

# **MODULE 6**

## **Operations, Hazardous Materials (HAZMAT), Mass Casualty Incidents (MCI) & Weapons of Mass Destruction (WMD)**

### **Lesson 6-1**

## **Ambulance Operations**

## ***OBJECTIVES***

### **OBJECTIVES LEGEND**

C=Cognitive P=Psychomotor A=Affective

1 = Knowledge level

2 = Application level

3 = Problem-solving level

### **COGNITIVE OBJECTIVES**

At the completion of this lesson, the EMT-Basic student will be able to:

- 6-1.1 Discuss the medical and non-medical equipment needed to respond to a call. (C-1)
- 6-1.2 List the phases of an ambulance call. (C-1)
- 6-1.3 Describe the general provisions of state laws relating to the operation of the ambulance and privileges in any or all of the following categories: (C-1)
  - Speed
  - Warning lights
  - Sirens
  - Right-of-way
  - Parking
  - Turning
- 6-1.4 Describe why defensive driving is critical to safe ambulance vehicle operation. (C-1)
- 6-1.5 Describe the importance of being familiar with your EMS response area (C-1)
- 6-1.6 Describe the importance of anticipating special conditions that may complicate or create hazardous driving conditions. (C-2)
- 6-1.7 List contributing factors to unsafe driving conditions. (C-1)
- 6-1.8 Describe how an unsafe scene will vary ambulance response (C-1)
- 6-1.9 Describe the importance of "staging" when responding to unsafe or unstable scenes. (C-2)
- 6-1.10 Describe the considerations that should be given to:
  - Request for escorts
  - Following an escort vehicle
  - Intersections (C-1)
- 6-1.11 Discuss "Due Regard for Safety of All Others" while operating an emergency vehicle. (C-1)
- 6-1.12 Explain the use of the Incident Command System in ambulance operations. (C-1)
- 6-1.13 State what information is essential in order to respond to a call. (C-1)
- 6-1.14 Discuss various situations that may affect response to a call. (C-1)
- 6-1.15 Differentiate between the various methods of moving a patient to the unit based upon injury or illness. (C-3)
- 6-1.16 Apply the components of the essential patient information in a written report. (C-2)

- 6-1.17 Summarize the importance of preparing the unit for the next response. (C-1)
- 6-1.18 Identify what is essential for completion of a call. (C-1)
- 6-1.19 Describe how to clean or disinfect items following patient care. (C-1)

### **AFFECTIVE OBJECTIVES**

At the completion of this lesson, the EMT-Basic student will be able to:

- 6-1.20 Explain how safe driving skills can affect other crew members and the patient during transport. (A-1)
- 6-1.21 Explain how anticipating driving hazards can contribute greatly to the safe operation of emergency vehicles. (A-1)

### **PSYCHOMOTOR OBJECTIVES**

No psychomotor objectives identified.

## ***PREPARATION***

**Motivation:** As an EMT-Basic, the student may be required to function in the prehospital environment. A solid foundation related to the operational aspects of prehospital care is required.

The EMT-Basic should be familiar with the medical and non-medical equipment for use in patient care. The EMT-Basic should also be aware of the phases of a response and their role.

**Prerequisites:** BLS, Preparatory, Airway and Patient Assessment, Physical Exam and SAMPLE history for Medical and Trauma Patients.

### **MATERIALS**

**AV Equipment:** Utilize various audio-visual materials relating to ambulance operations. The continuous design and development of new audio-visual materials relating to EMS requires careful review to determine which best meet the needs of the program. Materials should be edited to assure meeting the objectives of the curriculum.

**EMS Equipment:** An ambulance, properly stocked.

### **PERSONNEL**

**Primary Instructor:** One EMT-Basic instructor, knowledgeable in ambulance and equipment operations.

Assistant Instructor: Not required.

## ***PRESENTATION***

### Declarative (What)

- I. Phases of an ambulance call
  - A. Preparation for the call
    1. Equipment
      - a) Medical
        - (1) Basic supplies
        - (2) Patient transfer equipment
        - (3) Airways
        - (4) Suction equipment
        - (5) Artificial ventilation devices
        - (6) Oxygen inhalation equipment
        - (7) Cardiac compression equipment
        - (8) Basic wound care supplies
        - (9) Splinting supplies
        - (10) Childbirth supplies
        - (11) Medications
        - (12) Automated external defibrillator
      - b) Non-medical
        - (1) Personal safety equipment per local, state, and federal standards
        - (2) Pre-planned routes or comprehensive street maps
    2. Personnel
      - a) Available for response
      - b) At least one EMT-Basic in patient compartment is minimum staffing for an ambulance - two is preferred.
    3. Daily inspections
      - a) Inspection of vehicle systems
        - (1) Fuel
        - (2) Oil
        - (3) Engine cooling system
        - (4) Battery
        - (5) Brakes
        - (6) Wheels and tires
        - (7) Headlights
        - (8) Stoplights
        - (9) Turn signals
        - (10) Emergency warning lights
        - (11) Wipers
        - (12) Horn
        - (13) Siren
        - (14) Doors closing and latching
        - (15) Communication system

