

# NURSING LEVEL-III

Based on January 2022, Curriculum Version I



**Module Title: First Aid and Emergency Response**

**Module Code: HLT NUR3 M05 0122**

**Nominal duration: 140 hours**

**Prepared By: Ministry of Labor and Skill**

**August, 2022**

**Addis Ababa, Ethiopia**

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## AKNOWLEDGEMENT

**Ministry of Labor & Skills and Ministry of Health** wish to extend thanks and appreciation to the many representatives of TVET instructors and respective industry experts who donated their time and expertise to the development of this Teaching, Training and Learning Materials (TTLM).

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## List of Acronyms/Abbreviations

ABCDE	Airway, Breathing, Circulation, Disability and Exposure
AED	Automatic External Defibrillator
AVPU	Alert, Voice, Pain, Unresponsive
BP	Blood Pressure
CPR	Cardiopulmonary Resuscitation
CRT	Capillary Refill Time
DOTS	Deformity, Open Wound, Tenderness and Swelling
EMS	Emergency Medical Staff)
EMT	Emergency Medical Technician
GCS	Glasgow Coma Scale
HIV	Human Immunodeficiency Virus
LOC	Level Of Consciousness
MAP	Mean Arterial Pressure
PPE	Personal Protective Equipment
PPT	Place, People and Time
PTSD	Post-Traumatic Stress Disorder
SCA	Sudden Cardiac Arrest
VF	Ventricular Defibrillation
VT	Ventricular Tachycardia

## Introduction to the module

This module is developed in line with the national competency standard of Midwifery Training Package unit competence of Applying First Aid and Emergency. The aims of this module is to provide trainees with knowledge, skills and attitude required to recognize and respond to life threatening emergencies using basic life support, provide first aid response, management of casualty(s), the incident and other first aiders, until the arrival of medical or other assistance.

## Module units

- Assess and identify client's condition
- Provide first aid service
- Prepare, evaluate and act in an emergency
- Communicate details of the incident
- Refer client requiring further care
- Evaluate own performance

## Learning objectives of the Module

**At the end of the module the learner will be able to:**

- Assess and identify client's condition
- Provide first aid service
- Prepare, evaluate and act in an emergency
- Communicate details of the incident
- Refer client requiring further care and Evaluate own performance

## Module Learning Instructions:

- Read the specific objectives of this Learning Guide.
- Follow the instructions described below.
- Read the information written in the information Sheets
- Accomplish the Self-checks
- Perform Operation Sheets, if any
- Do the "LAP test

## Unit One:- Assess and identify client's condition

### Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Definition of terms
- Basic principles of first aid
- Identifying, assessing and minimizing hazards
- Minimizing risks
- Identifying causality
- Recognizing emergency situation
- Monitoring vital signs and state of consciousness
- Obtaining history of the event
- Safety equipment and aids required for emergencies

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Definition of terms
- Basic principles of first aid
- Identifying, assessing and minimizing hazards
- Minimizing risks
- Identifying causality
- Recognizing emergency situation
- Monitoring vital signs and state of consciousness
- Obtaining history of the event
- Safety equipment and aids required for emergencies

### Learning Instructions:

- Read the specific objectives of this Learning Guide.
- Follow the instructions described below.
- Read the information written in the information Sheets
- Accomplish the Self-checks
- Perform Operation Sheets
- Do the “LAP test”

## 1.1. Definition of terms

**First aid:** is the initial assistance / support or treatment given to an injured or accidentally ill person using whatever materials or equipment available at the time before he / she reaches to a health facility. In the provision of first aid service, before providing the service, the first step that a first aider has to consider is that assessment and identification of clients condition. The identification of casualty's condition helps to set priority and decide the type of first aid measure that has to be initiated first. The casualty's condition can be assessed and identified by doing a quick observation of the surroundings and by taking quick history and physical examination.

The purpose of giving first aid is to prevent further deterioration of the patient's health. The responsibility of a First Aider is to help the patient by winning her/his confidence. At the same time, the First Aider must not endanger her/his own life while providing treatment. She/he must always keep in the mind that the casualty may have more than one injury.

## 1.2. Basic principles of first aid

In the management (mgt) of casualty, as a general principle, the first aider has to consider the following tasks as his or her responsibility.

- Preserve life: This includes preserving the life of the casualty and the rescuer.
- Ensure protection of the casualty from further harm: the treatment area needs to be safe and must not have excess people.
- Provide pain relief: This includes the use of ice packs or applying a sling.
- Prevent the condition from worsening: Ensure that the First Aid procedures do not worsen the patient's condition.

## 1.3. Assessing and Minimizing hazards

### 1.3.1. Assessment of the casualty's condition

This involves assessment of the overall situation and the general condition of the casualty.

During the process of assessment the following principles has to be considered:

- ✓ be calm and confident
- ✓ Talk, listen & reassure the conscious causality
- ✓ Check safety of casualty and of yourself
- ✓ Check for breathing, bleeding and level of consciousness
- ✓ Get others to help / (Emergency Medical Staff)EMS/

**Components of assessment process:**

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- Assessment of the situation and safety / scene size up/
- Initial assessment
- Physical examination
- Vital sign
- Focused History taking
- On-going assessment

### 1.3.2. Assessment of the situation /Scene size up/

An assessment of the scene (current situation of an event) and the surroundings, if it is safe, will provide valuable information to the first responder and will ensure the wellbeing of the first responder. Example, Unstable Situation, violent, Hazmat Situation (industry hazardous material) etc. Scene safety in relation to personal protection, casualty and bystander protection is important.

Assessment of the situation /Scene size-up/ is a multifaceted process that occurs before and immediately upon arrival at the scene, prior to executing any other activities. The subject to the unique environmental dangers associated with patient care in the field that often contributed to, or are a result of, the patient's injury or illness.

A successful first aider in active field operations, Assesses the scene, Acts on the assessment finding and Mitigates danger prior to the provision of any patient care or evaluation.

#### 1.3.2.1. Purpose of Assessment of the situation /scene size-up

The purpose of scene size-up is to expeditiously ensure that there is a safe scene on which to provide care, and that the proper resources are summoned to the scene according to the number of patients and their specific care needs. Many scenes evolve even after the first unit has arrived, and various specialty units have different perspectives on the size-up of the same scene. The hazardous materials team will have a different focus and perspective during size-up than the first arriving advanced life support unit. Just as a scene is dynamic, aspects of the size-up should be reevaluated over the course of an incident.

If the scene is unsafe, make it safe, Otherwise, **DO NOT ENTER**

#### 1.3.1.3. The components of assessment /scene size-up/

These components of size-up can initially be assessed from the relatively safety of the emergency response vehicle. The components of scene size-up require simultaneous assessment and include the review of dispatch information, identification of the number of

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patients, identification of mechanism of injury or nature of illness, resource determination, standard precautions determination and assessment of scene safety.

### 1.3.2 Minimizing hazards

Managing health and safety hazards is key to operational excellence in the work place regardless of its size. Where possible, Always try to remove or eliminate hazards from the workplace, for example by using a different process, or changing the way a job is done. If it is not possible to eliminate the hazard.

Below are 6 steps to determine the most effective measures to control workplace hazards and to minimize risk.

#### Step 1: Design or re-organize to eliminate hazards

- It is often cheaper and more practical to eliminate hazards at the design or planning stage of a product, process or place used for work. In these early phases, there is greater scope to design out hazards or incorporate risk control measures that are compatible with the original design and functional requirements. For example, remove trip hazards on the floor or dispose of unwanted chemicals.

#### Step 2: Substitute the hazard with something safer

- If it is not reasonably practical to eliminate the hazards and associated risks, you should minimize the risk. For example, today the dangers associated with asbestos are well known and there are numerous alternatives to asbestos products currently on the market including cellulose fiber, thermoset plastic floor or polyurethane foams. Replacing solvent- based paints with water-based ones is also a better alternative.

#### Step 3: Isolate the hazard from people

- This involves physically separating the source of harm from people by distance or using barriers. For example, introducing a strict work area, using guard rails around exposed edges and holes in the floors, using remote control systems to operate machinery, enclosing a noisy process from a person and storing chemicals in a fume cabinet.

#### Step 4: Use engineering controls

- An engineering control is a control measure that is physical in nature, including a mechanical device or process. For example this can be done through the use of machine guards, effective ventilation systems and setting work rates on a roster to reduce fatigue.

## Step 5: Use administrative controls

- Administrative controls are work methods or procedures that are designed to minimize exposure to a hazard. Establish appropriate procedures and safe work practices such as; limit exposure time to a hazardous task so that fewer employees are exposed, routine maintenance and housekeeping procedures, training on hazards and correct work methods and use signs to warn people of a hazard.

## Step 6: Use Personal Protective Equipment (PPE)

- Provide suitable and properly maintained PPE and ensure employees are trained in its proper use. Examples include gloves, earplugs, face masks, hard hats, gloves, aprons and protective eyewear. PPE limits exposure to harmful effects of a hazard but only if workers wear and use the PPE correctly.

## Hazards that may pose a risk of injury or illness

**Definition:** There are many definitions for hazard but the most common definition regarding health and safety. A hazard is any source of potential damage, harm or adverse health effects on something or someone. The harm may include human injury or ill-health, damage to property, damage to the environment, or a combination of these.

## Types of hazards

- Biological hazards:** commonly known as biohazards, can be any biological substance that could cause harm to humans. Biological hazards are extremely dangerous. Wastes from hospitals and industries may contain disease-causing organisms that could infect human. e.g.; bacteria, viruses, insects, plants, birds, animals, and humans, etc Employees who work in hospitals, laboratories or various other outdoor occupations are at risk from biological hazards. Protective equipment can help reduce the chances of exposure.
- Physical hazards;** physical hazards are environmental factors that can harm the body without necessarily touching it, include radiation ( microwaves, radio waves, etc.),high exposure to sunlight/ultraviolet rays, temperature extremes – hot and cold, constant loud noise
- Ergonomics hazards;** ergonomic hazards are a result of physical factors that can result in musculoskeletal injuries. occur when repetitive movements, improper set up of workstation, poor design of equipment, workstation design, (postural) or workflow, manual handling etc. They are the hardest to spot since you don't always immediately

notice the strain on your body or the harm that these hazards pose. For example, a poor workstation setup in an office, poor posture, vibration

- D. Chemical hazards; are hazardous substances that can cause harm. these hazards can result in both health and physical impacts, such as skin irritation, respiratory system irritation, blindness, corrosion and explosions . For example, Gases like acetylene, propane, carbon monoxide and helium, Liquids like cleaning products, paints, acids, solvents , Flammable materials like gasoline, solvents, and explosive chemicals and Pesticides etc.
- E. Psychosocial hazards; are hazards that can have an adverse effect on an individual mental health or wellbeing. For example, sexual harassment, victimization, stress and workplace violence, workload
- F. Safety hazards; it is unsafe conditions that can cause injury, illness and death. These are the most common and will be present in most workplaces at one time or another. They include ;
- Working from heights, including ladders, scaffolds, roofs, or any raised work area
  - Unguarded machinery and moving machinery parts; guards removed or moving parts that a worker can accidentally touch Electrical hazards like frayed cords, missing ground pins, improper wiring Confined spaces
  - Machinery-related hazards (lockout/tag out, boiler safety, forklifts, etc

## 1.4. Minimizing risk

The first aider must consider the safety of the patient, self, and any bystanders before attempting to rescue and assist a sick or injured person. There are many situations in which great care must be taken because of the presence of a specific hazard, such as high-voltage electricity cables, fire, toxic fumes or road traffic.

### I. Domestic electricity

The first aider must remember to make the area safe before attempting to touch or rescue the patient. The source of electricity must be identified and contact broken in the easiest but safest manner. If it is possible to remove an appliance plug from the power supply point, then this will stop the flow of electricity. DO NOT rely on the power point switch because it is still possible for electricity to flow even after the switch has been turned off. Alternatively, the power should be turned off at the mains supply board to ensure safety for all concerned.

## II. Road crashes

Whether a driver, passenger or pedestrian, the patient who has been involved in a road accident can be seriously injured and in need of urgent medical assessment and treatment. The first aider might be the first person on the scene and may be influential in saving a life before the arrival of ambulance personnel. Anyone involved in the accident might also need support although there may be no obvious injuries. The driver of a car that has hit a pedestrian or cyclist will be most distressed and will require reassurance.

## III. Motor vehicle crash patients

Whatever the circumstances, the first aider must ensure safety for self, patient and bystanders. This may involve obtaining help to make the area safe.

## IV. Motorcycle crash patients

A person who is involved in a motorcycle crash may receive multiple injuries and could have a spinal injury. The first step is to ensure safety for the first aider, patient, and any bystanders.

## V. Fumes Fire or toxic

When fire complicates an emergency, the first aider should be conscious of the danger and the serious risks of going into a burning room or building. Home fires are associated with the release of toxic fumes from furniture made of synthetic products. Entry into a place where there is dense smoke or toxic fumes is not recommended and may result in the loss of another life. Fire officers will generally use breathing apparatus to give protection from smoke or fumes and the first aider should make sure that the emergency services have been called and wait for such trained assistance to arrive.

## 1.5. Identifying causality

### 1.5.1. Consider Hazards situation and safety first

In the assessment and management of casualty, as a general principle, the first aider has to consider the following tasks as his or her responsibility.

- ✓ Assessment of the situation and casualty
- ✓ Reaching to diagnosis for each casualty
- ✓ Giving immediate & adequate treatment based on priority matrix
- ✓ Arrangement for transport according to the seriousness of the condition
- ✓ Prevent cross infection
- ✓ Provision of psychological and emotional support

### 1.5.1.1. Assessment of the situation

Look to see who is at the emergency scene, and find out what others at the scene are doing. If anyone is in danger or hurt, you should immediately take charge of the situation. In high stress situations, people tend to panic if they or someone they know has been injured. The role of assessment in an emergency is a critical and ongoing step in determining humanitarian needs and meeting obligations to humanitarian principles. Assessments are used to make decisions and help to identify the most appropriate response to an emergency and what value care can add to an emergency response.



**Figure 1.1: Assessing the situation/Scene/**

### 1.5.1.2. Components of assessment process

- ✓ Assessment of the situation and safety / scene size up/
- ✓ Initial assessment
- ✓ Physical examination
- ✓ Vital sign
- ✓ Focused History taking
- ✓ Ongoing assessment

### 1.5.1.3. Assessment of the casualty's condition

This involves assessment of the overall situation and the general condition of the casualty. During the process of assessment the following principles has to be considered:

- ✓ Be calm and confident
- ✓ Talk, listen & reassure the conscious casualty
- ✓ Check safety of casualty and of yourself
- ✓ Check for breathing, bleeding and level of consciousness
- ✓ Get others to help / (Bystanders or Emergency Medical Technician(EMT)/



Figure 1.2: General assessment of the victim

#### 1.5.1.4. Assess vital sign

Vital signs are an objective measurement of the essential physiological functions of a living organism.

##### I. Airway assessment

- Look for signs of airway compromise:
- Two- to three-word dyspnea
- Use of accessory muscles
- Nasal flaring and use of accessory muscles in children
- Labored breathing
- is it open & functional? If not, correct.
- Consider cause or mechanism of injury.
- (Use head-tilt, chin-lift if no injury; jaw-thrust maneuver if there is head/neck injury)
- airway may be obstructed



Figure 1.3: Airway assessment

##### II. Breathing



#### Check breathing (<10 s)

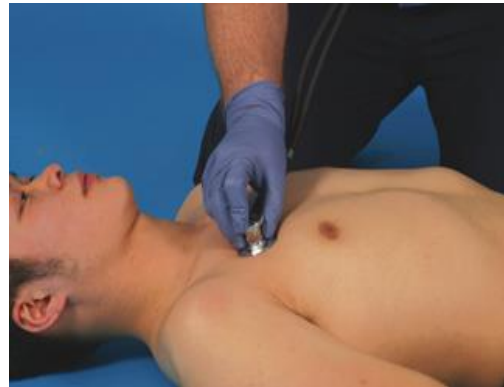


Figure 1.4: Assessing air way and breathing

Figure 1.5: Assessing Breath Sounds

### Measuring breathing

One Respiration Consists Of One Inspiration And One Expiration

- ✓ The chest rises during inspiration (breathing in) and falls during expiration (breathing out)
- ✓ Count each time the chest rises
- ✓ Count for 30 seconds and multiply x 2
- ✓ Do not let the person know you are counting respiration
- ✓ Count after taking the pulse – keep your fingers on the pulse site
- ✓ Normal respiratory rate for adult is 12 – 20 breaths per min.

