Chapter 9 - Patient Assessment

1 National EMS Education
Standard Competencies (1 of 10)
Assessment
Applies scene information and patient assessment findings (scene size-up, primary and secondary assessment, patient history, and reassessment) to guide emergency management.

3 National EMS Education
Standard Competencies (2 of 10)
Scene Size-up
- Scene safety
- Scene management
  - Impact of the environment on patient care
  - Addressing hazards
  - Violence

4 National EMS Education
Standard Competencies (3 of 10)
Scene Size-up (cont’d)
- Scene Management (cont’d)
  - Need for additional or specialized resources
  - Standard precautions
  - Multiple-patient situations

5 National EMS Education
Standard Competencies (4 of 10)
Primary Assessment
- Primary assessment for all patient situations
  - Level of consciousness
  - ABCs
  - Identifying life threats
  - Assessment of vital functions
  - Initial general impression

6 National EMS Education
Standard Competencies (5 of 10)
Primary Assessment (cont’d)
- Begin interventions needed to preserve life
- Integration of treatment/procedures needed to preserve life

7 National EMS Education
Standard Competencies (6 of 10)
History Taking
- Determining the chief complaint
- Mechanism of injury/nature of illness
- Associated signs and symptoms
• Investigation of the chief complaint
• Past medical history
• Pertinent negatives

National EMS Education Standard Competencies (7 of 10)
Secondary Assessment
• Performing a rapid full-body scan
• Focused assessment of pain
• Assessment of vital signs
• Techniques of physical examination
  – Respiratory system
    • Presence of breath sounds

National EMS Education Standard Competencies (8 of 10)
Secondary Assessment (cont’d)
• Techniques of physical examination (cont’d)
  – Cardiovascular system
  – Neurologic system
  – Musculoskeletal system
  – All anatomic regions

National EMS Education Standard Competencies (9 of 10)
Monitoring Devices
• Obtaining and using information from patient monitoring devices including (but not limited to):
  – Pulse oximetry
  – Noninvasive blood pressure

National EMS Education Standard Competencies (10 of 10)
Reassessment
• How and when to reassess patients
• How and when to perform a reassessment for all patient situations

Introduction (1 of 3)
• Patient assessment is very important.
• EMTs must master the patient assessment process.
• Patient assessment is used, to some degree, in every patient encounter.

Introduction (2 of 3)
• Five main parts:
  – Scene size-up
  – Primary assessment
  – History taking
  – Secondary assessment
  – Reassessment

Introduction (3 of 3)
Rarely does one sign or symptom show you the patient’s status or underlying problem.

- **Symptom**: subjective condition the patient feels and tells you about
- **Sign**: objective condition you can observe about the patient

### Scene Size-up

- Your evaluation of the conditions in which you will be operating
- Maintain situational awareness
- Scene size-up combines:
  - An understanding of the situation and conditions prior to responding
  - Dispatcher’s basic information
  - Observation of the scene

### Ensure Scene Safety (1 of 3)

- Issues can range from minor difficulties to major dangers.
- Do not enter until the scene is safe for you and your team.
- Typically, the way you enter an area is the way you will leave.
- Wear a high-visibility safety vest on roadways.

### Ensure Scene Safety (2 of 3)

- Consider difficult terrain.
- Consider traffic safety issues.
- Consider environmental conditions.

### Ensure Scene Safety (3 of 3)

- If appropriate, help protect bystanders from becoming patients.
- Hazards range from extreme weather conditions to the threat of physical violence.
- An emergency scene is a dynamically changing environment.
  - If the scene is unsafe, make it safe if possible.
  - If this is not possible, move to a safe location.

### Determine Mechanism of Injury/Nature of Illness (1 of 5)

- Calls for assistance can be categorized as medical conditions, traumatic injuries, or both.
  - A medical problem can lead to a traumatic injury.
- **Mechanism of injury (MOI)**
  - Type or amount of force
  - How long it was applied
  - Where it was applied to the body

### Determine Mechanism of Injury/Nature of Illness (2 of 5)

- Fragile and easily injured areas include the brain, spinal cord, and eyes.
- **Blunt trauma**
  - The force occurs over a broad area.
  - Skin is usually not broken.
  - Tissues and organs below the area of impact may be damaged.

### Determine Mechanism of Injury/Nature of Illness (3 of 5)

- **Penetrating trauma**
  - The force of the injury occurs at a small point of contact between the skin and the object.
– Open wound with high potential for infection

22 Determine Mechanism of Injury/Nature of Illness (4 of 5)
• For medical patients, determine the nature of illness (NOI).
• Similarities between MOI and NOI
  – Both require you to search for clues.
• Talk with the patient, family, or bystanders.
• Use your senses to check for clues.

23 Determine Mechanism of Injury/Nature of Illness (5 of 5)
• Be aware of scenes with more than one patient with similar signs or symptoms.
  – Example: carbon monoxide poisoning
  – Could indicate an unsafe scene for the EMT as well

24 Importance of MOI and NOI
• Considering the MOI or NOI early can be of value in preparing to care for the patient.
• You may be tempted to categorize the patient immediately as either trauma or medical.
  – Fundamentals of good patient assessment are the same.