- (16) Air conditioning/heating system
- (17) Ventilation system
- b) Equipment
  - (1) Checked and maintained
  - (2) Restocked and repaired
  - (3) Batteries for defibrillator, suction, oxygen, etc.
- 4. Utilization of safety precautions and seat belts.
- B. Dispatch
  - 1. Central access
  - 2. 24-hour availability
  - 3. Trained personnel
  - 4. Dispatch information
    - a) Nature of call
    - b) Name, location, and callback number of caller
    - c) Location of patient
    - d) Number of patients and severity
    - e) Other special problems
  - 5. Importance of being familiar with your EMS response area
    - a) Road maps
    - b) Computer mapping
    - c) GPS systems
    - d) Known hazards
    - e) Road construction
- C. En route
  - 1. Seat belts
  - 2. Notify dispatch - refer to Communications module
  - 3. Essential information
    - a) Nature of the call
    - b) Location of the call
  - 4. Driving the ambulance
    - a) Emergency vehicle operations
      - (1) It is recommended, and in some states mandated, that the driver of an emergency vehicle attend an approved driving course
      - (2) Characteristics of good ambulance operators
        - (a) Physically fit
        - (b) Mentally fit
        - (c) Able to perform under stress
        - (d) Positive attitude about abilities
        - (e) Tolerant of other drivers
        - (f) Ability to anticipate and compensate for environmental and operational hazards that could imperil safe operation of the ambulance vehicle
      - (3) Safe driving is an important phase in the emergency medical care of the ill or injured patient

- (a) The driver and all passengers should wear safety belts
  - (b) Become familiar with the characteristics of your vehicle
  - (c) Be alert to changes in weather and road conditions
  - (d) Exercise caution in use of red lights and siren
  - (e) Select appropriate route
  - (f) Maintain safe following distance
  - (g) Drive with due regard for safety of all others
  - (h) Know appropriateness of using lights and sirens
  - (i) Headlights are the most visible warning device on an emergency vehicle
- b) Obtain additional information from dispatch.
  - c) Assign personnel to specific duties.
  - d) Assess specific equipment needs.
  - e) Positioning the unit
    - (1) For safety
      - (a) Uphill from leaking hazards
      - (b) 100 feet from wreckage
        - (i) In front of the wreckage or,
        - (ii) Beyond the wreckage
      - (c) Set parking brake
      - (d) Utilize warning lights
      - (e) Shut off headlights unless there is a need to illuminate the scene
    - (2) Staging
      - (a) Unsafe scenes
      - (b) Unstable scenes
      - (c) Multiple casualty scenes
      - (d) Entry into the Incident Command System
        - (i) provides formal structure assures
        - (ii) appropriate resources are present
    - (3) To exit the scene. Avoid parking in a location that will hamper exit from the scene.
  - f) Laws, regulations and ordinances - review state and local laws, regulations or ordinances in the area relative to the operations of an emergency vehicle, including as needed:
    - (1) Vehicle parking or standing
    - (2) Procedures at red lights, stop signs and intersections
    - (3) Regulations regarding speed limits
    - (4) Direction of flow or specified turns

- (5) Emergency or disaster routes
  - (6) Use of audible warning devices
  - (7) Use of visual warning devices
  - (8) School buses
  - g) Escorts and multiple vehicle response
    - (1) Extremely dangerous
    - (2) Used only if unfamiliar with location of patient or receiving facility
      - (a) No vehicle should use lights or siren
      - (b) Provide a safe following distance
      - (c) Recognize hazards of multiple vehicle response
  - h) Intersection crashes - most common type
    - (1) Motorist arriving at intersection as light changes and does not stop
    - (2) Multiple emergency vehicles following closely and waiting motorist does not expect more than one
    - (3) Vision is obstructed by vehicles
- D. Arrival at scene
- 1. Notify dispatch
  - 2. Size-up
    - a) Body substance isolation
      - (1) Should be a consideration prior to patient contact
      - (2) Use gloves, gowns and eyewear when appropriate
    - b) Scene safety - assess the scene for hazards
      - (1) Is the emergency vehicle parked in a safe location?
      - (2) Is it safe to approach the patient?
      - (3) Does the victim require immediate movement because of hazards?
    - c) Mechanism of injury/nature of illness
      - (1) Medical
        - (a) Mass casualty incident
          - (i) Number of patients
          - (ii) Obtain additional help
          - (iii) Begin triage
        - (b) Spine stabilization if necessary
      - (2) Trauma
        - (a) Mass casualty incident
          - (i) Number of patients
          - (ii) Obtain additional help
          - (iii) Begin triage
        - (b) Spine stabilization if necessary
    - d) Total number of patients
    - e) Need for additional help or assistance
    - f) Initiating the Incident Command System as appropriate

