NURSING LEVEL-IV

Manage Common Non-Communicable Diseases

Based on Dec, 2018 Version OS and Dec, 2019 Version Curriculum

Module Title: - Managing Common Non-Communicable Diseases

LG Code: - HLT NUR4 M03 LO (1-3) LG (9-11) 0221

TTLM Code: - HLT NUR4 TTLM 0221 V1

February 2021

Bishoftu, Ethiopia

Contents **Page**

LO1. Prevent non-communicable diseases through provision of adequate information and education 4

Information Sheet -1 Introduction to common non-communicable diseases 6

Self-Check -1 72

Operation sheet 01 73

Operation sheet 02 74

Information Sheet -2- Carrying out community diagnosis 75

Self-Check -2 78

Information sheet 3- Action plan 79

Self-Check -3 82

Information sheet 4- Selecting methods to resolve the problem 84

Self-Check -4 89

Information Sheet -5- Preparing IEC materials 90

Self-Check -5 93

Information Sheet -6- Providing education on healthy life style and early detection of diseases 94

Self-Check -6 97

Information sheet 7- Reporting and follow up cases 98

Self-Check -7 99

LO2. Screen and refer clients requiring further investigation and management 101

Information Sheet -1- History taking and physical examination (P/E) 102

Self-Check -1 106

Operation sheet 01- 107

Information Sheet -2- Management of minor symptoms 108

Self-Check -2 111

Information Sheet -3- Identifying and counseling individual with risk factors 112

Self-Check -3 119

Information Sheet -4- Referral of suspected cases 120

Self-Check -4 122

LO3. Follow cases and promote community based rehabilitation..... 123

Information Sheet 1- Following up of cases 124
Self check 01 127
Information Sheet -2- Mobilizing community taking care of disabilities 128
Self check 02 138
Information Sheet -3- Conducting training for selected family and organizations..... 139
Self check 03 142
Information Sheet -4- Follow up of reported cases 143
Self check 04 151
Reference materials 152
Answer Key for self-check 153

LG #1	LO1. Prevent non-communicable diseases through provision of adequate information and education

Instruction sheet #1

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

- Introduction to common non-communicable diseases
- Carrying out community diagnosis
- Action plan
- Selecting methods to resolve the problem
- Preparing IEC materials
- Providing education on healthy life style and early detection of diseases
- Reporting and follow up cases

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

- Introduction to common non-communicable diseases
- Carry out community diagnosis
- Action plan
- Select methods to resolve the problem
- Prepare IEC materials
- Provide education on healthy life style and early detection of diseases
- Report and follow up cases

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished

answering the Self-checks).

6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,

If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Information Sheet -1 Introduction to common non-communicable diseases

1.1. Introduction to common non-communicable diseases

A non-communicable disease (NCD) is a disease that is not transmissible directly from one person to another.

The significant progress in tackling the major communicable diseases, however, can potentially be spoiled by the steady rise in the burden non-communicable disease within Ethiopia, and elsewhere in the developing world. As deaths from infection decline and people live longer, so their vulnerability to the chronic non-communicable diseases of old age increases.

Despite the high global burden of mortality and morbidity from non-communicable diseases (NCDs), the response has not been strong. Sixty-three per cent (63%) of global deaths in 2008 (i.e. 36 million of the 57 million global deaths) resulted from NCDs, principally cardiovascular diseases and diabetes, cancers and chronic respiratory diseases. Nearly 80% (28 million) of these deaths occurred in low- and middle income countries.

A survey conducted by the World Health Organization (WHO) in 2000 suggested that a key inadequacy in addressing NCDs was the lack of capacity in national health ministry's (Also increasing across the world are the numbers of deaths and injuries from traffic accidents and violence: over 90% of the 1.3 million traffic-related deaths and 20-30 million serious injuries from collisions with a vehicle occur in developing countries; the poorer parts of the world are also disproportionately affected by injuries requiring emergency care as a result of other accidents and interpersonal violence.

Mental health conditions are also responsible for high levels of mortality and disability, accounting for 8.8% of the deaths and 16.6% of the total burden of disease in low- and middle income countries. Taking these trends into consideration, the Ethiopian Federal Ministry of Health has included this Module on Non-Communicable Diseases,

Emergency Care and Mental Health in the education and training of its Health professional service providers.

As deaths from infection decline and people live longer, so their vulnerability to the chronic non-communicable diseases of old age increases. Chronic conditions such as cardiovascular diseases, diabetes, obstructive lung disease and cancers are on the increase all over the world, but particularly in low- and middle-income countries. For example, more than half of the 8 million deaths from cancers every year and over 80% of the 17 million deaths from heart disease and strokes now occur in developing countries. Also increasing across the world are the numbers of deaths and injuries from traffic accidents and violence: over 90% of the 1.3 million traffic-related deaths and 20-30 million serious injuries from collisions with a vehicle occur in developing countries; the poorer parts of the world are also disproportionately affected by injuries requiring emergency care as a result of other accidents and interpersonal violence. Mental health conditions are also responsible for high levels of mortality and disability, accounting for 8.8% of the deaths and 16.6% of the total burden of disease in low- and middle income countries.

1.2. Common non-communicable diseases

- Cardiovascular disease (Hypertension, heart failure)
- Diabetes Mellitus
- Cancers
- COPD
- Cataract, Eye and Ear injuries
- Disability
- Mental health problem

1.2.1. Cardiovascular disease

Cardiovascular diseases are a major problem all over the world, including in developing countries such as Ethiopia. They are in the top three killers almost in every country. The common cardiovascular diseases are ***hypertension and heart failure***

The circulation of blood

- The heart is a large four-chambered muscular bag on the left side of the chest.
- In order to appreciate how the heart works, remind yourself of the primary function of the cardiovascular system: to deliver oxygen and nutrients and to remove carbon dioxide and other waste products.
- When you breathe in, the lungs are filled with air, of which about 21% is oxygen. To collect this oxygen, the blood has to be pumped through the lungs by the heart.
- Oxygenated blood (blood rich in oxygen) from the lungs, which is bright red because oxygen has bound to the hemoglobin, returns to the heart and is then pumped around the body to supply the tissues.
- Blood returning from the body to the heart is rich in waste products such as carbon dioxide and is short of oxygen.
- This oxygen-depleted blood (dark red in color) is termed deoxygenated blood and is pumped through the lungs again to release carbon dioxide and, of course, to collect more oxygen.
- The design of the heart and associated blood vessels ensures that blood going to the lungs is kept separate from that going around the body. The heart prevents the mixing of oxygenated blood with deoxygenated blood by using two separate but parallel circuits of blood vessels: the pulmonary circulation and the systemic circulation.
- The muscular part of a heart is called the myocardium (‘myo-’ means muscle’ and ‘-cardium’ means ‘of the heart’). The heart muscles are very special because they keep beating (contracting and relaxing) spontaneously throughout our whole lives without any conscious decision from us to make them beat.
- The heart is shown in cross-section, illustrating the position of the atria, ventricles and major veins and arteries.
- The left and right sides of the heart are separated by a muscular wall (called the septum), and each side is divided into a small chamber, the atrium (plural, atria), and a larger chamber, the ventricle (plural, ventricles).

- The atria are connected to the ventricles via a valve that ensures a one-way flow of blood.
- Deoxygenated blood returns from the body through two main ‘great’ veins, the inferior and superior vena cava (superior means ‘at the top’ and inferior means ‘at the bottom
- The atrium is a thin-walled chamber that expands with little resistance as the blood inters in.
- Blood from the right atrium flows down into the right ventricle, through the tricuspid valve. You can imagine the valve operating in a manner similar to a swing door that only opens in one direction.
- When blood enters the right atrium, the valve opens and blood flows into the right ventricle.
- When the ventricles contract, the back pressure of the blood forces the valve to close to prevent any backflow of blood into the atria.