### Abnormal findings of Breathing

- ✓ **Tachypnea** – respiratory rate over 20
- ✓ **Bradypnea** – respiratory rate below 12
- ✓ **Dyspnea** – shortness of breath – difficulty in breathing
- ✓ **Apnea** – no breathing
- ✓ **Hyperventilation** – fast and deep respirations
- ✓ **Hypoventilation** – slow and shallow respirations

### III. Assessing the Pulse

The pulse rate is a measurement of the heart rate, or the number of times the heart beats per minute. As the heart pushes blood through the arteries, the arteries expand and contract with the flow of the blood. Taking the pulse allows us to find out what the patient's heart rate is and to assess the strength, regularity, and character of the pulse. Irregularities might indicate a heart problem and must be investigated. Assess pulse rate for Presence, Rate, Rhythm and Strength.

**Normal adult pulse rate is: 60 to 100 beats per min for adult**

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### Abnormal pulse rate findings:

- ✓ **Tachycardia** – heart rate over 100bpm
- ✓ **Bradycardia** – heart rate below 60bpm

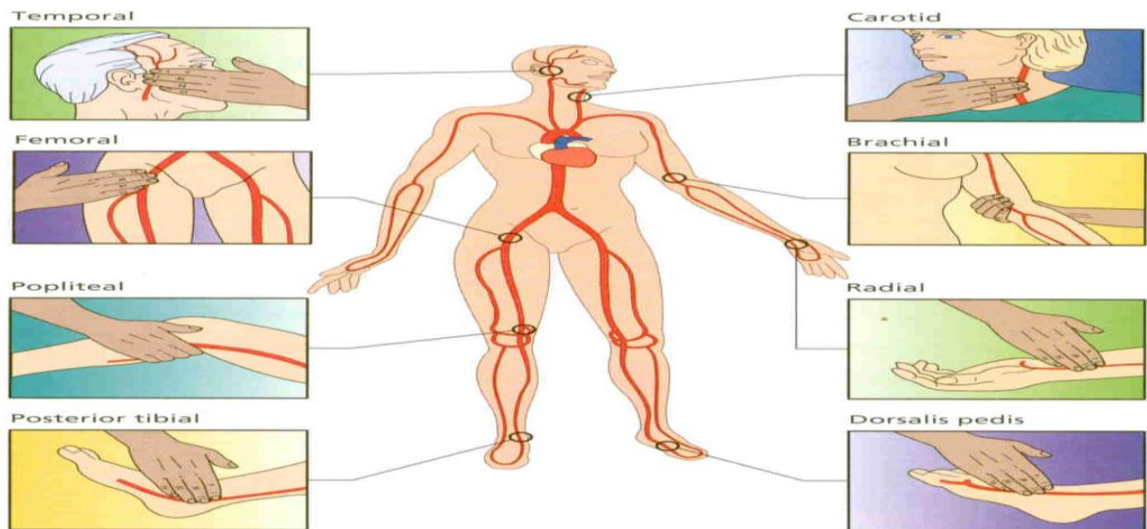


Figure 1.6: Pulse sites

### IV. Blood pressure (BP)

The measurement of the amount of force the blood exerts against the artery walls

**Systolic pressure** – pressure exerted when the heart muscle is contracting

**Diastolic pressure** – pressure exerted when the heart muscle is relaxing between beats

Blood pressure is recorded as a fraction with the systolic pressure on top and the diastolic pressure on the bottom (Systolic/systolic /diastolic) 120/80. BP is measured in mm (millimeters) of Hg (mercury).

#### Normal blood pressure

- ✓ Average adult systolic range – 100 to 140
- ✓ Average adult diastolic range – 60 to 90

#### Abnormal Blood Pressure

- ✓ Hypertension – measurements above the normal systolic or diastolic pressures
- ✓ Hypotension – measurements below the normal systolic or diastolic pressures

#### Equipment needed for BP measurement

- ✓ Equipment for accurate BP measurement
- ✓ Functional & calibrated machine
- ✓ Right-sized cuff
- ✓ Pen or pencil

- ✓ Flow up sheet, chart, or medical record
- ✓ Clean hands and fingers!
- ✓ Patient in a comfortable & relaxed position
- ✓ Wait 5 minutes if patient was active

## V. Assessing Perfusion

Evaluation of tissue perfusion can be done by considering gum or lip mucous membrane Colour, the capillary refill time, and the blood pressure. High mean arterial pressure does not guarantee adequate tissue perfusion. For example, when blood pressure increases during anesthesia in response to a surgical stimulus, cardiac output may be decreased due to increase after-load from peripheral vasoconstriction.

Tissue perfusion is usually decreased when the gums are pale, rather than pink, sometimes when very pink, and the capillary refill time (CRT) exceeds 1.5 seconds, or the mean arterial pressure (MAP) is less than 60 mmHg. When MAP is above 60 mmHg, palpation of the strength of the peripheral pulse and observation of oral membrane Colour and CRT should be used to assess adequacy of peripheral perfusion and cardiac output. During laparotomy, intestinal Colour should be bright pink and intestines that are pale pink, white, or grey may be an indicator of inadequate tissue perfusion.

### Capillary refill assessment/procedure/

The following steps have to be followed when doing the test:

**Step1.** Remove finger rings and nail polish.

**Step2.** The therapist compresses the nail bed until it turns white and records the time taken for the color to return to the nail bed.

**Step3.** It normally takes 3 seconds or less. When it takes longer, arterial insufficiency is suspected.

**Step4.** Always compare to the normal side of the hand or fingers.

Although the CRT is used in both children and adults , there is less literature about its use among adults as well as very little research information about its validity.

### Interpretation of Results

I. Normal Results: The CRT is largely recommended in the routine of unwell patients and should last less < 2 seconds. If the color is pink after there is no more pressure; it indicates a good blood flow to the finger.t It's part of the assessment of patients seriously ill.

2. Abnormal Results: A CRT > 2 seconds or prolonged CRT is suggestive of an early sign of shock. Several other factors can affect the CRT measurement and therefore its results. They may include: Peripheral vascular disease, Hypothermia, Cold ambient temperature, Poor lighting, Old age and Pressure application.

### 1.5.2. State of consciousness assessment

It is the assessment of level of awareness about ourselves and our environment.

#### 1.5.2.1 Assess State of consciousness

Level of consciousness (LOC) indicates a patient's level of arousal and awareness. Simply by walking into a patient's room you may be able to observe her awareness, but how you assess LOC and document it can be subjective.

#### 1.5.2.2. Initial assessment

Following a through observation of the situation and the surroundings, the first aider quickly assesses the patient's major body systems to identify life-threatening problems, initiate interventions, identify priority patients, and determine whether immediate transportation is necessary. Common priority patients include: General impression of a very sick patient, Unresponsive - no gag or cough, Responsive, not following commands, Difficulty breathing, Shock (hypo-perfusion), Complicated childbirth, Chest pain with blood pressure < 100 systolic, uncontrolled bleeding and Severe pain anywhere.

- A. **General impression** – this is performed based on the First Responder's immediate assessment of the environment and the patient's chief complaint.
- B. **Assessment of consciousness /responsiveness** by checking if the casualty is Alert, responding to Verbal stimuli, responding to pain stimuli or Unresponsive.

The level of responsiveness / consciousness can be expressed as:

- ✓ Full consciousness – able to speak & answer questions normally
- ✓ Drowsiness- Easily aroused (awoken) but lapses in to unconsciousness
- ✓ Stupor – Can be aroused with difficulty and is aware of painful stimuli Ex- pin prick
- ✓ Coma – Cannot be aroused by any stimuli



Figure 1.7: checking for the victim's responsiveness

### 1.5.2.3. Use AVPU scale to assess consciousness

The AVPU scale (Alert, Voice, Pain, Unresponsive) is a system, which is taught to healthcare professionals and first aiders on how to measure and record the patient's level of consciousness. It is a simplification of the GCS Scale (Glasgow Coma) which assesses a patient's response using Eyes, Voice and Motor skills as measures.

The AVPU has only one of four possible outcomes:

**A. Alert:** Patient is fully awake (though not necessarily orientated), will have spontaneously open eyes, and will respond to voice (though may be confused). They will have bodily motor function.

**B. Voice:** The patient makes some sort of response when you talk to them. This could be through the eyes, which open when you speak to them, or by voice which may only be as little as a grunt. Or, it could be by moving a limb when prompted to do so by the rescuer.

**C. Pain:** A patient may respond by using any of the three components when pain stimulus is used on them (Eyes, Voice, Movement). Recognized methods for causing pain are pinching the ear or pressing into the bed of a fingernail. A fully conscious patient will locate the pain and push it away, whereas a patient who is not alert and not responded to voice may only manifest involuntary flexion or extension of a limb. Performing pain stimulus should be used with caution as in extreme circumstances this could be considered assault.

**D. Unresponsive:** This outcome is noted if the patient does not give any Eye, Voice or Motor response to voice or pain.

In first aid, an AVPU score less than A is a good indication of the need to get further help.

#### Treatment:

If patient conscious level is below 'A' seek medical help.

- ✓ Monitor patient's level of response until medical help arrives.

- ✓ An unconscious patient is serious and the priority here is the patient's airway.
- ✓ Place in recovery position.
- ✓ Dial to Emergency Medical service
- ✓ Treat any bleeding or cover open fractures.

If first aiders have oxygen therapy, place pulse oximetry on patients finger and take reading, if below 94% place patient on oxygen therapy.

#### 1.5.2.4. Physical examination

The First Responder Physical Examination is designed to locate and begin the initial management of the signs and symptoms of illness or injury. The First Responder should complete a physical exam on all patients following the initial assessment. Inspection and palpation /feeling of body parts/ are the two important methods of physical examination in first aid practice. Inspect and palpate for DOTS (Deformity, Open wound, tenderness and Swelling).

Do the physical examination in the sequence of: Head, Neck, Chest , Abdomen, Pelvic and Extremities.

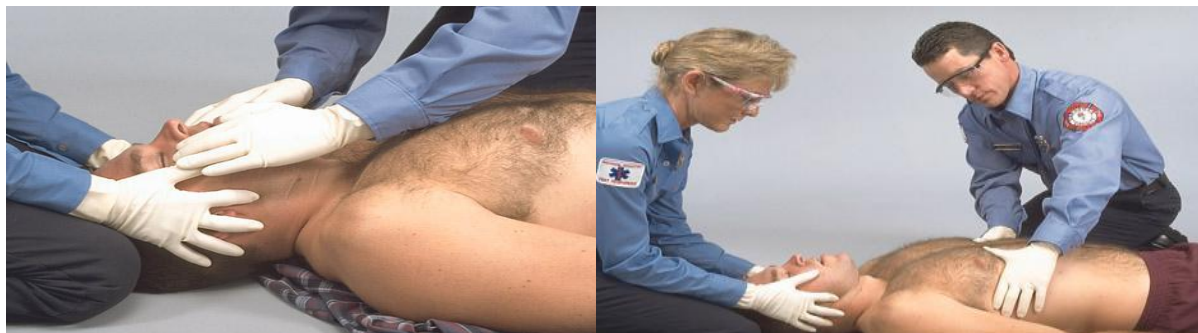


Figure 1.8: Head, neck and chest assessment



Figure 1.9: Assessment of Abdomen and Hip

### 1.6. Recognizing emergency situation

Emergencies are the situations which require immediate response. A first aid provider should have the knowledge on what is an emergency, what can cause emergency and how



the emergency can be recognized. In this section, we shall discuss the emergency situation and understand when and where to suspect emergency.

The victim of an emergency can be anyone- he/she can be your friend, family member, stranger, or you yourself. An emergency can happen anywhere – on the road, at home, work or play and so on and can occur any time. Thus, in simple words it is the situation of sudden and unexpected occurrence which requires urgent attention.

Emergency is occurring because of certain things which anybody see, hear, smell, touch and so on. Usually smell or noise can indicate emergency even before you see them. There may be unusual noise, smells, symptoms and signs or behavior that point towards emergency.

Table 1.1: Emergency indicators and their signals.

Emergency Indicators	Signals/signs
Unusual noises	<p>The noises that indicates</p> <ul style="list-style-type: none"> <li>Someone is in problem or crises , such as screaming, shouting, moaning, crying and calling for help</li> <li>alarming or high intensity sounds or noise, such as breaking glass, crashing metal or screeching tires.</li> <li>loud noises such as collapsing structures or falling ladders.</li> </ul>
Unusual Sights	<ul style="list-style-type: none"> <li>The Things that look out of ordinary</li> <li>Stopped or parked vehicle which shows that some accident has occurred.</li> <li>An overturned or tilted or fallen pot e.g. if filled with hot water , it can cause burns.</li> <li>Spilled medicines, empty medicine container, household disinfectants, insecticides may suggest the chance of poisoning.</li> <li>burnt electrical wires or if the wires indicate short circuit which may show the chance of electrical shock.</li> </ul>
Unusual Odors/Smells	<ul style="list-style-type: none"> <li>The Odors/Smells which may be</li> <li>Stronger than usual e.g. as in case of toxic fumes or fumes during fires, LPG fumes that may start fires.</li> <li>unrecognizable odors or nauseous smells e.g. toxic fumes of sewage tanks or septic tanks which can cause poisoning and death.</li> <li>Natural gas odors.</li> </ul>
Unusual appearance or behavior	<p>The Appearance or Behavior which may indicate</p> <ul style="list-style-type: none"> <li>Unconscious e.g. not responding to your shouts or pain.</li> <li>Difficulty in breathing as in asthma/choking.</li> <li>Clutching the chest or throat as in heart attack or chest pain.</li> <li>Slurred or hesitant speech e.g. in stroke.</li> <li>Extreme confusion or drowsiness, sweating e.g. in blood sugar changes.</li> <li>Changes in skin Colour as in insect bites/snake bites/ medical conditions.</li> </ul>

## 1.7. Monitoring vital signs and State of consciousness

### 1.7.1. Vital signs

Vital signs are measurements of the body's most basic functions. These signs give us an indication as to how well the body is functioning and responding to an illness or injury. They are an objective measurement of the essential physiological functions. They have the name "vital" as their measurement and assessment is the critical first step for any clinical evaluation.

The most common vital signs monitored by medical personnel/workers are:

- ✓ Body temperature.
- ✓ Pulse rate.
- ✓ Blood pressure.
- ✓ Respiratory rate

#### 1. Body Temperature

Body temperature is important vital sign that indicate physiological functions of our body.

The normal body temperature of a person varies depending on different factors. e.g. recent activity, food and fluid consumption, time of day etc. The body temperature is measured by use of a thermometer. Common sites to measure temperature include under the tongue, the forehead, the armpit, or in the ear. A high temperature (fever) may be a sign of infection. A normal body temperature is between 96.8°F (36°C) and 98.6°F (37°C), although this can vary slightly from person to person. The location you use will depend on the model of thermometer you have. There are

many varieties of digital thermometer available.



