



Terrorism Emergencies

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When you encounter a HazMat incident, it is essential to follow three primary objectives of disaster response:

- Do the greatest good for the greatest number of victims as healthcare resources are limited or strained due to the number of injured individuals
- Treatment during triage is minimal, and this is counterintuitive to normal pre-hospital protocols. Effectively utilize personnel, equipment, and health facilities
- The goal is to move patients away from the incident and toward resources that offer more comprehensive care. Do not relocate the disaster from one location to another by poor command, control, or communication practices

Role Of EMS – Skills

Role of EMS

- Isolate the scene
- Deny entry
- Notify additional resources and
- Recognize key indicators of a potential terrorist incident



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You are one of the first to arrive on the scene of a suspected terrorist incident. As a first responder trained at the awareness level, you are among the first to witness or discover an incident involving criminal activity or terrorism and to initiate an emergency response sequence by notifying the proper authorities.

In this role you need the following competencies which you can acquire through training and professional experience:

- an understanding of what terrorism is, and the risks associated with such an incident;
- an understanding of the potential outcomes associated with a terrorist incident;
- the ability to recognize the presence of, and identify, criminal activity or terrorism in an emergency;
- an understanding of the role of the first responder as it relates to components of an emergency response plan, including site security. Be familiar with the use and application of the current year's Emergency Response Guidebook;
- the ability to realize the need for additional resources, and to make appropriate notifications to an emergency communication center; and
- the ability to self-protect, keeping you as a priority.

Specific steps that you can take at the awareness level are:

- isolating the scene
- denying entry
- notifying additional resources, and
- recognizing key indicators of a potential terrorist

incident

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Disaster Cycle

Phases of disaster cycle

- Preparedness
- Response
- Recovery
- Mitigation



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Emergency management describes the science of managing complex systems and multidisciplinary personnel to address extreme events, across all hazards, and through the phases of mitigation, preparedness, response, and recovery. The cycle illustrates the steps you take when planning for and responding to a disaster.

Here is a short note on each of the phases:

- Preparedness is the most critical phase. It is the phase where response plans are constructed, training exercises are performed, and information gaps are

identified and addressed.

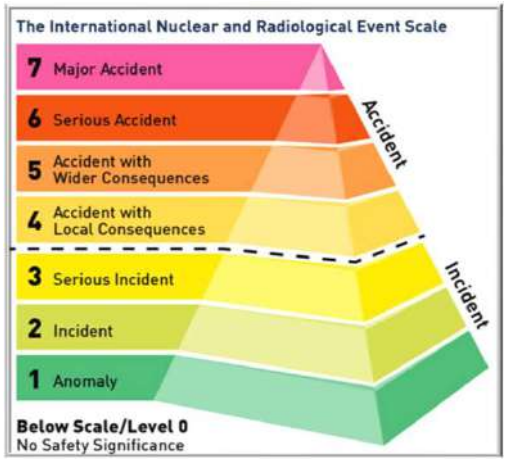
- Response focuses on saving lives, property, and the environment, and on preserving evidence in a CBRNE incident.
- Recovery, the longest phase focuses on returning to normalcy or as close to normal as possible; psychological effects often become prevalent in this phase.
- Mitigation is the phase where new measures are undertaken to prevent or minimize the effects of future disasters, build resilience to disasters, and shorten the recovery.

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CBRNE Incidents | Areas Of Concern

Areas of concern

- Scale of the incident
- Responder protection
- Affected population
- Affected animals
- Environment
- Preservation of forensic evidence



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After any type of C B R N E incident, we are bound to experience few key areas of concern:

- Scale of the incident is one of the major concerns. Resources will be needed, but how many will depend on the scale and type of incident, the capabilities of the area affected, and whether outside help is needed at the local, state, or federal levels.
- Responder protection is unavoidable. Responders like us need protection so that we help the victims without becoming victims ourselves. Appropriate levels of PP E will be required, and this equipment will

differ depending on the type of agent.

