Chapter 10, Patient Assessment

## 1. Introduction to Patient Assessment

* + Patient assessment is very important in emergency care .
  + The assessment process has five main parts .These parts are scene size up, Primary assessment, History taking, Secondary assessment, and Reassessment .
  + The order of these steps can change depending on the patient and the situation .
  + You might change the order after the scene size up based on what you find .
  + One sign or symptom usually does not show the whole problem .
  + A symptom is something the patient feels and tells you about . A sign is something you can see or measure .

## 2. Scene Size-Up

* + Scene size-up is checking the conditions where you will work .
  + Being aware of your surroundings is needed throughout the call for safety .
  + The dispatcher gives basic information about the call .
  + Scene size-up uses information and observations for safe operations .
  + Ensuring scene safety is very important .Problems can be minor or major dangers .If the scene is not safe, try to make it safe or call for more help .Consider traffic safety on roads .Think about environmental conditions .Help protect bystanders from getting hurt .
  + Hazards can be environmental, physical, chemical, electrical, water, fire, explosions, or physical violence .Be aware of scenes with possible violence from patients, family, bystanders, gangs, or crowds .
  + An emergency scene can change quickly .
  + Determine the Mechanism of injury (MOI) or Nature of illness (NOI) .Calls can be medical, trauma, or both .Trauma injuries are from physical force to the body .For trauma, find the MOI . Common MOI terms are blunt trauma and penetrating trauma .For medical patients, find the NOI .You might need to ask the patient, family, or bystanders, or look for clues .Scenes with many patients with similar symptoms, like carbon monoxide, mean the scene might be unsafe for EMTs .Knowing the MOI or NOI helps you prepare to care for the patient .
  + Next, take Standard precautions .Standard precautions and Personal protective equipment (PPE) should fit the task .Standard precautions are protective steps for dealing with blood, body fluids, skin, and mucous membranes .Assume all blood and body fluids could cause infection .Standard precautions must start before patient contact .At least wear gloves before touching the patient .Consider glasses and a mask .
  + Determine the number of patients .Identify the total number of patients accurately .For multiple patients, use the incident command system and start Triage .Triage is sorting patients by how bad their condition is .
  + Consider additional resources .This could mean more ambulances, police, a helicopter, or fire trucks .It might also mean advanced life support or air medical transport .Fire departments may handle hazmat, technical rescue, extrication, or water rescue .You might also need law enforcement .
  + Questions to ask about needing more resources: Does the scene threaten you or the patient? How many patients are there? Do you have enough resources to help them?

Hazard TypeExamplesEnvironmentalWeather, terrain PhysicalTraffic, unstable structures ChemicalHazardous materials ElectricalDowned power lines WaterDrowning risk FireFlames, smoke ExplosionsBlast zones Physical ViolenceViolent patients, angry crowds

