Chapter 39
Incident Management

Lecture
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
Multiple Casualty Incidents

- Triage principles
- Resource management
- Triage
  - Performing
  - Retriage
  - Destination decisions
  - Posttraumatic and cumulative stress
Hazardous Materials Awareness

- Risks and responsibilities of operating in a cold zone at a hazardous material or other special incident
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
Introduction (2 of 2)

• National Incident Management System (NIMS)
  – Promotes efficient coordination of emergency incidents at the regional, state, and national levels
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
Organizational structure must be flexible enough to be rapidly adaptable.

Provides standardization in:
- Terminology
- Resource classification
- Personnel training
- Certification
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
(4 of 8)

• Roles and responsibilities
  – Command
  – Finance
  – Logistics
  – Operations
  – Planning
  – Command staff
• 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
• 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.
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.
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.
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.
• 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.
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?
EMS Response Within the Incident Command System (3 of 5)
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.
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.
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
The Medical Branch of Incident Command (2 of 10)

EMS Branch

- Triage
  - Tasks
    - Triage and tag all patients. Work closely with treatment and遏灾监督者. Ensure movement of all patients to treatment area.
    - Ensure adequate personnel to accomplish tasks.
    - Ensure safety of all members.
    - Communicate with EMS branch on progress of operations.
    - Establish initial morgue (if necessary).
    - Document activities of triage area.

- Treatment
  - Tasks
    - Separate patients by each priority category. Assign crews to treat patients. Communicate with transportation supervisor.
    - Ensure safety of all members working in area.
    - Ensure sufficient supplies and personnel.
    - Maintain security of treatment area. If necessary, initiate decontamination procedures.
    - Document activities of treatment area.
    - Provide updates to EMS branch director.

- Transportation
  - Tasks
    - Direct movement of all patients. Ensure safety of members.
    - Establish a loading zone.
    - Work with treatment supervisor on patient movement to hospitals.
    - Establish and determine destination for patients. Communicate with hospitals.
    - Request additional transport units from EMS branch or staging supervisor. Provide updates to EMS branch director. Establish a landing zone, if necessary. Track all/patient movement.
    - Document activities of transportation area.

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• 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.
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
• 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
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.
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
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
• Extrication and special rescue
  – Determines the type of equipment and resources needed for the situation
  – Usually function under the EMS branch of the ICS
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.
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
• 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.
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” 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)
## Table 39-1  Triage Priorities

<table>
<thead>
<tr>
<th>Triage Category</th>
<th>Typical Injuries</th>
</tr>
</thead>
</table>
| **Red tag**: first priority (immediate)  | - Airway and breathing compromise  
                              - Uncontrolled or severe bleeding  
                              - Severe medical problems  
                              - Signs of shock (hypoperfusion)  
                              - Severe burns  
                              - Open chest or abdominal injuries |
| Patients who need immediate care and transport  |  
                              Treat these patients first, and transport as soon as possible |
| **Yellow tag**: second priority (delayed)   | - Burns without airway compromise  
                              - Major or multiple bone or joint injuries  
                              - Back injuries with or without spinal cord damage |
| Patients whose treatment and transport can be temporarily delayed  |  
| **Green tag**: third priority, minimal (walking wounded)  | - Minor fractures  
                              - Minor soft-tissue injuries |
| Patients who require minimal or no treatment and transport can be delayed until last  |  
| **Black tag**: fourth priority (expectant)  | - Obvious death  
                              - Obviously nonsurvivable injury, such as major open brain trauma  
                              - Respiratory arrest (if limited resources)  
                              - Cardiac arrest |
| Patients who are already dead or have little chance for survival; treat salvageable patients before treating these patients  |  

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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.
• 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.
• 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 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.
• 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.
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.
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
• 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.
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
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
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.
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
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
Recognizing a Hazardous Material (4 of 6)

Courtesy of Rob L. Jackson/U.S. Marines.

Courtesy of George Roarty/Virginia Department of Emergency Management.
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
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.
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
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.
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
Containers (4 of 11)

Courtesy of Tank Service, Inc.
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
Containers (6 of 11)

Courtesy of UBH International Ltd.
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.
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.
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
Containers (10 of 11)

Courtesy of EMD Chemicals, Inc.
• Nonbulk storage vessels (cont’d)
  - Uninsulated compressed gas cylinders are used to store substances such as nitrogen, argon, helium, and oxygen.
• 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.
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
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.
• 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

Courtesy of the U.S. Department of Transportation.
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
• 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
• 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
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
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.
• 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.
• Establish control zones (cont’d).
  – You should be prepared to expand or contract the control zones if necessary.
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.
• 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.
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
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
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
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.
# Classification of Hazardous Materials (3 of 3)

## Table 39-2: Toxicity Levels of Hazardous Materials

<table>
<thead>
<tr>
<th>Level</th>
<th>Health Hazard</th>
<th>Protection Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Little or no hazard</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>Slightly hazardous</td>
<td>SCBA (level C suit) only</td>
</tr>
<tr>
<td>2</td>
<td>Slightly hazardous</td>
<td>SCBA (level C suit) only</td>
</tr>
<tr>
<td>3</td>
<td>Extremely hazardous</td>
<td>Full protection, with no exposed skin (level A or B suit)</td>
</tr>
<tr>
<td>4</td>
<td>Minimal exposure causes death</td>
<td>Special HazMat gear (level A suit)</td>
</tr>
</tbody>
</table>
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.

• Level A
  – Most hazardous
  – Requires fully encapsulated, chemical-resistant protective clothing that provides full body protection, as well as SCBA and special, sealed equipment
• 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
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.
Personal Protective Equipment

Level (4 of 4)

Level A


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Level B

Level C

Courtesy of The DuPont Company.

Level D

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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
• 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
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.
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
Review

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

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.
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.
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.

Rationale: Correct answer
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 attempted until the scene has been deemed safe.
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.
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
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.
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
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.
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
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.
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.
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.
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
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.
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
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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.