2 National EMS Education Standard Competencies (1 of 3)
EMS Operations
Knowledge of operational roles and responsibilities to ensure patient, public, and personnel safety.
Incident Management
• Establish and work within the incident management system

3 National EMS Education Standard Competencies (2 of 3)
Multiple Casualty Incidents
• Triage principles
• Resource management
• Triage
  – Performing
  – Retriage
  – Destination decisions
  – Posttraumatic and cumulative stress

4 National EMS Education Standard Competencies (3 of 3)
Hazardous Materials Awareness
• Risks and responsibilities of operating in a cold zone at a hazardous material or other special incident

5 Introduction (1 of 2)
• Disasters and mass-casualty incidents (MCIs) can be overwhelming.
  – Three or more patients
  – Lack of resources
• Incident command system (ICS)
  – Makes it possible to do the greatest good for the greatest number

6 Introduction (2 of 2)
• National Incident Management System (NIMS)
  – Promotes efficient coordination of emergency incidents at the regional, state, and national levels

7 National Incident Management System (1 of 3)
• Implemented in 2004
• Provides a framework
• Enables federal, state, and local governments to work together
  – As well as private-sector and nongovernmental organizations

8 National Incident Management System (2 of 3)
• Organizational structure must be flexible enough to be rapidly adaptable.
• Provides standardization in:
  – Terminology
  – Resource classification
  – Personnel training
  – Certification

9 National Incident Management System (3 of 3)
• Major NIMS components
– Preparedness
– Communications and information management
– Resource management
– Command and management
– Ongoing management and maintenance

**Incident Command System**
(1 of 8)

- Sometimes referred to as the incident management system
- The purpose of the ICS is to:
  - Ensure responder and public safety
  - Achieve incident management goals
  - Ensure the efficient use of resources

**Incident Command System**
(2 of 8)

- Controls duplication of effort and freelancing
- Limits the span of control
  - One supervisor for three to seven workers
- Organizational levels include sections, branches, divisions, and groups.

**Incident Command System**
(3 of 8)

**Incident Command System**
(4 of 8)

- Roles and responsibilities
  - Command
  - Finance
  - Logistics
  - Operations
  - Planning
  - Command staff

**Incident Command System**
(5 of 8)

- Command
  - Incident commander (IC) is in charge of the overall incident.
  - It is important to know who the IC is, how to communicate with the IC, and where the command post is located.
  - An IC may turn over command to someone with more experience in a critical area.

**Incident Command System**
(6 of 8)

- Finance
  - Responsible for documenting all expenditures at an incident for reimbursement
- Logistics
  - Responsible for communications equipment, facilities, food and water, fuel, lighting, and medical equipment/supplies

**Incident Command System**
(7 of 8)
• Operations
  – At a very large or complex incident, responsible for managing the tactical operations usually handled by the IC
  – Supervises the people working at the scene

• Planning
  – Solves problems as they arise
  – Develops an incident action plan

17 Incident Command System
(8 of 8)
• Command staff
  – The safety officer monitors the scene for conditions or operations that may present a hazard.
  – The public information officer (PIO) provides the media with clear and understandable information.
  – The liaison officer relays information and concerns among command, the general staff, and other agencies.

18 Communications and Information Management
• Communication has historically been the weak point at most major incidents.
• It is recommended that communications be integrated.
  – All agencies should be able to communicate quickly and effortlessly via radios.
  – Communications allow for accountability and instant communication.

19 Mobilization and Deployment
(1 of 2)
• Check in with the incident commander when you arrive.
• Report to your supervisor for an initial briefing.
• Record keeping allows for tracking of time spent on the actual incident for reimbursement purposes.

20 Mobilization and Deployment
(2 of 2)
• Accountability means keeping your supervisor advised of your location, actions, and completed tasks.
• Once the incident has been stabilized, the IC will determine which resources are needed and when to begin demobilization.

21 EMS Response Within the Incident Command System (1 of 5)
• Preparedness
  – Involves the decisions made and basic planning done before an incident occurs
  – Involves decisions and planning about the most likely natural disasters for the area
  – Your EMS agency should have written disaster plans that you are regularly trained to carry out.

