Chapter 2
EMERGENCY PATIENT ASSESSMENT

Learning Objectives:

- Perform Initial Patient Assessment in a uniform manner by all healthcare providers.
- Perform a sequential and Focused History and Physical Examination of an injured or ill patient.
- Provide appropriate emergency lifesaving care to the injured or ill patients.
- Initiate treatment and make appropriate referrals whenever necessary.

INTRODUCTION

The treatment of seriously ill or injured patients requires rapid assessment of illness or injuries and institution of life-preserving therapy. Because time is of the essence, a systematic approach that can be easily reviewed and practiced is most effective. This process is termed "Patient Assessment" which is an important part of emergency patient evaluation.

Even though it may seem time-consuming, it is necessary to properly and completely examine the patient to determine what care the patient requires. It is required not only to detect life-threatening conditions and correct them as quickly as possible but also detect problems that may become life-threatening if they go un-noticed.

ABCDE APPROACH

Initial Assessment

The ABCDE approach provides a framework for the systematic and organized evaluation of acutely ill patients in order to rapidly identify and **intervene for life-threatening conditions**:

A– Airway: check for and correct any obstruction to movement of air into the lungs.

B– Breathing: ensure adequate movement of air into the lungs.

C– Circulation: evaluate whether there is adequate perfusion to deliver oxygen to the tissues; check for signs of life-threatening bleeding.

D– Disability: assess and protect brain and spine functions.

E– Exposure: identify all injuries and any environmental threats and avoid hypothermia.

This stepwise approach is designed to ensure that life-threatening conditions can be identified and treated early, in order of priority. If a problem is discovered in any of these steps, it must be addressed immediately before moving on to the next step. The ABCDE approach should be performed in the first 5 minutes and repeated whenever a patient's condition changes or worsens.

Life-saving Interventions During Initial Assessment

- **Unconscious or suspected cervical spine injury-** immediate manual stabilization of head and neck followed by cervical immobilization.
- **Airway obstruction-** open and maintain airway (insert oro- or nasopharyngeal airway).
- **Breathing problems**- rescue breathing and provide supplemental oxygen as required.
- **Circulation** problems- control bleeding, treat shock or if cardiac arrest perform CPR.
- **Disability (paralysis/fractures) -** spinal immobilization (on spine board) or splinting of long bone fractures.

Table 2.1 ABCD Approach and management

Airway	Assessment	Immediate Management
A	Can the patient talk normally? If YES, the airway is open. If the patient cannot talk normally: • Look to see if the chest wall is moving and see if there is air movement from the mouth or nose. • Listen for abnormal sounds (such as stridor, grunting, or snoring) or a hoarse or raspy voice that indicates a partially obstructed airway. Stridor plus swelling and/or hives suggest a severe allergic reaction (anaphylaxis). • Look and listen for flu id (such as blood, vomit) in the airway. • Look for foreign body or abnormal swelling around the airway, and altered mental status. • Check if the patient is able to swallow saliva or is drooling.	• If the patient is unconscious and not breathing normally and: ○ NO TRAUMA: open the airway using the **head-tilt and chin-lift maneuver**. ○ CONCERN FOR TRAUMA: maintain cervical spine immobilization and open the airway using the **jaw thrust maneuver.** ○ Place an oropharyngeal or nasopharyngeal airway to maintain the airway. • If a foreign body is suspected: – If the object is visible, remove it– be careful not to push the object any deeper. ○ If the patient is able to cough or make noises, keep the patient calm and encourage coughing. ○ If the patient is choking (unable to cough, not making sounds) use age-appropriate chest thrusts/ abdominal thrusts/back blows. ○ If the patient becomes unconscious while choking, follow relevant CPR protocols. • If secretions or vomit are present, suction when available, or wipe clean. Consider placing patient in the recovery position if the rest of the ABCDE is normal and no trauma is suspected. • If the patient has swelling, hives or stridor, consider severe allergic reaction (anaphylaxis), and give intramuscular adrenaline. • Allow the patient to stay in a position of comfort and prepare for rapid handover/transfer to a center capable of advanced airway management, if needed.
Breathing	**Assessment**	**Immediate Management**
B	• Look, listen, and feel to see if the patient is breathing. • Assess if breathing is very fast, very slow, or very shallow. • Look for signs of increased work of breathing (such as accessory muscle use, chest in drawing/retractions, nasal fla ring) or abnormal chest wall movement.	• If unconscious with abnormal breathing, start bag-valve-mask ventilation and follow relevant CPR protocols. • If not breathing adequately (too slow for age or too shallow), begin bag-valve-mask ventilation with oxygen. If oxygen not immediately