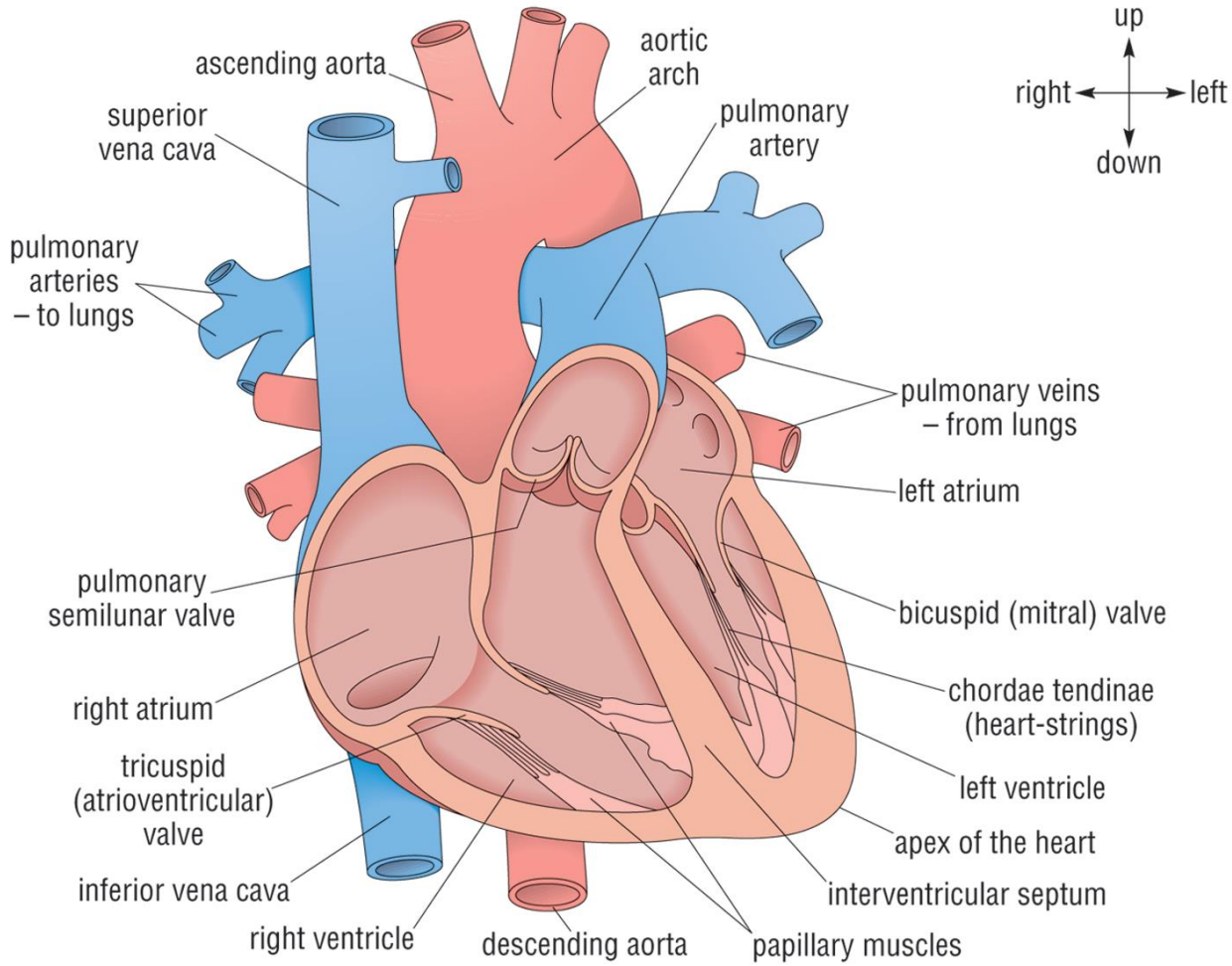


Figure 1.1 Anatomy of the heart.

The heart beat (pulse): The heart has got a special property to beat in a coordinated manner, and a normal heart beats between 60-90 beats per minute.

Can be counted using “stethoscope” or placing your finger on main arteries.

Figure 1.2: area of counting pulse.

The blood vessels

There are five types of blood vessels

- **Artery (plural arteries)** is subjected to higher blood pressure than any other vessels and the blood flow in them 'pulses', meaning that the blood pressure and the rate of blood flow vary with the pumping action of the heart. Arteries have layers of muscular and elastic tissue in their walls, which allows the vessels to expand with the contraction of the heart, and contract again as the heart refills with blood.
- **Arterioles** are smaller vessels that distribute the blood into the network of capillaries (capillary beds). They too have layers of muscle in their walls; this is very important, because it controls how much blood goes into the capillaries.
- **Capillaries** are the smallest blood vessels in the body, having an internal diameter hardly larger than the diameter of a single red blood cell.
- **Venules** collect blood from the capillary networks. The blood pressure in these vessels is low, and they do not pulse.
- **Veins** are the larger collecting vessels. They may run deep in tissues such as muscles, or superficially, just beneath the skin. Veins have valves to prevent the blood from running backwards or pooling.

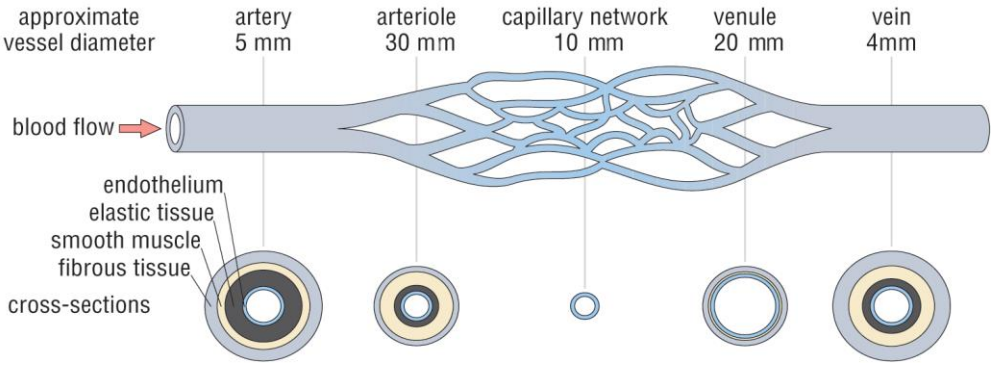


Figure 1.3 Diagrams of the different types of blood vessels.

Blood pressure (BP)

Blood pressure (BP) refers to how hard the blood is pushing on the major blood vessels as it is pumped around the body by the heart. It is measured in millimetres (mm)

of mercury (a liquid silver metal, which has the chemical symbol Hg), so blood pressure measurements are expressed as a number followed by mmHg.

A blood pressure measurement is two numbers written one above the other. The top number tells you the systolic pressure, which is the pressure at the moment the heart beats and pushes blood into the body. The bottom number tells you the diastolic pressure when the heart relaxes between each beat so it can refill with blood. Healthy blood pressure stays at or above 90/60 mmHg, but should not reach as high as 140/90 mmHg.

Blood pressure above 140/90 is considered hypertension (high blood pressure)

Risk factors for hypertension:

- Having a high level of fat (cholesterol) in the blood,
- Old age, poor nutrition,
- Being overweight or obese, excessive alcohol intake,
- Diabetes,
- Taking oral contraceptive pills for many years,
- Being physically inactive and, most importantly, being a cigarette smoker
- Most of these factors are preventable by teaching the community to change their behavior to healthier ways.