25 Take Standard Precautions
(1 of 3)
• Wear personal protective equipment (PPE).
  – Should be adapted to the prehospital task at hand

26 Take Standard Precautions
(2 of 3)
• Standard precautions have been recommended for use in dealing with:
  – Objects
  – Blood
  – Body fluids
  – Other potential exposure risks of communicable disease

27 Take Standard Precautions
(3 of 3)
• When you step out of the EMS vehicle, standard precautions must have been already taken or initiated.
  – At a minimum, gloves must be in place.
  – Consider glasses and a mask.

28 Determine Number of Patients (1 of 2)
• During scene size-up, accurately identify the total number of patients.
  – Critical in determining the need for additional resources
• When there are multiple patients, use the incident command system, identify the number of patients, and then begin triage.

29 Determine Number of Patients (2 of 2)
• Triage is the process of sorting patients based on the severity of each patient’s condition.

30 Consider Additional/Specialized Resources (1 of 3)
• Some situations may require:
  – More ambulances
  – Specialized resources
Consider Additional/Specialized Resources (2 of 3)
• Specialized resources include:
  – Advanced life support (ALS)
  – Air medical support
  – Fire departments, who may handle high-angle rescue, hazardous materials, or water rescue
  – Law enforcement

Consider Additional/Specialized Resources (3 of 3)
• To determine if you require additional resources, ask yourself:
  – Does the scene pose a threat to me, my patient, or others?
  – How many patients are there?
  – Do we have the resources to respond to their conditions?

Primary Assessment
• Begins when you greet your patient
• The goal is to identify and initiate treatment of immediate or potential life threats.
• Physically examine the patient and assess:
  – LOC
  – ABCs

Form a General Impression (1 of 3)
• Formed to determine the priority of care
• First part of primary assessment
• Make a note of the person’s:
  – Age, sex, and race
  – Level of distress
  – Overall appearance

Form a General Impression (2 of 3)
• Note the patient’s position.
• Avoid standing over the patient.
• Address the patient by name.
• Introduce yourself.
• Ask about the chief complaint.
• Address life-threats immediately.

Form a General Impression (3 of 3)
• Determine if the patient’s condition is:
  – Stable
  – Stable but potentially unstable
  – Unstable

Assess Level of Consciousness (1 of 8)
• The level of consciousness (LOC) can tell you a great deal about the patient’s neurologic and physiologic status.

Assess Level of Consciousness (2 of 8)
• Categories:
  – Unconscious
  – Conscious with an altered LOC
  – Conscious with an unaltered LOC

40 Assess Level of Consciousness (4 of 8)
• Conscious with an altered LOC may be due to inadequate perfusion.
  – Perfusion is the circulation of blood within an organ or tissue.
• Could also be caused by medications, drugs, alcohol, or poisoning

41 Assess Level of Consciousness (5 of 8)
• To assess for responsiveness, use the mnemonic AVPU:
  – Awake and alert
  – Responsive to Verbal stimuli
  – Responsive to Pain
  – Unresponsive

42 Assess Level of Consciousness (6 of 8)

43 Assess Level of Consciousness (7 of 8)
• Orientation tests mental status.
• Evaluates a patient’s ability to remember:
  – Person
  – Place
  – Time
  – Event

44 Assess Level of Consciousness (8 of 8)
• Evaluates long-term memory, intermediate-term memory, and short-term memory
• Altered mental status
  – Any deviation from alert and oriented to person, place, time, and event
  – Any deviation from the patient’s normal baseline

45 Identify and Treat Life-Threats (1 of 2)
• Conditions that cause sudden death:
  – Airway obstruction
  – Respiratory failure
  – Respiratory arrest
  – Shock
  – Severe bleeding
  – Primary cardiac arrest

46 Identify and Treat Life-Threats (2 of 2)
• In most cases, begin with airway, followed by breathing and circulation (ABC).
• In some cases, it may be appropriate to address life threats to circulation first (CAB).
Assess the Airway (1 of 4)
- Moving through the primary assessment, stay alert for signs of airway obstruction.
- Ensure the airway remains open (patent) and adequate.

Assess the Airway (2 of 4)
- Responsive patients
  - Patients who are talking or crying have an open airway.
  - Watch and listen to how patients speak.
  - If you identify an airway problem, stop the assessment and work to clear the patient’s airway.

Assess the Airway (3 of 4)
- Unresponsive patients
  - Immediately assess the airway.
  - Use the jaw-thrust technique when necessary.
  - Use the head tilt–chin lift technique when necessary.
  - Relaxation of the tongue muscles is a cause of airway obstruction.

Assess the Airway (4 of 4)
- Signs of obstruction in an unconscious patient:
  - Obvious trauma, blood, or obstruction
  - Noisy breathing (snoring, bubbling, gurgling, crowing, abnormal sounds)
  - Extremely shallow or absent breathing

Assess Breathing (1 of 5)
- Make sure the patient’s airway is open.
- Make sure the patient’s breathing is present and adequate.
- Ask yourself:
  - Is the patient breathing?
  - Is the patient breathing adequately?
  - Is the patient hypoxic?