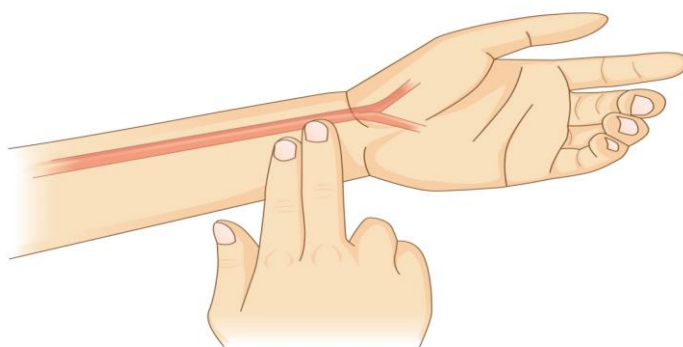
Figure 1: 10: Thermometer

#### 2. Pulse Rate

The pulse rate is a measurement of the heart rate, or the number of times the heart beats per minute. As the heart pushes blood through the arteries, the arteries expand and

contract with the flow of the blood. Each beat corresponds to the heart contracting and expanding, pushing blood through the body the pulse rate is recorded as the number of beats per minute (Bpm). Taking a pulse not only measures the heart rate, but also can indicate heart rhythm and strength of the pulse. Assess the pulse is regular or irregular. An irregular pulse may be a sign of an irregular heart rhythm. If you're unable to feel a radial pulse, attempt to feel a carotid pulse by placing two fingers on the victim's neck next to his windpipe. Do not attempt to feel both carotid arteries at the same time! The carotid arteries supply blood to the brain; if you compress both at the same time, you run the risk of cutting off this blood supply, and the victim will rapidly lose consciousness.

The pulse is often measured at the wrist by feeling the radial artery, in the neck using the carotid artery, and in the elbow crease using the brachial artery. The normal pulse for healthy adults ranges from 60 to 100 beats per minute. The pulse rate may fluctuate and increase with exercise, illness, injury, and emotions.



**Figure 1.11: pulse rate measurement**

### 3. Respiratory Rate

The respiration rate is the number of breaths a person takes per minute. The rate is usually measured when a person is at rest and simply involves counting the number of breaths for one minute by counting how many times the chest rises. Respiration rates may increase with fever, illness, and other medical conditions. When checking respiration, it is important to also note whether a person has any difficulty breathing. Normal respiration rates for an adult person at rest range from 12 to 16 breaths per minute. It varies depending on different factors.



#### 4. Blood pressure

Blood pressure is the force of the blood pushing against the artery walls during contraction and relaxation of the heart. Each time the heart beats, it pumps blood into the arteries, resulting in the highest blood pressure as the heart contracts. When the heart relaxes, the blood pressure falls.

It is measured mostly both arm and wrist. The blood pressure is recorded as two numbers (for example, 130/80). The first number indicates the pressure in the blood vessels when the heart contracts. This is called the systolic blood pressure. The second, lower number is the pressure when the heart relaxes. This is called the diastolic blood pressure. Both the systolic and diastolic pressures are recorded as "mm Hg" (millimeters of mercury). It is measured by sphygmomanometer. Normal blood pressure in an adult is approximately 120/80. Persistent high blood pressure is known as hypertension and increases the risk of suffering a heart attack or stroke.

##### Equipment needed for B/P measurement;

- Alcohol swabs
- Sphygmomanometer with proper size cuff
- Stethoscope
- Tray
- Vital sign sheet
- Pen and pencil



Figure 1.12: Blood pressure measurement

#### 1.7.2. State of consciousness

**Consciousness** is the state of being aware of and responsive to one's surroundings. The level of awareness of internal events and external surroundings is known as a state of

consciousness. The more aware we are of our thoughts, feelings, perceptions and surroundings, the higher. altered level of consciousness.

Glasgow Coma Scale (GCS) is a neurological scale which aims to give a reliable and objective way of recording the conscious state of a person for initial as well as subsequent assessment.. The scale assesses patients according to three aspects of responsiveness: eye-opening, motor, and verbal responses. It is also useful in the classification of head injury. A patient is assessed against the criteria of the scale, and the resulting points give a patient score

**Change of level of consciousness of a patents is recognized as;**

- **Full consciousness** – the casualty is able to speak and answer questions normally
- **Confused:** disoriented to surroundings, may have impaired judgment, may need cues to respond to commands.
- **Lethargic:** Drowsy, needs gentle verbal or touch stimulation to initiate response.
- **Obtunded:** responds slowly to external stimulation and needs repeated stimulation to maintain attention and response
- **Comatose:** no observable response to any external stimuli

## 1.8. Obtaining history of the event.

History of the incident must be taken into consideration. An examination made to determine the signs, symptoms and level of consciousness. Signs is variations from normal ascertained by the first aider and symptoms is sensations and feelings that are described by the casualty. Obtain appropriate history of how the accident happened or the illness began include its casualty.

## 1.9. Selecting, Using, Maintaining and Storing safety Equipment in emergency

All first aid kits should contain essential equipment in order to protect yourself and client from harm in an emergency situation. The following are major categories;

- Personal protective equipment/ safety equipment
- Safety equipment that is useful during an emergency.

**A. Personal protective equipment (PPE)** is a main safety equipment of protection for emergency and recovery workers. Depending on the type of emergency it is necessary to protect emergency response and recovery workers from physical, chemical and

biological hazards. Therefore , main protective equipment includes respirators, eye protection, hearing protection and protective clothing. Some examples of PPE may include gas masks, gloves, overalls, boots, and goggles.

## **B. Infection control equipment**

The first aid kits should contain basic protective equipment to reduce the risk of infection. It should contain equipment to safely clean up spills of blood or other bodily fluids

## **C. Wound management equipment**

A first aid kit should contain equipment to deal with wounds of all sizes, ranging from minor cuts to life-threatening major bleeding. For example tourniquet ,bandages and others

### **1.9.1. Occupational health / safety procedures and safe working practices**

Occupational Health & Safety policies is defined as laws and guidelines keep to help your workplace safe. It is important that you are familiar with the occupational Health & Safety policies that exist in your state or territory.

The purpose of the Health and Safety policies and procedures is to guide and direct all employees to work safely and prevent injury, to themselves and others. All employees are encouraged to participate in developing, implementing, and enforcing Health and Safety policies and procedures. All employees must take all reasonable steps to prevent accidents and never sacrifice safety for expedience. Our goal is to eliminate or minimize hazards that can cause accidents. Health, safety, the environment and loss control in the workplace are everyone's responsibility. Everyone join put efforts to provide a healthy and safe working environment on a continuous day to day basis. The legislation places duties on owners, employers, workers, suppliers, the self-employed and contractors, to establish and maintain safe and healthy working conditions.

It outline the responsibilities of employers to provide first aid facilities and first aid trained personnel/workers. The regulations may also detail the requirements of first aid kits and facilities based on the size of the organization and the type of work environment. One of your most important responsibilities is to protect your Health and Safety as well as that of your co-workers.

Occupational health & safety policies guidelines for preventing accidents in the workplace should be found in the organizational polices and standard operating procedures. It should have procedures on how to deal with a workplace accident. It may include instructions on how to use Personal Protective Equipment (PPE), which can prevent infection spreading.

Similarly you can read the detail of Ethiopian Occupational Health & Safety policies for more detail.

## Self-check -1

## Written test

Name. \_\_\_\_\_ ID. \_\_\_\_\_ Date. \_\_\_\_\_

### Test 1.1: True or False Question

**Directions:** Say true if the statement is correct and false if the statement is incorrect

1. Artificial Respiration is a procedure for making air to flow in to and out of a person's lungs when individual's natural breathing is inadequate or ceased.
2. The decision to perform mouth to mouth respiration by First Responders is a personal choice.
3. The aim of CPR is to compress the heart b/n sternum and the back bone (spine) thus literally squeezing blood out of it.

### Test 1.2: Matching

**Direction:** Match Terms in column A with its meanings in column B

#### Column "A"

1. Tachypnea
2. Confused
3. Apnea
4. Bradypnea
5. Dyspnea
6. Hyperventilation
7. Hypoventilation

#### Column "B"

- A. Respiratory rate over 20
- B. Respiratory rate below 12
- C. Shortness of breath – difficulty in breathing
- D. No breathing
- E. Fast and deep respirations
- F. Slow and shallow respirations
- G. heart rate over 100bpm
- H. Heart rate below 60bpm
- I. Average adult systolic range – 100 to 140
- J. Average adult diastolic range – 60 to 90

### Test 1.3: Short answer questions

**Directions:** Answer all the questions listed below.

1. What is the purpose of First Aid?

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2. State the principles of First Aid.

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3. Describe state of consensuses.

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4. The key signs that are used to evaluate the patient's condition are called?

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## Operation Sheet -1

▪ **Operation Title:** Taking Vital signs

**Instruction:** Perform all steps/tasks according to standard procedures /guideline

**Purpose:** to identify the state of the clients

**Required tools and equipment:** Vital sign measurement equipment; like thermometer, BP apparatus, etc.

**Precautions:** use personal protective equipment

**Procedures:**

Step 1. Calibrate and ready each of vital sign measuring tool before measurement.

Step2. Calm yourself and select appropriate place

Step3. Sit the patients comfortable in appropriate place and position

Step4. Calm the patients appropriately

Step5. Control condition that affect patients Temperature, respiration, pulse and heart beat

Step6. Differentiate the normal and abnormal range of each vital sign.

Step7. Measure each of vital sign correctly

Step8. Register the findings.

**Quality criteria:** vital sign reading (measurement) done correctly manner.

## LAP TEST-I

## Performance Test

Name: \_\_\_\_\_ ID: \_\_\_\_\_ date: \_\_\_\_\_

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

**Instructions:** Given necessary templates, tools and materials you are required to perform the following tasks within **1** hour. The project is expected from each student to do it.

**Task-1:** Count respiratory rate of individuals in all age groups accordingly.

**Task-2:** Count pulse rate of individuals.

**Task-3:** Measure human body temperature of individuals.

**Task-4:** Perform measuring of blood pressure of individuals

**Task-5:** Records and interpret each findings of measurement.



## Unit Two: Provide First Aid Service

### Instruction Sheet

This learning unit is developed to provide the trainees the necessary information regarding the following content coverage and topics:

- Communication style
- Resources and equipment
- Basic ABCDE rules
- Responding the casualty in a culturally aware and sensitive manner
- First aid procedures
- Sought informed consent
- Established first aid principles and procedures
- First aid equipment and client management
- Client care techniques
- Casualty's condition and management

This Unit will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Adopt Communication style to match the casualty's level of consciousness
- Use the Available Resources and equipment to make the casualty as comfortable as possible
- Apply Basic rules of ABCDE life
- Respond the casualty in a culturally aware and sensitive manner
- Provide First aid procedures
- Request Sought informed consent
- Recognized first aid principles and procedure
- Use First aid equipment and manage clients correctly
- Implement Client care techniques
- Monitor Casualty's condition and management accordingly

### Learning Instructions:

- Read the specific objectives of this Learning Guide.
- Follow the instructions described below.
- Read the information written in the information Sheets
- Accomplish the Self-checks
- Perform Operation Sheets
- Do the "LAP test"

## 2.1. Causality level of consciousness and communication style

### 2.1.1. Level of consciousness

Level of consciousness is a term used to describe a person's awareness and understanding of what is happening in his or her surroundings.

There are three main levels of consciousness:

1. Consciousness is an awake state, when a person is fully aware of his or her surroundings and understands, talks, moves, and responds normally.
2. Decreased consciousness is when a person appears to be awake and aware of surroundings (conscious) but is not responding normally. While in a state of decreased consciousness, a person may not answer when spoken to, stare straight ahead, and have no facial expression. Others may think the person is acting confused, odd, or sleepy. Later, the person may not be able to recall what happened.
3. Unconsciousness is when a person is not aware of what is going on and is not able to respond normally to things that happen to and around him or her.
  - Fainting is a brief form of unconsciousness.
  - Coma is a deep, prolonged state of unconsciousness.
  - General anesthesia is a controlled period of unconsciousness.

### 2.1.2. Communication style

Communication is an essential component of pre hospital care. Both verbal and written communications will be used during every response. Patient care is not only assessment and treatment of patient but also the ability to effectively and efficiently communicate findings to other health care providers.

Communication has to do with getting information from one person to another. In emergency medical service, that information may be extremely urgent ,so it needs to move rapidly and efficiently.

Read about communication, its component and type as you learnt in MCC module. The following are major communication conducting during first aid.

#### I. Communicating with other health care professional.

Effective communication between the emergency service providers and health care professionals in the receiving facility is an essential cornerstone of efficient, effective and appropriate patient care. Once you arrive at hospital, a hospital staff member will take responsibility for the patient from you. Provide that person with a formal oral report of the

patient's condition. Giving report is a longstanding and well documented part of transferring the patient's care from one provider to another.

The following six components must be included in the oral report;

- ✓ The patient's name (if you know it) and chief complaint, nature of illness, or mechanism of injury.
- ✓ More detailed information of what you gave in your radio/telephone report
- ✓ Any important history that was not given already
- ✓ Patient response to treatment given en route
- ✓ The vital signs assessed during transport and after radio report
- ✓ Any other information that you may have gathered that was not important enough to report sooner.

## II. Communicating with patients

Your communication skill will be put to the test when you communicate with patient's and/or families in emergency situation. Remember that someone who is sick or injured is scared and might not understand what you are doing and saying. Therefore, your gestures, body movements, and attitude toward the patient are critical in gaining the trust of the patient and family. Golden Rules will help you to calm and reassure your patients:

- Make and keep eye contact with the patient at all times. Give the patient your undivided attention. This will the patient know that he or she is your top priority. Look the patient straight in the eye to establish rapport. Establishing rapport is building a trusting relationship with your patient
- Use the patient's proper name when you know it. Ask the patient what he/she to be called. Avoid using the term —Honeyll or —Dearll. Use the patient's first name if the patient is a child or the patient asks you to use his/her first name. Rather, use a courtesy title such as —Mr. Peterll —Mrs. Smithll or —Ms. Butlerll. If you do not know the patient name, refer to him or her as —Sirll or —ma'amll
- Tell the patient the truth. Even if you have to say something unpleasant, telling the truth is better than lying. You might not always tell the patient everything, but if the patient or family asks a specific question, you should answer truthfully. If you don't know the answer to the patient question says I don't know d. Use language that the patient can understand. Avoid technical medical terms that the patient might not understand .

- Be careful of what you say about the patient to others. You have to assume that the patient can hear every word you say, even if you are speaking to others and even if the patient appears to be unconscious or unresponsive.
- Be aware of your body language. Be careful not to appear threatening. Instead position yourself at a lower level than the patient when practical. You should always conduct yourself in a calm, professional manner.
- Always speak slowly, clearly, and distinctly. Pay close attention to your tone of voice
- If the patient is hearing impaired, speak clearly and face the person so that he can read the lip. Don't shout at a person who is hearing impaired. It may frighten the patient and make it even difficult to understand.
- Allow time for the patient to answer or respond to your questions. Do not rush a patient unless there is immediate danger. Sick and injured people may not be thinking clearly and may need time to answer even simple question.
- Act and speak in a calm, confident manner while caring for the patient. Make sure you attend to the patient's pains and needs. Try to make the patient physically comfortable and relaxed. Find out whether the patient is more comfortable sitting or lying down Patients literally place their lives in your hand. They deserve to know that you can provide medical care and that you are concerned about their wellbeing.

### **III. Communicating with geriatric patients**

A person actual age might not be the most important factor in making him/her geriatrics. It is more important to determine a person's functional age. The functional age relates to the person's ability to function in daily activities, the person's mental state and activity pattern. Most of the older people think clearly, can give you a clear medical history and can answer your question. Do not assume that an older patient is senile or confused. Although communicating with some older patients is extremely difficult. Some may be hostile, irritable, and/or confused. Do not assume this is normal behavior for an older patient. This signs may be caused by a simple lack of oxygen (hypoxia), brain injury, un intentional drug over dose or even hypovolemia. Never attribute altered mental status to —old age. There may be other serious underlying conditions. Others may have difficulty hearing or seeing you. You need great patience and compassion when you are called upon to care for such a patient. Think of the patient as someone's grandmother or grandfather or even as yourself when you reach at that age. Approach an older person slowly and calmly. Allow plenty of time for the patient to respond to your questions. Watch for signs of confusion, anxiety, or

impaired hearing or vision. The patient should feel confident that you are in charge and that everything possible is being done for him or her.