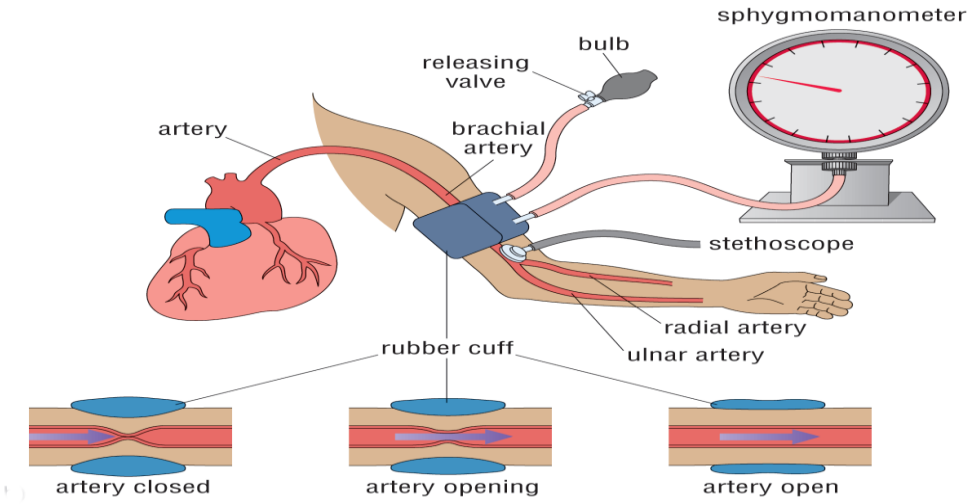


Figure 1.4: equipment for blood pressure measurement

Table 1: Blood pressure levels for adults

Category Systolic	Systolic (mmHg)	Diastolic (mmHg)	Advice
Normal	Less than 120	Less than 80	None
Pre-hypertension (before hypertension starts)	120-139	80-89	You should advise people with hypertension to make changes in what they eat and drink, to be physically active, and lose extra weight. If your client also has diabetes, refer him or her.
Hypertension	140 or Higher	90 or higher	This person has high blood pressure. Refer him or her to a higher health facility.

A. Hypertension

- Is defined as persistent elevation of BP. > 140/90mmHg.
- High blood pressure is medically known as hypertension.
- Is called a "**silent killer**" because the individual is often symptom free (50%)
- Is a major cause of CHF, stroke & kidney failure?

Pathophysiology

Hypertension is a sign; it is most likely to have many causes for hypertension to occur; there must be a change in one are more affecting peripheral resistance, or cardiac output there must be also problem with the central system that monitor or regulate pressure

Cause: Unknown

S/S - Headache

- Visual disturbance
- Nausea & vomits
- Palpitation
- Stroke due to thrombus

- BP ↑ & pulse ↑
- Left ventricular enlargement

Assessment & Dx

- Proper history
- Physical exam
- Lab :- blood chem. – sodium & potassium
  - ✓ Cholesterol level
  - ✓ C.B.C
  - ✓ Urinalyses
- Diagnosis of High Blood Pressure
  - ✓ A blood pressure measurement gives you two readings numbers).
  - ✓ **Systolic blood pressure:** The upper one, which is higher of the two numbers.
  - ✓ **Diastolic blood pressure:** The lower number, which is also the smaller of the two numbers.

Figure 1.5

Types of Hypertension

- **Primary or essential Hypertension**
  - ✓ Denotes high BP from unknown cause
  - ✓ Accounts 90-95% of total HPN

Risk Factors

- Age: advancing
- Family Hx of HPN
- Overweight or Obesity: ↑ intravascular volume
- Atherosclerosis
- High salt diet: ↑ water retention →↑ BP

- Alcohol: ↑ plasma catecholamine
- Cigarette smoker
- poor nutrition
- Emotional stress: stimulates SNS

Secondary Hypertension

- HPN from identified cause

  Ex. Renal disease

Risk factor

- Renal disease / ↑ intra vascular volume
- Renal vascular hypertension (renal artery stenosis)
- Hypertention associated with pregnancy

Classification of HPN- based on severity

The severity of HPN is determined by the degree of elevation of the diastolic BP. Based on this HPN is classified into three:

1) **Mild HPN: DBP 90-104mmHg**
2) **Moderate HPN: DBP 105-114mmHg**
3) **Severe HPN: DBP > 115mmHg.**

Purpose: - To maintain blood pressure with normal ranges by the simples & safest means possible with the fewer effect for each individual patient.

Treatment

- **Mild HPN**
  - ✓ Diet control (NaCl)
  - ✓ Regular exercise
  - ✓ Reduce obesity
- **Moderate HPN**
  - ✓ Reserpine
  - ✓ Methyldopa

- ✓ Propranolol

- **Severe HPN**
  - ✓ Hydralazine
  - ✓ Methyldopa or nifedepine

Nursing process

- Check v/s strictly – input & out put
- Teaching and patient self care
  - Instruct the patient
  - ↑B/P
  - how to manage including
    - Medication
    - Diet
    - Wt. control
- Continuing care
  - Regular follow up care
  - Regular check up of B.P
- Monitoring and managing potential complication

Life style modification for HPN prevention and management

- Lose wt if obese
- Reduce sodium intake
- ↑ anaerobic physical exercise
- Maintain adequate intake of K^+
- Stop smoking
- Reduce dietary fat & cholesterol
- Limit alcohol intake

Complications of HPN

- CHF, MI or angina pectoris
- Renal failure
- Stroke or cerebral hemorrhage
- Visual failure

B. Heart failure:

Heart failure: is when the heart cannot pump efficiently and is unable to generate sufficient blood flow to meet the demands of the body for oxygen and nutrients, either at rest or during exercise.

Heart failure is the inability of the heart to pump sufficient blood to meet the need of the tissues for oxygen and nutrients.

Symptoms of heart failure:

- Shortness of breath even when sitting still;
- They often cannot sleep without using many pillows
- Tiredness and weakness.

Congestive heart failure – is usually an acute presentation of heart failure where patients experience pulmonary or peripheral congestion.

Path physiology

- Heart failure results from a variety of cardiovascular diseases but lead to some common heart abnormalities which result in decreased contraction (systolic dysfunction), decreased filling (diastolic dysfunction), or both and with or without pulmonary or systemic congestion.
- Significant myocardial dysfunction most often occurs before the patient experiences sign and symptoms of heart failure.
- Heart failure therefore is classified as systolic heart failure and diastolic heart failure.

Etiology

- Underlying heart diseases. Such as

- ✓ Coronary atherosclerosis – primary cause of HF
- ✓ Cardiomyopathy
- ✓ Systemic or pulmonary hypertension
- ✓ Valvular heart disease /e.g. aortic valve stenosis, mitral valve stenosis)
- ✓ Constrictive pericarditis.

Precipitating causes

Factors that contribute to the development and severity of HF. These include.

- Infection
- Anemia
- Thyrotoxicosis
- Pregnancy
- Dysrhythmias
- Acidosis (respiratory or metabolic)
- Hypoxia
- Electrolyte imbalances
- Emotional or physical stress
- Pulmonary emboli
- Inappropriate discontinuation of medications to treat heart failure, or hypertension.

Clinical Manifestations

The signs and symptoms of HF are most often described in terms of the effects on the ventricles.

Thus classified as:

- Right sided (right ventricular) and
- Left sided (left ventricular) heart failure.

Left sided heart failure (left ventricular failure)

Inability of the left ventricle to pump blood to the systemic circulation causes blood to back up through the left atrium and in to the pulmonary veins. Pulmonary venous blood

volume & pressure rise, forcing fluid from the pulmonary capillaries in to the interstitial and alveoli, which leads to pulmonary congestion.