Assess Breathing (2 of 5)
- Consider providing positive-pressure ventilations with an airway adjunct when:
  - Respirations exceed 28 breaths/min
  - Respirations are fewer than 8 breaths/min
- The goal for oxygenation for most patients is an oxygen saturation of approximately 94% to 99%.

Assess Breathing (3 of 5)
- Observe how much effort is required for the patient to breathe:
  - Retractions
  - Use of accessory muscles
  - Nasal flaring
  - Two-to-three-word dyspnea
  - Tripod position
  - Sniffing position
  - Labored breathing

Assess Breathing (4 of 5)
- Respiratory distress
– Increased work of breathing
– Increased effort and rate

55 Assess Breathing (5 of 5)
• Respiratory failure
  – Occurs when the blood is inadequately oxygenated or ventilation is inadequate to meeting the oxygen demands of the body
  – The ultimate result of respiratory failure if it is not corrected

56 Assess Circulation (1 of 11)
• Assess:
  – Mental status
  – Pulse
  – Skin condition

57 Assess Circulation (2 of 11)
• Assess pulse
  – The pulse is the pressure wave that occurs as each heartbeat causes a surge in the blood circulating through the arteries.
  – Palpate (feel) the pulse.
  – If you cannot palpate a pulse in an unresponsive patient, begin CPR.

58 Assess Circulation (3 of 11)
• Skin condition
  – Evaluate the patient’s skin color, temperature, moisture, and capillary refill.
  – A normally functioning circulatory system perfuses the skin with oxygenated blood

59 Assess Circulation (4 of 11)
• Skin color
  – Determined by the blood circulating through vessels and the amount and type of pigment present in the skin
  – Poor circulation will cause the skin to appear pale, white, ashen, or gray.

60 Assess Circulation (5 of 11)
• Skin color (cont’d)
  – When blood is not properly saturated with oxygen, it appears bluish.
  – Changes in skin color may result from chronic illness.

61 Assess Circulation (6 of 11)
• Skin temperature
  – Normal skin will be warm to the touch (98.6°F).
  – Abnormal skin temperatures are hot, cool, cold, and clammy.

62 Assess Circulation (7 of 11)
• Skin moisture
  – Dry skin is normal.
  – Skin that is wet, moist, or excessively dry and hot suggests a problem.

63 Assess Circulation (8 of 11)
• Capillary refill
  – Evaluated to assess the ability of the circulatory system to restore blood to the capillary system
  – Press on the patient’s fingernail.
– Remove the pressure.
– The nail bed should restore to its normal pink color.

**Assess Circulation (9 of 11)**
- Capillary refill (cont’d)
  - Should be restored to normal within 2 seconds

**Assess Circulation (10 of 11)**
- Assess and control external bleeding in trauma patients.
  - Should occur before addressing airway or breathing concerns.
  - Bleeding from a large vein is characterized by a steady flow of blood.
  - Bleeding from an artery is characterized by a spurting flow of blood.

**Assess Circulation (11 of 11)**
- Controlling external bleeding can be simple.
  - Apply direct pressure.
  - Apply a tourniquet if:
    - Direct pressure is not quickly successful
    - Obvious arterial hemorrhage of an extremity

**Perform a Rapid Scan**
- Scan the body to identify injuries that must be managed or protected before the patient is transported.
  - Take 60 to 90 seconds to perform.
  - Not a systematic or focused physical examination

**Determine Priority of Patient Care and Transport (1 of 5)**
- Primary assessment assists in determining transport priority.
- High-priority patients include those with any of the following conditions:
  - Unresponsive
  - Poor general impression
  - Difficulty breathing

**Determine Priority of Patient Care and Transport (2 of 5)**
- High-priority patients (cont’d):
  - Uncontrolled bleeding
  - Responsive but unable to follow commands
  - Severe chest pain
  - Pale skin or other signs of poor perfusion
  - Complicated childbirth
  - Severe pain in any area of the body

**Determine Priority of Patient Care and Transport (3 of 5)**
- The Golden Hour (The Golden Period) is the time from injury to definitive care.
  - Treatment of shock and traumatic injuries should occur.
  - Aim to assess, stabilize, package, and begin transport to the appropriate facility within 10 minutes after arrival on scene (“Platinum 10”).

**Determine Priority of Patient Care and Transport (4 of 5)**

**Determine Priority of Patient Care and Transport (5 of 5)**
- Transport decisions should be made at this point, based on:
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- Patient’s condition
- Availability of advanced care
- Distance of transport
- Local protocols

73  **History Taking (1 of 4)**
- Provides detail about the chief complaint and the patient’s signs and symptoms
- Includes demographic information:
  - Date of the incident
  - Patient’s age, gender, race, past medical history, and current health status

74  **History Taking (2 of 4)**
- Investigate the chief complaint.
  - Make introductions, make the patient feel comfortable, and obtain permission to treat.
  - Ask a few simple and direct questions.
  - Refer to the patient as Mr., Ms., or Mrs., using the patient’s last name.
  - Ask open-ended questions.