Older patients often don't feel much pain. An older person who has fallen or been injured may report no pain. In addition, older patient might not be fully aware of important changes in other body system as a result, be especially vigilant for objective changes- no matter how subtle-in their condition. Even minor change in breathing or mental state may signal major problem. When possible give time to collect a few personal items like hearing aid, glass or denture packed before departure

#### **IV. Communicating with children**

Everyone who is thrust into an emergency situation become frightened to some degree. However fear is probably most severe and most obvious in children. Children may be frightened by your uniform, the ambulance and the number of people who has suddenly gathered around. Even a child who says little may be very much aware of all that is going on. Familiar objects and faces will help to reduce this fright. Let a child keep a favorite toy, doll, or security blanket. To give the child some sense of control and comfort. Having a family member or friend nearby can also be helpful. When not impractical due to the child's condition, it is often helpful to let the parent or an adult friend hold the child during your evaluation and treatment Children can easily see through lies or deceptions. Always be honest with them. Explain to the child over and over again what and why certain things are happening. If treatment is going to hurt, such as applying splint, tell the child ahead of time. Also tell the child it will not hurt for long and that it will help —make it better!! Respect a child's modesty. Little girls and little boys are often embarrassed if they have to undress or be undressed in front of strangers. This anxiety often intensifies during adolescence. When a wound or site of an injury has to be exposed, try to do so out of the sight of strangers. Again, it is extremely important to tell the child what you are doing and why you are doing it.

You should speak to a child in a professional, yet friendly, way. A child should feel reassured that you are there to help in every way possible. Maintain eye contact with a child. It is helpful to position yourself at their level so that you do not appear to tower above the child.

#### **V. Communicating with hearing-impaired patients**

Patient who are hearing-impaired patients or deaf are usually not ashamed or embarrassed by their disability. Often it is the people around a deaf (hearing-impaired patients) who have

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the problem of coping. You must be able to communicate with hearing-impaired patients so that you can provide the necessary or even lifesaving care. The majority of hearing-impaired patients have normal intelligence. They can usually understand what is going on around them, provided that you can successfully communicate with them. Most hearing-impaired patients can read lips to some extent. Therefore you should place yourself in a position so that the patient can see your lip. Many hearing-impaired patients have hearing aids. Be careful that hearing aid is not lost during an accident or fall. Hearing aid may be forgotten if the patient confused. Look around or ask the patient or the family about hearing aid. Remember the following five steps to help you efficiently communicate with patients who are hearing impaired;

- Make sure you have paper and a pen. This way, you can write down question and the patient can write down the answer
- If the patient can read lips, you should face the patient and speak slowly, clearly, and distinctly. Do not cover your mouth or mumble. If it is night or dark consider shining light on your face.
- Never shout!
- Be sure to listen carefully, ask short questions, and give short answers. Remember that although many hearing impaired patients can speak distinctly, some cannot.
- Learn some simple phrases used in sign language. For example knowing the signs for sick, hurt and help may be useful if you cannot communicate in any other way.

## **VI. Communicating with visually impaired patients.**

Not all visually impaired patients are completely blind. Many can perceive light and dark or can see shadow or movement. Ask the patient whether he or she can see at all. You should expect that visually impaired patient have normal intelligence. As you begin caring for visually impaired patients explain everything you are doing in detail as you are doing it. Be sure to stay in physical contact with the patient as you begin your care. Hold your hand lightly on the patient's shoulder or arm. Try to avoid sudden movements. If the patient can walk to the ambulance, place his or her hand in your arm. Taking care not to rush. If circumstances permit, bring the guide dog to the hospital with the patient. If the dog has to be left behind, you should arrange for its care.

## **VII. Communicating with patients of other languages**

Your first step is to find out how much the local language the patient can speak. Use short, simple questions and simple words whenever possible. Avoid difficult medical terms. You can help patient to better understand by pointing to specific parts of the body as you ask questions. If the patient doesn't speak the local language try to find a relative, friend or bystander who may be able to translate for you, so you can better communicate with the patient.

## 2.2. Clinical equipment required for client management

This session explains the various equipment and materials used for First Aid. First Aid facilities and ambulance service must be available at a workplace to meet emergency situations. Institution should have First Aid facilities, such as a First Aid room, First Aid kit, , First Aiders and First Aid equipment in the premises to meet emergency situations.

**First Aid room:-**It is the place where equipment and materials are arranged systematically for providing First Aid services. First Aid room could accommodate the following:

- ✓ A nameplate with the symbol of First Aid
- ✓ Adequate lighting and ventilation facility
- ✓ Toilets, which should be friendly for differently abled persons
- ✓ Facilities for the easy movement of a person on a stretcher or wheelchair
- ✓ Table and chairs
- ✓ A telephone

**First Aid room should ;** it also include not limited ;

- Examination lamp
- Medical examination couch with blankets and pillows
- A container for storing sharp equipment, like surgical knives, etc.
- Sink and washbasin with hot and cold running water
- Sterilizer and Stretcher and A portable screen
- Work bench or dressing trolley and Oxygen cylinder
- Sphygmomanometer — blood pressure measuring
- Instrument
- Resuscitation equipment and Cupboards for storing medicines, dressings and linen
- Electric power points and Seating arrangements
- Container for soiled dressings and medical waste containers etc.

**First Aid kit:**

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A First Aid kit consists of items for providing First Aid in case of emergency. A basic First Aid kit include the following:

- Bandages of all sizes for cleaning and dressing wounds
- Medical tape, Cotton balls, Safety pins, Alcohol pads , Anti-microbial hand wipes
- Hydrogen peroxide for cleaning skin wounds, Sterile water bottle
- Eye flushing solution bottle with an eye cup
- Arm sling, chemical ice pack, Chemical hot pack
- Thermometer oral and rectal (for children)
- Tweezers, Scissors, torch, Nail clippers and Sterile gloves and etc.

### **Important medications and other relief materials.**

This to be kept in a First Aid kit (check for their expiry and replace them immediately with a fresh batch)include the following:

- Antibiotic ointment for cuts and scrapes on the skin
- medicated sunburn spray or cream
- Calamine lotion and Insect sting relief pads
- Advil (ibuprophen), an anti-inflammatory tablet used for pain, swelling and fever
- Benadryl (diphenhydramine) syrup, an anti-histamine for allergic reactions, itching and running nose
- Cough suppressant and Oral rehydration salts (ORS)
- Defibrillator, Sling, a bandage used to rest an injured forearm; it is a wide triangular piece of cloth used to support the hand from around the neck
- Splint, orthopedic mechanical device used to restrain and protect a part of the body in case of a fracture (such as a broken leg or hand)

## **2.3. Applying basic rules of ABCDE life**

### **2.3.1. Respiratory Emergencies**

Respiration involves the process of breathing and the exchange of gases (oxygen and carbon dioxide) in the lungs and in cells throughout the body. This could be takes place through respiratory system. Respiratory system comprises the mouth, nose, windpipe (trachea), lungs, and pulmonary blood vessels.



Natural breathing process is accomplished by increasing and decreasing the capacity of the chest and the lung. Atmospheric air being under pressure, rushes in and out with the increase and decrease of chest space.

During the inhalation phase of breathing (inspiration), the muscles of the chest lift the ribs, expanding the chest. At the same time the diaphragm contracts and descends toward the abdomen. In this way, the chest cavities increased in size and air flows in. When all muscles relax, the ribs and diaphragm resume their normal position, the chest cavity becomes smaller, and air flows outward. In all manual methods of artificial respiration, the objective is to cause an alternate decrease and increase in size of the chest cavity. When this is done, air flows in and out if there is no obstruction

Respiratory emergency is a condition in which normal breathing is reduced or stops so that oxygen intake is insufficient to support life

### **Causes of Respiratory Failure**

#### **A. Anatomic Obstruction:**

- Obstruction by tongue – the most common cause
- Other causes of obstruction that constrict the air passages are:
- Asthma, , Diphtheria, Swallowing of corrosive poisons, Direct injury

#### **B. Mechanical Obstruction :-**

- Solid foreign objects lodging in the respiratory passage e.g. choking of food
- Accumulation of fluids in the back of the throat (mucous ,blood or saliva)
- Aspiration (Inhalation of any solid or liquid substance)

#### **C. Air depleted of oxygen or containing toxic gases**

#### **D. Additional causes:**

- Drowning , Circulatory collapse (shock), Heart disease, Strangulation
- Electrical shock
- Poisoning by alcohol, barbiturate, codeine etc.
- Lung disease e.g. pneumonia
- Compression of the chest e.g. accident

In case of respiratory failure the vital steps to carry out is applying basic rule of "DRS ABCDE"

**Danger (D):-** Check the surrounding area and make sure it's safe for you, the injured person and others in the area. Do this by looking, listening and smelling.

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If the casualty is in immediate danger you should move them, but only if it is safe to do so. Try to lift or move the person in a way that will not incur further injury, and remember to protect yourself from back strain or other injuries.

**Response (R):** Check the patient's responses by talking and touching them (squeezing their shoulders). This is referred to as the "Talk And Touch Method". You may say: Can you hear me, What is your name and Open your eye.

If the patient responds they are conscious, breathing and have a pulse – make them comfortable and check them for any injuries using the secondary survey technique, call for help if required and continue to monitor them for at least 10-15 minutes before letting them move

A person who does not respond is unconscious and this is potentially life-threatening as they are at risk of choking, their breathing may stop or uncontrolled bleeding may result in death.

**Send for help(S):-** Call and Seek for an ambulance or medical assistance as soon as possible.

When speaking on the phone, try your best to maintain your composure, speak clearly to the telephone operator and try to answer all the questions as best you can.

There are situations where it may be necessary to request the use of a bystander's mobile phone to make the emergency call. If possible you should ask a bystander to make the call for you so that you are able to remain with the casualty and continue with the required treatment. If you are alone you should shout for help. However if no one comes you should immediately proceed with CPR.

As well as seeking help for calling emergency services you may also ask bystanders for help in the treatment of casualties. This may be particularly helpful when conducting CPR as it can be physically tiring.

### **Elements of ABCDE approach:**

It is very important approach in case of assessing Respiratory Emergencies.

- Approach every patient in a systematic way
- Recognize life-threatening conditions early
- DO most critical interventions first - fix problems before moving on
- The ABCDE approach is very quick in a stable patient

- a. Airway (A):** Open airway to allow air to reach the lungs. Check that the individual's airway is clear so that their breathing is not obstructed. To check their airway use the head tilt/chin lift technique as this helps lift the tongue from the back of the throat. One hand is placed on the casualty's forehead to tilt the head back while the fingers of the other hand are positioned on the bony part of the chin to lift it up and outward. The mouth should then be gently opened by pulling down on the jaw to check for any obstruction. If there is any foreign material present you should move the casualty into the recovery position and allow gravity to aid in draining material from the mouth. Ensuring and providing an open airway always takes precedence over the possibility of a spinal injury.
- b. Breathing (B):** While keeping the airways open, look, listen and feel for normal breathing signs. Restore breathing to reverse respiratory arrest, allow sufficient oxygen to enter the lungs and pass in to the blood. This is often easier to do when the injured person is on their back but can also be done while they are in the recovery position. For a full 3-5 seconds you should position yourself so that you can hear and feel if air is escaping from the nose and mouth, while also watching the chest and abdomen to see if they rise and fall with air movement. If the casualty is breathing normally, position them in the recovery position and again check their airway and head position. Check their airway after one minute and thereafter every two minutes.
- c. Circulation(C):** Determine if there is adequate perfusion and Check for life-threatening bleeding. Look, listen and feel for signs of poor perfusion, Cool, moist extremities, Delayed capillary refill, Diaphoresis, Low blood pressure, Tachypnea, Tachycardia and Absent pulses
- d. Disability(D):**
- Assess and protect brain and spinal functions.
  - Assess level of consciousness (AVPU or GCS) in trauma
  - Check for low blood glucose (hypoglycemia), pupils (size, reactivity to light and if equal), movement and sensation in all four limbs
  - Look for abnormal repetitive movements or shaking and Seizures/convulsions

## E. Exposure(E):

- Examine the entire body for hidden injuries, rashes, bites or other lesions
- Rashes, such as hives, can indicate an allergic reaction
- Other rashes can indicate infection

### First Aid management of air way and breathing problem

Emergency medical care begins with ensuring an open airway and breathing status. The patient's airway and breathing status are the first step in your initial assessment for a very good reason: unless you can immediately open and maintain a patent airway.

The following activities are helpful to position the patient for airway and breathing status management:

- Shout for help (depend on the condition)
- Determine the consciousness of the causality by tapping the victim on the shoulder and asking loudly
- Are you okay!?
- Assess and ensure that patient air way is clear
- Place the patient flat on his back with the head turned to one side
- Remove any thing which is preventing the taking in of air (Remove constraints from the neck)
- Kneel beside the patient's head place one hand under his neck and the other hand under his lower Jaw extend his head and neck gently back ward.
- This prevents the tongue from falling back in to the throat.
- Place your cheek and ear close to the victim's mouth and Nose.
- Look at the victim's chest to see if it rises, falls, and listen and feel for air to be exhaled for about 5 seconds.
- If there is no breathing pinch the victim's nostrils shut with thumb and index finger of your hand that is pressing on the victim's forehead.
- This action prevents leakage of air when the lungs are inflated through the mouth.
- Take very deep breath and hold it.
- Fit your mouth tightly over the patients open mouth and forcibly in to the lungs
- While carrying out respiration, check the patient's pulse every 2 or 3 minutes to ensure the heart has not stopped.

- Continue the breathing procedure at the rate 12 to 18 breaths per minute until the chest is seen to rise and the patient is breathing for himself or until is certain.
- If a patient is child, our mouth should cover both his nose and mouth. Very gentle breathing should be used and the younger the child, the gentler this should continue at a rate of 25 breaths per minute.
- Once the patient can breathe by him/herself/ place him/her in what is called the recovery position.

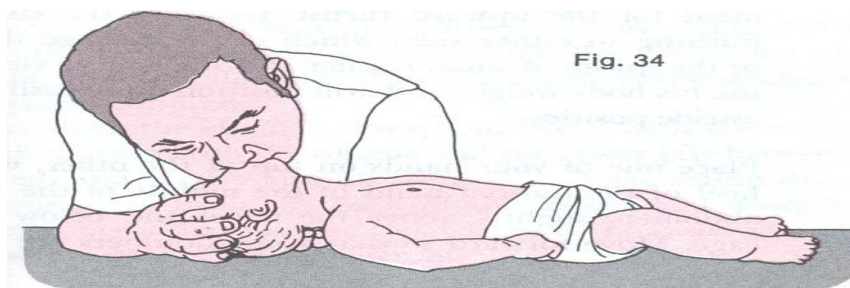


**Figure2.1: Mouth to mouth respiration**

**For infants and children** mouth- to- mouth and -nose resuscitation are administered as described above except that the

- Backward head tilt should not be as extensive as that of adult.
- Both the mouth and nose of the infant or child should be sealed off by your mouth.
- Blow in to the infant's mouth and nose once every 3 seconds (about 20 times per minutes)
- But in the case of children blow once every 4 seconds (about 15 times per minute).
- The amount of air is determined by the size of the victim.

If mouth to mouth is failed and no pulse cardiopulmonary resuscitation is followed.



**Figure2.2: Infant mouth to mouth respiration**

## Compressions/CPR

Cardiopulmonary Resuscitation (CPR) is the name given to the technique of combining rescue breaths with external cardiac compressions. It restore circulation to keep blood circulating and carrying oxygen to the heart, lungs, brain, and body. When CPR is applied to the casualty, multiple body systems such as the brain and the heart are affected by the procedure as oxygen is being pumped into the blood through the circulatory system.

CPR can save lives or increase the chance of survival for the casualty until qualified medical help takes over. The job of the first aider who is considering CPR as a lifesaving option is to determine whether the casualty has a need for it. This can be assessed by looking for signs of collapse or indications of a life-threatening situation such as stopped breathing, no pulse and unconsciousness. If there is a lack of response from the victim and vital signs are missing, then it is cause to proceed with CPR immediately.

The importance of the initial assessment cannot be overstated. If the casualty has been assessed to be in a life and death situation, there is a high priority to implement appropriate life saving strategies.

For example,. If the casualty was found unconscious and not breathing properly, then CPR could be performed.