Therefore patient with left sided heart failure may present with

- Dyspnea on exertion – precipitated by minimal to moderate activity
- Orthopnea.
- Paroxysmal nocturnal dyspnea
- Cough – initially dry, later it becomes productive with large quantities of frothy sputum. Which sometimes is pink (blood tinged)
- Adventitious breath sounds bilateral crackles that do not clear with coughing.
- Nocturia
- Altered digestion (nausea, and anorexia)
- Dizziness, lightheadness, confusion, restlessness & anxiety
- Tachycardia, weak & thready pulse.
- Fatigue, decreased activity tolerance.
- Pale, cyanotic skin
- Left ventricular hyperthrophy, (apical impulse displaced to the left of the midclavicular line).
- S3 heart sounds or murmur (with valvular dysfunctions) might be heard.

Right sided heart failure /right ventricular failure/

When the right ventricle fails, it cannot eject blood and cannot accommodate all the blood that normally returns to it from the venous circulation. This causes congestion of viscera & peripheral tissues.

Clinical manifestations

- edema of the lower extremities (dependent edema pitting)
- hepatomegaly
- Distended jugular veins
- Ascites

- Weakness, anorexia and nausea
- Weight gain

Assessment and Dx finding

- Echocardiogram to conform the Dx of H.F
- Chest x-ray
- E.C.G
- Serum electrolyte, urinalysis
- B.U.N , T.S.H, C.B.C

Medical management

- Critical management is easily identification and documentation of type of H.F.
- Management varying with type of H.F

Basic objectives

- To eliminate or reduce any etiologic contributory factor.
- Reduce work load on the heart by reducing after load pre load.

Management

Providing general counseling about

- Sodium restriction
- Monitoring daily weight
- Sign of fluid retention
- Regular exercise
- Avoid alcohol
- Avoid smoking
- Avoidance of excessive fluid intake

Pharmacological therapy

Depends on the underlying cause

- Beta blockers- tenormin/ atenolol
- Angiotensin converting enzyme inhibitors(ACEI)

- Diurectics - Digitalis
  - ✓ Digoxin
  - ✓ Calcium channel blockers
- Nutritional therapy
  - ✓ Low – sodium diet
  - ✓ Balanced food

Nursing management

The nurse is responsible for administering the medications and for assessing their beneficial and detrimental effects to the potent. It is the balance of these effects that determines the type and dosage of pharmacologic therapy. Nursing actions to evaluate therapeutic effectiveness include the following.

- keeping an intake and output record to identify a negative balance (more output than input)
- Weighing the patient daily at the same time and on the same scale.
- Osculating lung sounds at least daily to detect an increase or decrease in pulmonary crackles
- Determining the degree of JVD.
- Identifying and evaluating the severity of dependent edema
- Monitoring pulse rate and blood pressure.
- Examining skin turgor and mucus membranes for sign of dehydration
- Assessing symptoms of fluid overload
- Cheek u/s special pulse before giving digoxin.

Risk factors for cardiovascular diseases

- unhealthy diet,
- Physical inactivity and
- Tobacco use.
- These are called behavioral risk factors because they are due to people's behavior; these factors are responsible for about 80% of cardiovascular diseases.

Role of Health professional worker is

- Identifying the client with symptom of hypertension and heart failure to nearest health center/hospital.
- Educating on health life style, exercise.

1.2.2. Diabetes Mellitus

Def^{n}. Diabetes mellitus is a group of heterogeneous disorder characterized by elevated levels of glucose in the blood or hyperglycemia

Diabetes mellitus is a condition in which the level of glucose (the simplest type of sugar) in the blood is poorly controlled, so that sometimes it rises too high and at other times it falls too low. Both these extremes can have serious consequence for the diabetic person. People with diabetes mellitus are usually very thirsty, so they drink a lot of fluids and as a consequence they produce large amounts of urine.

The normal range is between 75-115 mg (milligrams) of glucose in every 10 ml of blood. Glucose control is due to the action of hormones secreted in pancreas.

If the pancreas is severely damaged or removed by operation the production of insulin and glucagon will stop and diabetes will result. simple way to test urine or a sign of diabetes, ants are attracted to the urine

Figure 1.6: Ants are attracted to the urine

In diabetes the body's ability to respond to insulin may decreased or the pancreases, may stop producing insulin entirely. This lead to hyperglycemia which may result in acute complication such as

- Diabetic Keto-acidosis

- Hyperglycemia hyperosmolar non ketotic (HHNK) syndrome

Long term hyperglycemia may contribute to:-

- Micro-vascular Complications
- Macro-vascular diseases

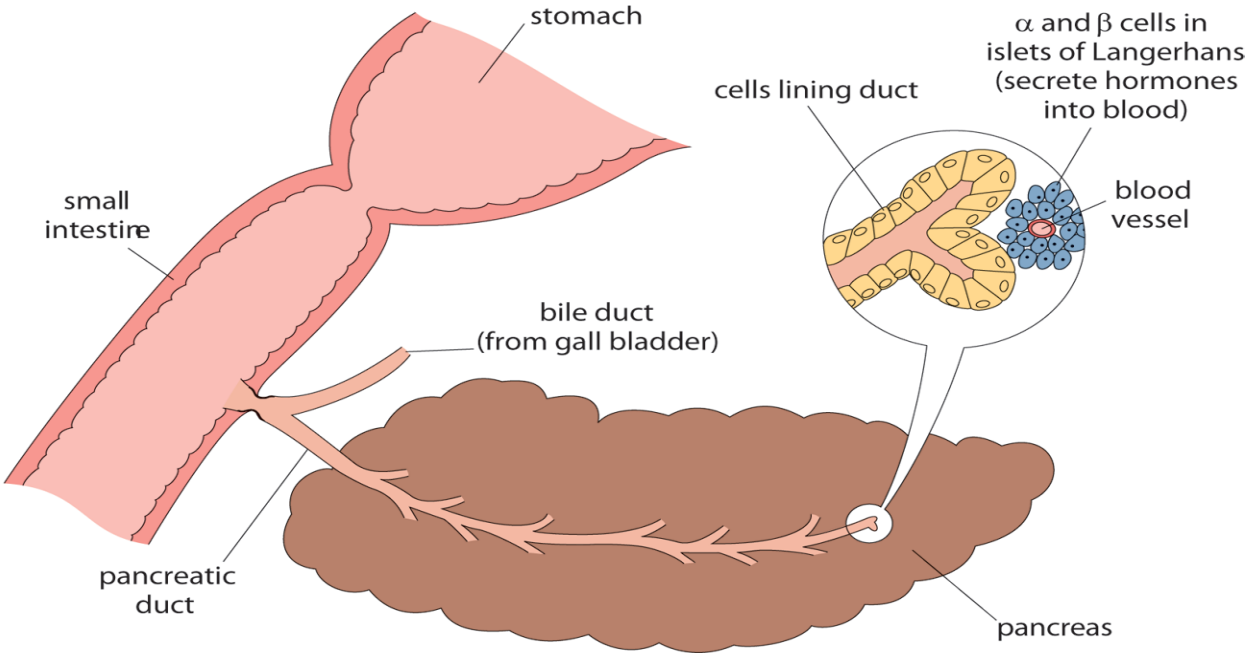


Figure 1.7: Cells in the Islets of Langerhans in the pancreas produce insulin and Glucagon.