75  **History Taking (3 of 4)**
- If the patient is unresponsive, patient information and clues about the incident may be obtained from:
  - Family members present
  - A person who may have witnessed the situation
  - Bystanders
  - Medical alert jewelry
  - Other patient medical history documentation

76  **History Taking (4 of 4)**
- Use the OPQRST mnemonic to assess symptoms.
  - Onset
  - Provocation or palliation
  - Quality
  - Region/radiation
  - Severity
  - Timing
- Identify pertinent negatives.

77  **Obtain a SAMPLE History**
- Use the mnemonic SAMPLE to obtain the following information:
  - Signs and symptoms
  - Allergies
  - Medications
  - Pertinent past medical history
  - Last oral intake
  - Events leading up to the injury/illness

78  **Critical Thinking in Assessment**
- Gathering
  - Seeking facts
- Evaluating
  - Considering what the information means
• Synthesizing
  – Putting the information together to plan scene management and patient care

79 Taking History on Sensitive Topics (1 of 3)
• Alcohol and drugs
  – Signs may be confusing, hidden, or disguised.
  – Patient may deny having any problems.
  – History gathered may be unreliable.
  – Do not judge the patient.
  – Be professional in your approach.

80 Taking History on Sensitive Topics (2 of 3)
• Physical abuse or violence
  – Report all physical abuse or domestic violence to the appropriate authorities.
  – Follow local protocols.
  – Do not accuse; instead, immediately involve law enforcement.

81 Taking History on Sensitive Topics (3 of 3)
• Sexual history
  – Consider all female patients of childbearing age who report lower abdominal pain to be pregnant.
  – Inquire about urinary symptoms with male patients.
  – When appropriate, ask all patients about the potential for sexually transmitted diseases.

82 Special Challenges in Obtaining Patient History (1 of 14)
• Silence
  – Patience is extremely important.
  – Use a close-ended question that requires a simple yes or no answer.
  – Consider whether the silence is a clue to the patient’s chief complaint.

83 Special Challenges in Obtaining Patient History (2 of 14)
• Overly talkative
  – Reasons why a patient may be overly talkative:
    • Excessive caffeine consumption
    • Nervousness
    • Ingestion of cocaine, crack, or methamphetamines
    • Underlying psychologic issue

84 Special Challenges in Obtaining Patient History (3 of 14)
• Multiple symptoms
  – Often true of older patients
  – Prioritize the patient’s complaints as you would in triage.
  – Start with the most serious and end with the least serious.

85 Special Challenges in Obtaining Patient History (4 of 14)
• Anxiety
  – Some anxious patients show signs of psychological shock:
    • Pallor
    • Diaphoresis
    • Shortness of breath
    • Numbness in the hands and feet
Special Challenges in Obtaining Patient History (5 of 14)
- Anger and hostility
  - Friends, family, or bystanders may direct their anger and rage toward you.
  - Remain calm, reassuring, and gentle.
  - If the scene is not safe or secured, get it secured.

Special Challenges in Obtaining Patient History (6 of 14)
- Intoxication
  - Do not put an intoxicated patient in a position where he or she feels threatened.
  - Potential for violence and a physical confrontation is high.
  - Alcohol dulls a patient’s senses.

Special Challenges in Obtaining Patient History (7 of 14)
- Crying
  - A patient who cries may be sad, in pain, or emotionally overwhelmed.
  - Remain calm; be patient, reassuring, and confident; and maintain a soft voice.

Special Challenges in Obtaining Patient History (8 of 14)
- Depression
  - Among the leading causes of disability worldwide
  - Symptoms include sadness, hopelessness, restlessness, irritability, sleeping and eating disorders, and a decreased energy level.
  - Be a good listener.

Special Challenges in Obtaining Patient History (9 of 14)
- Confusing behavior or history
  - Conditions such as hypoxia, stroke, diabetes, trauma, medications, and other drugs could alter a patient’s explanation of events.
  - Older patients could have dementia, delirium, or Alzheimer’s disease.

Special Challenges in Obtaining Patient History (10 of 14)
- Limited cognitive abilities
  - Keep your questions simple, and limit the use of medical terms.
  - Be alert for partial answers and keep asking questions.
  - Rely on the presence of family, caregivers, and friends to supply answers.

Special Challenges in Obtaining Patient History (11 of 14)
- Cultural challenges
  - Do not use medical language.
  - Patients may prefer to speak with health care providers of the same gender.
  - Gain the assistance of the patient’s friends or family members.
  - Enlist the help of health care providers of the same culture or background, if possible.

Special Challenges in Obtaining Patient History (12 of 14)
- Language barriers
  - Find an interpreter, if possible.
  - If not, determine if the patient understands who you are.
  - Keep questions straightforward and brief.
  - Use hand gestures.
– Be aware of the language diversity in your community.

Special Challenges in Obtaining Patient History (13 of 14)
• Hearing problems
  – Ask questions slowly and clearly.
  – Use a stethoscope to function as a hearing aid.
  – Learn simple sign language to help with communication.
  – Use a pencil and paper.