Failure to initiate CPR promptly can lead to brain damage and subsequent death of the injured person. The more immediate the response time to perform CPR, the better the chances of survival and less injury to the casualty. Timing is crucial when dealing with life-threatening injuries and illnesses as brain damage can occur within four minutes of oxygen being deprived.

### When you perform CPR apply the following steps:

- Ensure the person is lying on their back, if possible and ideally on a flat, hard surface, and with their head at the same level as their heart.
- Kneel beside the person midway between the head and chest for ease of movement between giving breaths and compressions.
- Find the correct hand position – this is in the center of the chest.
- Apply pressure to the sternum with the heel of your hand, keeping your fingers up.
- With the other hand either grip the wrist of the hand on the chest, or place it over the top of the first hand. You can interlace your fingers so that the top ones pull the bottom ones off the chest during compressions.
- Use two hands for an adult, one for a child and the pads of two fingers for an infant.

- Keep your shoulders directly over your hands when making compressions – this will help you to push straight down on the chest giving the best blood flow.
- Keep elbows locked – this applies to the elbow of the hand on the chest if holding the wrist and both if interlacing the fingers. This will help reduce fatigue as you will be able to use the weight of your upper body, rather than the strength of your arms when doing the compressions.
- Compress the lower part of the sternum by up to a third of the chest depth – this will vary depending on the size of the person.
- After each compression, allow the chest to return to the normal position as you rise up, but keep contact with it.
- Keep the up and downward movements smooth, with a steady rhythm.
- Compress faster than 1 per second.
- After every 30 compressions, give two rescue breaths.

After every 30 compressions you will need to deliver 2 rescue breaths. To do this:

- Position the head using the head tilt/chin lift method. The 'pistol grip' is often the best and easiest way to hold and position the jaw.
- Take a breath and place your mouth over the person's mouth.
- Pinch their nose or seal it with your cheek.
- Blow into their mouth and then turn your head to see if their chest rises and falls with the breath, indicating an effective breath and that air has reached their lungs. This also prevents you from inhaling their exhaled breath and allows you to hear air escaping from their mouth.
- If the chest does not rise and fall, adjust the position of the person's head, being careful not to lift, twist or turn their neck.
- Repeat with a second breath.

Remember to give smaller breaths to infants and children as they have smaller lung capacities. Whenever possible use a resuscitation mask. If signs of life return consciousness, normal breathing, moving place the person in the recovery position. It is more important that CPR is not interrupted too often to check for signs of life as regular checking has been shown to reduce survival rates. If you are unwilling to give mouth-to-mouth you should at least continue to administer chest compressions. Any resuscitation is better than none. Do not stop until emergency help arrives.





1-Rescuer CPR Demo.mpg

**Figure 2.3: Cardio pulmonary resuscitation**

### The chain of survival:

The chain of survival is the rapid administration of CPR in sudden cardiac arrest situations to maximize its life saving potential. Understanding the links in the chain of survival will improve the probability of survival from a cardiac arrest.

Four links in the chain of survival:

1. **Early Access:-** Recognize the signs of an impending cardiac arrest and call for help
2. **Early CPR:-** As soon as the first aider observes the victim collapse to the ground, Commence CPR immediately.
3. **Early Defibrillation:-** Request an AED (Automatic External Defibrillator) from a bystander, they are easy to use and applied the moment the heart is in ventricular defibrillation (VF). For every minute defibrillation is delayed, there is approximately 10% reduction in survival. CPR should not be stopped until ambulance personnel or an AED (Automated External Defibrillator) arrive. An AED is an electronic device that is portable, easy to operate, and used when the casualty is having a Sudden Cardiac Arrest (SCA). When the machine detects an abnormal heart rhythm, such as Ventricular Fibrillation (VF) or Ventricular Tachycardia (VT), an electrical shock is sent to the heart, which can restore normal heart rhythm. People requiring CPR have abnormal heart rhythms.
4. **Early Advanced Care Procedures:-** The sooner professional emergency medical personnel/workers can attend the casualty, the better the chance of survival. Seek assistance from paramedics as soon as possible.



**Figure 2.4:-chain of survival**



## OBSTRUCTED AIRWAY: Conscious Victim

If the victim has good air exchange with only partial obstruction and is still able to speak or cough effectively, do not interfere with his attempts to expel a foreign body. If the victim cannot speak or cough, shows a distress signal, appears cyanotic or reveals an exaggerated effort to breathe, you must intervene appropriately.

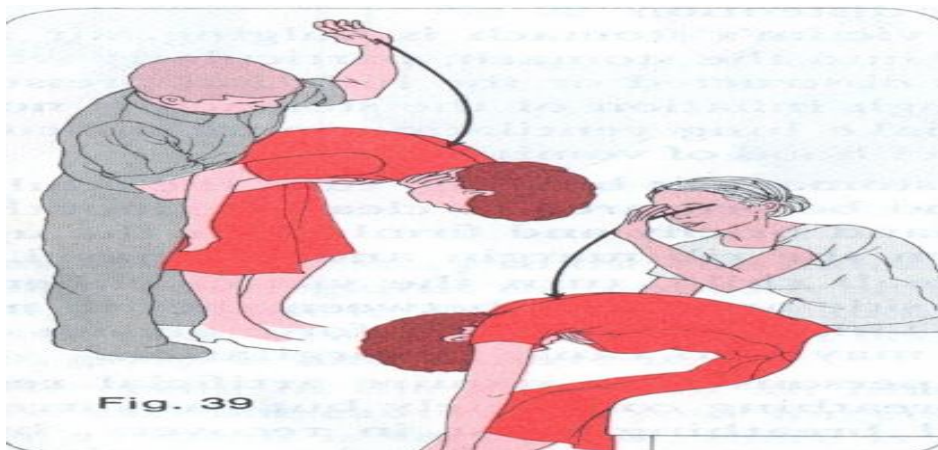
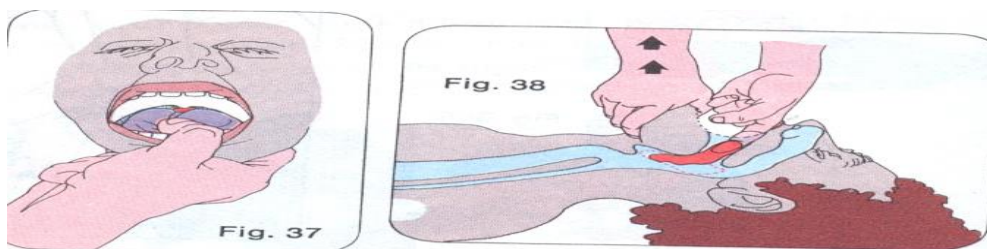


Figure 2.5: Techniques of Obstructed Airway management/Conscious Victim

## OBSTRUCTED AIRWAY - unconscious victim

- If you are not getting air exchange, reposition the head and again attempt to ventilate.
- If you still do not get an air exchange immediately turn the victim on his side towards you, resting his chest against your knees and administer four sharp blows between the shoulder blades
- Place the victim on his back (supine) and spread legs wide apart, straddle his hips or one thigh. This position gives comfort for the first -aider.
- Open the victim's airway and sweep with the fingers.
- If the procedures are ineffective, you must repeat the sequence.
- Attempt to ventilate and Perform five rapid back blows
- Perform five thrusts (push on the chest ) and Do finger sweep
- If the stomach is building gastric distention, turn the adult victim to one side and clear the mouth after pressing your hand briefly and firmly over the upper abdomen between the rib margin and the navel. This procedure will force air out of the stomach. But it may also cause regurgitation.



**Figure 2.6:** Techniques of Obstructed Airway management/unconscious Victim

### CHOKING:

Choking is difficulty of breathing or stopping of breathing a totally or partially obstructed airway – caused by swollen tissues or a foreign body. E.g. Food or other material entering the windpipe instead of the gullet.

#### Common signs and symptoms include:

- Inability to cough, breathes, speak or cry out.
- Clutching/gripping of throat.
- Cyanosis – blue skin, tongue, mouth lining.
- Anxiety/restlessness and Noisy breathing/wheezing.
- Red/congested face with bulging neck veins and Collapse/unconsciousness.

#### First aid Management

Can the patient breathe, speak or cough?		
If Yes:	If No and Conscious:	If No and Unconscious:
<ol style="list-style-type: none"> <li>1. Give the patient reassurance and encourage coughing until cleared. <b>Do nothing else.</b></li> <li>2. If the patient continues/starts wheezing or breathing noisily</li> </ol>	<ul style="list-style-type: none"> <li>• Call for help and ambulance.</li> <li>• Have person stand if able and lean on the back of a chair.</li> <li>• Give five sharp, upward <i>back blows</i> between the shoulder blades, using the heel of the hand.</li> <li>• After each blow – check if the object has been expelled.</li> <li>• If not successful – give up to 5 chest thrusts (similar but slower and sharper than CPR compressions).</li> <li>• Check to see if object has been expelled. if person becomes unconscious:</li> <li>• Lie on person on side and try to clear the airway – check mouth for visible foreign material.</li> <li>• Use head tilt and jaw support to open airway</li> <li>• look, listen and feel for breath signs.</li> <li>• If person still not breathing commence ABC Basic Life Support process</li> </ul>	<ul style="list-style-type: none"> <li>• Call for help and ambulance.</li> <li>• Lie on person on side</li> <li>• and try to clear the airway – check mouth for visible foreign material.</li> <li>• Use head tilt and jaw support to open airway – look, listen and feel for breath signs.</li> <li>• If person still not breathing commence ABC Basic Life Support process.</li> </ul>



**Figure 2: choking**

### For infant /child:

Follow procedures for an adult, with these differences:

- Position child face down over your lap to take advantage of gravity.
- Position head lower than chest, at a 45 degree angle.
- Give 5 back blows between the shoulder blades.
- While giving back blows support the child's head by placing hand around jaw.
- If unsuccessful give up to 5 chest thrusts.
- If child becomes unconscious and stops breathing commence CPR.



**Figure 2.7: Child choking**

### SHOCK:

It is potentially life-threatening. Shock can occur when the body is unable to cope with serious injuries, illnesses or stressful situations e.g. bleeding, burns, severe allergic reactions, witnessing an accident.

A person who goes in to shock the body prioritizes the supply of oxygen/blood to the vital organs first, restricting blood to the limbs, resulting in pale, cold, sweaty skin. Blood will then be restricted to the digestive system, resulting in nausea. After a time the tissues of the arms and legs will begin to die, at this stage the brain will return blood flow to these parts, causing vital organs to lose blood flow. If this continues the person will become drowsy, and the heart and lungs will begin to shut down, resulting in death.

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### Recognizing shock:

- Cold, pale, sweaty skin.
- Rapid, weak pulse.
- Rapid breathing.
- They may feel anxious, restless and very thirsty.
- They may develop nausea/vomiting and Altered conscious state

### First aid Management:

If the patient is conscious:	If the patient is unconscious
<ul style="list-style-type: none"> <li>▪ Prevent further injury.</li> <li>▪ Assess patient and provide first aid for major injury/illness.</li> <li>▪ Manage any other injuries e.g. fractures, bleeding.</li> <li>▪ Make person comfortable and cover with a blanket to maintain body temperature.</li> <li>▪ Do not give the patient any food or drink. If needed moisten lips to make more comfortable.</li> <li>▪ Call for an ambulance and for help.</li> <li>▪ Continue to monitor ABC (Airway Breathing Circulation) and consciousness/responses.</li> </ul>	<ol style="list-style-type: none"> <li>1. Commence ABCDE Basic Life Support.</li> <li>2. Call for help and an ambulance.</li> </ol>

## STROKE

Most commonly caused by a bleeding or a blood clot in the brain, a stroke occurs when the brains blood flow is disrupted, leading to brain tissue damage.

The most common method for checking for a stroke is using the **FAST** method.

**F** – Facial weakness – Can the person smile? Does the mouth or eye droop?

**A** – Arm weakness – Can the person raise both arms?

**S** – Speech – Is the speech slurred? Can the person understand what you say?

**T** – Time to act fast – Call an ambulance

Other common signs and symptoms include:

- Sudden weakness/numbness/paralysis of one side of the face, arm or leg.
- Sudden difficulty swallowing and Blurred/decreased vision
- Severe sudden headache and May develop nausea, vomiting and drowsiness.
- May develop dizziness, fatigue or become and unconscious.

Time is critical so calling an ambulance quickly is vital.

**If the patient is conscious:**

- call an ambulance
- Carry out any required first aid.
- Help the person rest comfortably
- Reassure person to help relieve anxiety.
- Do not give the casualty anything to eat or drink.
- If the person is drooling or has difficulty swallowing move them in to the recovery position on the side with the facial droop facing down/closest to the ground.

**If the patient is unconscious;**

- Commence DRS ABCDE Basic Life Support.
- Call an ambulance
- Move them in to the recovery position on the side with the facial droop facing down/closest to the ground.
- Care for any life-threatening illnesses/injuries.
- Continue to monitor vital signs until ambulance arrives.

**BLEEDING:**

Bleeding is defusing or oozing of blood from blood vessels(Hemorrhage)

Any bleeding, wounds and injuries will need to be located and treated accordingly. It may be life-threatening if there is blood spurting from the wound. Bleeding can be classed and checked as internal or external .

**Methods of controlling bleeding externally**

**Direct pressure-** using compresses

- Pressure bandage can be placed to hold pads of cloth.
- Put a thick pad of cloth held between the hand and wound



Fig. 2.8: Fingertip and direct pressure

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- **Elevation:-** The injured part of the body should be raised about the victim's heart
- Applying pressure on the supplying artery specially on brachial artery in severe bleeding,
- Apply tourniquet in severe bleeding



Fig. 2.9: Elevated extremity Pressure point brachial and Pressure point Femoral

## WOUNDS:

A wound is a break in the continuity of the body tissue either internal or external.

Wounds are categorized as either closed or open.

- Closed Wounds – damage occurs beneath the surface of the skin e.g. a bruise.
- Open Wounds – damage breaks the outer layer of the skin e.g. scrape, cut. Usually involves bleeding.

**Types of Wounds:** Abrasions, Incisions, Lacerated, Punctures, Avulsions

**The main aims when dealing with wound:**

- To control the wound stop bleeding
- To treat and prevent shock
- To protect the wound from contamination and infection
- To prevent complication

## General first aid treatment for major wounds involves:

If the patient is conscious:	If the patient is unconscious:
<ul style="list-style-type: none"> <li>Put a dressing on the wound and control bleeding (as for external bleeding).</li> <li>Call for help or get the person to medical attention.</li> <li>Do not remove bandage once bleeding has been controlled.</li> <li>Do not try to clean the wound – medical staff will do this.</li> <li>Continue to monitor person closely.</li> <li>Be prepared to treat for shock.</li> <li>If person becomes unconscious follow ABCDE basic life support process.</li> </ul>	<ul style="list-style-type: none"> <li>Follow ABC Basic Life Support process.</li> <li>Call for help and follow emergency personnel instructions.</li> </ul>

## SEIZURES:

Seizures occur when the electrical activity of the brain is interrupted or becomes irregular. This may be caused by a number of conditions and injuries including: Stroke, Poisoning, Head injury, Meningitis, Brain tumour. Epilepsy etc.



Figure 2.10: Seizures

First aid management may include;

### During the seizure:

- Do not try to stop the seizure.
- Do not try to restrain/hold the person – this could result in other injuries.

- Make the area around the person safe – remove objects, furniture etc. Away from the person.
- Protect the person's head – use a low pillow or folded clothing etc. Under their head.
- Do not place anything in the person's mouth/between their teeth – they will not swallow their tongue. While they may bite their tongue or cheek this is not usually done with enough force to cause significant damage/bleeding.

#### **Immediately after the seizure:**

- Place the person in the recovery position to manage the airway and allow any fluids to drain out of the mouth. This may include blood and vomit.
- Keep on side until fully conscious – they may be drowsy or disoriented after the seizure.
- Carry out any required first aid.
- Reassure the person.
- Ask bystanders not to crowd around.
- If the person became incontinent during/after the seizure provide some covering for the person's clothing if possible.
- Remain with the person until they are fully conscious and aware of their surroundings.
- Contact for medical help.