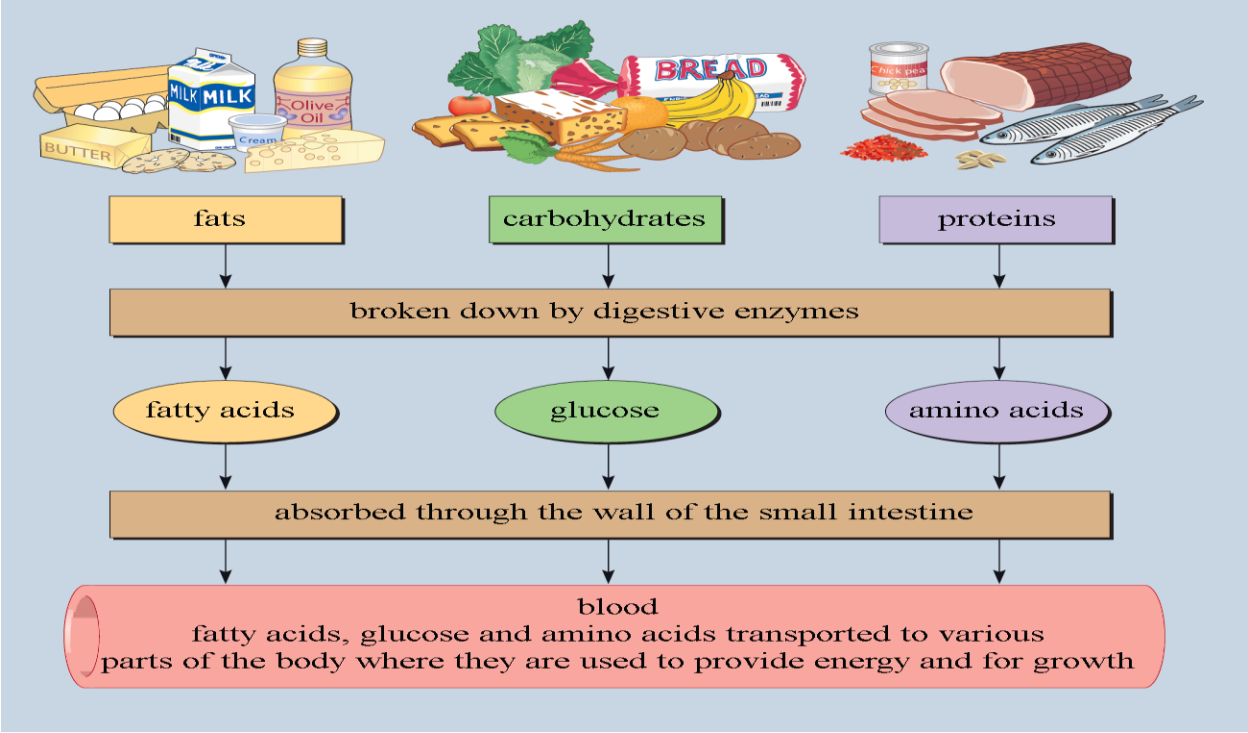


Figure 1.8: Breaking down of food and absorption of its end products

Symptoms and signs of diabetes

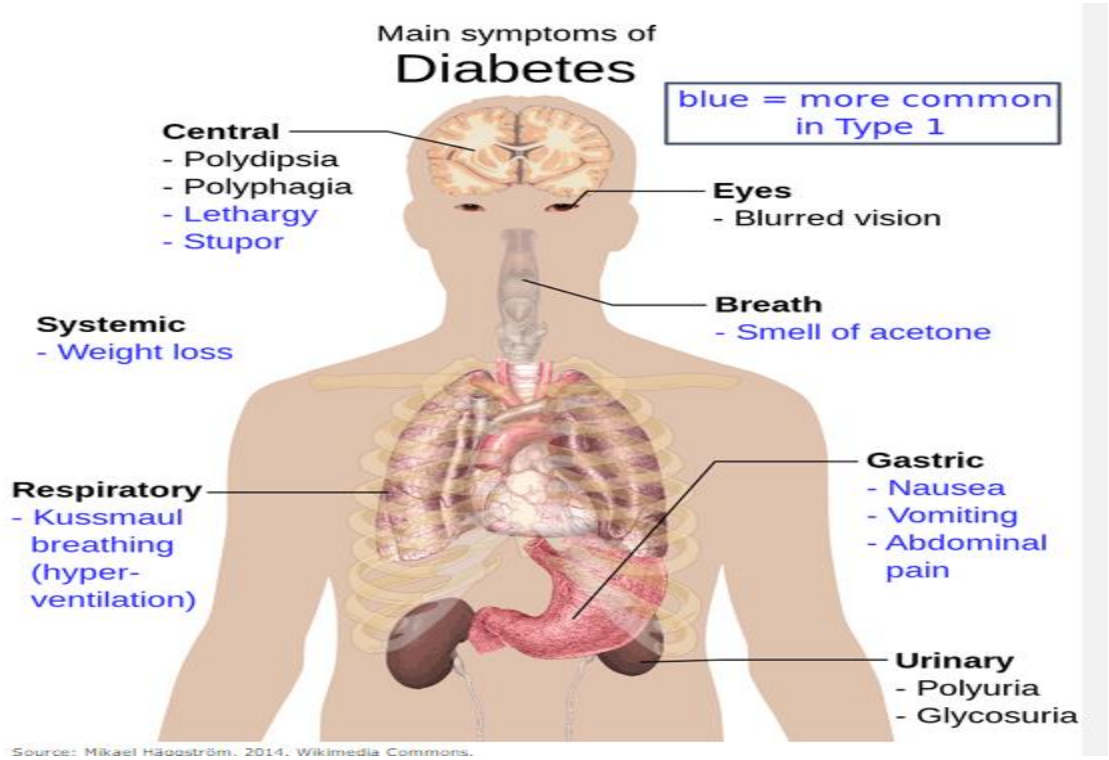


Figure 1.9: Symptoms and signs of diabetes

Classification of diabetes

- **Type I** or insulin dépendant DM
- **Type II** non insulin dépendent DM
- Gestational diabetes mellitus (GDM)

Type I or insulin dépendant DM

Type 1 diabetes: pancreas fails to produce enough insulin

- Dm results from autoimmune beta cell destruction.
- Common at child age and young people(but at any age
- 5-10% of world people with diabetes
- It is characterized by sudden onset usually before the age of 30yrs.

Type II or non insulin dépendent DM

Type 2 diabetes: the pancreas still produces insulin, though the amount reduces over time. The main problem is that the body cells become increasingly resistant to the action of insulin

- Characterized by insulin deficiency and tendency to develop ketosis
  - ✓ Insulin resistance
  - ✓ Impaired insulin secretion
  - ✓ Glucose production
- 90-95% of world people with diabetes
- Results from ed amount of insulin production-
- Occurs most frequently in people who are older than 30yrs of age and obese.

Normal Physiology

- Insulin is secretary by B.cells of pancreases
- Insulin is an anabolic or storage hormone it has the following effects.
- Stimulate storage of glucose in the liver and muscle (in the form of glycogen)
- Enhance storage of dietary fat in adipose tissue.
- Accelerates transport of amino acids in to cells

- Insulin diabetes the breakdown of stored glucose protein and fat.

Pathophysiology of Diabetes

Type I Diabetes

Inability to produce insulin because pancreas beta cell has been destroyed

Fasting hyperglycemia, Post prandial (after meal) hyperglycemia

- Glucose in the urine since the concentration is high in the blood

  Excess glucose excreted in the urine

  ↓

  Excessive loss of fluids and electrolytes

  Osmotic diuresis – Polyuria

  ✓ Polydipsia
- Insulin deficiency – impaired metabolism of protein and fats

  ✓ Weight loss
- Polyphagia – because of the decreased storage of calories
- Further hyperglycemia from – Glycogenolysis

  ✓ Gluconeognesis
- Fat break down
- Production of ketone bodies leads to diabetic Ketoacidosis (DKA)

Type II – Diabetes

There are two main problems

- Insulin resistance
- impaired insulin secretion

Insulin resistance - decreased sensitivity of the tissue to insulin

To overcome insulin resistance and to prevent the buildup of glucose in the b/d there must be an increased in the amount insulin secreted → If the B cells are unable to keep up of the increased demand for insulin, the glucose level rises.