22 EMS Response Within the Incident Command System (2 of 5)
• Scene size-up
  – Make an initial assessment and some preliminary decisions
  – Driven by three basic questions:
    • What do I have?
    • What do I need?
    • What do I need to do?
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23 EMS Response Within the Incident Command System (3 of 5)

24 EMS Response Within the Incident Command System (4 of 5)
  • Establishing command
    – Command should be established by the most senior official.
    – Notification to other responders should go out.
    – Necessary resources should be requested.
    – Command must be established early.

25 EMS Response Within the Incident Command System (5 of 5)
  • Communications
    – If possible, use face-to-face communications to limit radio traffic.
    – If you communicate via radio, do not use 10-codes or signals.
    – Equipment must be reliable, durable, and field-tested.
    – Be sure there are backups in place.

26 The Medical Branch of Incident Command (1 of 10)
  • Medical incident command is also known as the medical (or EMS) branch of the ICS.
    – Primary roles of triage, treatment, and transport of injured people

27 The Medical Branch of Incident Command (2 of 10)

28 The Medical Branch of Incident Command (3 of 10)
  • Triage supervisor
    – In charge of counting and prioritizing patients
    – Ensures that every patient receives initial assessment of his or her condition
    – Do not begin treatment until all patients are triaged.

29 The Medical Branch of Incident Command (4 of 10)
  • Treatment supervisor
    – Locates and sets up the treatment area with a tier for each priority of patient
    – Ensures that secondary triage is performed and that adequate patient care is given
    – Assists with moving patients to the transportation area

30 The Medical Branch of Incident Command (5 of 10)
  • Transportation supervisor
    – Coordinates the transportation and distribution of patients to appropriate receiving hospitals
    – Documents and tracks the number of transport vehicles, patients transported, and the facility destination

31 The Medical Branch of Incident Command (6 of 10)
  • Staging supervisor
    – Should be assigned when scenes require a multivehicle or multiagency response
    – Emergency vehicles must have permission to enter the scene and only drive in the directed area.
– The staging area should be established away from the scene.

32 **The Medical Branch of Incident Command (7 of 10)**
- Physicians on scene
  - Make difficult triage decisions
  - Provide secondary triage decisions in the treatment area
  - Provide on-scene medical direction for EMTs
  - Provide care in the treatment sector as appropriate

33 **The Medical Branch of Incident Command (8 of 10)**
- Rehabilitation supervisor
  - Establishes an area that provides protection from the elements and situation
  - Rehabilitation is where a responder’s needs for rest, fluids, food, and protection from the elements are met.
  - Monitors responders for signs of stress

34 **The Medical Branch of Incident Command (9 of 10)**
- Extrication and special rescue
  - Determines the type of equipment and resources needed for the situation
  - Usually function under the EMS branch of the ICS

35 **The Medical Branch of Incident Command (10 of 10)**
- Morgue supervisor
  - Works with area medical examiners, coroners, disaster mortuary assistance teams, and law enforcement agencies to coordinate removal of bodies and body parts
  - The morgue area should be out of view of the living patients and other responders.

36 **Mass-Casualty Incidents (1 of 3)**
- A mass-casualty incident (MCI):
  - Involves three or more patients
  - Places great demand on the EMS system
  - Has the potential to produce multiple casualties

37 **Mass-Casualty Incidents (2 of 3)**
- All systems have different protocols for when to declare an MCI and initiate the ICS.
  - You and your team cannot treat and transport all injured patients at the same time.
  - Never leave the scene with patients if there are still other patients who are sick or wounded.

38 **Mass-Casualty Incidents (3 of 3)**
- If there are multiple patients and not enough resources to handle them without abandoning victims, you should:
  - Declare an MCI.
  - Request additional resources.
– Initiate the ICS and triage procedures.

Triage (1 of 9)
• "Triage" means "to sort" patients based on the severity of their injuries.
  – Assessment is brief and patient condition categories are basic.
  – Primary triage is done in the field.
  – Secondary triage is done as patients are brought to the treatment area.

Triage (2 of 9)
• Four common categories give the order of treatment and transport.
  – Immediate (red)
  – Delayed (yellow)
  – Minor or minimal (green; hold)
  – Expectant (black; likely to die or dead)

Triage (3 of 9)

Triage (4 of 9)
• Tagging patients early assists in tracking them and can help keep an accurate record of their condition.
  – Tags should be weatherproof, easily read, and color-coded.