#### **BURNS:**

A burn is an injury that results from heat, chemical agents, or radiation. It may vary in depth, size, and severity causing injury to the cells in the affected area.

Burns are usually classified in three levels based on the depth or degree of skin damage.

These are:-i

1. First degree burn
  2. Second degree burn, and
  3. Third degree burn.
- **I<sup>st</sup> degree burn (Superficial burn):** may have Redness or discoloration, Mild swelling and pain and Rapid healing.





Fig. 2.11:- superficial burn

- **2<sup>nd</sup> degree burn(Intermediate burn):** Greater depth than first degree burns; Redness and mottled appearance, Blisters, Severe pain, Swelling and Prone to infection.



Fig. 2.12: 2<sup>nd</sup> degree burn(Intermediate burn)

- **3<sup>rd</sup> degree burn(Deep burn):** Deep tissue distraction, White appearance, No pain and blisters; and Complete loss of all layers of skin. This type of burn results in severe disability and/or death



Fig.2.13: 3rd degree burn(Deep burn)

**First-aid measures:** If the victim is burned with fire apply cold applications, immerse the burned area in cold water roll the burned person on the ground, or cover with water soaked thick cloth or blanket and put out the fire. If the accident is of electric source, quickly disconnect at the electric meter or check point, or use rope wooden stick, dried cloth etc. to disconnect it.

- Move the victim from the accident place to avoid further injury;

- Loosen and/or remove burned dresses and lay down the victim on his/her back and let him/her breathe fresh air and ensure that no foreign objects have entered and blocked the passage of the respiratory system;
- If the victim is not breathing properly, initiate mouth to mouth artificial respiration;
- Cool the burned area under cool water for 20 minutes.
- Gently remove any clothing and jewellery from the burned area.
- Thoroughly check the wound to determine the size, and the degree of burn;
- Do not try to remove any clothing that is sticking to it.
- If the area cannot be immersed – such as the face – towel, sheets or wet clothes that have been soaked in water can be applied. Change/rewet these regularly as they will absorb heat from the burn.
- Cover the burn with a sterile, non-stick dressing and loosely bandage in place. If this is not available or the burn covers a large area use a dry, clean sheet or other material that is not fluffy.
- Minimize shock.
- Do not use ointments, lotions, creams or powders on a burn – these will seal in heat and may contaminate the burn
- Seek for medical care

#### **Measure to prevent burns:**

- Keep away from children items such as matches, burning lamp and candles;
- Prepare and place stoves and other cooking installations in a safe way. E.g. locally made standing stove
- Keep away from fire inflammable materials and don't come with materials such as nylon close to fire-place;
- Educate smokers not to smoke inside a house and if they smoke give them strict advice to put off the burning left over cigarette

#### **FRACTURES:**

Fractures are breaks in bones tissues and can be classed as either open or closed fractures.

**Open fractures:** involve an open wound – both sides of the fracture do not need to be visible. Limb may be severely bent or an object may have penetrated the skin, breaking the bone.

**Closed fractures:** no unbroken skin, more common than open fractures.

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**Compound fractures:** involve both feature

Fractures can become life-threatening if there is severe internal or external bleeding and due to the risk of shock. If organs or major nerves or other structures/systems are also injured, the fracture, whether open or closed, is classed as 'complicated'.

Common signs and symptoms include;

- Pain/tenderness – at or near injury site.
- Deformity or abnormal position/twist of limb.
- Swelling and Loss of function.
- Discoloration, Bruising of skin and Shock.



**Figure 2.14: Fracture**

**General first aid measure include:**

**If the patient is conscious:**

- Control any bleeding and cover any wounds.
- Check for signs of fractures.
- Ask casualty not to move injured body part.
- Immobilize and/or support the fracture.
- Handle gently – move the limb/body part as little as possible to prevent making the fracture worse (e.g. a closed fracture may become an open fracture) and to lessen the person's pain.
- Seek medical aid.

**If the patient is unconscious:**

- Give ABC Basic Life Support
- Seek medical aid.

**DISLOCATIONS:**

Dislocations occur when a bone is separated or displaced from its normal anatomical position. If left untreated dislocations may lead to a permanent loss of function in the affected area. Joints which are most frequently dislocated are shoulder, elbow, thumb, finger, jaw and etc.

**Signs and symptoms:-**Pain, near the joint, victim cannot move it, deformity abnormal appearance, swelling and bruise are usually present.

#### **First aid and management :-**

- Support and secure the part in most comfortable position
- Obtain medical aid at once
- Do not attempt to replace the bones to normal position
- Seek professional medical help

#### **UNCONSCIOUSNESS:**

victim is said to be unconscious when the patient is asleep, he/she cannot speak and has no control over his movement. Victim cannot respond to place, people and time (PPT)

#### **Cause of unconsciousness**

Head injury (bleeding), Fainting, Heart attacks, Poisoning, Shock, Epilepsy, Diabetes etc

#### **Level of unconsciousness**

- Alertness: the patient can speak, answers, questions and feels pain
- Lethargy: the patient is awake but answers questions slowly- he may be confused about what is happening and where he is.
- Drowsiness: the patient is sleep of he is unable to concentrate on what we are saying
- Semi-consciousness: the patient is very sleep of and has great difficulty in speaking and in answering your questions
- Unconsciousness: the patient is sleepy we cannot speak and has no control his movements

#### **First aid management for unconscious Patient**

During treatment of unconscious patient follow principles of ABCDE and

- ✓ Check for any bleeding and attempt to stop bleeding
- ✓ If the victim is improving place in recovery position
- ✓ Do not give to an unconscious victim anything by mouth
- ✓ Establish level of responsiveness, check pulse,
- ✓ Breathing rate and record any observations

- ✓ Give priority to respiratory problems and heartbeat.
- ✓ Seek for medical help



Figure 2.15: Recovery position of unconscious patient.

## STRAINS AND SPRAINS

A **strain** is over stretching of muscles due to over pulling of Muscles. Occurs when muscle or tendon fibers are stretched and torn.

**Sprain** is an injury which occurs at a joints when the ligaments and tissue around particular joints are suddenly twisting or torn. Sprain is more severe than strain. It usually happens or occurs at joint especially at ankle joint. It might involve bone ( broken). Sprain is also tearing of ligaments Signs and symptoms. Pain specially on movement. Swelling. Loss of movement

**Common signs and symptoms of strains** include:

- Signs and symptoms of strain
- Pain (sudden sharp pain at the site of the injury)
- Stiffness of muscles
- Difficulty in moving the affected parts

**First aid treatment for sprains and strains uses the RICER acronym:**

- **R – Rest:** Avoid movement/activities that cause pain. Assist person to most comfortable position – if head/neck/spinal injuries are suspected leave person lying flat.
- **I – Ice:** Control bleeding if applicable then apply a wrapped ice pack/cold compress. Reapply every 2hours for first 48-72 hours. This helps to reduce swelling and relieve pain/discomfort.
- **C –Compression:** Apply a firm, supporting bandage over the area, giving even pressure over the area. Light padding may be used if pain is severe.



- **E – Elevation:** If possible, raise the injured area above the level of the heart. This slows the blood flow to the area and reduces swelling. Do not elevate if fracture is suspected.
- **R – Referral:** refer the person for further advice and treatment. May be their doctor or emergency department



**Figure 2.16: sprain and strain**

### **POISONS:-**

A poison is a substance that can cause injury, sickness and possibly lead to death.. Many poisons may only be harmful if exposed to larger quantities. Poisons enter the body either accidentally or intentionally. As with any medical emergency it is important to try and identify the source of the injury and illness so that it may be treated appropriately.

Poisons can enter the body by contact with the skin, ingested, injected or inhaled and they can be solid, liquid or gas (including fumes and vapours)

### **Inhaled Poisons include**

- ✓ Gases:- carbon monoxide from an engine, carbon dioxide occurring naturally from decomposition, nitrous oxide used in medicine, chlorine used in pools and cleaning.
- ✓ Fumes from sources such as: glues, paints, petrol, drugs, including cocaine, as well as other odour less fumes.

### **Ingested Poisons include:**

- ✓ Medications – both prescribed and over-the-counter.
- ✓ Contaminated foods including mushrooms and shellfish.
- ✓ Alcohol and Cleaning products.
- ✓ Pesticides and Plants.

**Injected Poisons** include: Those obtained through the bite or sting of insects, spiders, snakes, marine animals, etc. Those from drugs or medications injected through a needle or other sharp object.

**Common signs/symptoms of poisoning include:** Chest and/or abdominal pain, Nausea, Vomiting, Diarrhea, Difficulty breathing/irregular breathing, Presence of drug paraphernalia., Sweating, Seizures, Altered conscious state, Burns around the lips and tongue in inhaled/ingested.

**General steps for dealing with a poisons situation are**

- ✓ Remove the poison from the body
- ✓ Give the patient the antidote
- ✓ Treat symptoms
- ✓ Give comfort and confidence

**How to remove the poison from the body**

- ✓ Make the victim vomit it
- ✓ Give plenty of tape water.
- ✓ If it is a child give them syrup or water
- ✓ Repeat the procedure
- ✓ Refer the victim if it is not improving

**NB.** Do not make patient vomit if the poison e.g. paraffin or kerosene. Do not make the patient vomit if unconscious. For poisoning by acid, give alkali, anti-acids.

### **SUBSTANCE MISUSE ( alcohol & other drugs)**

Substance misuse occurs when a person takes an overdose of a drug and it becomes toxic to the cells and organs in the body. There are accidental and intentional overdoses. As a result, a drug overdose can be life threatening and require first aid management.

Any drug, can be misused when it is taken outside approved medical uses. With over the counter drugs or commonly used drugs, there are strict instructions on the package of the drug that specifies the daily dosage. Examples of commonly used over the counter drugs are aspirin, ibuprofen, paracetamol, acetaminophen (Tylenol) and products that contain codeine. With all prescription drugs, there is a sticker label with the name of the patient, the daily amount to be taken and when to take the medication (morning/afternoon or before/after meals).

Illicit drugs or street drugs are those obtained without a prescription and are illegal to possess. Alcohol overdose, can be harmful and in extreme cases cause death.

In medical literature, it is known that excessive alcohol consumption can cause drunkenness, impair judgment and make the person more prone to accidents in the workplace when operating machinery or driving.

Binge drinking can slow respiration and lead to unconsciousness. Too much alcohol can cause death. First aid management of substance misuse is similar to treating casualties who have been affected by poisonous substances because the body sees a drug overdose as being a poison. First aid treatments can include:



**Figure 2.17: Substance abuse**

## **BITES:**

There are different types of bite occur. The following are commonly happen bite.

### **I. Snake Bite**

#### **Signs and symptoms**

- ✓ Disturbed vision
- ✓ Feel nauseated or vomiting
- ✓ One or two small puncture wounds with sharp pain and local swelling
- ✓ Symptoms and sign of shock
- ✓ Sweating and salivation in advanced stages of venom reaction

#### **First aid management;**

- Lay the victim down and advise not to move
- Calm the victim
- Immobilized the affected part and keep it below the level of the heart
- Wipe the wound of venom
- Apply firm cord just above the bite
- This must be removed if you are sure that anti venom has been injected and you cannot get the victim to hospital in time.



- Seek for medical help

### If there is no anti venom do the following:

- Tie a cord tightly around the limb just above the bite
- Using a razor blade or a clean knife make a cut 1 cm deep
- Suck the liquid which is coming out of the wound
- Continue to suck and dispose for 5-10 minutes
- Loosen the cord around the patients limb
- Disinfect the wound
- Refer to hospital for anti- venom injection.



Figure 2.19: Snake bite

## II. Dog Bite

Rabies is a sickness due to an infection from an animal usually a rabid dog, cat, fox, wolf, and bats. The infection grows in the animal's nerves, may develop the disease, if the saliva enters a wound or scratch on a human being.

### Signs and symptoms of a rabid dog

- Has difficulty in swallowing
- Is lethargic /lazy/
- Hides it self
- Does not want food, but swallows, pieces of wood stone etc.
- Barks in unusual way and never stop barking
- Saliva runs out of its mouth

### First aid management:

- Clean the wound with soap and water
- Cover the wound with dressing ointment/powders
- Find out if anyone knows the dog that bit the patient

- If the dog known, ask its owner to watch the dog carefully for lodges and to let you know it shows any of the above sign and symptoms in that time. See, during that time, it begins to show any of the above signs and symptoms. Get the dog Killed. Send the person to hospital or Health center immediately for anti-rabies vaccination.

## EYE INJURY

Eye injuries may be serious, even if minor, as the eye is very sensitive and easily damaged. Eye injuries may involve either or both the bones and soft tissues surrounding the eye, as well as the eyeball itself.

Since the eyes are delicate, they can be affected easily therefore; immediate help should be given.

### Signs and symptoms

- Pain inside the eye
- A high volume of tears in the eye.
- Wound or cut around the eye ball
- Different between the size of eye ball
- Sight decreases
- Inflammation and infection

### Management of the eye injury

- A very light covering be applied to an injured eyes
- Do not apply pressure
- Reassure the patient
- If no improvement in few days, Refer the victim to the nearest health facility

### If foreign bodies in the eye (such as dirt, sand, slivers of wood etc.):

- Tell the person the try to remove the foreign body by blinking several times – this will produce more tears, which may flush it out.
- If this does not work, try flushing the eye with water – keep the affected eye lower so the unaffected eye does not become contaminated.
- If this does not remove the object, cover the eye with a pad, taped in place, then seek professional medical attention

### If object is embedded in the eye:

- Do not attempt to remove the object.
- Place a sterile dressing around the object.

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- Stabilize the object in place as best as possible: a paper cup could be used, placing it over the object before applying the bandage.
- Bandage it in place.
- Ask the person to keep unaffected eye closed – this will prevent blood/dirt/fluid from entering it.
- Advise person to try not to move the unaffected eye – this will prevent movement in the affected eye also.
- Seek for medical help



**Figure 2.20: Eye injuries**

## **EAR INJURIES**

Bleeding and fluids in or draining from the ear may be from an injury to the ear itself or as a result of a serious head or spinal injury.

Signs and symptoms of ear injuries may include:

- Pain and Impaired hearing or deafness in affected ear.
- Bleeding from the ear.
- If related to an injury within the skull: watery fluid mixed with blood coming from the ear, headache and/or altered conscious state.

### **If Bleeding from the ear:**

- Cover the ear with a clean material (sterile if available) dressing.
- Do not plug the ear with wool
- Do not put in drops
- Refer the victim to the nearest health facility

### **Foreign body in the ear:**

- Turn the patient's head to the affected part of the ear so that the foreign body may drop out.

- If it is an insect which is inside the ear, direct torch- light to the ear- the insect may follow the light and come out of the ear. If this does not succeed, Pour in taped boiled water, the insect may float out
- If neither these treatment is successful refer the client to the next health facility.



Figure 2.21: Ear injure

## NOSE INJURES

**Bleeding from the Nose:** If the foreign body is either beans, peas, avoid putting water or any fluid

- Get the patient to pinch the lower part of his nose firmly for 10 minutes, while breathing through his mouth
- Loose tight clothing around his neck
- Tell the patient not to blow his nose for several hours
- If bleeding persists, refer the client to the next health facility.

**Foreign body in the nose:** In an adult, a foreign body may enter the nose by accident, but mostly common in children who insert a pea or a bean in to their noses.

NB. - Do not attempt to remove it, refer to the next health facility.



Figure 2.22: Noise injures

## NEEDLE STICK INJURIES

A needle stick injury occurs when a used needle punctures a person's skin. This puts the person at risk of infection of blood-borne diseases such as HIV, hepatitis B and hepatitis C.

### **General first aid treatment for a needle stick injury involves:**

#### **If the patient is conscious:**

- Reassure the patient and get them to rest and stay calm.
- Let the wound bleed freely for a few seconds.
- Flush/wash the injury site with soap and running water – if not available an alcohol-based hand rub/wash may be used.
- If necessary a sterile, waterproof dressing may be applied.
- Urge the person to go straight advanced treatment. If possible the needle should be retained in a rigid, puncture resistant container with lid for later testing.