Special Challenges in Obtaining Patient History (14 of 14)
• Visual impairments
  – Identify yourself verbally when you enter the scene.
  – Return any items that have been moved to their previous positions.
  – Explain to the patient what is happening in each step of the vital signs assessment.

Secondary Assessment (1 of 4)
• May be performed on-scene, in the back of the ambulance en route to the hospital, or not at all
• Purpose is to perform a systematic physical examination of the patient
• May be a systematic head-to-toe secondary assessment or an assessment that focuses on a certain area or system of the body

Secondary Assessment (2 of 4)
• How and what to assess:
  – Inspection—Look at the patient for abnormalities.
  – Palpation—Touch or feel the patient for abnormalities.
  – Auscultation—Listen to the sounds a body makes by using a stethoscope.

Secondary Assessment (3 of 4)
• Use the mnemonic DCAP-BTLS.
• Compare findings on one side of the body with the other side when possible.

Secondary Assessment (4 of 4)
• Systematically assess the patient—secondary assessment
  – Goal is to identify hidden injuries or identify causes missed during 60- to 90-second exam during primary assessment.

Focused Assessment
• Performed on patients who have sustained nonsignificant MOIs or on responsive medical patients
• Typically based on the chief complaint
• Goal is to focus your attention on the body part or systems affected by the priority problems

Respiratory System (1 of 7)
• Expose the patient’s chest.
• Look for signs of airway obstruction.
• Inspect for symmetry.
• Listen to breath sounds.
• Measure the respiratory rate.
• Look for retractions and increased work of breathing.

Respiratory System (2 of 7)
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- **Respiratory rate**
  - A normal rate in adults ranges from 12 to 20 breaths/min.
  - Children breathe at even faster rates.
  - Count the number of breaths in a 30-second period and multiply by two.

103 **Respiratory System (3 of 7)**
- **Respiratory rhythm**
  - Regular
    - The time from one peak chest rise to the next is fairly consistent
  - Irregular
    - The respirations vary or the rate changes frequently

104 **Respiratory System (4 of 7)**
- **Quality of breathing**
  - Normal breathing is silent.
  - Breathing accompanied by other sounds may indicate a significant respiratory problem.

105 **Respiratory System (5 of 7)**
- **Depth of breathing**
  - Amount of air the patient exchanges depends on the rate and tidal volume
- **Breath sounds**
  - You can almost always hear breath sounds better from the patient’s back.

106 **Respiratory System (6 of 7)**
107 **Respiratory System (7 of 7)**
- **What are you listening for?**
  - Normal breath sounds
  - Snoring breath sounds
  - Wheezing breath sounds
  - Crackles
  - Rhonchi
  - Stridor

108 **Cardiovascular System (1 of 10)**
- Look for trauma to the chest and listen for breath sounds.
- Consider the pulse, respiratory rate, and blood pressure.
- Pay attention to rate, quality, and rhythm.

109 **Cardiovascular System (2 of 10)**
- Consider your findings when assessing the skin.
- Check and compare distal pulses.
- Consider auscultation for abnormal heart sounds.

110 **Cardiovascular System (3 of 10)**
- **Pulse rate**
  - Normal resting pulse for an adult is between 60 and 100 beats/min.
  - The younger the patient, the faster the pulse.

111 **Cardiovascular System (4 of 10)**
• Pulse quality
  – Describe a stronger than normal pulse as “bounding.”
  – A pulse that is weak and difficult to feel is described as “weak” or “thready.”

Cardiovascular System (5 of 10)
• Pulse rhythm
  – Regular
    • The interval between each contraction should be the same
    • The pulse should occur at a constant, regular rhythm
  – Irregular
    • If the heart periodically has an early or late beat
    • If a pulse beat is missed

Cardiovascular System (6 of 10)
• Blood pressure
  – Pressure of circulating blood against the walls of the arteries
  – A drop in blood pressure may indicate:
    • A loss of blood or fluid components
    • A loss of vascular tone and sufficient arterial constriction
    • A cardiac pumping problem

Cardiovascular System (7 of 10)
• Blood pressure (cont’d)
  – Decreased blood pressure is a late sign of shock.
  – Abnormally high blood pressure may result in a rupture or other critical damage in the arterial system.

Cardiovascular System (8 of 10)
• A blood pressure cuff with gauge contains the following components:
  – A wide outer cuff
  – An inflatable wide bladder
  – A ball-pump with a one-way valve
  – A pressure gauge

Cardiovascular System (9 of 10)
• Auscultation is the most common means of measuring blood pressure.
• Palpation method does not depend on the ability to hear sounds.

Cardiovascular System (10 of 10)
• Normal blood pressure
  – Hypotension: Blood pressure is lower than normal.
  – Hypertension: Blood pressure is higher than normal.

Neurologic System (1 of 2)
• Neurologic assessment
  – Should be performed with any patient who has:
    • Changes in mental status
    • A possible head injury
    • Stupor
    • Dizziness/drowsiness
    • Syncope
Neurologic System (2 of 2)
- Neurologic assessment (cont’d)
  - Evaluate the level of consciousness and orientation.
  - Use the AVPU scale if appropriate.
  - The Glasgow Coma Scale (GCS) can be helpful in providing additional information.