3. Actions at scene
  - a) Organized
  - b) Rapid/efficient
  - c) Goal of transport in mind
- E. Transferring the patient to the ambulance
  1. Preparing the patient for transport
    - a) Completion of critical interventions
    - b) Check dressings and splints
    - c) Patient covered and secured to moving device
  2. Lifting and moving is accomplished using the guidelines of the lifting/moving module (Module 1, Lesson 1-5)
  3. Concerns for proper decontamination of patients, providers and vehicles
- F. Selecting the appropriate receiving facility
  1. Trauma Centers
  2. Specialty care centers
  3. Immediate stabilization of the patient
  4. Use of Advanced Life Support intercepts & Aeromedical assistance
- G. En route to the receiving facility
  1. Notify dispatch
  2. On-going assessment should be continued
  3. Additional vital sign measurements should be obtained
  4. Notify receiving facility
  5. Reassure patient
  6. Complete prehospital care reports
- H. At receiving facility
  1. Notify dispatch
  2. Transferring the patient at the facility
    - a) Reports
      - (1) Complete verbal report is given at bedside
      - (2) Complete written report is completed and left prior to returning to service
    - b) Lifting and moving is accomplished using the guidelines of the lifting/moving module (Module 1)
- I. En route to station
  1. At station or receiving facility, notify dispatch
  2. Prepare for the next call
    - a) Clean and disinfect the ambulance as needed
    - b) Clean and disinfect ambulance equipment
    - c) Restock the disposable supplies
- J. Post run
  1. Refuel unit
  2. File reports
  3. Complete cleaning and disinfection procedures
  4. Notify dispatch

- K. Advanced Life Support Intercept considerations
  - 1. Utilization
    - a) Local protocols
    - b) Priority dispatch
  - 2. Choosing intercept sites
  - 3. Communications between vehicles
- II. Air Medical Consideration
  - A. Utilization
  - B. Landing zones
  - C. Safety

## ***APPLICATION***

### **STUDENT ACTIVITIES**

#### Auditory (Hear)

1. Students should hear audio tapes of actual dispatch conversations with callers to the 9-1-1 system.
2. Students should hear audio tapes of actual dispatch information.

#### Visual (See)

1. Students should see an ambulance.
2. Students should see actual equipment or audio-visual aids or materials of ambulance equipment.
3. Students should see audio-visual aids or materials depicting an actual ambulance run.

#### Kinesthetic (Do)

1. Students should practice receiving and sending information to dispatch.

### **INSTRUCTOR ACTIVITIES**

1. Supervise student practice.
2. Reinforce student progress in cognitive, affective, and psychomotor domains.
3. Redirect students having difficulty with content (complete remediation forms).

## ***EVALUATION***

Written: Develop evaluation instruments, e.g., quizzes, verbal reviews, handouts, to determine if the students have met the cognitive and affective objectives of this lesson.

Practical: Evaluate the actions of the EMT-Basic students during role play, practice or other skill stations to determine their compliance with the cognitive and affective objectives and their mastery of the psychomotor objectives of this lesson.

## ***REMEDIATION***

Identify students or groups of students who are having difficulty with this subject content. Complete remediation sheet from the instructor's course guide.

## ***ENRICHMENT***

What is unique in the local area concerning this topic? Complete enrichment sheets from the instructor's course guide and attach with lesson plan.

**MODULE 6**

**Operations,**

**HAZMAT, MCI**

**& WMD**

**Lesson 6-2**

**Gaining Access**

## ***OBJECTIVES***

### **OBJECTIVES LEGEND**

C=Cognitive P=Psychomotor A=Affective

1 = Knowledge level

2 = Application level

3 = Problem-solving level

### **COGNITIVE OBJECTIVES**

At the completion of this lesson, the EMT-Basic student will be able to:

- 6-2.1 Describe the purpose of extrication. (C-1)
- 6-2.2 Discuss the role of the EMT-Basic in extrication. (C-1)
- 6-2.3 Identify what equipment for personal safety is required for the EMT-Basic. (C-1)
- 6-2.4 Define the fundamental components of extrication. (C-1)
- 6-2.5 State the steps that should be taken to protect the patient during extrication. (C-1)
- 6-2.6 Evaluate various methods of gaining access to the patient. (C-3)
- 6-2.7 Distinguish between simple and complex access. (C-3)

### **AFFECTIVE OBJECTIVES**

No affective objectives identified.

### **PSYCHOMOTOR OBJECTIVES**

No psychomotor objectives identified.

## ***PREPARATION***

Motivation: Although the EMT-Basic is not usually responsible for rescue and extrication, a fundamental understanding of the process is required.

Prerequisites: BLS, Preparatory, Airway, Patient Assessment, Physical Exam and SAMPLE history for Medical and Trauma Patients.

### **MATERIALS**

AV Equipment: Utilize various audio-visual materials relating to extrication. The continuous design and development of new audio-visual materials relating to EMS requires careful review to determine which best meet the needs of the program. Materials should be edited to assure meeting the objectives of the curriculum.

EMS Equipment: Exam gloves, stethoscopes, blood pressure cuffs, penlight.

### **PERSONNEL**

Primary Instructor: One EMT-Basic instructor knowledgeable in gaining access.

Assistant Instructor: The instructor-to-student ratio should be 1:6 for psychomotor skill practice. Individuals used as assistant instructors should be knowledgeable in extrication procedures.

## ***PRESENTATION***

### Declarative (What)

- I. Fundamentals of Extrication
  - A. Role of the EMT-Basic
    1. Non-rescue EMS
      - a. Administer necessary care to the patient before extrication and assure that the patient is removed in a way to minimize further injury.
      - b. Patient care precedes extrication unless delayed movement would endanger life of the patient or rescuer.
      - c. Working with others
        - (1) The non-rescue EMS provider will need to work together with the providers of rescue.
        - (2) The non-rescue EMT-Basic should cooperate with the activities of the rescuers, and not allow their activities to interfere with patient care.
    2. Rescue EMS
      - a. In some instances, the EMS providers are also the rescue providers.
      - b. A chain of command should be established to assure patient care priorities.
        - (1) Administer necessary care to the patient before extrication and assure that the patient is removed in a way to minimize further injury.
        - (2) Patient care precedes extrication unless delayed movement would endanger life of the patient or rescuer.
- II. Equipment
  - A. Personal safety
    1. The number one priority for all EMS personnel.
    2. Protective clothing that is appropriate for the situation should be utilized.

