Hazardous Materials, Multiple Casualty Incidents & Incident Management

Session 15

**CORE CONCEPTS**

- How to identify and take appropriate action in a hazardous materials incident
- How to identify a multiple-casualty incident
- The role of an EMT at a multiple-casualty incident

**Topics**

- Hazardous Materials
- Multiple-Casualty Incidents

**What Are Hazardous Materials?**

- "Any substance or material in a form which poses an unreasonable risk to health, safety, and property when transported in commerce."—U.S. Department of Transportation (DOT)
Responsibilities of the EMT

- Recognize hazmat incident
- Control scene
- Establish danger zone and safe zone
- Attempt to identify substance

Identify Hazardous Material

- Signs, labels, placards
  - Binoculars from safe distance
  - NFPA 704 system placards
  - Diamond-shaped DOT labels
- Other sources
  - MSDS, bill of lading, invoice, manifest
  - Interview workers

Identify Hazardous Material

- Get expert advice about next actions
- Use Local experts

Control Zones

- Hot zone
  - Area of contamination or danger
- Warm zone
  - Area immediately adjacent to hot zone
- Cold zone
  - Area immediately adjacent to warm zone
  - Where equipment and emergency rescuers are staged

Treatment Area

- Rehabilitation operations
  - Located in cold zone
  - Protected from weather
  - Large enough to accommodate multiple rescue crews
  - Easily accessible to EMS units

Treatment Area

- Care of injured and contaminated patients
  - Decontaminate in warm zone
  - Treat in cold zone
- Phases of decontamination
  - Gross decontamination
  - Secondary decontamination
Treatment Area

- Mechanisms for decontamination
  - Emulsification
  - Chemical reaction
  - Disinfection
  - Dilution
  - Absorption or adsorption
  - Removal
  - Disposal

continued

Multiple-Casualty Incidents

Multiple-Casualty Incident Operations

- Know local disaster plan
- Written to address events conceivable for particular location
- Well publicized
- Realistic
- Rehearsed

Treatment Area

- Decontamination procedures
  - Victims wearing PPE
  - Victims not wearing PPE

Incident Command System

- National Incident Management System (NIMS)

Command

Operations  Planning  Logistics  Finance
Communications

- On arrival, give brief report and request necessary resources
- Incident commander only person to converse with communications center, disseminates information to others
- Have face-to-face conversations among command staff whenever possible

EMS Branch Functions
Under Command Structure

- Mobile command center
- Extrication
- Staging area
- Triage area
- Treatment area
- Transportation area
- Rehabilitation area

Triage

- Goal: afford greatest number of people greatest chance of survival
- Prioritizing patients:
  - Priority 1: Treatable life-threatening illness or injury
  - Priority 2: Serious but not life-threatening illness or injury
  - Priority 3: Walking wounded
  - Priority 4 (sometimes called Priority 0): Dead or fatally injured

START Triage

- Simple Triage and Rapid Treatment
- Foundation of system is speed, simplicity, consistency of application
- Simple commands to patients
- Patient evaluation based on RPM
- Respiration
- Pulse
- Mental status

Combined START/JumpSTART Triage

- Able to walk?
  - Yes: Priority 3
  - No: Check respirations

- Respirations present?
  - Yes and >30/minute: Priority 1
  - Yes and <30/minute: Check pulse
  - No: Position airway, recheck respirations
  - Still no respirations: Priority 4 (or 0)

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Can you walk?

- Yes: Priority 3
- No: Check respirations

- Respirations present?
  - Yes and >30/minute: Priority 1
  - Yes and <30/minute: Check pulse
  - No: Position airway, recheck respirations
  - Still no respirations: Priority 4 (or 0)
START Triage

- Good pulse?
  - Unresponsive, not breathing, no pulse: Priority 4 (or 0)
  - Breathing, no apparent pulse: Priority 1
- Breathing, pulse, good skin signs, capillary refill: Check mental status
- Good mental status?
  - Alert: Priority 2
  - Altered mental status: Priority 1

SALT Mass Casualty Triage

- Triaged and treated patients next transported using priority system
- Ambulances stage in designated area to await direction and patients
- Receiving facilities contacted early to determine capabilities and update on expected patient counts

Patient Identification

- Color code patients by priority
  - Priority 1: Red
  - Priority 2: Yellow
  - Priority 3: Green
  - Priority 4: Black

Transportation and Staging Logistics

Summary

- Be suspicious. Many hazmat incidents start out as routine EMS calls.
- Remember the Hot Zone-Warm Zone-Cold Zone.
- Patients who have been decontaminated still have some contamination.
- Use your MCI plan and procedure at small incidents and larger ones will be easier when they occur.
- Learn and practice START triage essentials.
- Be alert for signs of stress and seek help as necessary.
Remember

- A hazardous materials response requires specialized training and resources. Common responsibilities of initial responders must be identification of the incident, scene control, and activation of appropriate resources.

Remember

- Scene safety is highest priority; when possible, use scene clues, product information, and specific resources to identify hazardous materials.
- Decontamination prevents the spread of a hazardous material. EMTs are commonly involved in various levels of this process.

Remember

- Multiple-casualty incident overwhelms resources of responding units. When this occurs, organization is the most important priority.

Remember

- Triage allows EMTs to prioritize care and transport of patients when resources are limited.