Pupils (1 of 4)
- The pupil is the black center portion of the eye.
  - The pupils are normally round and of approximately equal size.
  - In the absence of any light, the pupils will become fully relaxed and dilated.

Pupils (2 of 4)

Pupils (3 of 4)
- A small number of the population exhibit unequal pupils (anisocoria).
- Causes of depressed brain function:
  - Injury of the brain or brain stem
  - Trauma or stroke
  - Brain tumor
  - Inadequate oxygenation or perfusion
  - Drugs or toxins

Pupils (4 of 4)
- PEARRL is a useful assessment guide:
  - Pupils
  - Equal
  - And
  - Round
  - Regular in size
  - React to Light

Neurovascular Status
- Check for bilateral muscle strength and weakness.
- Complete a thorough sensory assessment.
- Test for pain, sensations, and position.
- Compare distal and proximal sensory and motor responses and one side with the other.

Anatomic Regions (1 of 6)
- Head, neck, and cervical spine
  - Palpate the scalp and skull.
  - Check the patient’s eyes.
  - Check the color of the sclera.
  - Assess the patient’s cheekbones.
  - Check the patient’s ears and nose for fluid.

Anatomic Regions (2 of 6)
- Head, neck, and cervical spine (cont’d)
  - Check the upper (maxillae) and lower (mandible) jaw.
  - Open the patient’s mouth and look for any broken or missing teeth.
  - Note any unusual odors in the mouth.
Anatomic Regions (3 of 6)

- Chest
  - Inspect, visualize, and palpate.
  - Watch for both sides of the chest to rise and fall together with normal breathing.
  - Observe for abnormal breathing signs.

Anatomic Regions (4 of 6)

- Abdomen
  - Palpate for tenderness, rigidity, and patient guarding.
  - Four quadrants:
    - Left upper quadrant (LUQ)
    - Left lower quadrant (LLQ)
    - Right upper quadrant (RUQ)
    - Right lower quadrant (RLQ)

Anatomic Regions (5 of 6)

- Pelvis
  - Inspect for symmetry and any obvious signs of injury, bleeding, and deformity.
- Extremities
  - Inspect for symmetry, cuts, bruises, swelling, obvious injuries, and bleeding.
  - Palpate for deformities.
  - Check for pulses and motor and sensory functions.

Anatomic Regions (6 of 6)

- Posterior body
  - Inspect the back for DCAP-BTLS, symmetry, and open wounds
  - Palpate the spine from the neck to the pelvis for tenderness and deformity.

Assess Vital Signs (1 of 4)

- Use appropriate monitoring devices.
  - Should never replace your comprehensive assessment of the patient.
- Pulse oximetry
  - Used to evaluate oxygenation’s effectiveness

Assess Vital Signs (2 of 4)

- Pulse oximetry (cont’d)
  - Measures the oxygen saturation of hemoglobin in the capillary beds
  - Patients with difficulty breathing should receive oxygen regardless of their pulse oximetry value.

Assess Vital Signs (3 of 4)

- Capnography
  - Can quickly provide information on a patient’s ventilation, circulation, and metabolism
- Blood glucometry
  - Measures the level of glucose in the bloodstream

Assess Vital Signs (4 of 4)

- Noninvasive blood pressure measurement
  - The sphygmo-manometer (blood pressure cuff) is used to measure blood pressure.

Reassessment (1 of 4)
• Perform at regular intervals during the assessment process
• Repeat the primary assessment.
• Reassess vital signs.
  – Compare with the baseline vital signs obtained during the primary assessment.
  – Look for trends.

Reassessment (2 of 4)
• Reassess the chief complaint.
  – Ask and answer the following questions:
    • Is the current treatment improving the patient’s condition?
    • Has an already identified problem gotten better?
    • Has an already identified problem gotten worse?
    • What is the nature of any newly identified problems?

Reassessment (3 of 4)
• Recheck interventions.
  – Check all interventions.
  – Most important are the patient’s ABCs.
  – Ensure management of bleeding.
  – Ensure adequacy of other interventions, and consider the need for new interventions.

Reassessment (4 of 4)
• Identify and treat changes in the patient’s condition.
  – Document any changes, whether positive or negative.
• Reassess the patient.
  – Unstable patients: approximately every 5 minutes
  – Stable patients: approximately every 15 minutes

Review
1. During the scene size-up, you should routinely determine all of the following, EXCEPT:
   A. the mechanism of injury or nature of illness.
   B. the ratio of pediatric patients to adult patients.
   C. whether or not additional resources are needed.
   D. if there are any hazards that will jeopardize safety.

Answer: B
Rationale: Components of the scene size-up—after taking standard precautions—include determining if the scene is safe for entry, determining the mechanism of injury or nature of illness, determining the number of patients, and determining if additional resources are needed at the scene.

Review
1. During the scene size-up, you should routinely determine all of the following, EXCEPT:
   A. the mechanism of injury or nature of illness.
      Rationale: This is part of the scene size-up.
   B. the ratio of pediatric patients to adult patients.
      Rationale: Correct answer
   C. whether or not additional resources are needed.
      Rationale: This is part of the scene size-up.
   D. if there are any hazards that will jeopardize safety.
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Rationale: This is part of the scene size-up.