- B. Patient safety - following the safety of the EMS responders, the next priority is the safety of the patient.
  - 1. The patient should be informed of the unique aspects of extrication.
  - 2. The patient should be protected from broken glass, sharp metal and other hazards, including the environment.
- III. Getting to the Patient
  - A. Simple access - does not require equipment.
    - 1. Try opening each door.
    - 2. Roll down windows.
    - 3. Have patient unlock doors.
  - B. Complex access - requires use of tools, special equipment. These are separate programs that should be taken (Trench, High Angle, Basic Vehicle Rescue).
- IV. Removing the Patient
  - A. Maintain cervical spine stabilization.
  - B. Complete initial assessment.
  - C. Provide critical interventions.
  - D. Immobilize spine securely.
    - 1. Short spine board
    - 2. Rapid extrication considerations
  - E. Move the patient, not the immobilization device.
  - F. Use sufficient personnel.
  - G. Choose path of least resistance.
  - H. Continue to protect patient from hazards.

## ***APPLICATION***

### Contextual (When, Where, Why)

1. Gaining access is intended to be an overview of the actions required to extricate a patient.
2. It is not the intent of this lesson to teach the EMT-Basic the techniques of extrication. A number of special classes are available to teach such specialized knowledge and skills.
3. This lesson should emphasize the safety and medical aspects of this process.

## **STUDENT ACTIVITIES**

### Visual (See)

1. Students should see various crash scenes to determine if additional help will be necessary to remove the patient.
2. Students should see the various options of personal protective equipment.
3. Students should see patients being removed from vehicles.

### **INSTRUCTOR ACTIVITIES**

1. Supervise student practice.
2. Reinforce student progress in cognitive, affective, and psychomotor domains.
3. Redirect students having difficulty with content (complete remediation forms).

### ***EVALUATION***

Written: Develop evaluation instruments, e.g., quizzes, verbal reviews, handouts, to determine if the students have met the cognitive and affective objectives of this lesson.

Practical: Evaluate the actions of the EMT-Basic students during role play, practice or other skill stations to determine their compliance with the cognitive and affective objectives and their mastery of the psychomotor objectives of this lesson.

### ***REMEDIATION***

Identify students or groups of students who are having difficulty with this subject content. Complete remediation sheet from the instructor's course guide.

### ***ENRICHMENT***

What is unique in the local area concerning this topic? Complete enrichment sheets from the instructor's course guide and attach with lesson plan.

**MODULE 6**

**Operations,**

**HAZMAT, MCI**

**& WMD**

**Lesson 6-3**

**Overviews: Hazardous  
Materials and Mass  
Casualty Incident**

## ***OBJECTIVES***

### **OBJECTIVES LEGEND**

C=Cognitive P=Psychomotor A=Affective

1 = Knowledge level

2 = Application level

3 = Problem-solving level

### **COGNITIVE OBJECTIVES**

At the completion of this lesson, the EMT-Basic student will be able to:

- 6-3.1 Explain the EMT-Basic's role during a call involving hazardous materials. (C-1)
- 6-3.2 Describe what the EMT-Basic should do if there is reason to believe that there is a hazard at the scene. (C-1)
- 6-3.3 Describe the actions that an EMT-Basic should take to ensure bystander safety. (C-1)
- 6-3.4 State the role the EMT-Basic should perform until appropriately trained personnel arrive at the scene of a hazardous materials situation. (C-1)
- 6-3.5 Break down the steps to approaching a hazardous situation. (C-1)
- 6-3.6 Discuss the various environmental hazards that affect EMS. (C-1)
- 6-3.7 Describe the criteria for a multiple-casualty situation. (C-1)
- 6-3.8 Evaluate the role of the EMT-Basic in the multiple-casualty situation. (C-3)
- 6-3.9 Summarize the components of basic triage. (C-1)
- 6-3.10 Define the role of the EMT-Basic in a disaster operation. (C-1)
- 6-3.11 Describe basic concepts of incident management. (C-1)
- 6-3.12 Explain the methods for preventing contamination of self, equipment and facilities. (C-1)
- 6-3.13 Provide examples of triage systems. (C-1)
- 6-3.14 Review the local mass casualty incident plan. (C-1)

### **AFFECTIVE OBJECTIVES**

No affective objectives identified.

### **PSYCHOMOTOR OBJECTIVES**

No psychomotor objectives identified.

## ***PREPARATION***

Motivation: EMT-Basics respond to scenes that require special considerations. These include hazardous materials and multi-patient considerations. It is the intent of this lesson

to provide the EMT-Basic with an overview of these areas.

Prerequisites: BLS, Preparatory, Airway, Patient Assessment, Physical Exam and SAMPLE History of Medical and Trauma Patients.

### **MATERIALS**

AV Equipment: Utilize various audio-visual materials relating to operations. The continuous design and development of new audio-visual materials relating to EMS requires careful review to determine which best meet the needs of the program. Materials should be edited to assure meeting the objectives of the curriculum.