Triage (5 of 9)
• START triage
  – Simple Triage And Rapid Treatment
  – First step is to call out to patients and direct them to an easily identifiable landmark.
    • Injured persons are the walking wounded.
  – Second step is directed toward nonwalking patients.
    • Assess the respiratory rate, hemodynamic status, and neurologic status.

Triage (6 of 9)
• JumpSTART triage for pediatric patients
  – Intended for use in children younger than 8 years or who appear to weigh less than 100 lb
  – Begin by identifying the walking wounded.
  – Several differences within the respiratory status assessment compared with START
  – Assess the approximate rate of respirations, hemodynamic status, and neurologic status.

Triage (7 of 9)
• Triage special considerations
  – Patients who are hysterical and disruptive to rescue efforts may need to be handled as an immediate priority.
  – A responder who becomes sick or injured during the rescue effort should be handled as an immediate priority.
  – Identify patients as contaminated or decontaminated in HazMat incidents.

Triage (8 of 9)
• Destination decisions
  – All patients triaged as immediate (red) or delayed (yellow) should be transported by ground or air ambulance.
  – In large situations, a bus may transport the walking wounded.
  – Immediate-priority patients should be transported two at a time until all are transported
from the site.

47 **Triage (9 of 9)**
- Destination decisions (cont’d)
  - Then patients in the delayed category can be transported two or three at a time.
  - Finally, the slightly injured are transported.
  - Expectant patients who are still alive would receive treatment and transport last.
  - Dead victims are handled or transported according to the SOP for the area.

48 **Disaster Management (1 of 2)**
- A disaster is a widespread event.
  - Disrupts the functions and resources of the community
  - Threatens lives and properties
- Many disasters may not involve personal injuries, but many disasters (floods, fires, hurricanes) result in widespread injuries.

49 **Disaster Management (2 of 2)**
- Your role is to respond when requested and report to the IC for assigned tasks.
  - A casualty collection area may be established in a disaster with an overwhelming number of casualties.
  - Coordinated through the ICS in the same way as all other branches and areas of the operation

50 **Introduction to Hazardous Materials (1 of 3)**
- When you arrive at a possible HazMat incident, first step back and assess the situation.
- Rushing into unsafe scenes can be catastrophic.
  - If overcome, you will be unable to assist patients.
  - Requiring emergency care yourself, you will further strain the system.

51 **Introduction to Hazardous Materials (2 of 3)**
- According the HAZWOPER, first responders at the awareness level should have sufficient training or experience to demonstrate the following competencies:
  - An understanding of what hazardous substances are and the risks associated with them
  - An understanding of the potential outcomes of an incident

52 **Introduction to Hazardous Materials (3 of 3)**
- Areas of training or experience (cont’d):
  - The ability to recognize the presence of hazardous substances
  - The ability to identify the hazardous substances, if possible
  - An understanding of the role of the first responder awareness individual
  - The ability to determine the need for additional resources and to notify the communication center

53 **Recognizing a Hazardous Material (1 of 6)**
- A hazardous material poses an unreasonable risk of damage or injury if it is not properly controlled during handling, storage, manufacture, processing, packing, use and disposal, and transportation.
- Take time to look at the whole scene.
- Identify critical visual indicators.

54 **Recognizing a Hazardous Material (2 of 6)**
- Hazardous materials may be involved in any of the following situations:
– A truck or train crash in which a substance is leaking from a tank truck or tank car
– A leak, fire, or other emergency at an industrial plant, refinery, or other complex
– A leak or rupture of an underground natural gas pipe

55 Recognizing a Hazardous Material (3 of 6)
• Hazardous materials may be involved in any of the following situations (cont’d):
  – Deterioration of underground fuel tanks and seepage of oil or gasoline into the ground
  – Buildup of methane or other by-products of waste decomposition in sewers
  – A motor vehicle crash resulting in a ruptured gas tank

56 Recognizing a Hazardous Material (4 of 6)

57 Recognizing a Hazardous Material (5 of 6)
• Occupancy and location
  – A wide variety of chemicals are stored in locations such as:
    • Warehouses
    • Hospitals and laboratories
    • Industrial complexes
    • Residential garages
    • Bowling alleys
    • Home improvement and garden centers
    • Restaurants

58 Recognizing a Hazardous Material (6 of 6)
• Senses
  – The senses that can be safely used are those of sight and sound.
  – Using any of your senses that bring you in proximity to the chemical should be done
    with caution or avoided.
  – Clues that are seen or heard from a distance may enable you to take precautionary
    steps.