#### **If the patient is unconscious**

- Follow DRS ABCDE Basic Life Support process.
- Call for ambulance and help.



**Figure 2.23:-Needle stick injures**

### **DIARRHEA**

If someone has over three frequent/subsequent loose stool in a day, it is called diarrhea. When an individual loses much fluid from the body due to diarrhea and vomiting, it is likely that he/she becomes unconscious and /or dies.

Causes of diarrhea and/or vomiting: Food poisoning and Intestinal parasites. Excessive diarrhea may lead to loss of body fluids and called dehydration

#### **Signs of dehydration:-**

- Body debilitation or loss of weight
  - Dryness of the mouth or tongue, sunken eye balls, eye drops, and sunken fontanel, in children
  - Dry and wrinkled skin,
  - Restless and unconscious and others

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## First-aid measures:

- First, ensure that there are no adverse signs that are usually precipitated by diarrhea and vomiting such as:- Sunken eye balls, wrinkled skin, restlessness; and unconsciousness; and in children, continuous vomiting after taking fluids, shivering etc.
- Prepare ORS in one liter of boiled and cold water. If ORS is not available prepare homemade solution as follows. Mix eight spoon of sugar, with half a spoon salt in one litre (three normal beer bottles) of boiled cold water. If available, add half a glass of orange or banana juice into the solution; The ORS or home-made solution is prepared for an adult. Therefore, he/she must take the fluid in small amount every five minutes. If the one liter solution is not finished in 24 hours, prepare and give a new/fresh solution in the following day. In addition frequently provide the victim soup, rice water, gruel/oatmeal (an adult can take daily up to three liters of fluid)
- For children give ORS or a solution mix of eight spoon of sugar and half spoon of salt in one liter of boiled cold water or mix of 2 times rice flour or corn or wheat or smashed potato in one liter of water and boiled for 5-7 minutes. Feed children after it is properly cooled in the following manner.
- Children 2 months to 2 years old must get 50-100 milliliters (1 or 2 cups), a maximum of 500 milliliters in one day (one spoon every 2 minutes)
- Children 2-10 years old must get 100-200 milliliters or 2-4 cups of ORS or home-made solution after every diarrhea episode the child can take up to one liter of the solution).
- If the victim is over 10 years old, give the fluid until satisfied
- If the victim vomits the fluid, wait for about 10 minutes, and give one spoon of the solution every three minutes
- Frequently breast feed the victim and add in small amount other supplementary foods such as gruel/oat meals every 10 minutes; and
- Continue the supplementary feeding for about two weeks after the diarrhea ceased.
- Consult care takers for further medical help.

## Rationale for referral

- Persistent vomiting after taking fluids
- If the diarrhea is stained/mixed with blood and the victim has high fever

- If the vomiting is accompanied with sign such as tenderness and sever cramp of the stomach
- If the diarrhea continues for 3 days in children and 4 days in adults without improvement.

### Measures to be taken after first-aid assistance:

- Explain the causes of diarrhea and vomiting'
- Observe on the presence of precipitating factors in the household, such as the maintenance of house cleanliness and personal hygiene, water source usage, the handling of food and feeding practices. Based on the findings educate the household or the community with demonstrations.

### Preventive Measures:

- Educate and demonstrate to the household on the importance of washing hands with soap and water, or sand and water etc. before eating
- Feed children supplementary food and milk with cup and spoon or breast-feed instead of bottle feeding
- Keep children in clean areas and keep them always away from dirty area
- Don't feed on unclean and unprotected food stuff
- Use always latrines/toilets
- Maintain personal hygiene and clean environment.

### DISEASES CHARACTERIZED BY FEVER

When an individual's body temperature is too hot than normal (above 37.5 oc) he/she has a fever. Fever itself is not an illness, but a sign of many different illnesses.

**Common diseases that precipitate fever:-**Yellow fever, Typhus, relapsing fever , Typhoid, Meningitis', Influenza, Malaria and etc

### Adverse consequences of febrile diseases

- Mental confusion, unconsciousness;
- Reduction of body fluid;
- Convulsion; and
- High fever precipitates brine damage, paralysis, low blood pressure, dysfunction of kidneys, inability to hear, speak, and liver damage.

### First-aid Measures for febrile cases in general

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- Cover with or put light dress on the victim. If the victim is a child, cover it with light cloth and carry it in your arms;
- Replace fluids lost by profuse sweating give frequently the victim, soup, gruel oatmeal, if the victim is a child, give frequently breast-milk;
- Put cloth soaked in lukewarm water on the chest, face and abdomen to bring down the fever;
- Ask or ensure perhaps the presence of convulsion, chillness, vomiting, diarrhea, meningitis etc;
- Consult or refer for the professional staff in the health facility to find out whether the cause of the fever is or not an infectious disease



## Self-check -2

## Written test

Name \_\_\_\_\_ ID \_\_\_\_\_ Date \_\_\_\_\_

### Test 2.1: Choose the best answer

1. Which of the following is a signal of respiratory distress?
  - A. Gasping for air
  - B. Breathing that is slower than normal
  - C. Wheezing
  - D. All of the above
2. Before beginning a check for life-threatening conditions, you should first;
  - A. Move the person to a convenient location for care.
  - B. Check the scene.
  - C. Call for help
  - A and B
3. After checking for consciousness, you determine that the person is unconscious. What should you do next?
  - A. Have Call for help
  - B. Give 2 rescue breaths.
  - C. Check for breathing and severe bleeding.
  - D. Begin a check for non-life-threatening conditions.
4. When you give rescue breaths, how much air should you breathe into the person?
  - A. Enough to make the stomach clearly rise
  - B. Enough to make the chest clearly rise
  - C. Enough to fill the person's cheeks
  - D. As much as you can breathe in 2 seconds
5. Which is the purpose of CPR?
  - A. To keep a person's airway open
  - B. To identify any immediate threats to life
  - C. To supply the vital organs with blood containing oxygen
  - D. All of the above
6. When is CPR needed for an adult?
  - A. When the person is conscious
  - B. For every person having a heart attack
  - C. When the person is unconscious and is not breathing
  - D. When the person who is having a heart attack loses consciousness

## Test 2.2: Matching Questions

**Direction:** Match Terms in column A with its meanings in column B

### Column “A”

1. Unconsciousness
2. Semi-consciousness
3. Drowsiness
4. Lethargy
5. Alertness

### Column “B”

- A. Patient is sleepy, cannot speak and has no control his movements
- B. Patient is very sleep of and has great difficulty in speaking and in answering your questions
- C. Patient is sleep, unable to concentrate on what we are saying
- D. Patient is awake but answers questions slowly
- E. Enough to make the chest clearly rise
- F. Patient can speak, answers, questions and feels pain
- G. False interpretation in case of febrile condition

## Test 2.3: Short Answer Questions

1. What mean by ABCDE ?

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2. Discuss the following emergency term and how it manage Bleeding, wound, Shock, fracture, Burn, choking, Eye, ear ,noise injures and Obstructed air way.

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## Operation Sheet -1

**Operation Title:** Apply Basic rules of ABCDE life

**Instruction:** Perform the ABCDE rules correctly.

**Purpose:** to help patient suffered for emergency

**Required tools and equipment:** Vital sign measurement equipment; like thermometer, BP apparatus, Basic first aid kit, ambulance.

**Precautions:** use personal protective equipment (PPE)

**Procedures:**

- ✓ Find all important first aid equipment to provide first aid service for patients in emergency condition.
- ✓ Identify the client status ,
- ✓ Place the client comfortable in appropriate place
- ✓ Apply basic rules of ABC
- ✓ Provide first aid service to patients with the following emergency accordingly.

## LAP TEST-1

## Performance Test

Name \_\_\_\_\_ ID \_\_\_\_\_ Date \_\_\_\_\_

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

**Instructions:** Given necessary templates, tools and materials you are required to perform the following tasks within short time. The project is expected from each student to do it.

Task-1. Perform ABC rule of life

Task-2. Give first aid for the patents with bleeding

Task-3. Give first aid for the patents with shock

Task-4. Give first aid for the patents with obstructed air way

Task-5. Give first aid for the patents with wound

Task-6. Give first aid for the patents with choking

Task-7. Give first aid for the patents with burn

Task-8. Give first aid for the patents with drowning

Task-9. Give first aid for the patents with poison

Task-10. Give first aid for the patents with bite

Task-11. Give first aid for the patents with fracture

Task-12. Give first aid for the patents with eye, ear, noise injury

Task-13. Give first aid for the patents with diarrhea

## Unit Three: Prepare, evaluate and act in an emergency

### Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Options for action in emergency and control strategies
- Occupational health and safety procedures and policies.
- Removing clients and others from dangers.
- Assessing, evaluating, reporting and documenting potential hazards.

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Follow Options for action in cases of emergency and group control strategies for evaluation
- Identify Occupational health and safety policies, procedures and safe working practices
- Remove clients and other individuals from danger
- Assess, evaluate, report and document potential hazards

### Learning Instructions:

- Read the specific objectives of this Learning Guide.
- Follow the instructions described below.
- Read the information written in the information Sheets
- Accomplish the Self-checks

### 3.1. Options for action and group control strategies in cases of emergency

- In Event of the emergency alarm sounding (a continuous ringing) evacuation should be immediate. Any one should urge individuals to leave quickly. Emergency situations are often confusing and frightening. To take appropriate actions in any emergency, follow the three basic emergency action steps:
  - CHECK the scene and the person
  - CALL for help or the local emergency number
  - CARE first for the person until advanced medical support.

All evacuees should muster at the designated assembly point. Refer more on LoI.

### 3.2. Occupational health / safety policies, procedures and safe working practices

Occupational Health & Safety policies is defined as laws and guidelines keep to help your workplace safe. It is important that you are familiar with the occupational Health & Safety policies that exist in your state or territory.

The purpose of the Health and Safety policies and procedures is to guide and direct all employees to work safely and prevent injury, to themselves and others. All employees are encouraged to participate in developing, implementing, and enforcing Health and Safety policies and procedures. All employees must take all reasonable steps to prevent accidents and never sacrifice safety for expedience. Our goal is to eliminate or minimize hazards that can cause accidents. Health, safety, the environment and loss control in the workplace are everyone's responsibility. Everyone join put efforts to provide a healthy and safe working environment on a continuous day to day basis. The legislation places duties on owners, employers, workers, suppliers, the self-employed and contractors, to establish and maintain safe and healthy working conditions.

It outline the responsibilities of employers to provide first aid facilities and first aid trained personnel/workers. The regulations may also detail the requirements of first aid kits and facilities based on the size of the organization and the type of work environment. One of your most important responsibilities is to protect your Health and Safety as well as that of your co-workers.

Occupational health & safety policies guidelines for preventing accidents in the workplace should be found in the organizational polices and standard operating procedures. It should

have procedures on how to deal with a workplace accident. It may include instructions on how to use Personal Protective Equipment (PPE), which can prevent infection spreading. Similarly you can read the detail of Ethiopian Occupational Health & Safety policies for more detail.

### **The legislation outlines requirements for:**

- The reporting requirements for notifiable incidents.
- Licenses, permits and registrations (e.g. for persons engaged in high risk work or users of certain plant or substances).
- Provision for worker consultation, participation and representation at the workplace
- Provision for the resolution of health and safety issues.
- Protection against discrimination and others

The purpose of the Occupational Health and Safety policies and procedures is to guide and direct all employees to work safely and prevent injury, to themselves and others. Its goal is to eliminate or minimize hazards that can cause accidents.

### **3.3. Removing clients and other individuals from danger**

It is essential to know how to properly package a victim in a safe, effective, and efficient manner. It is our responsibility to be able to prepare a victim for removal from danger atmosphere as quickly as possible, through the use of many different lifts, assists, carries, and drags, while also striving to minimize any further damage to the victim.

At times, drastic and unconventional lifting techniques may be needed to remove a victim from severe conditions. The only limiting factors when removing a victim in an expedient manner are safety, the environment, and the imagination of the rescuers. Raw strength is helpful, but not necessary with the proper technique and form.

#### **Victim removal precautions:**

- Victims who are injured should only be moved if a life-threatening emergency exists.
- Spinal injury from trauma is one the greatest threats to an injured victim.
- In most situations, it is safer to move the victim along the long axis of their body leading with the head or feet.
- For the safety of the victim and the rescuers, two or more rescuers should be used when conditions allow.
- Victims who are unconscious tend to be much more difficult to move than conscious victims.



- Using improper lifting techniques causes many back injuries to rescuers.

## Victim removal techniques

The following are the basic skills of victim removal techniques that we should be proficient at performing.

- Single Person
- Two Person Drag (Under Arm)
- Two Person Drag (Football)
- Two Person Drag (Over The Shoulder)
- Window Rescues
- Movement up and down stairs
- Use of Webbing

### Single Person Drag

- Locate and assess the downed victim. Utilize the appropriate victim positioning technique.
- Cross the victim's arms.
- The firefighter positions their arms under the victim's arm and grasps the victim's wrists. This will lock the arms in place
- Slightly lift the victim off of the ground.
- Push off of the posted leg.
- The firefighter's chest must remain in close contact with the victim's back to avoid unnecessary strain on the lower back
- Move in short, quick "steps".

### Two Person Drag (Under Arm)

- Locate and assess the downed victim. Utilize the appropriate victim positioning technique.
- The firefighters will position themselves on opposite sides of the victim's head facing the same direction
- Each rescuer will place their inside arm underneath the armpit of the victim, keeping it locked in the natural pinch point of the forearm and the bicep.
- Both firefighters post the rear leg and Push off the post.

### 3.4. Assessing, evaluating, reporting and documenting potential hazards

Potential Hazard means a danger to health or safety which may occur if corrective action is not taken.

Potential hazard assessments are very important as they help to:

- Create awareness of hazards and risk.
- Identify who may be at risk (e.g., employees, cleaners, visitors, contractors, the public, etc.)
- Determine whether a control program is required for a particular hazard.
- Determine if existing control measures are adequate or if more should be done.
- Prevent injuries or illnesses, especially when done at the design or planning stage.
- Prioritize hazards and control measures.
- Meet legal requirements where applicable.

The aim of Potential hazard risk assessments process is to evaluate hazards, then remove that hazard or minimize the level of its risk by adding control measures, as necessary. By doing so, you have created a safer and healthier workplace.

Once you have established the priorities, the organization can decide on ways to control each specific hazard.

### Self-check -3

### Written test

Name: \_\_\_\_\_ ID: \_\_\_\_\_ Date: \_\_\_\_\_

#### Test 3.1: True or False question

**Directions:** Say true if the statement is correct and false if the statement is incorrect.

1. Potential Hazard means a danger to health or safety which may occur if corrective action is not taken.
2. The purpose of the Occupational Health and Safety policies and procedures is to guide and direct all employees to work safely and prevent injury

#### Test 3.2: Matching

**Direction:** Match Terms in column A with its meanings in column B

#### Column "A"

1. Victim removal precautions
2. Single Person Drag
3. Two Person Drag (Under Arm)
4. Victim removal techniques

#### Column "B"

- A. Using improper lifting techniques causes many back injuries to rescuers.
- B. Movement up and down stairs
- C. Push off of the posted leg
- D. Both firefighters post the rear leg and Push off the post
- E. Create awareness of hazards and risk
- F. Meet legal requirements where applicable

#### Test 3.3: Short Answer Questions

**Direction :** Answer all the questions listed below.

1. Define occupational health / safety policy and its importance?

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2. Describe control strategies of hazard ?

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3. Assess and evaluate potential hazard in your environment that cause emergency.

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## Unit Four: Communicate Details of the incident

### Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Soughing first aid assistance
- Requesting ambulance support and medical assistance
- Conveying the observed casualty's condition and management activities
- Assessing, managing and reporting the causality
- Maintain confidentiality

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Identify causality level of consciousness and communication style
- Sough first aid assistance from others in a timely manner
- Request ambulance support and/or appropriate medical assistance
- Observe casualty's condition and management activities
- Describe details of casualty's physical condition, changes in condition, management
- Keep Confidentiality of records and information

### Learning Instructions:

- Read the specific objectives of this Learning Guide.
- Follow the instructions described below.
- Read the information written in the information Sheets
- Accomplish the Self-checks

## 4.1. Soughing first aid assistance

### 4.1.1.3. Seeking first aid assistance in a timely manner.

In all first aid situations there can be a need to call on others who are not professional medical people to help/ provide the basic first aid in an emergency situation.