- The affected population dictates our role. Is it a large, populated area with the potential for greater numbers of victims? If so, special mass casualty considerations may be needed.
- Affected animals will also be a part of C B R N E threats. So, plans should be in place for their care and protection.
- The environment is yet another concern. Food and water sources need to be considered. Cleanup of the environment may be possible for some agents, but not all. Cleanup can be time-consuming and very expensive.
- Preservation of forensic evidence is of utmost importance in such a situation. Evidence from the scene of the incident needs to be gathered and protected, so as to prosecute perpetrators of the terrorism act.

You must know the current threat level issued by the federal government through the Department of Homeland Security (DHS).

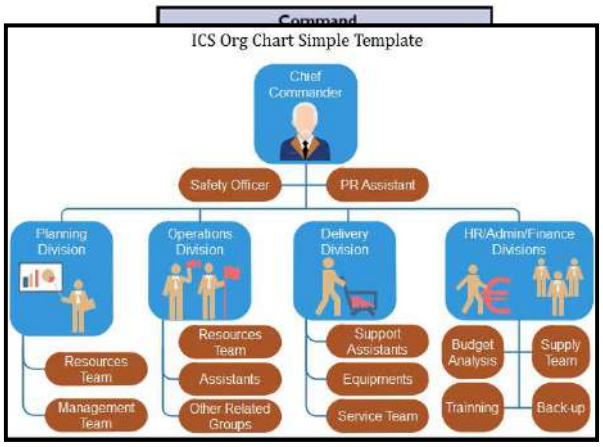
In April 2011, the color-coded Homeland Security Advisory System was replaced by the National Terrorism Advisory System (NTAS).

Alerts from the N-T-A-S contain a summary of the threat and the actions that first responders, government agencies, and the public can take to maintain safety.

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INCIDENT COMMAND SYSTEM

- Five functional areas of ICS:
  - ✓ Command, Operations, Planning, Logistics, Administration/Finance
- Steps to deal with response:
  - ✓ Conducting size-up
  - ✓ Evaluating the situation
  - ✓ Setting incident priorities
  - ✓ Estimating potential incident course and harm
  - ✓ Choosing strategic goals and tactical objectives



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During these unforeseen mass casualty incidents, the Incident Command System (ICS), is designed to provide the emergency responder with an organization, and system to achieve the desired results.

The ICS provides guidance for how to organize assets to respond to an incident.All response assets are organized into five functional areas: Command, Operations, Planning, Logistics, and Administration, or Finance.

During routine emergencies, most emergency service personnel follow a standard approach. The five common steps include, conducting size-up, evaluating the situation, setting incident priorities, estimating potential incident course and harm, and choosing strategic goals and tactical objectives.

Let's re collect what goes into each of these steps:

- Conducting Size-up

The first step in determining a course of action, size-up, is the rapid mental evaluation of the factors that influence an incident. The more information you have prior to the incident, the greater the chances of having a safe and successful response.

- Evaluating the Situation

This refers to the type, the cause, and the status of the incident. The type of incident refers to whether it is one of the five types of incidents, a chemical attack, an explosion, a fire, etcetera. The cause of the incident refers to whether it is an accident, such as a system failure, or something intentional, such as a bombing. The incident status refers to whether the incident is in a

somewhat controlled state or is still uncontrolled, which is dynamic or expanding.