## 3. Primary Assessment

* + Patient assessment starts when you meet the patient .
  + The main goal is to find and start treating immediate life threats .
  + You must check the patient physically and assess their level of consciousness, airway, breathing, and circulation .
  + First, form a general impression .This helps decide the priority of care .Note the patient's age, sex, race, how much distress they are in, and their overall look .
  + Approach the patient so they see you coming .Note their position and if they are moving .Avoid standing over them .Address them by name, introduce yourself, and ask about the Chief complaint .Their response gives clues about their consciousness, airway, breathing, and circulation .
  + Treat life-threatening problems right away .Decide if the patient is stable, possibly unstable, or unstable .Scan for uncontrolled external bleeding . This is a top priority .
  + Assess the Level of consciousness (LOC) .LOC tells you about the patient's brain and body status .For an unconscious patient, focus on ABCs . Being unconscious can mean a serious breathing, circulation, or brain problem .An altered LOC in a conscious patient can be from poor blood flow, medicine, drugs, alcohol, or poisoning .Use the AVPU mnemonic to check responsiveness . Choose one description .Check if a patient who doesn't respond to talking responds to painful stimuli .Pain tests include pinching the arm, skin, or earlobe, or pressing under the eyebrow .A patient who moans or pulls away responds to pain .
  + Orient and test mental status by checking memory and thinking .Evaluate if they remember:Person: Their name Place: Current location Time: Current year, month, and approximate date Event: What is happening Answering all means they are alert and oriented times four (A&Ox4) .Any change from A&Ox4 or their normal is altered mental status .
  + Identify and treat life threats .Conditions causing sudden death are life threats . Examples are airway obstruction, Respiratory failure/arrest, shock, severe bleeding, or cardiac arrest .Usually, fix airway problems first (A), then breathing (B), then circulation (C) – ABC .Sometimes, it's better to fix circulation first (C), then airway (A), then breathing (B) – CAB .
  + Assess the Airway (A) .Watch for signs of airway obstruction .Ensure the airway stays open in responsive patients . Patients who are talking or crying have open airways .A conscious patient who cannot talk or cry likely has a severe obstruction .If you find an airway problem, stop assessing and clear the airway . Take action immediately if the patient has trouble breathing or isn't breathing .In unresponsive patients, check if the airway is open .If trauma is possible, use the Jaw-thrust maneuver to open the airway .If jaw-thrust doesn't work or you know there's no trauma, use the head-tilt chin-lift .Signs of obstruction in an unconscious patient include trauma, blood, other blockages, noisy breathing (snoring, gurgling), shallow or absent breathing .
  + Assess Breathing (B) .Once the airway is open, check if the patient is breathing and if it's adequate .Ask: Is the patient breathing? Is it adequate? Are they hypoxic (low oxygen)? Use positive pressure ventilation if the patient isn't breathing or breathing too slowly/shallowly .If breathing is adequate but they are hypoxic, give oxygen .The goal for oxygen saturation is usually 94% to 99% .If difficulty breathing starts after your Primary assessment, re-evaluate the airway .Consider positive pressure ventilation if breathing rate is over 28 or under 8, or if respirations are too shallow .Shallow breaths mean little chest movement . Observe how much effort is needed to breathe . Look for Retractions, use of neck/shoulder muscles, Nasal flaring, trouble talking (two to three word dyspnea), Tripod position (leaning forward), or labored breathing .Respiratory distress is increased effort and rate .Respiratory failure is when blood isn't getting enough oxygen or ventilation isn't enough . This can lead to respiratory arrest if not fixed .
  + Assess Circulation (C) .Evaluate circulation by checking the patient's mental status, pulse, and skin condition .Assess the pulse . If a pulse is present, feel for it .In responsive patients older than one year, feel the radial pulse (wrist) .In unresponsive patients older than one year, feel the carotid pulse (neck) .In children under one year, feel the brachial pulse (upper arm) .If you cannot feel a pulse in an unresponsive patient, start CPR .Assess Skin condition . Perfusion (blood flow) is checked by looking at skin color, temperature, condition, and Capillary refill .Skin color: Poor blood flow makes skin pale, white, ashen, or gray . High blood pressure can make skin red . Low oxygen makes skin blue (Cyanotic) .Skin temp: Normal is warm . Abnormal is hot, cold, cool, or clammy .Moisture: Normal is dry . Wet or excessively dry/hot skin suggests a problem .Capillary refill: Checked in children by pressing on fingers or toes until white, then releasing . Color should return within two seconds .Assess and control any external bleeding . This should happen before checking airway or breathing .Bleeding from a large vein is a steady flow .Bleeding from an artery is spurting .Control bleeding by applying direct pressure .If direct pressure doesn't work or there's obvious arterial bleeding in an arm or leg, apply a tourniquet .
  + Perform a rapid scan to find life threats .Identify injuries that need care before transport .This takes 60 to 90 seconds .It is not a full physical exam .
  + Determine the priority of patient care and transport (D) .

## 4. Priority of Patient Care and Transport

* + Patients with certain conditions are high priority .
  + High priority conditions:Unresponsive Difficulty breathing Uncontrolled bleeding Altered level of consciousness Severe chest pain Pale skin or other signs of poor blood flow Complicated childbirth Severe pain anywhere
  + For high-priority patients, you will load and go .
  + The Golden hour (or golden period) is important .This is the time from injury until definitive care .Treating shock and traumatic injuries during this time increases survival chances .Immediate transport is key for patients who need care you cannot give .
  + The Golden hour includes phases .Discovery of the accident and calling EMS (first 20 minutes) .The Platinum 10 minutes: initial assessment, care, and getting the patient ready to move .EMS transport and initial hospital care .
  + Transport decisions are made at this point .
  + Decisions depend on the patient's condition, availability of advanced care, transport distance, and local rules .