	• Listen for abnormal breath sounds such as wheezing or crackles. • With severe wheezing, there may be limited/no breath sounds on examination because narrowing of the airways may be so severe that breathing cannot be heard. • Listen to see if breath sounds are equal on both sides. • Check for the absence of breath sounds and dull sounds with percussion on one side (large pleural effusion or hemothorax). • If there are no breath sounds on one side, and hypotension, check for distended neck veins or a shifted trachea (tension pneumothorax). • Check oxygen saturation with a pulse oximeter when available.	available, DO NOT DELAY ventilation. Start ventilation while oxygen is being prepared. Plan for rapid handover/transfer. • If breathing fast or hypoxic, give Oxygen. • If wheezing, give salbutamol. • Repeat salbutamol as needed. • If concern for severe allergic reaction (anaphylaxis), give intramuscular adrenaline. • If concern for tension pneumothorax, perform needle decompression immediately and give IV flu ids and oxygen. Plan for rapid handover/transfer. • If concern for large pleural effusion or hemothorax, give oxygen and plan for rapid handover/transfer. • If cause unknown, remember the possibility of trauma.
Circulation	**Assessment**	**Immediate Management**
C	• Look and feel for signs of poor perfusion (cool, moist extremities, delayed capillary refill greater than 3 seconds, low blood pressure, tachypnoea, tachycardia, absent pulses). • Look for both external AND internal bleeding, including bleeding: into chest; into abdomen; from stomach or intestine; from pelvic or femur fracture; from wounds. • Look for hypotension, distended neck veins and muffled heart sounds that might indicate pericardial tamponade.	• For cardiopulmonary arrest, follow relevant CPR protocols. • If signs of poor perfusion, give IV fluids and oxygen and: ○ For external bleeding, apply direct pressure or use other technique to control. ○ If internal bleeding or pericardial tamponade are suspected, refer rapidly to a center with surgical capabilities. • If cause unknown, remember the possibility of trauma: Bind pelvic fractures and splint femur fractures, or any fracture with compromised blood flo w.
Disability	**Assessment**	**Immediate Management**

D	• Assess level of consciousness with the AVPU scale (Alert, Voice, Pain, and Unresponsive) or in trauma cases, the Glasgow Coma Scale (GCS). • Always check glucose level in the confused or unconscious patient. • Check for pupil size, whether the pupils are equal, and if pupils are reactive to light. • Check movement and sensation in all four limbs. • Look for abnormal repetitive movements or shaking on one or both sides of the body (seizure/convulsion).	• If altered mental status and no evidence of trauma, place in recovery position. • If glucose low (<3.5 mmol/L) or glucose test not available and patient has altered mental status, give glucose. • For active seizures, give a benzodiazepine. • If pregnant and having seizures, give magnesium sulphate. • If pupils are small and breathing slow, consider opioid overdose and give naloxone. • If pupils are not equal, consider increased pressure on the brain and raise head of bed 30 degrees if no concern for spinal injury. • Plan for rapid transfer to an advanced provider or facility with neurosurgical care.
Exposure	**Assessment**	**Immediate Management**
E	• Examine the entire body for hidden injuries, rashes, bites or other lesions. • Rashes, such as hives, can indicate allergic reaction, and other rashes can indicate serious infection.	• If snake bite is suspected, immobilize the limb. • Remove constricting clothing and all jewelry. • Cover the patient as soon as possible to prevent hypothermia. Acutely ill patients have difficulty regulating body temperature. • Remove any wet clothes and dry patient thoroughly. • Respect the patient and protect modesty during exposure. • If cause unknown, remember the possibility of trauma: Log roll if suspected spinal injury.