- Setting Incident Priorities

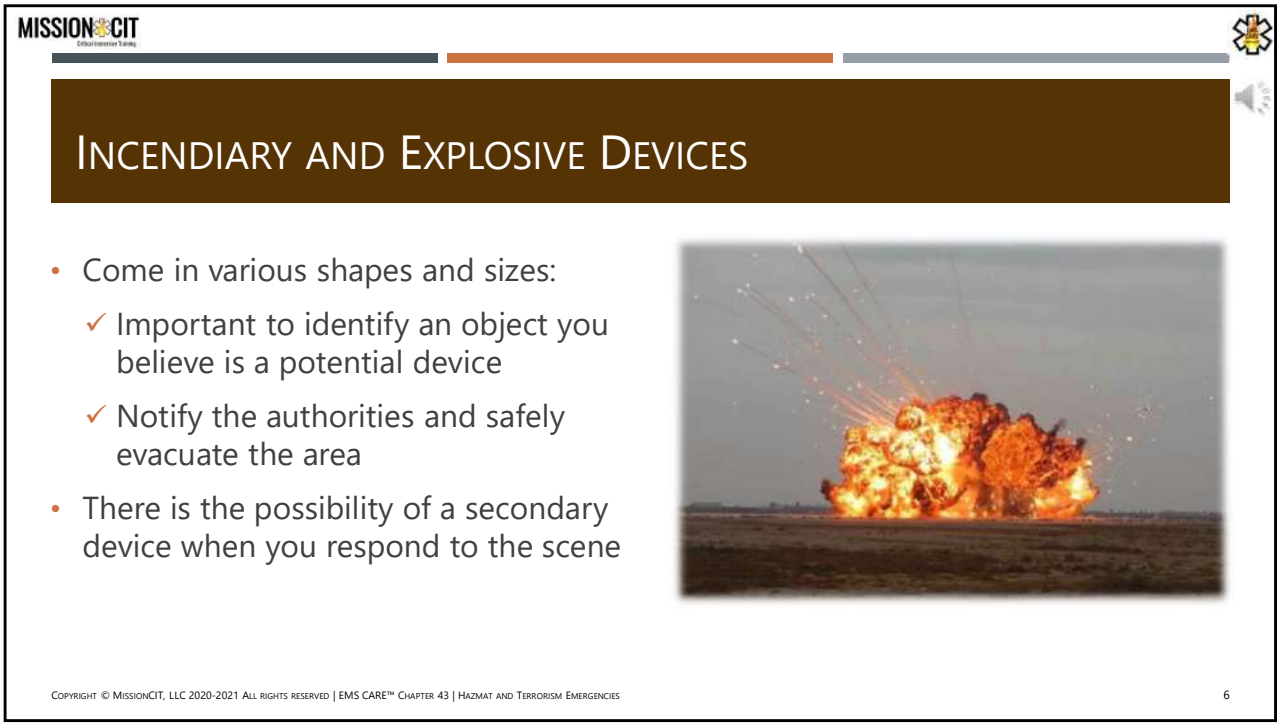
Incident priorities include life safety; protecting critical systems and incident stabilization.

- Estimating Potential Incident Course and Harm

This includes a series of predictions based upon the incident situation and available information. You should estimate the probable course that the incident will take and the probable harm or damage that is likely to occur.

- Choosing Strategic Goals and Tactical Objectives

Strategic goals are broad, general statements of the desired outcome,while tactical objectives are specific operations or functions to meet the goal.



Incendiary and explosive devices come in various shapes and sizes. Incendiary devices are weapons used to start fires. Terrorists use:

- Flamethrowers
- Chemicals
- Molotov cocktails, and
- Other explosive devices

It is important for you to be able to identify an object you believe is a potential device, notify the proper authorities, and safely evacuate the area. Always

remember that there is the possibility of a secondary device when you are responding to the scene.

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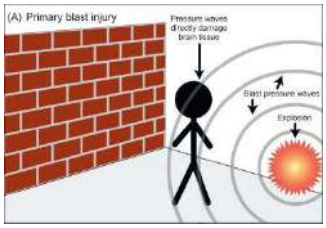
Mechanisms of Injury

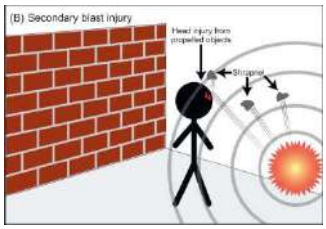
Primary blast injury:

- Direct effects of the pressure
- Seen exclusively in the hollow organs
- An injury to the lungs causes the greatest morbidity and mortality

Secondary blast injury:

- Penetrating or non-penetrating injury resulting from flying debris





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The type and severity of wounds primarily depend on the patient's distance from the epicenter of the explosion. Blast injuries occur in several ways.

Primary blast injury:

- Due solely to the direct effects of the pressure wave on the body.
- The injury is seen almost exclusively in the hollow organs of the body.
- An injury to the lungs causes the most significant morbidity and mortality.

Secondary blast injury

- Penetrating or non-penetrating injury that

results from being struck by flying debris.

- Objects are propelled by the force of the blast and strike the victim, causing injury.