EMS Equipment: Triage tags.

### **PERSONNEL**

Primary Instructor: One EMT-Basic instructor knowledgeable in hazardous materials, triage and disaster operations.

Assistant Instructor: Not required.

## ***PRESENTATION***

### Declarative (What)

- I. Hazardous Materials
  - A. Common problem
  - B. Actual extent unknown
  - C. Safety is the primary concern
    1. EMT-Basic and crew
    2. Patient
    3. Public
  - D. Approaching the scene
    1. Identification
      - a) Occupancy
      - b) Containers - size/shape
      - c) Placards
      - d) Shipping papers
      - e) Senses
    2. General procedures
      - a) Park upwind/uphill from the incident, safe distance
      - b) Keep unnecessary people away from area
      - c) Isolate the area
        - (1) Keep people out

- (2) Do not enter unless fully protected with proper equipment and SCBA
    - d) Avoid contact with material
    - e) Remove patients to a safe zone, if no risk to EMT-Basic
    - f) Do not enter a HazMat area unless you are trained as a HazMat Tech and have proper training in SCBA
  - E. Environmental hazards
  - F. Resources
    - 1. Local hazardous materials response team
    - 2. CHEMTREC 800-424-9300
    - 3. *Hazardous Materials, The Emergency Response Handbook*, published by the United States Department of Transportation
  - G. National Fire Protection Association HazMat requirements for EMS providers
    - 1. NFPA 479
    - 2. OSHA 1910.120
- II. Incident Management Systems
  - A. An incident management system has been developed to assist with the control, direction, and coordination of emergency response resources
    - 1. It provides an orderly means of communication and information for decision making
    - 2. Interactions with other agencies are easier because of the single coordination
  - B. Structure - after an incident manager is determined, EMS sectors are established as needed
    - 1. Extrication sector
    - 2. Treatment sector
    - 3. Transportation sector
    - 4. Staging sector
    - 5. Supply sector
    - 6. Triage sector
    - 7. Mobile command center
  - C. Role of various individuals/organizations at the scene
    - 1. Individuals at the scene will be assigned to particular roles in one of the sectors
    - 2. Upon arrival, the EMT-Basic should report to the sector officer for specific duties
    - 3. Once assigned a specific task, the EMT-Basic should complete the task and report back to the sector officer
- III. Multiple Casualty Situations (MCS)
  - A. Definition - an event that places a great demand on resources, be it equipment or personnel
  - B. Basic triage - sorting multiple casualties into priorities for emergency care or transportation to definitive care. Priorities are given in three levels.
    - 1. Highest priority

- a) Airway and breathing difficulties
  - b) Uncontrolled or severe bleeding
  - c) Decreased mental status
  - d) Patients with severe medical problems
  - e) Shock (hypoperfusion)
  - f) Severe burns
  2. Second Priority
    - a) Burns without airway problems
    - b) Major or multiple bone or joint injuries
    - c) Back injuries with or without spinal cord damage
  3. Lowest priority
    - a) Minor painful, swollen, deformed extremities
    - b) Minor soft tissue injuries
    - c) Death
  4. Examples of triage systems-
    - a) START Triage
    - b) JumpSTART
- C. Procedures
1. Most knowledgeable EMS provider arriving on-scene first becomes triage officer
  2. Additional help should be requested
  3. Perform initial assessment on all patients first
  4. Assign available personnel and equipment to priority one patients
  5. Patient transport decisions are based on a variety of factors
    - a) Prioritization
    - b) Destination facilities
    - c) Transportation resources
  6. Triage officer remains at scene to assign and coordinate personnel, supplies and vehicles

## ***APPLICATION***

### Procedural (How)

1. Demonstrate how to recognize hazardous materials situations.
2. Demonstrate how to function within an incident management system.
3. Demonstrate how to complete a triage tag.
4. Demonstrate triage procedures.

## **STUDENT ACTIVITIES**

### Visual (See)

1. Students should see audio-visual aids or materials of various situations to determine if a hazardous materials incident exists.
2. Students should see a copy of the Hazardous Materials Response Guidebook.

3. Students should see a triage tag.
4. Students should see a sample disaster plan.

#### Kinesthetic (Do)

1. Students should practice recognizing a hazardous materials incident and identify basic interventions that should be performed.
2. Students should practice participating in a simulated mass casualty incident.
3. Students should practice triaging patients at a simulated mass casualty incident.

#### **INSTRUCTOR ACTIVITIES**

1. Supervise student practice.
2. Reinforce student progress in cognitive, affective, and psychomotor domains.
3. Redirect students having difficulty with content (complete remediation forms).

#### ***EVALUATION***

Written: Develop evaluation instruments, e.g., quizzes, verbal reviews, handouts, to determine if the students have met the cognitive and affective objectives of this lesson.

Practical: Evaluate the actions of the EMT-Basic students during role play, practice or other skill stations to determine their compliance with the cognitive and affective objectives and their mastery of the psychomotor objectives of this lesson.

#### ***REMEDIATION***

Identify students or groups of students who are having difficulty with this subject content. Complete remediation sheet from the instructor's course guide.

#### ***ENRICHMENT***

What is unique in the local area concerning this topic? Complete enrichment sheets from the instructor's course guide and attach with lesson plan.