High Priority ConditionsUnresponsive Difficulty breathing Uncontrolled bleeding Altered LOC Severe chest pain Pale skin/Poor perfusion

## 5. History Taking

* + History taking is the next part of patient assessment .
  + It includes the patient's history and the history of the present illness .
  + It provides details about the Chief complaint and the patient's signs and symptoms .
  + Be sure to document :Date of the incident Patient's age Gender Race Medical history Current health status
  + Investigate the Chief complaint using OPQRST questions .
  + Begin by introducing yourself, making the patient comfortable, and getting permission to treat .
  + Ask simple, direct questions .
  + Refer to the patient as Mr., Miss, or Mrs. with their last name .
  + Ask open-ended questions to understand the Chief complaint .
  + Use eye contact to encourage the patient to talk .
  + Repeat what the patient says to show you understand .
  + If the patient is unresponsive, get information from family, witnesses, or bystanders .
  + Look for medical alert jewelry or patient medical history cards .
  + Use the OPQRST mnemonic for the present illness .O: Onset - When did the problem start? P: Provocation - Does anything make it better or worse? Q: Quality - How would you describe the feeling (e.g., stabbing, pressure)? R: Region or Radiation - Where is the problem, and does it spread? (e.g., chest pain spreading to legs) S: Severity - On a scale of 0 to 10, how bad is the pain? T: Timing - When did it start? Is it constant or does it come and go?
  + Identify Pertinent negatives . These are negative findings that don't need care .
  + Obtain SAMPLE history .S: Signs and Symptoms A: Allergies M: Medications P: Past pertinent medical history L: Last oral intake E: Events leading up to the illness or injury
  + SAMPLE is for the patient's history, while OPQRST is for the present illness history .
  + Critical thinking is key in assessing a patient . It involves:Gathering: Finding facts for decisions and scene management .Evaluating: Thinking about what the information means .Synthesizing: Putting information together to make a plan .
  + Taking history on sensitive topics can be challenging .Alcohol or drugs: Signs can be hidden . Patients may deny problems . History from dependent patients might not be reliable . Do not judge; be professional .Physical abuse or violence: Report all physical abuse to authorities . Follow state laws and protocols . Do not accuse; involve law enforcement . This is mandatory reporting .Sexual history: It can be sensitive . Consider all women of childbearing age with lower abdominal pain to be pregnant unless history rules it out . Ask about the last menstrual period . For male patients, ask about urinary symptoms . Ask about possible sexually transmitted diseases when appropriate .
  + Other special challenges in History taking :Silence: Be patient . Use yes/no questions . Is the silence a clue to the problem? Overly talkative patients: Reasons can include caffeine, nervousness, drugs (crack, cocaine, meth), or an underlying medical issue .Multiple symptoms: Prioritize complaints like in Triage . Start with the most serious .Anxiety: Anxiety can be a sign of a serious medical condition . It is common in disaster scenes . Anxious patients may show signs of shock (pale, sweating, shortness of breath, numbness/tingling, dizziness, fainting) . Anxiety can be an early sign of low blood sugar, shock, or Hypoxia .Anger and hostility: Friends, family, or bystanders might be angry at you . Remain calm, reassuring, and gentle . If the scene is unsafe, leave until it is secure .Intoxication: Do not corner an intoxicated patient . Violence potential is high when a patient is intoxicated . Alcohol dulls their senses .Crying: A patient crying might be sad, in pain, or overwhelmed . Stay calm, be patient, reassuring, and confident, and use a soft voice .Depression: It is a leading cause of disability worldwide . Symptoms include sadness, hopelessness, restlessness, irritability, sleep/eating problems, and low energy . Being a good listener is the most effective treatment .Limited cognitive abilities: Keep questions simple . Avoid medical terms . Look for partial answers and keep asking . For patients with severe cognitive issues, rely on family or caregivers for answers .Cultural challenges: Don't use medical language . Patients from some cultures prefer healthcare providers of the same gender . Get help from friends, family, or healthcare providers of the same culture .Language barriers: Find an interpreter if possible . If not, ensure the patient understands who you are . Keep questions simple and short . Use hand signals if needed . Be aware of different languages in your community .Hearing problems: Speak slowly and clearly . Use a stethoscope as a hearing aid . Learn simple sign language or use paper and a pencil .Visual impairments: Say who you are when you enter the scene . Put moved items back where they were . Explain each step of your assessment and vital signs . Tell the patient before lifting or moving them .