59 Containers (1 of 11)
• A container is any vessel or receptacle that holds a material.
• Often the container type, size, and material of construction provide important clues about
  the nature of the substance inside.
• Two categories: bulk and nonbulk

60 Containers (2 of 11)
• Container volume
  – Bulk storage containers are found in buildings that rely on and need to store large
    quantities of a particular chemical.
  – These containers are often surrounded by a secondary containment system to help
    control an accidental release.
  – Large-volume horizontal tanks are also common.

61 Containers (3 of 11)
• Container volume (cont’d)
  – Totes have capacities ranging from 119 gallons to 703 gallons
  – Contain any type of chemical, including flammable liquids, corrosives, food-grade
    liquids, or oxidizers
  – No secondary containment system
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62 Containers (4 of 11)

63 Containers (5 of 11)
- Container volume (cont’d)
  - Intermodal tanks are both shipping and storage vessels.
  - Hold between 5,000 and 6,000 gallons
  - Can be pressurized or nonpressurized

64 Containers (6 of 11)

65 Containers (7 of 11)
- Nonbulk storage vessels
  - Hold commonly used commercial and industrial chemicals
  - Drums are easily recognizable, barrel-like containers.
  - Generally, the nature of the chemical dictates the construction of the drum.

66 Containers (8 of 11)
- Nonbulk storage vessels (cont’d)
  - Bags are commonly used to store solids and powders.
  - May be constructed of plastic, paper, or plastic-lined paper
  - Pesticide bags must be labeled with specific information.

67 Containers (9 of 11)
- Nonbulk storage vessels (cont’d)
  - Carboys transport and store corrosives and other types of chemicals.
    - Glass, plastic, or steel container that holds 5 to 15 gallons of product
    - Often placed in a protective wood, foam, fiberglass, or steel box

68 Containers (10 of 11)

69 Containers (11 of 11)
- Nonbulk storage vessels (cont’d)
  - Uninsulated compressed gas cylinders are used to store substances such as nitrogen, argon, helium, and oxygen.

70 Department of Transportation Marking System (1 of 4)
- Labels, placards, and other markings are used on buildings, packages, boxes, and containers.
- Marking systems indicate the presence of a hazardous material from a safe distance and provide clues about the substance.

71 Department of Transportation Marking System (2 of 4)

72 Department of Transportation Marking System (3 of 4)
- Placards are diamond-shaped indicators.
  - Placed on four sides of transport vehicles
- Labels are smaller versions of placards.
  - Placed on four sides of individual boxes and smaller packages

73 Department of Transportation Marking System (4 of 4)

74 Other Considerations
- The DOT system does not require that all chemical shipments be marked.
– In most cases, the package or cargo tank must contain a certain amount of hazardous material before a placard is required.
– Some chemicals are so hazardous that shipping any amount requires the use of labels or placards.

75 References (1 of 4)
• The *Emergency Response Guidebook*
  – Offers a certain amount of guidance for responders operating at a HazMat incident
  – Updated every 3 to 4 years
  – Provides information on approximately 4,000 chemicals

76 References (2 of 4)
• Material safety data sheets (MSDS)
  – Common source of information about a particular chemical
  – Provides basic information about:
    • The chemical makeup of a substance
    • The potential hazards it presents
    • Appropriate first aid in the event of an exposure
    • Other pertinent data for safe handling

77 References (3 of 4)
• Shipping papers
  – Required whenever materials are transported from one place to another
  – Include names and addresses of the shipper and the receiver, identify the material being shipped, and specify the quantity and weight of each part of the shipment

78 References (4 of 4)
• Chemical Transportation Emergency Center (CHEMTREC)
  – CHEMTREC is operated by the American Chemistry Council.
  – Serves as an invaluable technical information resource for first responders of all disciplines who are called upon to respond to chemical incidents