# **Module 6**

## **Operations, HAZMAT, MCI & WMD**

### **Lesson 6-4**

## **Weapons of Mass Destruction**

## ***OBJECTIVES***

### **OBJECTIVES LEGEND**

C=Cognitive P=Psychomotor A=Affective

1 = Knowledge level

2 = Application level

3 = Problem-solving level

### **COGNITIVE OBJECTIVES**

At the completion of this lesson, the EMT-Basic student will be able to (**LESSON DONE ON-LINE**):

- 6-4.1 Explain the historical perspective of terrorism. (C-1)
- 6-4.2 Identify the legal definition of Weapons of Mass Destruction. (C-1)
- 6-4.3 Describe the rationale used by terrorists as justification for the use of Weapons of Mass Destruction. (C-1)
- 6-4.4 Identify known international and domestic terrorist threats. (C-1)
- 6-4.5 Define current trends in terrorism. (C-1)
- 6-4.6 Identify the categories of Weapons of Mass Destruction. (C-1)
- 6-4.7 Describe the immediate and long-term effects of WMD. (C-1)
- 6-4.8 Describe the concept and purpose of secondary and/or multiple devices. (C-3)
- 6-4.9 Describe the potential outcomes of WMD incidents. (C-1)
- 6-4.10 Describe the need for and methods of obtaining additional resources when dealing with existing or suspected WMD emergencies. (C-1)
- 6-4.11 Describe the Basic protective actions to be taken by responding emergency services personnel. (C-1)
- 6-4.12 List indicators and identifiers that give clues to the existence or suspected existence of WMD emergencies. (C-1)
- 6-4.13 Explain the proper and appropriate use of the Mark I Auto-Injector kit.(C-1)
- 6-4.14 Describe the proper and appropriate use of the Emergency Response Guidebook (ERG) in managing suspected or existing WMD emergencies. (C-1)
- 6-4.15 Describe the proper and appropriate use of the ERG in identifying appropriate protective actions and pre-hospital care of patients. (C-1)

### **AFFECTIVE OBJECTIVES**

At the completion of this lesson, the EMT-Basic student will be able to:

- 6-4.16 Define the motivation behind the use of WMD to achieve political, social and/or religious goals. (A-1)
- 6.4.17 Establish the importance of recognizing common characteristics of terrorist groups. (A-1)
- 6.4.18 Recognize the critical role specialized training play in properly preparing for, dealing with and recovering from WMD emergencies. (A-1)

**PSYCHOMOTOR OBJECTIVES**

- 6-4.19 At the completion of this lesson, the EMT-Basic student will be able to:
- 6-4.20 Given a scenario of a WMD incident, demonstrate the use of the ERG to establish appropriate isolation zones. (P-2)
- 6-4.21 Given a scenario of WMD incident, demonstrate the use of the ERG in identifying what additional physical and informational resources are appropriate to the emergency. (P-2)
- 6-4.22 Demonstrate the proper use of a Mark I kit in the delivery of Atropine & 2Pam Chloride for use incidents involving organophosphate or nerve agents. (P-1)

***PREPARATION***

Motivation: EMT-Basics respond to scenes that require special considerations and may readily find they are the first to arrive at incidents involving weapons of mass destruction. It is the intent of this lesson to provide the EMT-Basic with the ability to recognize existing and potential WMD emergencies and in doing so to minimize the impact on victims, by-standers and rescue personnel.

Prerequisites: BLS, Preparatory, Airway, Patient Assessment, Physical Exam and SAMPLE History of Medical and Trauma Patients.

**MATERIALS**

AV Equipment: Utilize various audio-visual materials relating to operations. Wisconsin Department of Health Weapons of Mass Destruction training module.

**PERSONNEL**

Primary Instructor: One EMT-Basic instructor knowledgeable in Weapons of Mass Destruction Awareness training.

Assistant Instructor: Not required.

***PRESENTATION*****Declarative (What)**

- I. Terrorism Defined
  - A. USC Title 22, Section 2656f(d) definition
  - B. Federal Bureau of Investigation definition
  - C. WMD Legal definition; Title 18 U.S. Code
  - D. Terrorist Threats

1. May be international or domestic
  - a) Ideology or value driven
  - b) Mitigated by intentions, capabilities and motive
2. Historical Reasons
  - a) Religious
  - b) Social/Economic upheaval
  - c) Nationalism, anarchism, Marxism
  - d) Ethnic/Racial ideologies
  - e) Regional or global interests
3. Use of WMD
  - a) Cost
  - b) Availability
  - c) Effectiveness
  - d) Detection
  - e) Leverage
4. Terrorist acts & threats
  - a) International & Domestic
  - b) Ideology or Value driven
    - (1) Events
    - (2) Targets
  - c) Histories, intentions, capabilities & motivators
5. International Terrorist Threats
  - a) Events that occurred
    - (1) World trade center bombing 1993
    - (2) Helicopter in Somalia 1993
    - (3) USS Cole Bombing 2000
    - (4) World Trade Center 2001
  - b) Events that were planned and did not occur
    - (1) Assassination attempt of Pres Clinton in Philippines 1995
    - (2) Mid-air bombing of US trans-pacific flights 1995
    - (3) Bombing of LA International Airport 1999
    - (4) Richard Reid – Shoe bomb 2001
6. Domestic Terrorist Threats
  - a) Right-wing
    - (1) Typically anti-government
    - (2) Racial superiority
  - b) Left-wing
    - (1) Typically espouse socialist doctrine
    - (2) Anti-capitalistic
  - c) Extremists
    - (1) Earth liberation front
    - (2) Animal liberation front
    - (3) Etc.
  - d) Hate groups
  - e) Patriotic groups