## 6. Secondary Assessment

* + Secondary assessment is the fourth part of patient assessment .
  + If the patient is stable with only one complaint, you might do the Secondary assessment at the scene .
  + If not done at the scene, do it in the ambulance on the way to the hospital .
  + Sometimes you may not have time for the Secondary assessment . You might need to keep treating life threats found in the Primary assessment during transport .
  + The purpose is to do a systematic physical exam .
  + This exam focuses on a certain body area or system, often based on the Chief complaint .
  + Assessment techniques include:Inspect: Look at the patient for abnormalities .Palpate: Feel for abnormalities .Auscultate: Listen with a stethoscope .Percuss (not detailed in the text) .
  + The mnemonic D-CAP BTLS helps you remember what to look for when checking for trauma .
  + Compare findings on one side of the body with the other .
  + D-CAP BTLS stands for:D: Deformities C: Contusions (bruises) A: Abrasions (scrapes) P: Punctures or penetrations B: Burns T: Tenderness L: Laceration (cuts) S: Swelling
  + Systematically assessing the patient is the Secondary assessment .
  + The goal is to find hidden injuries or causes not found in the 60-90 second rapid scan .
  + A focused assessment is done for patients with non-serious MOIs or medical patients .
  + This assessment focuses on the body part or system affected based on the Chief complaint .

MnemonicMeaningDDeformities CContusions AAbrasions PPunctures/penetrations BBurns TTenderness LLaceration SSwelling

## 7. Focused Assessment: Respiratory System

* + Focus on the respiratory system if the patient has difficulty breathing .
  + Expose the chest and look for airway obstruction or trauma to the neck/chest .
  + Inspect the chest for symmetry (both sides rising/falling evenly) .
  + Listen to breath sounds with a stethoscope (auscultate) for abnormalities .
  + Measure the respiratory rate, and observe chest rise/fall and effort (tidal volume and effort) . Look for Retractions and increased work of breathing .
  + Obtain the RRQ of breathing :R: Respiratory Rate - Normal for adults is 12-20 breaths per minute . Count breaths in 30 seconds and multiply by two . Children breathe faster .R: Rhythm - Should be regular (consistent time between breaths) . Irregular rhythm can mean a medical or trauma issue .Q: Quality - Normal breathing is silent . Sounds with breathing can mean a respiratory problem . These are called advantageous breath sounds .
  + Assess the Depth of breathing . This is the amount of air exchanged .
  + Listen for breath sounds in multiple areas on both sides of the chest .
  + Listen for specific sounds:Normal Snoring (upper airway, can be from tongue or croup) Wheezing (lower airway) Crackles (lower airway) Rhonchi (lower airway) Stridor (can be upper airway)

## 8. Focused Assessment: Cardiovascular System

* + Focus on the cardiovascular system if the patient has chest pain or complaint .
  + Look for trauma to the chest .
  + Listen to breath sounds again .
  + Consider the pulse, respiratory rate, and blood pressure .
  + Pay close attention to the rate, quality, and rhythm of the pulse .
  + Consider findings from assessing the skin .
  + Check and compare pulses in the arms/legs (distal pulses) for differences between sides .
  + Consider listening for abnormal heart sounds (auscultation) .
  + Assess the Pulse :Normal resting pulse for an adult is 60-100 beats per minute . Younger patients usually have faster pulses .Assess the quality (RRQ for pulse) .Quality is described as strong, bounding, weak, or thready . Weak or thready is hard to feel .Assess the rhythm . Is it regular or irregular? The time between beats should feel the same for a regular rhythm . An irregular rhythm means the heart has early or late beats, or missed beats .
  + Take the Blood Pressure .Blood pressure is the force of blood against artery walls .A drop in blood pressure can mean blood loss, fluid loss, loss of vascular tone, or a heart pumping problem .Low blood pressure (hypotension) is a late sign of shock .High blood pressure (hypertension) can damage arteries .A blood pressure cuff has a cuff, inflatable bladder, pump, and pressure gauge .Listening with a stethoscope (auscultation) is common for measuring blood pressure .You can also feel for a pulse (palpation) to get a blood pressure reading in some cases . This is called blood pressure by palp .

