Learning Objectives

• Identify the components of the scene size-up.
• Identify the priorities in each component of patient assessment.
• Outline the critical steps in primary patient assessment.
Learning Objectives

• Describe findings in the primary assessment that may indicate a life-threatening condition.
• Discuss interventions for life-threatening conditions that are identified in the primary assessment.
• Distinguish priorities in the care of the medical versus trauma patient.

Scene Size-Up and Personal Safety

• First steps taken during every response
  – Ensure scene safety
    • Paramedic crew
    • Patient(s)
    • Bystanders
    • Scene assessment and surroundings offer key information

Scene Size-Up and Personal Safety

• Scene size-up priorities
  – Determine nature of incident
  – Determine maximum potential number of persons already ill or injured and needing care
  – Assess scene for hazards
  – Initiate mass casualty plan if indicated
Scene Size-Up and Personal Safety

- Scene size-up priorities
  - Notify dispatch to request more resources and alert area hospitals as needed
    - Law enforcement
    - Fire
    - Rescue
    - Utility companies
  - Determine best access routes and staging areas for responders
  - Secure area, clear unneeded persons from scene
  - Begin triage if needed

Scene Size-Up and Personal Safety

- Scene size-up priorities
  - Scenes that seem safe may still be dangerous
  - Never enter potentially unsafe scene until it is safe to approach patient
    - Crash-and-rescue scenes
    - Areas with toxic substances and low oxygen
    - Crime scenes in which violence is likely
    - Scenes with unsafe surfaces (slope, ice, water)

Do you know a paramedic who has been injured on a scene? What caused the injury? Could it have been prevented?
Protective Clothing

• NFPA and OSHA standards adopted by many response agencies
  – Minimum personal protective equipment
    • Impact-resistant protective helmet with ear protection and chinstrap
    • Safety goggles with vents to prevent fogging
    • Lightweight, puncture-resistant turnout coat
    • Slip-resistant waterproof gloves
    • Boots with steel insoles and toe protection

Protective Clothing

• NFPA and OSHA standards adopted by many response agencies
  – Minimum personal protective equipment
    • Self-contained breathing apparatus
    • Disposable gloves
    • Disposable masks
    • Disposable eye protection
    • Disposable gowns
Personal Protection

• Blood-borne pathogens
  – OSHA Act of 1991 adopted recommendations established by CDC
    • These universal precautions have been adopted by most states and public service entities
    • Minimum standards of practice recommended by OSHA
    • Used in case of all patients in which risk of exposure to blood/body fluids or infection status is unknown
    • Wash hands before and after patient contact

Patient Assessment Priorities

• After ensuring scene safety and that needed resources are available
  – Patient assessment can begin
  – Assessment priorities
    • Primary survey/primary assessment
    • Integration of treatment/procedures to preserve life
    • Evaluating priority of patient care and transport
Primary Survey

- Primary survey performed on all patients to establish priorities of care
  - Purpose is to recognize and manage all immediately life-threatening conditions
  - Establishes priorities of care
    - May include resuscitation
  - Consists of general impression of patient
    - Initially based on patient’s age and appropriate appearance

General Impression

- Paramedic’s immediate assessment of setting and patient’s chief complaint
- Used to determine whether patient
  - Appears stable
  - Appears stable but potentially unstable
  - Appears unstable
General Impression

• Formed based on both patient and environment in which patient is found
• Involves visual assessment of patients as they are approached

General Impression

• Before being close enough to begin physical assessment
  – As scene is entered, general setting should be observed for clues
    • Illness
    • Injury
    • Mechanism of injury

General Impression

• Factors that help form general impression based on
  – Position
    • Upright
    • Prone
    • Contorted
    • Tripod
  – Work of breathing
  – Apparent attentiveness
  – Skin color
  – Any obvious wounds noted
  – Any body fluids noted
General Impression

• Patients who appear stable usually require minimal care at scene
  – No life-threatening illness or injury
  – Conscious and alert
  – Vital signs within normal limits
  – Some will require transport for physician evaluation

General Impression

• Patients who appear stable but potentially unstable
  – Are injured or have underlying illness
  – May be conscious and alert
  – Vital signs may or may not be within normal limits
  – History alerts that decline in status may occur
  – Potentially unstable, always require transport
General Impression

• Patients who appear unstable have obvious signs
  – Serious injury
  – Illness
  – Disease
  – Injury, illness is life threatening
  – Require immediate care, transport to facility
  – May need resuscitation

Assessment for Life-Threatening Conditions

• Includes
  – Level of consciousness
  – Airway status
  – Breathing status
  – Circulation status

Level of Consciousness

• First priority
• Accomplished with warm exchange
  – Hi, my name is ______.
  – I’m a paramedic.
  – How can I help you?
Level of Consciousness

- If patient does not respond, assess response to painful stimuli
  - Begin with gentle tactile stimulation
  - Rub patient's shoulder
  - Ask questions
    - Are you okay? Can you hear me?
  - If no response, use uncomfortable stimuli to illicit response
    - Rub sternum
  - Patient who does not respond to verbal or painful stimuli is considered unresponsive

What does the level of consciousness tell you about the patient's oxygenation and circulation?