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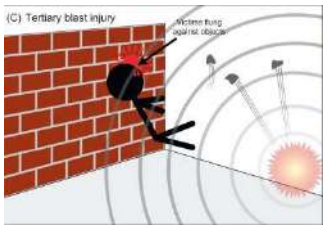
Mechanisms of Injury (Cont.)

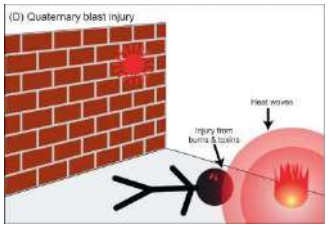
Tertiary blast injury:

- Whole body displacement and subsequent impact
- Also includes crush injury

Quaternary blast injury:

- Any other injury caused by a blast





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Tertiary blast injury:

- Results from whole-body displacement and subsequent traumatic impact with environmental objects.
- Other indirect effects include crush injury from the collapse of structures and toxic effects from the inhalation of combustion gases.

Quaternary blast injury:

- Any other injury caused by a blast, including toxic inhalation of combustion gases, burns, a medical emergency (like a myocardial infarction) sustained while fleeing the scene of an explosion, and even a

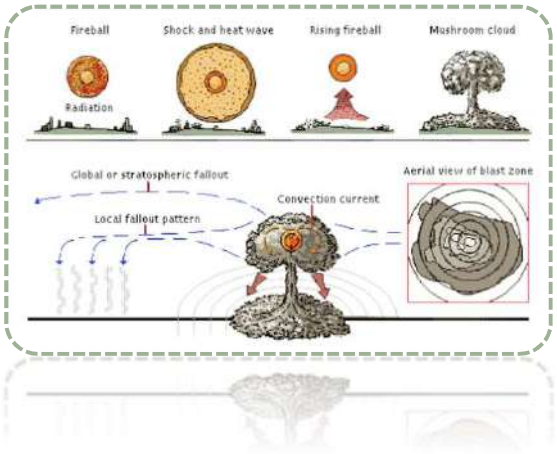
mental health disorder that develops immediately after or days to weeks after detonation of an explosive device.

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PHYSICS OF AN EXPLOSION

The physics of an explosion:

- When a substance is detonated, a solid or liquid is chemically converted into gas under high pressure
- Generates a spherical blast wave
- Commonly cause conventional blunt and penetrating trauma



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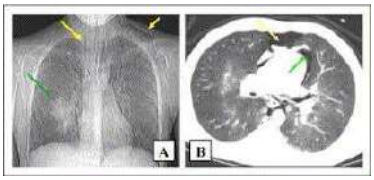
The physics of an explosion:

- When a substance is detonated, a solid or liquid is chemically converted into large volumes of gas under high pressure, with resultant explosive energy release.
- This generates a pressure pulse in the shape of a spherical blast wave, which expands in all directions from the explosion.
- Flying debris and high winds commonly cause conventional blunt and penetrating trauma.
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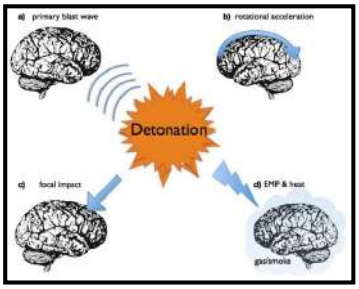
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BLAST INJURIES

- Blast lung is the most common cause of death
- Neurologic injuries and head trauma are also common causes of death from blast injuries
- Extremity injuries, including traumatic amputations, are common



Blast Lung



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According to the CDC, blast lung is the most common cause of death from blast injury:

- Neurologic injuries and head trauma are also common causes of fatality from blast injury.
  - Subarachnoid and subdural hematomas are often seen.
  - Permanent or transient neurologic deficits may be secondary to a concussion, intra-cerebral bleeding, or air embolism.
  - Instant but transient unconsciousness, with or without retrograde amnesia, may be initiated.
  - Bradycardia and hypotension are common after an intense pressure wave from an explosion.

- Extremity injuries, including traumatic amputations, are common, and patients may die of massive hemorrhage without the rapid application of a tourniquet.

We have seen the scale of damage, terrorism can do, its direct physical form. The other dangerous form in today's world is cybercrime. Missah will walk you through its aspects in the next lesson.