Type II Diabetes Develops

- DKA does not occur in type II diabetes

- Occurs most commonly in people older that 30yrs
- For most pt's the problem detected incidentally
- Long term Complications are common
- Wt loss is the primary Rx of type II DM and also exercise and diet.

Etiology

Type I diabetes

- Combination of
  - Genetic
  - Immunology
  - Environmental factors
- People don't inherent type I diabetes or tendency.
- An abnormal response in which antibodies are directed against normal tissue of the body responding to tissue as if they are foreign.

Type II Diabetes

- Exact mechanisms that used to insulin resistance and impaired secretion in type II DM are unknown.
- But genetic factors play a role in addition age (>65 yrs), obesity, family history and ethnic group.

Risk factors for diabetes:

- A family history of diabetes (genetic factors).
- Being overweight or obese; the distribution of body fat also appears to be important, with fat around the abdomen seen as more of a risk than fat hips.
- Lack of exercise.
- Viral infections during child hood

Diagnostic Evaluation

- The presence of abnormally high blood glucose level on at least two occasions
- Random plasma glucose >200mg/dl
- Fasting plasma glucose > 140mg /dl

- Oral glucose tolerance test
  >200 mg/dl

Management & main goal of the Rx

- To normalize insulin activity and b/d glucose levels to produce dev't of the vascular and neuropathic complications
- Normal blood glucose level with out hypoglycemic and with out seriously disrupting the pt usual activity patterns.
- There are five components of Mx
  Diet → Exercise → Monitoring → Medication → Education

Dietary Mx

- Constitutes the foundation of diabetes Mx has the following goals
  - ✓ prevision of all the essential foods
  - ✓ Meeting energy needs
  - ✓ Prevision of daily function in b/d glucose level
  - ✓ Decrease of blood glucose lipid levels.
- For obese pts wt loss is the key to Rx
- Important objective in dietary Mx of diabetes is control of total calorie intake to attain or maintain a reasonable body wt and control of blood glucose level.
- In a young pt with type I diabetes, priority should be given to provide a diet with enough calories to maintain normal growth & dev't.

Insulin Therapy

- Insulin lower blood glucose level after meals by facilitating the uptake & utilization of glucose by muscles, fat and liver cells. During periods of fasting insulin inhibits the breakdown of stared glucose, protein & tax.
- In type I diabetes exogenous insulin must be administered.
- In type II diabetes insulin may be necessary and a long term bases to controlled glucose levels if diet an oral agents have failed.

<u>Insulin Preparation</u>

- A number of insulin preparations are available
- They vary according to four major characteristics
  - Time course of action
  - Concentration
  - Species and source
  - Manufactures

Time Course

May be grouped in to three main categories based on onset peak and duration.

- **Short Acting Insulin**
  - ✓ Regular insulin (marked "R")
  - ✓ Onset of regular human insulin action is ½ to 1hr, peak 2 to 3 hrs duration 4 to 6hrs
  - ✓ Clear in appearance given 20 minutes before food.
- **Intermittent Acting**
  - ✓ NPH insulin (neutral protamin hagodorn)
  - ✓ Lente insulin ("C")
  - ✓ On set 3to 4 hrs, peak 4 to 12 hrs duration 16 to 20 hrs.
  - ✓ White and milky in appearance
  - ✓ It is important for the pt to have eaten some food arrived the time of the onset and peak of these insulin's.
- **Long Acting Insulin**
  - ✓ Ultra lente Insulin (UL)
  - ✓ Sometimes referred to us "peaks less" b/c it tends to have a long slow, sustained action rather than sharp peaks in action
  - ✓ Onset – 6 to 8hrs peak 12 to 16 hrs duration – 20 to 30hrs

Concentration

- The most common conc. of insulin is U-100
- This means increase 100 units of insulin per litter (ml) also U-40 & U-80 areused

Species

- In the past all insulin were obtained from beef (cow) and pig pancreas.
- New human insulin's are widely available.

Insulin regimen

- vary from one to four injections per day.
- Usually these are a combination of a short acting and longer acting insulin
- These are two general approaches to therapy.

Conventional Regimen

- Simplifying the insulin regimen as much as possible with the aim of avoiding the acute complications.
- This approach would be appropriate for
  - Terminally ill
  - The elderly with limited self care abilities
  - Pt completely unwilling or unable to engage in self manage

Intensive Regimen

- Uses a more complex insulin regimen to achieve as much control over blood glucose level is safe.
- This regimen allows pts more flexibility to change their eating and activity patterns. Pts who may not be appropriate candidate for intensive regimen:-
- Persons with autonomic neuropathy that can uses then to have hypoglycemic an awareness.
- Pts who have recurrent severe hypoglycemia
- Pts with permanent, irreversible complications of diabetes.
- pts who do not take fall responsibility in those care

Administering the Injection

- Selection and rotation
- The four main area for injection are the abdomen, arms, thighs and the hip.

- Speed of absorption is in the abdomen and decrease progressively in the arm, thigh and hip.
- Systematic rotation of injection site with in anatomic areas is recommended to prevent localized changes in fatty tissues (lipidystrophy)

Problems with Insulin

- **Local allergic reaction**
  - ✓ Redness, Swelling, tenderness and indurations at the site of injection
  - ✓ Usually occur during the beginning stages of therapy and disappear with continued use of insulin.
- **Systemic Allergic Reaction**
  - ✓ First there is an immediate local skin reaction that gradually spread into sever & generalized.
  - ✓ Rx is desensitization of insulin
- **Insulin lipodystrophy**
  - ✓ **Lipodystrophy** – refers to localized disturbance of that metabolism in the form of either wipe atrophy or lipohypertropy – occurring at the site of injection.
  - ✓ Loss of subcutaneous fat & appears as slight dimpling or more serious pitting or subcutaneous fat.
- **Insulin Resistance**
  - ✓ Occur most commonly in obesity.

Oral Anti diabetic Agents

Are effective for type II diabetic pts. They cannot be used during pregnancy.

Oral agents include:

- Sulfonylurea
- Biguamides

Sulfonylurea

- exert their primary action by directly stimulating to pancreas to secret insulin

- Additionally improve insulin action at the cellular level they may also directly decreases glucose production by the liver
- hey are divided in to
  - ✓ long acting
  - ✓ Intermediate
  - ✓ Short acting

Most Common Side Effects

- Eg. Of drugs – Tolbutamide (orinase)
  - ✓ Tolazamide (Tolinase)
  - ✓ Glibenclamide (Glyburide)
- Hypoglycemia may occur when an excessive dose of sulfonylurea is used.
- There is also disalfiram (ant abuse) type reaction with alcohol ingestion.

Complications can be acute & chronic.

Acute complications

Three major acute complications of glucose imbalance

- Hypoglycemia
- DKA
- Hyperglycemia
- Hyper osmolar non ketotic coma.

Hypoglycemia (Insulin Reaction)

- occurs when blood glucose level falls below 50 to 60 mg /dl
- Can be caused by too much insulin, oral hypoglycemic agents, too little food, excessive physical activity.
- occurs at any time of the day or night
- Hypoglycemia can be
  - ✓ Mild
  - ✓ Moderate

- ✓ Severe

- In severe hypoglycemia, CNS function is so impaired that the pt needs the assistance of another person for Rx. of hypoglycemia.
- Disoriented behaviors, seizures difficulty arousing from sleep or loss of consciousness.
- Immediate Rx must be given
- Usual recommendation 10 to 15 gm of fast acting sugar orally.