Review

2. You arrive at the scene of an “injured person.” As you exit the ambulance, you see a man lying on the front porch of his house. He appears to have been shot in the head and is lying in a pool of blood. You should:
   A. immediately assess the patient.
   B. proceed to the patient with caution.
   C. quickly assess the scene for a gun.
   D. retreat to a safe place and wait for law enforcement to arrive.

Answer: D
Rationale: Your primary responsibility as an EMT is to protect yourself. Prior to entering any scene, you must assess for potential dangers. In cases where violence has occurred, you must retreat to a safe place and wait for law enforcement personnel to arrive.

Review (1 of 2)

2. You arrive at the scene of an “injured person.” As you exit the ambulance, you see a man lying on the front porch of his house. He appears to have been shot in the head and is lying in a pool of blood. You should:
   A. immediately assess the patient.
      Rationale: You must wait until the scene is safe.
   B. proceed to the patient with caution.
      Rationale: You must wait until the scene is safe.

Review (2 of 2)

2. You arrive at the scene of an “injured person.” As you exit the ambulance, you see a man lying on the front porch of his house. He appears to have been shot in the head and is lying in a pool of blood. You should:
   C. quickly assess the scene for a gun.
      Rationale: This is the responsibility of law enforcement.
   D. retreat to a safe place and wait for law enforcement to arrive.
      Rationale: Correct answer

Review

3. Findings such as inadequate breathing or an altered level of consciousness should be identified in the:
   A. primary assessment.
   B. focused assessment.
   C. secondary assessment.
   D. reassessment.

Answer: A
Rationale: The purpose of the primary assessment is to identify and manage any life threats to the patient, such as inadequate breathing, an altered level of consciousness, or severe hemorrhage.

Review (1 of 2)

3. Findings such as inadequate breathing or an altered level of consciousness should be identified in the:
   A. primary assessment.
Chapter 9 - Patient Assessment

Rationale: Correct answer
B. focused assessment.
   Rationale: The focused assessment takes place during the secondary assessment if appropriate.

Review (2 of 2)
3. Findings such as inadequate breathing or an altered level of consciousness should be identified in the:
   C. secondary assessment.
      Rationale: The purpose of the secondary assessment is to perform a systematic physical examination of the patient after the primary assessment.
   D. reassessment.
      Rationale: Reassessment is performed to identify and treat changes in a patient’s condition after the primary assessment.

Review
4. Which of the following would you NOT detect while determining your initial general impression of a patient?
   A. Cyanosis
   B. Gurgling respirations
   C. Severe bleeding
   D. Rapid heart rate

Answer: D
Rationale: The initial general impression is what you first notice as you approach the patient, but before physical contact with the patient is made. It is what you see, hear, or smell. A rapid heart rate (tachycardia) would not be detected until you actually perform the entire primary assessment; you cannot see, hear, or smell tachycardia.

Review (1 of 2)
4. Which of the following would you NOT detect while determining your initial general impression of a patient?
   A. Cyanosis
      Rationale: You can see cyanosis while determining your initial general impression.
   B. Gurgling respirations
      Rationale: You can hear gurgling while determining your initial general impression.

Review (2 of 2)
4. Which of the following would you NOT detect while determining your initial general impression of a patient?
   C. Severe bleeding
      Rationale: You can see bleeding while determining your initial general impression.
   D. Rapid heart rate
      Rationale: Correct answer

Review
5. Your primary assessment of an elderly woman who fell reveals an altered level of consciousness and a large hematoma to her forehead. After protecting her spine and administering oxygen, you should:
   A. reassess your interventions.
   B. perform a rapid exam.
   C. transport the patient immediately.
D. perform a focused assessment of her head.

**Review**

Answer: B

Rationale: If any life-threatening problems are discovered in the primary assessment, they should be addressed immediately. The EMT should then perform a rapid exam to look for other potentially life-threatening injuries or conditions.

**Review (1 of 2)**

5. Your primary assessment of an elderly woman who fell reveals an altered level of consciousness and a large hematoma to her forehead. After protecting her spine and administering oxygen, you should:
   A. reassess your interventions.
      Rationale: This is the last step of the patient assessment process.
   B. perform a rapid exam.
      Rationale: Correct answer

**Review (2 of 2)**

5. Your primary assessment of an elderly woman who fell reveals an altered level of consciousness and a large hematoma to her forehead. After protecting her spine and administering oxygen, you should:
   C. transport the patient immediately.
      Rationale: This is determined after the completion of a rapid exam.
   D. perform a focused assessment of her head.
      Rationale: This performed during the secondary assessment.

**Review**

6. A semiconscious patient pushes your hand away when you pinch his earlobe. You should describe his level of consciousness as:
   A. alert.
   B. unresponsive.
   C. responsive to painful stimuli.
   D. responsive to verbal stimuli.

**Review**

Answer: C

Rationale: Semiconscious patients are not alert, nor are they unresponsive. The fact that the patient pushes your hand away when you pinch his earlobe indicates that he is responsive to painful stimuli. If he opens his eyes or responds when you speak to him, he would be described as being responsive to verbal stimuli.