Which body substance causes the patient with poor perfusion to become diaphoretic?
Airway Status

• Assess airway to ensure good air exchange
• Open and clear obstructions from unresponsive patients

Airway Status

• Responsive patient
  — Assess ability to speak
  — Note signs of airway obstruction or respiratory insufficiency
    • Stridor
    • Snoring
    • Gurgling

What are some possible causes of airway compromise?
Airway Status

• Factors that may compromise airway
  – Tongue obstructing airway in unconscious patient
  – Loose teeth or foreign objects in airway
  – Epiglottitis
  – Upper airway obstruction from any cause
  – Facial and oral bleeding
  – Vomitus
  – Soft-tissue trauma to face and neck
  – Facial fractures

Airway Status

• Compromised airway must be secured manually
  – Using modified jaw thrusts or chin lift
  – Or with adjunct equipment
    • Oral or nasal airways
    • Suction
    • Advanced airway device

Airway Status

• Performing airway procedures for patients who may have cervical spine injury
  – Keep manipulation of cervical spine to a minimum
  – Stabilize head and neck in neutral position
• All patients must have airway established and maintained during primary survey
Breathing Status

- Breathing of responsive patient assessed
  - Adequate rate and quality
  - Too fast (more than 24 breaths/minute)
  - Too slow (fewer than 8 breaths/minute)
  - Absent (choking from airway obstruction)

Breathing Status

- Breathing of unresponsive patient assessed
  - Adequate rate and quality
  - Inadequate
  - Absent

Breathing Status

- Breathing assessed by evaluating
  - Rate
  - Depth (tidal volume)
  - Symmetry of chest movement
Breathing Status

• Symmetry of chest movement
  — Patient’s chest wall should be exposed and palpated for
    • Structural integrity
    • Tenderness
    • Crepitus
  — Observe and note use of muscles of respiration (accessory muscles)
    • Neck
    • Chest
    • Abdomen

Breathing Status

• Symmetry of chest movement
  — Auscultate lungs for presence of bilateral breath sounds
    • Listen to speech
    • Patient who has difficulty speaking without pain or who cannot talk without gasping may need ventilator

Breathing Status

• Respiratory abnormalities that may indicate life-threatening condition
  — Cyanosis
  — Respiratory distress with dyspnea or hypoxia
  — Asymmetrical chest wall movement
  — Chest injury
    • Tension pneumothorax
    • Flail segment
    • Open chest wound
  — Tracheal deviation
  — Distended neck veins
Breathing Status

• Ill or injured patients with ineffective respirations need oxygen and ventilatory support
  – Require supplemental high-concentration oxygen
  – If respiratory rate is fewer than 8 or more than 24 breaths/minute, ventilatory assistance may be needed
    • May coordinate assisted ventilation with patient’s respiratory efforts
    • May intersperse assisted ventilation between patient’s own respiratory efforts as needed to maintain adequate oxygenation

Are there any situations when a patient’s respirations are between 10 and 28 that would require assisted ventilation?

Breathing Status

• If respirations are absent
  – Initiate rescue breathing with pocket mask
  – Positive-pressure ventilation should follow
  – Endotracheal intubation or other advanced airway device may be indicated
Circulation Status

- Evaluated after assessing airway and breathing
- For trauma patients, this includes quick head-to-toe survey
  - Identify and control severe bleeding
- Assess patient's
  - Skin color
  - Moisture
  - Temperature

Circulation Status

- Evaluate pulse
  - Quality
  - Rate
  - Regularity
    - Normal rate: 60 to 100 bpm
    - Tachycardia: over 100 bpm
    - Bradycardia: under 60 bpm
    - Obtainable pulse site may offer critical details about systolic BP and tissue perfusion

Circulation Status

- Capillary refill
  - Capillary filling time may offer crucial details about cardiovascular status
  - Perform test by blanching nail bed or fleshy eminence at base of thumb
  - Observe time it takes for normal color to return
  - Filling time of more than 2 seconds
    - Caused by shunting and capillary closure to peripheral capillary beds
    - Indicates inadequate circulation and impaired cardiovascular function
How do age, gender, and the environment affect capillary refill?