N.B Golden advice – diabetic pts must carry some form of simple sugar with them all the times.

Severe Hypoglycemia

For unconscious pt

- Injection glucagon 1gm IM
- Simple sugar followed by a sheck

Patient Education

- Pt should follow regular pattern of eating administering insulin and exercise.
- Routine blood glucose tests
- Identification tag
- Pt should know potential symptoms of hypoglycemia

Diabetic Ketoacidosis

- Caused by an absence or markedly inadequate amount of insulin result in disorder of metabolism of CHO, Protein & fats.
- The three main clinical features of DKA are
  - ✓ Dehydration
  - ✓ Electrolyte loss
  - ✓ Acidosis

Cause of DKA

- Decreased or missed dose of insulin
- Illness or infection
- Initial manifestations of undiagnosed and untreated diabetes.

Treatment: aimed at correction to the three main problems

- Dehydration
- Electrolyte loss
- Acidosis

Rehydration

- To maintain tissue perfusion
- Initially 0.9% N.S at high rate
- Monitor fluid volume status involving frequent measurement of
  - ✓ Vital sign
  - ✓ Input & out put
  - ✓ Lung assessment

Electrolyte Lose

Major concern is potassium and replacement as soon as possible.

Acidosis

- Results from fat break down
- Is reversed by insulin injection

Long Term Complication

- Affect almost every organ system of the body.
- Categorized in to
- macrouascular
  - ✓ Coronary artery disease
  - ✓ Corbrouascular disease
  - ✓ Peripharal vascular disease

Macro vascular Complications

- **Retinopathy**: is characterized by capillary basement membrane thickening
- **Nephropathy:** Neuropathies affect all types of nerves:- Peripheral, Autonomic & Spinal nerves

Foot and leg problems

The cause of 75% of lower extremity amputations

The major contributes for the problems are

- Neuropathy
- Peripheral vascular disease
- Immunocompromised

Foot Care is the Management

- Properly bathing drying & lubricating
- Not to allow moisture b/n
- Inspect foot daily

Moderate – the fall in blood glucose level /depress the brain cells of needed for reaction.

Impaired function of CNS

- Inability to concentrate
- Headache, light headiness
- Confusion, memory lapses
- Numbness of the lips & tongues
- Slurred speech to coordination
- Emotional Change
- Irrational Behavior
- Double vision & drowsiness

Management – Fast Acting Sugar orally

Pathophysiology of DKA

Break down of fat / lipolysis /

↓

Free fatty acid & glycerol

↓

Keton bodies

Metabolic acidosis

C/M

- Polyurea & polydysia
- Blurred vision, weakness & headache
- Orthostatic Hypotension
- Weak rapid pulse <1 Symptoms - Anorexia
  - ✓ Nausea – vomiting
  - ✓ Abdominal pain.
  - ✓ Acetone breath
- Cosmal respiration
- Mental Status Change
  - ✓ alert
  - ✓ Lethargic
  - ✓ Comatose

Self-care and diet for someone with diabetes

- If they are already taking insulin or other drugs to treat their condition, you should advise them to take their medication regularly. Everyone with diabetes, regardless of treatment, should:
- attend regular medical checkups
- be aware of possible wound infection if they hurt themselves and seek urgent treatment if this occurs
- always wear shoes that fit correctly; wounds, blisters or sores on the feet can lead to tissue damage that is difficult to heal
- have an eye test once every year to check for early signs of eye damage
- always include exercise as a routine part of their lifestyle

- Attend health education classes (if they are available) for people with diabetes to learn about self-care.

1.2.3. Cancers

Cancers are characterized by the rapid creation of abnormal cells which grow beyond their usual boundaries, which can invade adjoining parts of the body and spread to other organs. Cancers can develop in any part of the body. Cancer is a general term for any malignant neoplasm.

A lump of new cells growing in an inappropriate location is known as a tumor:

- **Benign tumor: -** Most benign tumors are rarely life threatening, though some may grow very large over a long time and eventually interfere with the functioning of a vital organ, such as the liver, heart or brain.
- **A malignant tumor** is the medical name for a cancer(more life threatening)

Risk factors for cancer

Risk factors are factors known to predispose the person to develop the given problem , here “cancer”.

Table: 1: Risk factors for cancer

Modifiable risks	**Non modifiable risks**
• Cigarette smoking • Exposure to some industrial chemicals • Environmental risk factors, such as radiation and certain viruses • Lack of exercise • Fatty diet leading to obesity • Excessive alcohol consumption.	• Age • Genetic factors

Cancer prevention through risk reduction strategies

- Advise them to:
  - ✓ avoid cigarette smoking or chewing tobacco or khat (they increase the risk of cancers of the mouth, throat, lungs, stomach, colon and bladder)
  - ✓ avoid excessive alcohol usage (which is a risk factor for cancers of the mouth, oesophagus, stomach, breast and liver)
  - ✓ eat a healthy diet containing plenty of fruits, vegetables and other high-fibre foods from plant sources like whole grains, peas and beans (this helps in reducing cancer risks in the whole of the gastrointestinal system)
  - ✓ maintain a healthy weight (this reduces the risk of many cancers, including cancers of the ovaries and breast)
  - ✓ avoid exposure to industrial chemicals by wearing personal protective clothing (this reduces the risk of lung and skin cancers, among others)
  - ✓ Avoid exposure to cancer-promoting viruses (described below).
- The best way to prevent cervical cancer due to HPV (ABC rule)
  - ✓ Abstinence (refraining from sexual intercourse)
  - ✓ Be faithful (to one long-term partner)
  - ✓ Condoms (correct and consistent use of condoms for all acts of sexual intercourse).

Cancer

Risk Factors

- Early onset of menstrual period.
- Late menopause.
- Late age at first child birth.
- Alcohol and tobacco use.
- Family history.
- Being overweight.
- Lack of physical activity.

- Shorter duration or no breastfeeding.

Common Signs and Symptoms of Breast Cancer

- A change in size of the breasts.
- A nipple that is pulled in or changed in position or shape.
- A rash on or around the nipple.
- Discharge from one or both nipples.
- Puckering or dimpling of skin of the breasts.
- Lump or thickening in the breast.
- Constant pain in the breast or armpit.

Women over 30 years should be screened by a trained provider, at least once in five years.

Those who have a family history of breast cancer should be encouraged to gets screened more often. Screening for breast cancer can be done by trained health workers such as an ANM at the sub centre. This is called Clinical Breast examination. Any of the signs above should be considered suspicious and the woman should be referred to a medical officer.

What is Breast Self-Examination (BSE?)

Breast self-examination is recommended to raise awareness of breast cancer. The practice of BSE empowers women to take responsibility for their health. However this is **not a substitute for examination by a trained provider.**

Best time to undertake BSE:

- 7-10 days after the first day of the menstrual period.
- If not menstruating, pick a certain day - such as the first day of each month.
- If taking hormones, then do it 1-2 days after withdrawal bleeding.

Screening for breast cancer

- Screening refers to any method of examining an apparently healthy person to see if they have the early signs of a particular disease, which would benefit from having early treatment. Screening for breast cancer is easily carried out by women themselves.

Steps of Breast Self-Examination (BSE)

Five steps of BSE

Step 1: Begin by looking at your breasts in the mirror with shoulders straight and arms on hips.

What to look for:

- Any change from the usual size, shape, and colour.
- Any visible distortion or swelling of the breast.