Wherever possible you should always seek assistance from others to help someone. Seek assistance from work colleagues, supervisors, Friends and family members of casualty and anybody else close by. you may also ask bystanders for help in the treatment of casualties. Call for help if possible. when asking for help: Never be afraid to ask for help – from anyone; Most people are prepared to help even if they do not know what to do. They will do what you tell them or ask them to do. A vital thing they can do is to confirm professional medical help is on the way. If one person refuses to help, ask someone else. Never assume just because one person has refused, everyone will refuse

#### People may be asked to:

- Give information about causes of injury
- Provide directions to emergency services and Contact friends or relatives of the casualty
- Help carry or move the casualty and Protect casualty
- Communicate with emergency services and Record verbal information you give them
- Obtain first aid requisites for you.

## 4.2. Requesting ambulance support and medical assistance

Ambulance is a vehicle that transports critically sick or injured people to a medical facility.

It accommodate one or more patients and emergency medical personnel, supplies and equipment to stabilize a patient's condition en-route a hospital. Requesting of ambulance support and/or appropriate medical assistance according to relevant circumstance using relevant communication media and equipment is live saving.

Accurately convey assessment of casualty's condition and management activities to ambulance services /other emergency services/relieving personnel.

Obtained professional medical help as much as possible. Ask someone else to call for help such as a colleague, management, a bystander or member of the public while you go to the casualty or while you are rendering first aid. Yelling out for help. Yell out for someone to ring an ambulance. Flagging down a passing vehicle and asking them for help or to ring an ambulance.

### **The importance of obtaining professional medical help:**

- It increases the likelihood of survival of the casualty
- It allows necessary drugs and medications to be administered to the casualty at the earliest opportunity
- It enables professional care to be provided as soon as possible
- It reduces the possibility of the casualty suing the venue for breach of 'duty of care'.

### **Facilitate the arrival of emergency services or other help by:**

- Opening gates, or arranging for them to be opened
- Moving vehicles which may impede access
- Asking others to position themselves in locations to signpost the location of the casualty as emergency service workers arrive on scene.

## **4.3. Observation of casualty's condition and management activities**

Once you have started treating the casualty for their injuries you should continue to monitor their condition and document any changes, or treatments that you administer. Continue to monitor the vital signs of the casualty including: Body temperature, Pulse (or heart rate), Blood pressure, Respiratory rate.

It is important to monitor these vital signs as they can change rapidly causing the casualty to descend into unconsciousness or regain consciousness. The casualty's condition can deteriorate or improve according to the treatment being administered. All information from the assessment must be carefully collected, ready to be passed onto ambulance/paramedic personnel.

## **4.4. Details of casualty's physical condition, management**

When relaying information to the emergency care, stick to facts about the incident not opinions. Answer questions and convey information in a calm, clear and concise manner.

### **Convey information:**

- Where the incident occurred
- What has happened
- When the incident occurred
- Who you are and the identity of the casualty
- What action taken to casualty

#### 4.5. Confidentiality of records and information

Accurately record details of casualty's physical condition, changes in conditions, management and response to management in line with established procedures. Maintain confidentiality of records and information in line with privacy principles. Explain to the person involved, where possible, that a record of the incident will be made and the reasons for doing so and that they may access the record if desired. File the record appropriately.

First aiders also need to be aware of privacy legislation that protects medical data from being circulated to the general public and to be handled by authorized workers on a need to know basis. You should safeguard sensitive medical information. Remember, there are consequences and legal implications should patient information be leaked.



## Self-check -4

## Written test

Name: \_\_\_\_\_ ID: \_\_\_\_\_ Date: \_\_\_\_\_

### Test 4.1: True or false

**Directions:** Say true if the statement is correct and false if the statement is incorrect

1. Ambulance is a vehicle that transports critically sick or injured people to a medical facility.
2. Maintain confidentiality of records and information in line with privacy principles.

### Test 4.2: Multiple choice question

**Directions:** Choose the best answer from the given alternative.

1. When a person is not aware of what is going on and is not able to respond normally to things that happen to and around him or her is;
  - A. Consciousness
  - B. Unconsciousness
  - C. Decreased Consciousness
  - D. All
2. One of the following is important communication held during first aid.
  - A. Communicating with other health care professional;
  - B. Communicating with children and geriatric patients
  - C. Communicating with hearing/ visually impaired patients
  - D. Communicating with patients of other languages
  - E. All
3. All of the following are importance of obtaining professional medical help during emergency except;
  - A. It increases the likelihood of survival of the casualty
  - B. It allows necessary drugs and medications to be administered to the casualty at the earliest opportunity
  - C. It enables professional care to be provided as soon as possible
  - D. None
4. Safeguarding of medical information from being circulated to the general public and to be handled by authorized workers .
  - A. Confidentiality
  - B. Causality
  - A. Communication
  - C. None

### Test 4.3: Short Answer Questions

1. Describe level of Consciousness

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2. Define communication style during first aid

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3. How do you handle medical data ?

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## Unit Five: Refer Client Requiring Further Care

### Instruction sheet-5

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Relevant client history
- Documentation
- Conveying appropriate information in referral
- Maintaining client care

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Document relevant client history according to Health care service standard guidelines
- Ensure documentation for referral procedures
- Convey appropriate information to individuals involved in referral to facilitate understanding and optimal care
- Maintain client care until responsibility is taken over by staff of the receiving health institutions during referral.

Maintain client confidentiality at all times and levels.

#### Learning Instructions:

- Read the specific objectives of this Learning Guide.
- Follow the instructions described below.
- Read the information written in the information Sheets
- Accomplish the Self-checks

## 5.1. Documenting relevant client history

You will begin gathering the patient information as soon as you reach the patient. Continue collecting information as you provide care until you arrive at the hospital. This information describes the nature of the patient's injuries or illness at the scene and the initial treatment you provide. Although this report might not be read immediately at the hospital, it may be referred to later for important information.

It's vital to keep track of this information throughout the treatment. Once documented it will provide an overall and comprehensive account of how the casualty is going.

Documentation may include: Patient information and Administrative information

- Patient information: Chief complaint, Level of consciousness, Systolic blood pressure for patients older than age 3 years, Skin color and temperature, Pulse, Respirations and effort and Casualty details and others
- Administrative information collected;
  - ✓ Time that the incident was reported
  - ✓ Time that the first aider arrived at the scene
  - ✓ Time that patient care was transferred and others.
  - ✓ Documenting date of patients refusal

## 5.2. Documentation for Referral procedure

Referral is a process in which a health worker at one level seeks the assistance for advanced management of the client's.

Key reasons for deciding to refer either an emergency or routine case include:

- ✓ To seek expert opinion regarding the client.
- ✓ To seek additional or different services for the client.
- ✓ To seek admission and management of the client.
- ✓ To seek use of diagnostic and therapeutic tools.
- ✓ To meet the client's expectation to be seen by specialist.

Providing high-quality referrals involves assessing individual clients' circumstances, identifying potential barriers, and helping them to problem-solve and reduce all barriers, there in increasing their ability to access referral services.

Without support, clients may receive referral information, but still not access services. Some of the many barriers clients face in accessing services during referral are related to: Finances, Language, transportation, Age-based consent issues, Legal and policy, Fear of a lack of privacy, Fear of disclosing status etc.

Ensure staff to have adequate support to help clients with ways to overcome these barriers so they can access the services they need.

### 5.2.1. Referral & Patient Rights

- The patient has the right to know (why, where, when) to be referred.
- The patient has the right to discuss referral options and alternatives.
- The patient has the right to refuse referral unless it will be of a threat to his/her life.

### 5.2.2. Receiving Facility :

The receiving facility must be prepared for the arrival and to receive the client with their referral form. They will use the information sent on the referral form to begin a thorough assessment of the client and begin management of the case. They will use its particular resources to provide the client high quality care and maintain documentation according to agreed standards. When the client's care has finished at the higher level facility, back referral to the original facility is important.

The receiving facility completes the lower part of the referral form. This communication contains information on special investigations, findings, diagnosis and treatment given by the higher level facility as well as follow up expected from the lower level facility. The back referral can be delivered by the client to the initiating facility, but may also be sent by fax or post or E-mail. This communication not only assures proper patient care and follow up, but also provides continuing education to the initiating facility and their staff. The receiving facility can also give feedback to the initiating facility on the appropriateness of referral. If there are any issues regarding the need for referral, timing, speed or information sent. The higher level facility provides specific feedback to the initiating facility, if there is any issue related to referring technical issue. This will assist the lower level facility to be surer of referral processes in the future. The receiving facility completes its own register of referrals in and out, from their perspective.

## 5.3. Conveying appropriate information to individuals involved in referral

Documentation should greatly assists the transferal of information from the first aider to the team providing the casualty with ongoing care and treatment.

It should be performed at the time of treating the casualty (if possible) or right after treatment has concluded while the information is fresh in your mind.

When recording details of the casualty's physical condition, stick to facts about the incident and not an opinions. Casualty details should include: Name of casualty, Age, Address, Time

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of incident, History of incident/injury, Description of any injuries and/or illness, Changes in level of consciousness, Changes in vital signs such as temperature, Changes in pulse and respiratory rate, Changes in the color of the skin, Treatments administered, Changes in mental status, Response to each treatment and others

To allow for a smooth transition from the first aid management to the care by paramedics, the first aider should record details, at the earliest convenience.

If applying first aid outside of the workplace the first aider should make a record of the event, at a minimum a note about the first aid given.

Records should be clear and concise as they may be used as a legal document. You should take care to ensure that any first aid records are accurate, factual and reflect only your observations and actions and do not include opinions.

When recording a first aid incident, do not use correction. Try to record original information and record date and Sign .

#### **5.4. Maintaining client care confidentiality during referral**

Appropriate Client care could be maintained up on referral. Unless care not provided during referral, the client may suffer for more complication. Client vital sign were registered and maintained by first aider and trained EMT.

Simply don't talk about specific patient private issue at all with others not involved in the patients care. you will have an ethical responsibility to respect patients right to privacy. You may get such an information through history taking, physical examination or observation. In this case patient right of privacy is legally protected. Information contained in incident reports, notes taken, conversations held between medical staff (paramedics, nurse and doctors) are to remain confidential.

Violation of confidentiality can damage public trust up on your profession and liable you for legal elements. The first aider is privy to medical information about the casualty and this is not be divulged to anybody outside of the emergency medical personnel.

It doesn't matter how long ago the incident occurred. You are obliged by law to maintain confidentiality about the medical details such as the medical history (allergies) and illnesses the casualty suffered from.

If it is a workplace incident, there are may have polices and standard operating procedures in place, protecting incident reports.

## Duty to act and standard of care

- **Duty to act** is individual's responsibility to provide patient care and is a legal task given for you that originate from your professional role.

So that you must proceed promptly to scene and render emergency medical care within the limits of your training and available equipment.

- **Standard of care** is level of care you are expected to give for your patient. It is the manner in which you must act or behave.



<b>Self-check -5</b>	<b>Written test</b>
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Name: \_\_\_\_\_ ID: \_\_\_\_\_ Date: \_\_\_\_\_

### Test 5.1: True or false

**Directions:** Say true if the statement is correct and false if the statement is incorrect

- Referral is a process in which a health worker at one level seeks the assistance for advanced management of the client's.
- Records should be clear and concise as they may be used as a legal document.
- Standard of care is level of care you are expected to give for your patient.

### Test 5.2: Multiple choice question

**Direction:** Choose the best answer from the given alternative.

- All of the following is major client history Documented during first aid except ?
  - Nature of the patient's injuries
  - Level of consciousness
  - Chief complaint
  - Casualty details
  - None
- Key reasons for deciding to refer during first aid is:
  - To seek expert opinion regarding the client.
  - To seek additional or different services for the client.
  - To seek admission and management of the client.
  - To seek use of diagnostic and therapeutic tools.
  - All

### Test 5.3: Short Answer Questions

**Directions:** Answer all the questions listed below.

- Describe Referral procedure in emergency?

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- Explain role of receiving facility during referral?

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- How you maintain client confidentiality during first aid?

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## Unit Six- Evaluate own performance

### Instruction sheet-6

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Appropriate clinical expert feedback
- Recognizing psychological impacts on rescuer.
- Debriefing and evaluation

This guide will also assist you to attain the learning outcomes stated in the cover page.

Specifically, upon completion of this learning guide, you will be able to:

- Seek feedback from appropriate clinical expert
- Address possible psychological impacts on rescuers
- Participate in debriefing/evaluation to improve future response

### Learning Instructions:

- Read the specific objectives of this Learning Guide.
- Follow the instructions described below.
- Read the information written in the information Sheets
- Accomplish the Self-checks

## 6.1. Appropriate clinical expert feedback

Once you have handed over care of the casualty to professional medical personnel and completed the required reports and forms you should look back and evaluate how well you performed. Clinical experts involved in the first aid management are a good source of feedback

Clinical experts may include: Your supervisor/manager, Ambulance officer/paramedic and Other medical or health workers.

## 6.2. The possible psychological impacts on rescuers.

Not everyone who is involved in critical incidents will experience psychological trauma but it has been widely documented that paramedics and medical and rescue workers involved in emergency incidents can have a higher risk of suffering from mental health issues such as Post-Traumatic Stress Disorder (PTSD).

Indications of psychological trauma include: Irritability, Disturbed sleep, Flashbacks, Feeling numb, Emotional outbursts and Anxiety.

**Dealing with Post-Traumatic Stress disorder:** strategies that may help with stress can be supported with talking to a friend or co- worker who can offer support, talking to a counselor, engaging in hobbies that have helped in the past such as walking or listening , relaxing with music. Eating well and getting sufficient sleep can also help.

Bringing to psychologist can provide a medical evaluation in mental health issues and refer you to a qualified psychologist to provide counseling support. Community mental health services also provide counseling. Other than counseling, meditation and relaxation classes can help with stress which have been shown. These can be taken in general community health centers can be located through local councils.

## 6.3. Participation in debriefing and evaluation

**6.3.1 Debriefing:** as a first aider that has been personally involved in an emergency incident, there is an opportunity to participate in debriefing by talking to your supervisor, work colleague or counselor. This enables you to raise any issues or concerns you have had about the emergency process.

In participating in a debriefing or evaluation session, you may learn more about your abilities such as your successes and failures in a crisis situation to improve the response in future emergency situations. Debriefing may also provide closure on the incident for you.

### 6.3.2. Evaluate your own performance

Go back over the situation in your mind. Were there things you could have done better?

Was there anything you couldn't do because you had forgotten or never learned something?

Be honest with yourself. If you think you could have done better, you can gain objective feedback from an outsider who may place your efforts in proper perspective.

Always be on the lookout to improve your skills. Evaluating your performance may be the only way you can identify how to provide better first aid before.

Your organization can also learn from your experience and develop methods to improve emergency response techniques.

If the incident occurred outside of the workplace, you may gain feedback from a health care professional. A discussion with the treating doctor may also bring closure to the incident

## Self-check -6 Written test

Name: \_\_\_\_\_ ID: \_\_\_\_\_ Date: \_\_\_\_\_

### Test 6.1: True or false

**Directions:** Say true if the statement is correct and false if the statement is incorrect

1. Clinical experts involved in the first aid management are a good source of feedback.
2. Evaluating your performance may be the only way you can identify how to provide better first aid before.

### Test 6.2: Short Answer Questions

**Directions:** Answer all the questions listed below.

1. Define feedback in emergency?

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2. What is debriefing and its importance in first aid?

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### Test 6.3: Essay Question

**Direction:** Answer the following essay questions.

1. How you evaluate your own performance during first aid? Discuss briefly.

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2. Describe post-traumatic stress disorder and how they managed?

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