Chapter 16
Scene Size-Up

Learning Objectives

• Describe the purpose of scene size-up.
• Outline components of scene size-up.
• Recognize factors that may contribute to an unsafe scene.
• Describe scene evaluation techniques.
Learning Objectives

• Identify steps in scene management.
• Outline measures to lower risks associated with illness or injury on an unsafe scene.
• Identify additional resources that may be needed to manage multiple patient incidents.

Scene Size-Up

• Quick assessment of an emergency scene
• Used to determine what resources are needed to safely manage the event
• Continuous evaluation of scene
• Begins when a call is received

Scene Size-Up

• Requires quickly gathering facts about situation, analyzing problems and potential problems, determining appropriate response
• Receiving a call
  – Obtain as much information from dispatcher as possible
Scene Size-Up

- Receiving a call
  - Information that helps
    - Exact location
    - Type of occupancy (e.g., manufacturing, roadway, residence)
    - Number of patients
    - Type of situation (e.g., medical, trauma, vehicle collision)
    - Hazards on the scene
    - Unique issues (e.g., key boxes, known medical or access problems, etc.)

Scene Size-Up

- Regular updates from dispatch help determine need for additional resources
  - Additional ambulances
  - Fire-rescue services
  - Mutual aid
  - Utility services
  - Law enforcement
  - Air medical services
  - Hazmat teams

Scene Safety

- Environmental hazards
  - Unique aspect of prehospital care
  - Hot weather conditions can expose patient to thermal injury
    - Example: thermal burns from placing patient on spine board left uncovered on hot asphalt
    - Heat-related illness (hyperthermia) can quickly escalate if EMS crew does not remove patient from hot environment immediately
    - Move patients at risk to cooler environment to begin care
Scene Safety

• Cold weather creates challenges as well
  – Ill or injured patient is less able to regulate body temperature
  – Allows hypothermia to develop quickly
  – Immediately shelter patients at risk from wind and move to a warm environment
  – Quickly remove wet clothing
  – Cover patient with warm, dry blankets
  – Warming measures may be needed

Scene Safety

• Caring for patients in thunderstorms can be dangerous to everyone on scene
  – Quickly move patient to a location protected from lightening and other storm hazards
  – Paramedics should assume wires downed from high winds are charged and dangerous until their safety is verified

Scene Safety

• Many environmental hazards warrant specialized rescue teams or additional rescue resources
  – Rescue of patient in water or on ice
  – Low light conditions make patient assessment difficult
    • Easily contribute to personal injury
    • Portable light should be available
    • Large rescue scenes should be properly lighted by requesting additional resources
Hazardous Substances

- Industrial accidents, terrorist incidents
  - Chemical, biological, radiological, explosive hazards may be encountered
    - Paramedics should be alert to dispatch information indicating potential for these hazards
    - Reports of large numbers of patients with similar signs or symptoms should signal potential
    - Assessment of a scene with hazardous material spills should be carefully planned

Hazardous Substances

- Industrial accidents, terrorist incidents
  - Chemical, biological, radiological, explosive hazards may be encountered
    - Begin at a distance using binoculars to look for presence of indicators of hazardous material
    - Indicators include container shape, smoke or vapor clouds, identifying Hazmat placards
    - Should not be entered until secured and made safe by specialized teams or public health specialists

Violence

- Verbal aggression towards EMS crew out of concern for safety and wellbeing of loved one
- Drugs or illness can alter patient’s behavior
- When patients display violent behavior, EMS crew should retreat from the scene until it is secured by law enforcement personnel
Violence

- Paramedics should be alert for the presence of weapons at any scene
  - Traditional weapons include knives or guns
  - Objects within reach
    - Tools, kitchen appliances, household chemicals
  - All patients should be asked if they are carrying a weapon
    - If so, safely securing weapon during transport should be dictated by department policy

Violence

- Dogs or other pets can be a hazard
  - If dangerous animals are unsecured, patient or family member should be asked to contain them
  - If not possible, local animal specialists should be summoned
Violence

- When responding to a known violent crime scene, EMS crew should remain at a safe distance
  - Staging position should be maintained until law enforcement personnel have secured the area
  - Crime scenes are not completely safe even when law enforcement is present
  - Paramedic should stay alert for clues that a dangerous situation can ensue or escalate

Describe warning signs of potentially violent situations.
Why isn’t it always possible to identify a dangerous scene before arrival?

Rescue-Related Hazards

- Motor vehicle collisions often involve
  - Patient extrication
  - Sharp metal
  - Broken glass
  - Unstable vehicles
  - Leaking fluids that increase risk of fire
- Paramedic should put patient’s vehicle in park and turn off ignition before beginning patient care, provided it is safe

Rescue-Related Hazards

- Extrication may create additional hazards
  - Powerful cutting and spreading tools
  - Shifting vehicle
  - Possibility that airbag will violently deploy
Rescue-Related Hazards

• Paramedics should not remain in vehicle during extrication
  – Unless properly trained and wearing protective equipment
• Paramedics entering a roadway to provide care risk being struck by oncoming traffic

Rescue-Related Hazards

• Measures to reduce risk should be taken on all roadway calls
  – Ambulance should be positioned in a safe location
  – Other emergency vehicles should park so they are shielding ambulance and affected vehicles from oncoming traffic
  – Appropriate ANSI II vests (traffic vests) and other protective gear should be worn according to departmental policies
  – Safety officer should monitor scene at all times
  – Egress from roadway should be made as quickly as possible
Rescue-Related Hazards

- Specialized rescues require advanced training and equipment
  - High- and low-angle rescue
  - Trench rescue
  - Confined space rescue
  - Water rescue
  - Unstable structure rescue
  - Paramedics should not assist with rescue until made safe for entry