- f) Cults
- g) Single issue groups
- h) Lone individuals
- 7. Terrorist Threats
  - a) Weapons of Mass Destruction
  - b) Terrorist use of emerging technology
- 8. Probability of an attack on US is high
  - a) Incendiary or explosive devices are most probable
  - b) Diversity of targets is high
- II. Weapons of Mass Destruction
  - A. Increase alert posture
    - 1. Events of 9/11/01
    - 2. Possibility of additional attacks
    - 3. Growing interest in WMD
      - a) Operational repercussions
      - b) Fear 7 Psychological implications
  - B. Response to WMD
    - 1. Known versus undetected WMD incidents
    - 2. WMD Response complexities
      - a) Additional threats
        - (1) Secondary devices
        - (2) Cumulative exposure
      - b) Extensive physical damage
      - c) Physical and psychological threats
  - C. Medicine is not an exact science
    - 1. Patient with clean bill of health dies the next day
  - D. Law enforcement is not an exact science
    - 1. Many threats are investigated and found to be groundless
    - 2. Acts of terrorism occur the next day
      - a) Dependent upon the weapons used
      - b) May or may not be cumulative
      - c) May or may not be known
  - E. Identifying terrorist activity
    - 1. Difficult in a free society
      - a) Rights & civil liberties
      - b) Stereotypes 7 preconceptions
    - 2. Threat indicators
      - a) Gathering of target intelligence
      - b) Acquisition of weapons, explosives, biologicals, etc
      - c) Attempts to gain access
    - 3. Suspicious activity
      - a) Overwhelming numbers of reports
      - b) Identifying probable targets
  - F. WMD Threats
    - 1. Chemical agents
    - 2. Biological agents

3. Radiological materials
4. Explosive & Incendiary devices
- G. Devices
  1. Chemical agents
    - a) Categories
      - (1) Blister agents
      - (2) Choking agents
      - (3) Blood agents
      - (4) Nerve agents
      - (5) Toxic chemicals
    - b) Characteristics
      - (1) Incapacitating versus lethal
      - (2) Persistent versus non-persistent
  2. Biological Agents
    - a) Categories
      - (1) Bacteria
      - (2) Rickettsia
      - (3) Viruses
      - (4) Toxins
    - b) Routes of entry
      - (1) Respiration
      - (2) Ingestion
      - (3) Transdermal
      - (4) Absorption (rare)
  3. Radiological Materials
    - a) Means of exposure
      - (1) Nuclear weapons
      - (2) Fissile materials
  4. Explosive & Incendiary Devices
    - a) Components
      - (1) Triggering device
      - (2) Body (container)
      - (3) Filler (Explosive or flammable)
    - b) Kinematics
      - (1) Force (kinetic energy) equals Mass/2 times velocity
        - (a) Squared
      - (2) Frangibility (ability to burst into multiple projectiles)
- III. Emergency Response
  - A. Taking Control of the Incident – Awareness Level Training
    1. Identifying the need for additional resources
      - a) Scene size-up
      - b) Notification of proper authorities
      - c) Requesting resources
    2. Basic protective actions
      - a) Uphill & Up-wind

- b) Objectives
  - (1) Recognize the material
  - (2) Isolation distances
  - (3) Protect – prevent contamination
  - (4) Notify chain of command
- B. Medical Intervention – Self Rescue
  - 1. The Mark I auto-injector kit
    - a) Limited usefulness
    - b) For rescuer use only
    - c) Contents
      - (1) Atropine (2 mg)
      - (2) 2PAM Chloride
      - (3) Requires multiple injections
      - (4) Deactivates acetylcholine by blocking receptor sites & breaks enzyme-agent bond
    - d) Administration
      - (1) Site
        - (a) Lateral surface – Mid-thigh
        - (b) Lateral surface – upper buttocks
    - e) Down-wind prediction plotting
      - (1) Guidebook predictions
      - (2) Computer models
- C. The Emergency Response Guidebook (ERG)
  - 1. Recognizing & Identifying hazards
    - a) Name
    - b) ID Number
    - c) Placards
  - 2. Protective actions
  - 3. Isolation precautions
  - 4. Evacuation
- D. Using the ERG
  - 1. Find the Chemical
  - 2. Review the action guide
  - 3. Establish isolation & protection distances
  - 4. Establish zones
- E. Computer modeling
  - 1. CAMEO
  - 2. ALOHA
  - 3. MARPLOT
- F. Protective Action Options
  - 1. Shelter in-place
    - a) Short duration
    - b) Moving increases hazard
    - c) Impractical to move
  - 2. Evacuate
    - a) Potential of escalating danger

- (1) Fire
    - (2) Explosion
  - b) Long duration
  - c) Increasing risk of contamination
- G. Emergency Response
  - 1. First Aid
    - a) Largely symptomatic
    - b) Prevent secondary contamination
      - (1) Rescuers
      - (2) Facilities
  - 2. Spill/leak mitigation
    - a) Not an awareness level activity
    - b) Usually requires special training & equipment
  - 3. Fire Fighter
    - a) Definition of hazard
    - b) Defensive versus offensive
    - c) Role of awareness
- H. Debrief the Incident

## ***APPLICATION***

### Procedural (How)

1. Demonstrate how to recognize incidents involving weapons of mass destruction.
2. Demonstrate how to function within an incident management system during WMD incidents.
3. Demonstrate how to use a Mark I kit.
4. Demonstrate emergency response procedures.