79 Identification (1 of 2)
• Despite the availability of resources, identification may still be difficult.
  – Presence of the following may help:
    • Visible cloud or strange-looking smoke from the escaping substance
    • Leak or spill from a tank, container, truck, or railroad car
    • Unusual, strong, noxious, harsh odor in the area

80 Identification (2 of 2)
• If any signs suggest that a HazMat incident has occurred, stop at a safe distance and park upwind or uphill.
  – Call for the HazMat team, try to rapidly assess the situation, and try to provide as much information as possible.
  – Do not reenter the scene and do not leave the area until you have been cleared.
  – Avoid all contact with the material.

81 HazMat Scene Operations (1 of 6)
• Use the ambulance’s public address system.
  – Alert individuals near the scene and direct them to move.
• Establish control zones.
  – Securing access helps ensure that no one will accidentally enter the contaminated area.
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82 HazMat Scene Operations (2 of 6)
• Establish control zones (cont’d).
  – You should be prepared to expand or contract the control zones if necessary.

83 HazMat Scene Operations (3 of 6)
• Hot zone
  – Area immediately surrounding the release
  – Most contaminated area
  – All personnel must be decontaminated when they leave the hot zone.

84 HazMat Scene Operations (4 of 6)
• Warm zone
  – Where personnel and equipment transition into and out of the hot zone
  – Contains control points for access to the hot zone and the decontamination area
  – Decontamination is the process of removing or neutralizing and properly disposing of hazardous materials.

85 HazMat Scene Operations (5 of 6)
• Cold zone
  – Safe area where personnel do not need to wear any special protective clothing for safe operation
  – Includes personnel staging; the command post; EMS providers; and the area for medical monitoring, support, and/or treatment after decontamination

86 HazMat Scene Operations (6 of 6)
• Role of the EMT
  – Your job is to report to a designated area outside of the hot and warm zones and provide:
    • Triage
    • Treatment
    • Transport
    • Rehabilitation

87 Classification of Hazardous Materials (1 of 3)
• NFPA 704, Hazardous Materials Classification standard classifies hazardous materials according to:
  – Health hazard or toxicity levels
  – Fire hazard
  – Chemical reactive hazard
  – Special hazards

88 Classification of Hazardous Materials (2 of 3)
• Toxicity levels
  – Measures the health risk that a substance poses to someone who comes into contact with it
  – The higher the number, the greater the toxicity.

89 Classification of Hazardous Materials (3 of 3)

90 Personal Protective Equipment Level (1 of 4)
• PPE levels indicate the amount and type of protective gear that you need to prevent injury from a substance.
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- **Level A**
  - Most hazardous
  - Requires fully encapsulated, chemical-resistant protective clothing that provides full body protection, as well as SCBA and special, sealed equipment

91 **Personal Protective Equipment Level (2 of 4)**
- **Level B**
  - Requires nonencapsulated protective clothing or clothing that is designed to protect against a particular hazard
  - Requires breathing devices that contain their own air supply, such as SCBA, and eye protection

92 **Personal Protective Equipment Level (3 of 4)**
- **Level C**
  - Requires the use of nonpermeable clothing and eye protection
  - Face masks that filter all inhaled outside air
- **Level D**
  - Requires a work uniform, such as coveralls, that affords minimal protection
  - All levels require the use of gloves.

93 **Personal Protective Equipment Level (4 of 4)**

94 **Caring for Patients (1 of 4)**
- It is practical only to provide the simplest assessment and essential care in the hazard zone and the decontamination area because of the:
  - Dangers
  - Time constraints
  - Bulky protective gear

95 **Caring for Patients (2 of 4)**
- Your care of patients must address the following two issues:
  - Any trauma that has resulted from other related mechanisms, such as vehicle collision, fire, or explosion
  - The injury and harm that have resulted from exposure to the toxic hazardous substance

96 **Caring for Patients (3 of 4)**
- Most serious injuries and deaths from hazardous materials result from airway and breathing problems.
- In some cases, the HazMat team may find patients who need immediate treatment before the decontamination area has been set up.