## 9. Focused Assessment: Neurologic System

* + Focus on the neurologic system for patients with changes in mental status, head injury, dizziness, drowsiness, or fainting .
  + Evaluate the level of consciousness and orientation using the AVPU scale .
  + Use the Glasgow Coma Scale (GCS) for more information on patients with mental status changes .
  + Assess Pupils .Normal pupils are round, equal in size, and change size with light .Pupil size and reaction to light show the status of the brain .In the dark, pupils dilate (get big) .Unequal pupils can mean altered brain function .
  + Use the PEARL mnemonic to assess pupils .P: Pupils E: Equal A: And R: Round R: Regular in size L: Reactive to light
  + Assess neurovascular status . This means checking sensory and motor response .
  + Check for equal muscle strength and weakness on both sides .
  + Do a full sensory check . Test for pain sensation and position .
  + Compare sensation and motor response in the arms/legs (distal) and closer to the body (proximal) on one side to the other .

MnemonicMeaningPPupils EEqual AAnd RRound RRegular LReactive

## 10. Focused Assessment: Trauma

* + In a trauma situation, use the D-CAP BTLS assessment .
  + Systematically check different body regions .Head, neck, and cervical spine: Feel, check eyes, cheekbones, ears (look for fluid), jaw, mouth (broken teeth, odors) .Chest: Look, listen, and feel .Abdomen: Feel for tenderness, stiffness, and guarding . Feel all four quadrants (left upper, left lower, right upper, right lower) .Pelvis: Look for symmetry .Extremities (arms and legs): Look for D-CAP BTLS . Check for pulses, motor (movement), and sensory (feeling) function .Back: Roll the patient (often onto a backboard) and inspect the back for DCAP-BTLS, symmetry, and open wounds . Feel the spine from neck to pelvis for tenderness or deformity .

## 11. Vital Signs

* + Vital signs are assessed next .
  + Use appropriate monitoring devices .
  + These devices should not replace a full assessment .
  + Pulse oximetry: Checks how well oxygen is getting to the blood . It measures oxygen saturation on capillary beds . Give oxygen to patients with difficulty breathing, even if the pulse ox reading is high .
  + Capnography: Quickly gives information about the patient's ventilation (breathing), circulation, and metabolism .
  + Blood glucose (glucometry): Measures sugar level in the blood .
  + Non-invasive blood pressure (NBP): Measures blood pressure without breaking the skin .

## 12. Reassessment

* + Reassess the patient regularly .
  + The main purpose is to find and treat changes in the patient's condition .
  + Repeat the Primary assessment .
  + Reassess vital signs . Compare new vital signs to the first ones to look for trends (getting better or worse) .
  + Recheck the Chief complaint .
  + Recheck your interventions (treatments) .
  + Document any changes and if they were positive or negative .
  + Unstable patients are reassessed every five minutes .
  + Reassessment for unstable patients is continuous .
  + Reassessment is the last part of the patient assessment .

## 13. Review Questions

* + During Scene size-up, you should determine many things . One thing you do not routinely determine is the ratio of child patients to adults .
  + If you arrive at a scene and see a man lying in blood with a possible gunshot wound to the head, the scene is unsafe . You should retreat to a safe place and wait for law enforcement .
  + Problems like inadequate breathing or altered consciousness are found in the Primary assessment . You identify and fix these life threats early .
  + When forming your initial general impression, you would not typically detect a rapid heart rate . You check pulse rate during the ABCs .
  + For an elderly woman who fell with altered consciousness and a head injury, after protecting her neck and giving oxygen, you should do a rapid exam to find life threats .
  + If a semi-conscious patient pushes your hand away when you pinch their earlobe, they are responsive to pain .
  + Assessing an unconscious patient's breathing begins by opening the airway . Use jaw-thrust for possible trauma and head-tilt chin-lift for non-trauma .
  + A 12-year-old who can only say two or three words before needing a breath has two to three word dyspnea .
  + To find a pulse in an unresponsive eight-year-old (over one year), check the carotid pulse in the neck . For a child under one year, check the brachial pulse .
  + When a patient says their pain started in their chest but spread to their legs, this is an example of Region or Radiation from the OPQRST mnemonic .