### Contextual (When, Where, Why)

1. The recognition of existing or suspected terrorist activities is an important aspect of emergency medical care.
2. It is not the intent of the EMT-Basic course to make you proficient in dealing with weapons of mass destruction incidents. Dealing with the situation requires specialized training. It is more important for the EMT-Basic to recognize that a hazardous situation exists, and to prevent further illness or injury.
3. This should be a consideration before you respond to a scene and as you size up the scene.
4. Operations involving weapons of mass destruction can be extremely difficult.
5. Understanding the concept of incident management systems will help to manage the situation. As with hazardous materials, this program is not designed to make the EMT-Basic an incident manager.
6. The process of sorting patients and determining the priority of their care is a difficult process. It should begin upon arrival at scene, following determination that the scene is safe.

## **STUDENT ACTIVITIES**

### **INSTRUCTOR ACTIVITIES**

1. Supervise student practice.
2. Reinforce student progress in cognitive, affective, and psychomotor domains.
3. Redirect students having difficulty with content (complete remediation forms).

## ***EVALUATION***

Written: Develop evaluation instruments, e.g., quizzes, verbal reviews, handouts, to determine if the students have met the cognitive and affective objectives of this lesson.

Practical: Evaluate the actions of the EMT-Basic students during role play, practice or other skill stations to determine their compliance with the cognitive and affective objectives and their mastery of the psychomotor objectives of this lesson.

## ***REMEDIATION***

Identify students or groups of students who are having difficulty with this subject content. Complete remediation sheet from the instructor's course guide.

## ***ENRICHMENT***

What is unique in the local area concerning this topic? Complete enrichment sheets from the instructor's course guide and attach with lesson plan.

# **MODULE 6**

## **Operations, HAZMAT, MCI & WMD**

### **Lesson 6-5**

#### **Evaluation: Operations, HAZMAT, MCI & WMD**

## ***OBJECTIVES***

### **OBJECTIVES LEGEND**

C=Cognitive P=Psychomotor A=Affective

1 = Knowledge level

2 = Application level

3 = Problem-solving level

### **COGNITIVE OBJECTIVES**

At the completion of this lesson, the EMT-Basic student will be able to:

Demonstrate knowledge of the cognitive objectives of Lesson 6-1: Ambulance Operations

Demonstrate knowledge of the cognitive objectives of Lesson 6-2: Gaining Access

Demonstrate knowledge of the cognitive objectives of Lesson 6-3: Overviews

Demonstrate knowledge of the cognitive objectives of Lesson 6-4: Weapons of Mass Destruction

### **AFFECTIVE OBJECTIVES**

At the completion of this lesson, the EMT-Basic student will be able to:

Demonstrate knowledge of the affective objectives of Lesson 6-1: Ambulance Operations

Demonstrate knowledge of the affective objectives of Lesson 6-2: Gaining Access

Demonstrate knowledge of the affective objectives of Lesson 6-4: Weapons of Mass Destruction

### **PSYCHOMOTOR OBJECTIVES**

At the completion of this lesson, the EMT-Basic student will be able to:

Demonstrate proficiency in the psychomotor objectives of Lesson 6-3:

Overviews and 6-4: Weapons of Mass Destruction

## ***PREPARATION***

Motivation:

Evaluation of the student's attainment of the cognitive and affective knowledge and psychomotor skills is an essential component of the EMT-Basic educational process. The modules are presented in a "building block" format. Once the students have demonstrated their knowledge and proficiency, the next lesson should be built upon that knowledge. This evaluation will help to identify students or groups of students having difficulty with a particular area. This is an opportunity for the

instructor to evaluate his performance, and make appropriate modifications to the delivery of material.

Prerequisites: Completion of Lessons 6-1 through 6-4.

### **MATERIALS**

AV Equipment: Typically none required.

EMS Equipment: Equipment required to evaluate the students proficiency in the psychomotor skills of this module.  
Mark I simulation kit

### **PERSONNEL**

Primary Instructor: One proctor for the written evaluation.

Assistant Instructor: One practical skills examiner for each 6 students.

### **INSTRUCTOR ACTIVITIES**

Supervise student evaluation.

Reinforce student progress in cognitive, affective, and psychomotor domains.

Redirect students having difficulty with content (complete remediation forms).

## ***REMEDICATION***

Identify students and/or groups of students who are having difficulty with this subject content. Complete a remediation sheet from the instructor's course guide. If students continue to have difficulty demonstrating knowledge of the cognitive and affective objectives, or demonstrating proficiency in psychomotor skills, the students should be counseled, remediated and re-evaluated. If improvements in cognitive, affective or psychomotor skills are not achieved, consideration regarding the ability of the student to progress in the program should be taken into account.