97 **Caring for Patients (4 of 4)**
- You will need to increase the amount of protective clothing you wear, including:
  - SCBA
  - Two pairs of gloves
  - Goggles or a face shield
  - A protective coat
  - Respiratory protection
  - A disposable fluid-impervious apron

98 **Review**

1. What is the purpose of the incident command system (ICS)?
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A. Ensuring responder and public safety
B. Achieving incident management goals
C. Ensuring the efficient use of resources
D. All of the above.

99 Review
Answer: D
Rationale: The purpose of the ICS is ensuring responder and public safety, achieving incident management goals, and ensuring the efficient use of resources.

100 Review
1. What is the purpose of the incident command system (ICS)?
   A. Ensuring responder and public safety
      Rationale: This is one purpose of the ICS.
   B. Achieving incident management goals
      Rationale: This is one purpose of the ICS.
   C. Ensuring the efficient use of resources
      Rationale: This is one purpose of the ICS.
   D. All of the above.
      Rationale: Correct answer

101 Review
2. Upon arriving at a scene in which the incident command system has been activated, you should expect to:
   A. be passed from sector to sector, as needed, in between assignments.
   B. report directly to the incident commander in between assignments.
   C. be assigned a specific responsibility for the duration of the incident.
   D. be given general directions and allowed to function independently.

102 Review
Answer: A
Rationale: The incident commander establishes sectors of responsibility and sector officers. When functioning at an incident in which the incident command system has been activated, you should report to the appropriate sector officer, carry out your assignment, and report back to the sector officer. In many cases, you will be asked to report to a different sector.

103 Review (1 of 2)
2. Upon arriving at a scene in which the incident command system has been activated, you should expect to:
   A. be passed from sector to sector, as needed, in between assignments.
      Rationale: Correct answer
   B. report directly to the incident commander in between assignments.
      Rationale: Only sector or unit officers report to the IC.

104 Review (2 of 2)
2. Upon arriving at a scene in which the incident command system has been activated, you should expect to:
   C. be assigned a specific responsibility for the duration of the incident.
      Rationale: Responsibilities may change as sector officers see the need for change.
   D. be given general directions and allowed to function independently.
      Rationale: The purpose behind the ICS is to prevent personnel from freelancing.

105 Review
3. When EMS responds to a disaster, as part of their response within the ICS, EMS would start with a scene size-up. What is the next step for the first-responding units?
   A. Communicating with additional units
   B. Establishing command
   C. Caring for any injuries
   D. Stabilizing the incident

   **Review**
   
   **Answer:** B
   
   **Rationale:** The first EMS unit to arrive needs to function within the ICS. Once you have performed a good scene size-up and answered the three basic questions to complete a scene size-up, command should be established by the most senior official, notification to other responders should go out, and necessary resources should be requested.

3. When EMS responds to a disaster, as part of their response within the ICS, EMS would start with a scene size-up. What is the next step for the first-responding units?
   A. Communicating with additional units
      
      **Rationale:** Communications occur after establishing command.
   B. Establishing command
      
      **Rationale:** Correct answer

   **Review (2 of 2)**
   
   3. When EMS responds to a disaster, as part of their response within the ICS, EMS would start with a scene size-up. What is the next step for the first-responding units?
   C. Caring for any injuries
      
      **Rationale:** Triage occurs after communications have been established.
   D. Stabilizing the incident
      
      **Rationale:** Demobilization procedures occur at the end of the response.

   **Review**
   
   4. Which of the following statements BEST describes a mass-casualty incident?
   A. At least half of the patients are dead.
   B. Either a bus or an airplane has crashed.
   C. You have more than two critical patients.
   D. The patient count exhausts your resources.

   **Review**
   
   **Answer:** D
   
   **Rationale:** A mass-casualty situation is one that places such a great demand on available equipment or personnel that the system is stretched to its limits or beyond. While bus accidents and plane crashes are classic examples of MCIs, they are not the only situations that can exhaust your resources.

4. Which of the following statements BEST describes a mass-casualty incident?
   A. At least half of the patients are dead.
      