Scene Evaluation

- Paramedic must always ask, “Is the scene safe?”
  - If it is not safe and cannot be made safe, it should not be entered
  - EMS crew should remain in a safe holding area and request additional resources
  - Only when scene is secured should EMS crew enter
- If no safety hazards exist, paramedic should establish patient contact and proceed with patient assessment
Scene Evaluation

- Possible to make scene safe quickly
  - If incident is on a busy roadway, emergency vehicles can quickly be positioned to provide protection for emergency personnel
  - Wear reflective vests and clothing to improve rescuer visibility
  - Only consider making scene safe when it can be done without significant risk to paramedic or patient
Scene Management

• Quick, visual survey of scene should be made on all emergency calls

• For medical calls
  – First determine the nature of the illness
  – Be observant of patient’s surroundings for possible clues to nature of emergency
    • Empty pill bottles or drug paraphernalia
    • Medical alert necklace or bracelet
    • Unusual odors
    • Hazards at scene that could suddenly make scene unsafe

Scene Management

• For trauma calls
  – Quickly determine mechanism of injury
  – Visual clues that can direct patient care needed while at scene and during transport
    • Steering wheel, dash, or windshield damaged in vehicle collision
    • Occupants in car wearing personal restraints
    • Patient wearing helmet during motorcycle crash
    • Length of knife in stabbing
    • Hazards at scene to suddenly make it unsafe
Addressing Hazards

• Any hazard must be addressed
• Environmental conditions and hazards that could affect patient care or safety of others at the scene
  – Weather or extreme temperatures
  – Toxins and gases
  – Secondary collapses and falls
  – Unstable conditions

Addressing Hazards

• After making scene safe for paramedic, patient is next priority
  – Attempt to correct any hazards that could threaten health or safety
  – If hazard cannot be alleviated, move patient to safer environment
  – Any condition that poses threat to bystanders should be minimized
  – If unable to remove hazard, move bystanders to safer area

Addressing Hazards

• Additional and specialized resources may be needed
  – Request resources as soon as possible
  – Should be anticipated quickly when scene is scanned for mechanism of injury or nature of illness
    • If multiple patients, additional ambulances are needed
    • Fire hazards will be needed if there are fire or electrical hazards, chemical spills, biological threats, unsafe structures, and rescue or extrication requirements
    • Utility services may be required to manage downed power lines or to secure natural gas lines
    • Law enforcement may be needed to control traffic, manage bystanders, contain violence at scene
Standard Precautions

• Should be part of any EMS response
• Based on the principle that all blood, body fluids, secretions, excretions (except sweat), nonintact skin, and mucous membranes may contain transmissible infectious agents

Standard Precautions

• Include group of infection prevention strategies
  – Apply to all patients, regardless of suspected or confirmed infection status
  – Apply to any health care delivery setting in which patient care activities take place

Standard Precautions

• Extent used is determined by anticipated likelihood of exposure to blood, body fluids, or pathogens
• Implemented by thorough hand washing and wearing
  – Gloves
  – Protective eyewear
  – Masks
  – Gowns
Standard Precautions

- Personal protective equipment
  - Includes any clothing or specialized equipment that provides some protection to wearer
  - Protects paramedic and other emergency personnel from substances that may pose health or safety risk
  - Should be appropriate for potential hazard

- Examples
  - Steel-toe boots
  - Helmets
  - Turn-out gear
  - Heat-resistant outerwear
  - Reflective clothing
  - Bulletproof vests in high crime areas
  - Safety glasses
  - Hearing protection
  - Self-contained breathing apparatus (SCBA)
  - Leather gloves
Multiple Patient Situations

- Paramedic should anticipate need for additional support
- Dispatch center often makes this determination and requests assistance before EMS arrives at scene

Additional and specialized resources needed are based on nature of incident:
- Additional ambulances
- Air medical service
- Additional manpower to sort and care for injured
- Additional medical supplies
- Special equipment for extrication and fire suppression
- Specialized rescue teams
- Utility services
- Hazmat decontamination
- Traffic and crowd control

Goals are to ensure scene safety, protect patients and bystanders:
- Bystanders need to be removed from patient care area and isolated from scene
- Barricades are sometimes needed and manned by law enforcement personnel to ensure goals
Multiple Patient Situations

- Large-scale scenes or major incidents will require a command structure
  - Incident Command System (ICS)
  - Incident Management System (IMS)
  - Organize interagency functions and responsibilities of emergency personnel and public service agencies at scene
  - Play vital role whenever available resources are insufficient to manage number of casualties or type of emergency

Summary

- Scene size-up is a quick assessment of the emergency scene designed to determine the resources needed to manage the scene safely and effectively
- Dispatch information that assists with scene size-up includes location, type of location, type of situation, possible hazards, and unique issues

Summary

- Special rescue, transport, fire, or other public safety resources may need to be dispatched to help manage the scene
- Many factors can contribute to an unsafe scene, including environmental hazards, hazardous substances, violence, and rescue-related hazards
Summary

• Scene assessment should always begin by asking, “Is the scene safe?”
• If it is not safe, identify measures that eliminate or reduce the risk to permit safe entry
• Perform an initial scene survey
  – On medical calls, attempt to determine the nature of the illness
  – On trauma calls, gather information related to the mechanism of injury

Summary

• If hazards cannot be corrected, remove patient from scene as quickly and as safely as possible
• Standard precautions should be used for all patients to minimize risk of exposure to blood or bloody body fluids

Summary

• Other specialized personal protective equipment may be needed based on the nature of the hazard and the training and role of paramedics on the scene
• Multiple patient situations require many resources
  – Priorities should always be scene safety with protection of patient and bystanders
  – Incident command should be established