**Review (1 of 2)**

6. A semiconscious patient pushes your hand away when you pinch his earlobe. You should describe his level of consciousness as:
   A. alert.
      Rationale: This is when the patient’s eyes open spontaneously as you approach.
   B. unresponsive.
      Rationale: This is when the patient does not respond to any stimulus.

**Review (2 of 2)**

6. A semiconscious patient pushes your hand away when you pinch his earlobe. You should describe his level of consciousness as:
   C. responsive to painful stimuli.
Chapter 9 - Patient Assessment

Rationale: Correct answer
D. responsive to verbal stimuli.
Rationale: This is when the patient’s eyes open with verbal stimuli and he or she tries to respond.

7. Assessment of an unconscious patient’s breathing begins by:
   A. inserting an oral airway.
   B. manually positioning the head.
   C. assessing respiratory rate and depth.
   D. clearing the mouth with suction as needed.

Answer: B
Rationale: You cannot assess or treat an unconscious patient’s breathing until the airway is patent—that is, open and free of obstructions. Manually open the patient’s airway (eg, head tilt–chin lift, jaw-thrust), use suction as needed to clear the airway of blood or other liquids, insert an airway adjunct to assist in maintaining airway patency, and then assess the patient’s respiratory effort.

7. Assessment of an unconscious patient’s breathing begins by:
   A. inserting an oral airway.
      Rationale: You insert an airway adjunct to assist in maintaining airway patency after the head tilt–chin lift.
   B. manually positioning the head.
      Rationale: Correct answer

7. Assessment of an unconscious patient’s breathing begins by:
   C. assessing respiratory rate and depth.
      Rationale: After the airway is opened and suctioned, then determine the patient’s respiratory effort by assessing the respiratory rate and depth.
   D. clearing the mouth with suction as needed.
      Rationale: This is done after attempting to open the airway with proper positioning.

8. Your 12-year-old patient can speak only two or three words without pausing to take a breath. He has a serious breathing problem known as:
   A. nasal flaring.
   B. two- to three-word dyspnea.
   C. labored breathing.
   D. shallow respirations.

Answer: B
Rationale: Two- to three-word dyspnea is a severe breathing problem in which a patient can speak only two to three words at a time without pausing to take a breath.
Rationale: Nasal flaring is the flaring out of the nostrils.

B. two- to three-word dyspnea.
Rationale: Correct answer

Review (2 of 2)
8. Your 12-year-old patient can speak only two or three words without pausing to take a breath. He has a serious breathing problem known as:
   C. labored breathing.
   Rationale: Labored breathing requires increased effort and is characterized by increased effort and depth of each respiration.
   D. shallow respirations.
   Rationale: Shallow respirations are characterized by little movement of the chest wall or poor chest excursion.

Review
9. How should you determine the pulse in an unresponsive 8-year-old patient?
   A. Palpate the radial pulse at the wrist.
   B. Palpate the brachial pulse inside the upper arm.
   C. Palpate the radial pulse with your thumb.
   D. Palpate the carotid pulse in the neck.

Review
Answer: D
Rationale: In unresponsive patients older than 1 year, you should palpate the carotid pulse in the neck. If you cannot palpate a pulse in an unresponsive patient, begin CPR.

Review (1 of 2)
9. How should you determine the pulse in an unresponsive 8-year-old patient?
   A. Palpate the radial pulse at the wrist.
   Rationale: Only palpate here in responsive patients who are older than 1 year.
   B. Palpate the brachial pulse inside the upper arm.
   Rationale: Only palpate here in children younger than 1 year because the radial and carotid pulses are difficult to locate.

Review (2 of 2)
9. How should you determine the pulse in an unresponsive 8-year-old patient?
   C. Palpate the radial pulse with your thumb.
   Rationale: Do not palpate a pulse with your thumb. You may mistake the strong pulsing circulation in your thumb for the patient’s pulse.
   D. Palpate the carotid pulse in the neck.
   Rationale: Correct answer

Review
10. When assessing your patient’s pain, he says it started in his chest but has spread to his legs. This is an example of what part of the OPQRST mnemonic?
   A. Onset
   B. Quality
   C. Region/radiation
   D. Severity

Review
Answer: C
Rationale: The region/radiation section of the OPQRST mnemonic assesses a patient’s pain—
where it hurts and where the pain has spread. Because the patient informed you that his pain spread from his chest to his legs, this would be an example of radiation.

**Review (1 of 2)**

10. When assessing your patient’s pain, he says it started in his chest but has spread to his legs. This is an example of what part of the OPQRST mnemonic?

   A. Onset
   Rationale: This assesses the cause of the pain and when it began.

   B. Quality
   Rationale: This assesses the patient’s description of the pain.

**Review (2 of 2)**

10. When assessing your patient’s pain, he says it started in his chest but has spread to his legs. This is an example of what part of the OPQRST mnemonic?

   C. Region/radiation
   Rationale: Correct answer

   D. Severity
   Rationale: This assesses the severity of the patient’s pain.