      **Rationale:** MCIs are not based upon the number of fatalities.
   B. Either a bus or an airplane has crashed.
      
      **Rationale:** This is a good example of a potential MCI; however, there may be very few patients.

   **Review (2 of 2)**
4. Which of the following statements BEST describes a mass-casualty incident?
   C. You have more than two critical patients.
      Rationale: This situation places a burden upon the first EMS providers, but it may not
      stress available resources.
   D. The patient count exhausts your resources.
      Rationale: Correct answer

Review

5. Which of the following patients would have the HIGHEST treatment priority at the scene
   of a mass-casualty incident?
   A. 24-year-old man who is unconscious, has snoring respirations, and severe burns
   B. 32-year-old woman who is pulseless and apneic with an abdominal evisceration
   C. 29-year-old woman who is in full cardiac arrest with massive open chest trauma
   D. 32-year-old man with an open head injury, exposed brain matter, and no carotid pulse

Review

Answer: A
Rationale: Three of the four patients (B, C, and D) are dead. Triage efforts are aimed at
providing the greatest amount of good for the greatest number of people. Attempting to
resuscitate a patient in traumatic cardiac arrest is futile in almost all cases.

Review (1 of 2)

5. Which of the following patients would have the HIGHEST treatment priority at the scene
   of a mass-casualty incident?
   A. 24-year-old man who is unconscious, has snoring respirations, and severe burns
      Rationale: Correct answer
   B. 32-year-old woman who is pulseless and apneic with an abdominal evisceration
      Rationale: The woman has minimal possibilities of survival with no vital signs upon
      arrival.

Review (2 of 2)

5. Which of the following patients would have the HIGHEST treatment priority at the scene
   of a mass-casualty incident?
   C. 29-year-old woman who is in full cardiac arrest with massive open chest trauma
      Rationale: This patient presents with a low possibility of surviving.
   D. 32-year-old man with an open head injury, exposed brain matter, and no carotid pulse
      Rationale: This patient presents with a low possibility of surviving.

Review

6. How does a disaster differ from a mass-casualty incident?
   A. Disasters may not involve personal injuries.
   B. In a disaster, EMS may be on the scene for days or weeks.
   C. Only an elected official can declare a disaster.
   D. All of the above.

Review

Answer: D
Rationale: Many disasters, such as droughts that cause widespread crop damage, do not
involve personal injury. An MCI generally lasts no longer than a few hours, but emergency
responders may be on the scene for days or weeks in a disaster. Although you can “declare”
an MCI, only an elected official can declare a disaster.
6. How does a disaster differ from a mass-casualty incident?
   A. Disasters may not involve personal injuries.
      Rationale: This is true of a disaster.
   B. In a disaster, EMS may be on the scene for days or weeks.
      Rationale: This is true of a disaster.
   C. Only an elected official can declare a disaster.
      Rationale: This is true of a disaster.
   D. All of the above.
      Rationale: Correct answer

Review (1 of 2)

7. A large tanker truck has overturned on a highway. When you arrive, you see a clear liquid leaking from the rear of the tanker. The driver, who appears to be unconscious, is still in the vehicle and is bleeding heavily from the face. You should:
   A. immediately notify law enforcement for traffic control.
   B. fully assess the situation and request the appropriate assistance.

Review (2 of 2)

C. put on gloves, a gown, and a mask and quickly remove the driver.
D. go to the rear of the tanker and determine what type of fluid is leaking.

Review

Answer: B
Rationale: Upon arriving at the scene of a possible HazMat incident, you must first step back and assess the situation. This can be very stressful—especially if you see a patient. However, rushing into such a situation puts your own life in jeopardy. Once you have properly assessed the scene, you should request the appropriate assistance, such as the fire department or hazardous materials team.

Review (1 of 4)

7. A large tanker truck has overturned on a highway. When you arrive, you see a clear liquid leaking from the rear of the tanker. The driver, who appears to be unconscious, is still in the vehicle and is bleeding heavily from the face. You should:
   A. immediately notify law enforcement for traffic control.
      Rationale: Law enforcement is part of the assistance needed at the scene; however, rescue, fire, and HazMat providers must also be notified.
   B. fully assess the situation and request the appropriate assistance.
      Rationale: Correct answer

Review (2 of 4)

7. A large tanker truck has overturned on a highway. When you arrive, you see a clear liquid leaking from the rear of the tanker. The driver, who appears to be unconscious, is still in the vehicle and is bleeding heavily from the face. You should:
   B. fully assess the situation and request the appropriate assistance.