Circulation Status

- Other signs and symptoms of inadequate circulation
  - Altered or decreased level of consciousness
  - Distended neck veins
  - Increased respiratory rate
  - Pale, cool, diaphoretic skin
  - Distant heart sounds
  - Restlessness
  - Thirst

Disability -- Brief Neurological Evaluation

- Perform if time permits during primary survey
- Includes
  - Level of consciousness
  - Pupil size and reactivity
  - Speech
  - Motor function
- Purpose is to gather information about any level of altered consciousness
# Level of Consciousness

- Classifies patient as responsive or unresponsive
- Establishes patient as
  - Alert
  - Oriented to person, place, and date
  - Aware of surroundings

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# Level of Consciousness

- Patient who does not “pass” test is assumed to be disoriented
  - Any deviations to a “normal” test should be recorded and reported
- Other assessments
  - Glasgow Coma Scale
  - Stroke assessment

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# Pupil Size and Reactivity

- Healthy people have pupils that
  - Are equal in size
  - React in concert to light
- Causes of unequal pupils and impaired reactivity
  - Ocular prostheses
  - Eye trauma
  - Head trauma
  - Stroke
  - Conditions that may impair oxygenation
Speech

• Healthy person’s speech should be clear, easy to understand
• Slurred speech and difficulties with speech or nonsensical speech can result from
  – Stroke
  – Seizure
  – Head or facial injury
  – Medical conditions that cause speech impairment
  – Alcohol or drug use

Motor Function

• Uninjured patients should be able to move all extremities on command and without difficulty
• Walk and gait should be smooth and fluid

Motor Function

• Conditions that may affect motor function and movement
  – Extremity injury
  – Stroke
  – Head injury
  – Alcohol or other drug use
  – Medical conditions
    • Multiple sclerosis
    • Arthritis
Exposure

• Some trauma patients require only minimal care
  – Do not need to have their bodies fully exposed
  – Includes stable patients with minor injuries isolated to a specific body part

Exposure

• Other patients with significant injury and those who are potentially unstable
  – Should be completely undressed as part of primary survey
  – Exposure of body may reveal other injuries not easily visible when clothed
    • Bullet wounds
    • Stab wounds
    • Hidden fractures
    • Large areas of bruising or hematoma formation

Exposure

• Every effort should be made to ensure privacy
• Paramedic of same sex should remove clothing
  – Make visual inspection
  – Appropriately cover patient for privacy and warmth
**Vital Functions Assessment**

- Obtain baseline set of vital signs for every patient
  - Pulse rate
  - Respiratory rate
  - Blood pressure
- Other assessments may be indicated
  - Monitoring patient’s oxygen saturation using pulse oximetry
  - ECG monitoring

**Vital Functions Assessment**

- Baseline measurements of vital functions
  - Help identify positive and negative trends in course of care
  - Help identify priority patients
- Measure and record vital signs every 15 minutes for stable patients
  - Every 5 minutes for unstable or potentially unstable patients

**Identifying Priority Care**

- Findings from primary survey used to identify life threats and priority patients
  - Priority patients include those with
    - Poor general impression
    - Decreased level of consciousness
    - Depressed or absent gag or cough reflex
    - No response to commands
    - Difficulty breathing
    - Shock (hypoperfusion)
Identifying Priority Care

• Findings from primary survey used to identify life threats and priority patients
  – Priority patients include those with
    • Complicated childbirth
    • Chest pain with systolic pressure less than 100 mmHg
    • Uncontrolled bleeding
    • Severe pain anywhere
    • Multiple injuries

Identifying Priority Care

• Integration of treatment/procedures needed to preserve life
  – In some cases, definitive care for medical patients can be initiated in prehospital setting
  – Patients with altered consciousness related to hypoglycemia or narcotic overdose
    • Should receive immediate interventions that may completely reverse life-threatening signs and symptoms

Identifying Priority Care

• Integration of treatment/procedures needed to preserve life
  – In severe respiratory emergencies
    • Prehospital care can relieve severe hypoxic signs and symptoms prior to hospital arrival
    • Time spent on scene may be slightly longer
Identifying Priority Care

• Integration of treatment/procedures needed to preserve life
  – Most seriously injured trauma patients require short scene times and rapid transport
    • Should be taken to appropriate trauma center for definitive care
  – Patients needing life-saving care
    • Internal bleeding
    • Major fractures
    • Head injury
    • Multiple system trauma

Identifying Priority Care

• Integration of treatment/procedures needed to preserve life
  – Most trauma life-support training programs
    • Recommend patients needing immediate transport be stabilized and prepared for transport within 10 minutes after EMS arrival
  – Field management should be limited to
    • Airway control
    • Ventilatory support
    • Spinal immobilization
    • Major fracture stabilization
    • Intravenous fluid therapy

Summary

• Sizing up scene consists of initial steps performed on every EMS response, helps to ensure scene safety, provides valuable information to paramedics
• Paramedics should ensure they have access to and wear appropriate personal protective equipment to protect against injury or illness related to unsafe scenes and infectious diseases
Summary

• Primary assessment includes the paramedic’s general impression of the patient, assessment for life-threatening conditions, and identification of priority patients requiring immediate care and transport
• Assessment of life-threatening conditions entails a systematic evaluation of the patient’s level of consciousness, airway, breathing, circulation, disability
• Patient should also be appropriately exposed during primary assessment to detect life threats

Summary

• Information from primary survey is used to identify life threats and to prioritize patients
• Paramedic begins resuscitative measures such as airway maintenance, ventilatory assistance, and cardiopulmonary resuscitation immediately after recognizing the life-threatening condition that necessitates each respective maneuver

Questions?