

- Generally required by established directives, procedures, and statutes
- Request for additional specialized agencies carried out by communications center based upon early reports of EMTs on scene
Identification and Protection

• Identification of agent
  – Observe indicators of particular agent or presence of chemical containers or lab materials

• Protection of critical assets
  – People, vehicles, equipment/supplies
  – Requires close partnership between EMS and security agencies
Decontamination

• Gross decontamination by EMS personnel
  – Removing surface contamination via mechanical means and initial rinsing
  – Amount of surface contamination significantly reduced
Self-Protection at a Terrorist Incident
Recognition: Scene Size-up

- Victims displaying signs of hazardous substance exposure?
- Unconscious victims?
- Victims exhibiting SLUDGEM signs?
- Blistering, reddening of skin, discoloration or skin irritation?
- Victims having difficulty breathing?
Recognition: Situational Awareness

- Medical mass casualties or fatalities with minimal or no trauma
- Responder casualties
- Dead animals and vegetation
- Unusual odors, color of smoke, vapor clouds
Remember OTTO Clues

- Occupancy (location)
- Type of event
- Timing
- On-scene clues
Don’t Rush In

- Wait until appropriate authority says scene is safe
- Follow incident command protocols
- Wear appropriate PPE
- Beware possible secondary explosive devices
- Search all patients for explosives or weapons
Protect Yourself

- Understand TRACEM-P harms
- Time, distance, shielding
- Use specific tactics for each CBRNE threat
Chapter Review
Chapter Review

• There have been terrorist attacks throughout history. After 9/11 the world has been a different place because of the threat of terrorism.

• CBRNE helps recall the types of agents and weapons that can be used by terrorists. TRACEM-P helps recall the types of hazards of these agents.

continued
You must be sure to protect yourself from terrorist attacks as well as secondary attacks which are designed to injure or kill rescuers and further the physical and psychological impact of the attack.
Remember

- Responders often are targets of terrorists. Safety must be the highest priority. Use scene clues to identify potential terrorist incidents.

- Adapt protective measures to the specific threat. Know the protective principles of CBRNE events.
Remember

• Important priorities for responders at a terrorist incident are life safety, incident stabilization, and protection of property.
• Isolation, perimeter control, and appropriate notifications are important priorities in managing a terrorist incident.
Remember

- Force protection is an extension of general safety procedures. It refers to the safety and security of both providers and resources.
Questions to Consider

• How can I best protect myself from danger and hazards during a terrorist incident?
• What is my role in the incident response plan for a terrorist incident?
Critical Thinking

• You arrive at an office where multiple patients are complaining of the same symptoms. They state their office received several threats due to its role in a controversial foreign relations incident. You and your partner recognize the similar symptoms and decide these may be linked.

continued
Critical Thinking

• What is your best course of action next? Should you remove yourself from the scene at this point or remain with your patients?
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