Review (3 of 4)

7. A large tanker truck has overturned on a highway. When you arrive, you see a clear liquid leaking from the rear of the tanker. The driver, who appears to be unconscious, is still in the vehicle and is bleeding heavily from the face. You should:
   C. put on gloves, a gown, and a mask and quickly remove the driver.
      Rationale: This is a potentially hazardous environment. Access should not be
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attempted until the scene has been deemed safe.

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7. A large tanker truck has overturned on a highway. When you arrive, you see a clear liquid leaking from the rear of the tanker. The driver, who appears to be unconscious, is still in the vehicle and is bleeding heavily from the face. You should:
   D. go to the rear of the tanker and determine what type of fluid is leaking.
   Rationale: Unless you are trained as a HazMat technician and are part of the entry team, do not enter the hazard zone.

Review

8. Which of the following situations MOST likely involves a hazardous material?
   A. Milk truck that overturned and is leaking fluid
   B. Tractor trailer rig that is emitting a visible cloud
   C. Moving van that collided head-on with a small car
   D. Pickup truck from the gas company that struck a tree

Review

Answer: B
Rationale: A crash does not need to occur for a spill or leak to happen. A vehicle that is emitting a visible cloud should make you suspicious that a hazardous material is involved—especially if the vehicle is a tractor trailer rig. In such cases, you should stay uphill and upwind and notify the fire department or HazMat team.

Review (1 of 2)

8. Which of the following situations MOST likely involves a hazardous material?
   A. Milk truck that overturned and is leaking fluid
   Rationale: This is a possibility, but not the most likely possibility.
   B. Tractor trailer rig that is emitting a visible cloud
   Rationale: Correct answer

Review (2 of 2)

8. Which of the following situations MOST likely involves a hazardous material?
   C. Moving van that collided head-on with a small car
   Rationale: This is a possibility, but not the most likely possibility.
   D. Pickup truck from the gas company that struck a tree
   Rationale: This is a possibility, but not the most likely possibility.

Review

9. When dealing with a hazardous materials incident, where should you set up your decontamination area?
   A. Inside the hazard zone
   B. Inside the treatment area
   C. Between the hazard zone and treatment area
   D. Between the treatment and transportation zone

Review

Answer: C
Rationale: The decontamination area should be set up between the hazard zone and the treatment area. This way, patients cannot bring any hazardous materials into the treatment area and contaminate anyone else.

Review (1 of 2)
9. When dealing with a hazardous materials incident, where should you set up your decontamination area?
   A. Inside the hazard zone
      Rationale: It needs to be on the edge of the hazard zone—not inside it.
   B. Inside the treatment area
      Rationale: You do not want contaminated patients in the treatment area.

Review (2 of 2)
9. When dealing with a hazardous materials incident, where should you set up your decontamination area?
   C. Between the hazard zone and treatment area
      Rationale: Correct answer
   D. Between the treatment and transportation zone
      Rationale: Patients need to be decontaminated prior to entering the treatment and transport area.

Review
10. Which toxicity level would you assign a hazardous material spill that could cause a person temporary damage or residual injury unless prompt medical treatment is given?
    A. Level 1
    B. Level 2
    C. Level 3
    D. Level 4

Review
Answer: B
Rationale: Level 2 toxicity includes materials that could cause temporary damage or residual injury unless prompt medical treatment is provided. Level 1 toxicity includes materials that would cause little, if any, health hazard. Level 3 toxicity includes materials that are extremely hazardous to health and requires full protective gear. Level 4 toxicity includes materials that are so hazardous that even minimal contact will cause death.

Review (1 of 2)
10. Which toxicity level would you assign a hazardous material spill that could cause a person temporary damage or residual injury unless prompt medical treatment is given?
    A. Level 1
       Rationale: Level 1 materials cause few health hazards.
    B. Level 2
       Rationale: Correct answer

Review (2 of 2)
10. Which toxicity level would you assign a hazardous material spill that could cause a person temporary damage or residual injury unless prompt medical treatment is given?
    C. Level 3
       Rationale: Level 3 materials are extremely hazardous.
    D. Level 4
       Rationale: Level 4 materials cause death, even with minimal contact.