ASSESSING MENTAL STATUS

A quick assessment of the patient's mental condition can be done by following the mnemonic:

A- Alert: awake and oriented
V- Verbal: responds to verbal stimulus
P- Painful: responds to painful stimulus
U- Unresponsive

SAMPLE history- Basic Questions to ask all patients:

S- Signs/symptoms?
A- Allergies?
M- Medications?
P- Pertinent past medical history?
L- Last oral intake?
E- Events leading to the illness or injury?

Medical Patient- Questions to ask:

OPQRST:

O= onset; **P**= provoking; **Q**= quality; **R**= radiation; **S** = severity; **T**= time

Trauma Patient- Questions to ask:

Mechanism of Injury (MoI):

E.g. Road Traffic Accident: seated, seatbelt

Fall: height, landing on what part of the body, LOC, headache, vomiting

Penetrating Injuries: assaulting object

Vital signs- The vital signs must include the following parameters:

- Pulse
- Respiration
- BP
- Pupils
- Skin - color, temperature, condition

FOCUSED PHYSICAL EXAMINATION OF SPECIFIC INJURY

The mnemonic to perform a Focused Physical Examination is**: "DCAPBTLS"**:


Deformity


Contusion


Abrasion


Puncture/Penetration


Burn


Laceration


Swelling

RAPID TRAUMA ASSESSMENT OR RAPID PHYSICAL EXAMINATION

Table 2.2 Rapid Trauma Assessment and Rapid Physical Examination

Body Region	Trauma Patient with significant MoI	**Unresponsive Medical Patient**
Head	DCAP-BTLS + crepitation	DCAP-BTLS
Neck	DCAP-BTLS + jugular vein distension and crepitation	DCAP-BTLS + jugular vein distension, injury, medical alert
Chest	DCAP-BTLS + crepitation, paradoxical motion and breathe sounds.	DCAP-BTLS + chest rise, paradoxical motion and breathe sounds, retractions.
Abdomen	DCAP-BTLS + firm, soft, distended	DCAP-BTLS + rigidity, distention, mass, scar
Pelvis	DCAP-BTLS + gentle compression for tenderness or motion.	DCAP-BTLS + pregnancy, blood, incontinence.
Extremities	DCAP-BTLS + distal pulse, motor and sensory function	DCAP-BTLS + distal pulse, motor and sensory function
Posterior/Back	DCAP-BTLS + roll spinal precautions	DCAP-BTLS + scars

Focused History and Physical Exam- Rapid Assessment

1. First have your partner stabilize the patients' head and neck. Then check the head (scalp and face), **2.** Check the patient's neck. Apply a cervical collar if you are trained to do so, **3**. Check the chest, **4.** Check each quadrant of abdomen, **5**. Check the pelvis, pressing gently down and inwards, **6.** Check the back and buttocks by sliding your hands under the patient, **7.** Check the extremities, legs first and then the arms, **8**. Check for circulation, sensation and motor function.

DETAILED PHYSICAL EXAM

It is very similar to the rapid physical assessment but it has several differences. A few more areas are assessed in the examination of the head, i.e. scalp, cranium, face, ears, eyes, nose and mouth.

The detailed physical exam is most appropriate for a trauma patient who has a significant or unknown mechanism of injury. A responsive trauma patient with no significant mechanism of injury will seldom require a detailed physical exam. A detailed physical exam is not appropriate for most medical patients.

Perform Ongoing Assessment

Ongoing assessment must be performed on all patients who are unresponsive or has significant mechanism of injury because in such patients due to the serious mechanism of injury or nature illness that clinical profile can change rapidly.

a. **Repeat Initial Assessment**
b. **Repeat Vital signs**
c. **Repeat Focused Assessment**

References

1. EMERGENCY CARE by Daniel Limmer & Michael F. O'Keefe – 2010.
2. WHO Basic Emergency Care – WHO, IFEM, ICRC – 2018