If any of the following changes are seen, bring them to your doctor's attention:

- Dimpling, puckering, or bulging of the skin.
- A nipple that has changed position or an inverted nipple (pushed inward instead of sticking out).
- Redness, soreness, rash, or swelling.

Step 2: Same changes to be looked for with arms raised.

Step 3: Also look for any signs of fluid coming out of one or both nipples (this could be a watery, milky, or yellow fluid or blood).

Step 4: Next, feel breasts while lying down, using the right hand to feel the left breast and then the left hand to feel the right breast. Use a firm, smooth touch with the finger pads of your hand, keeping the fingers flat and together. Use a circular motion, about the size of a quarter.

Cover the entire breast from top to bottom, side to side — from your collarbone to the top of the abdomen, and from the armpit to your cleavage.

- Follow a pattern to be sure that the whole breast is covered.
- Begin at the nipple, moving in larger and larger circles until the outer edge of the breast is reached.
- Ensure that all the tissue from the front to the back of the breasts is examined. For the skin and tissue just beneath, use light pressure; use medium pressure for

tissue in the middle of your breasts; use firm pressure for the deep tissue in the back.

- When the deep tissue is reached, the individual should be able to feel down to the ribcage.

Step 5: Finally, the breasts should be examined while standing or sitting. Many women find that the easiest way to feel their breasts is when their skin is wet and slippery, so this can be done while taking a bath, using the same hand movements described in Step 4.

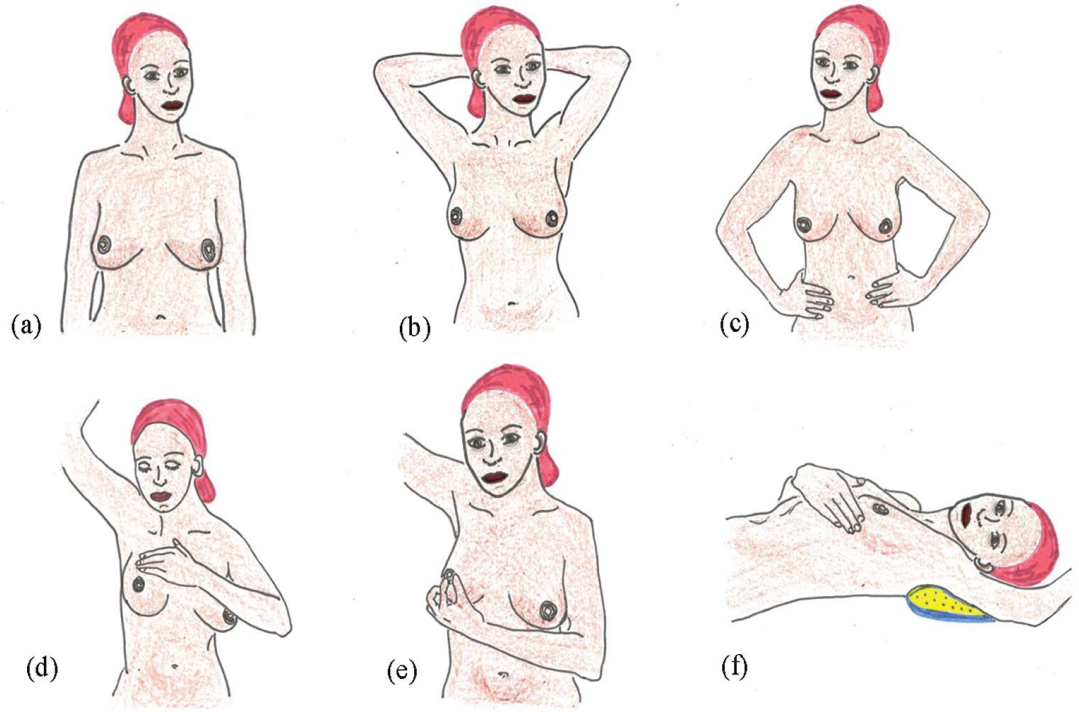


Figure 1.11: The steps of breast self-examination

Breast cancer treatment

- Breast cancer is usually treated surgically, either by removing just the cancerous tumor from the breast, or by removing the whole breast, hence role of the Health professional worker is to recognize and refer to hospital.

Cervical cancer

- Cervical cancer refers to cancer cells growing in the tissues of the cervix – the muscular organ connecting the uterus and the vagina. Most cases of cervical cancer are caused by sexually-transmitted infection with the human papilloma virus (HPV).

- In low- and middle-income countries, cervical cancer is the most common female cancer and one of the leading causes of death amongst women. In Ethiopia, it is believed from hospital reports that cervical cancer is the most common of all cancers. It is usually a slow-growing cancer that may not produce symptoms in its early stages. If the cancer is advanced, it may produce symptoms including an offensive discharge and bleeding from the vagina, and pain during sexual intercourse. You should encourage any woman with these symptoms to seek urgent medical attention.

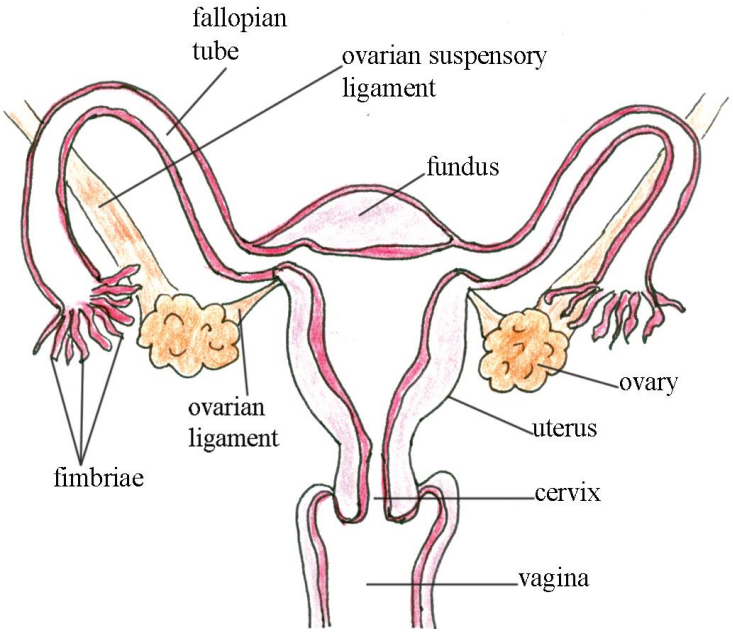


Figure 1.12: Female internal reproductive organs.

Risk Factors for Cervical Cancer

- Multiple sexual partners.
- Unprotected sex.
- Early marriage.
- Early age at first child birth.
- Higher numbers of pregnancy and childbirth.
- Smoking.

Common Signs and Symptoms of Cervical Cancer

- Bleeding between periods.

- Bleeding after sexual intercourse.
- Bleeding in post - menopausal women.
- Pain during sexual intercourse.
- Foul smelling vaginal discharge.
- Vaginal discharge tinged with blood.
- Pelvic pain.
- Fatigue.
- Unexplained weight loss.
- Pain during urination.

Cervical cancer screening

- Early detection of cervical cancer can be done with a test called a Pap smear test, in which cells are gently scraped from the cervix with a blunt instrument, smeared onto a glass slide and looked at under a microscope. A special stain is applied to the cells (called the Pap stain after the doctor who invented it), which shows up the cancer cells if they are present.
- Women who are sexually active should ideally have a Pap smear test once every two or three years, but this is only available in higher-level health facilities in Ethiopia. Cervical cancer screening detects the cancer early. If effective treatment, such as surgical removal of the uterus, chemotherapy orradiation follows, it dramatically stops the progression of cervical cancer and can cure the disease completely. Advise your female clients to go to a specialised well-woman clinic if possible and have the screening test for cervical cancer.

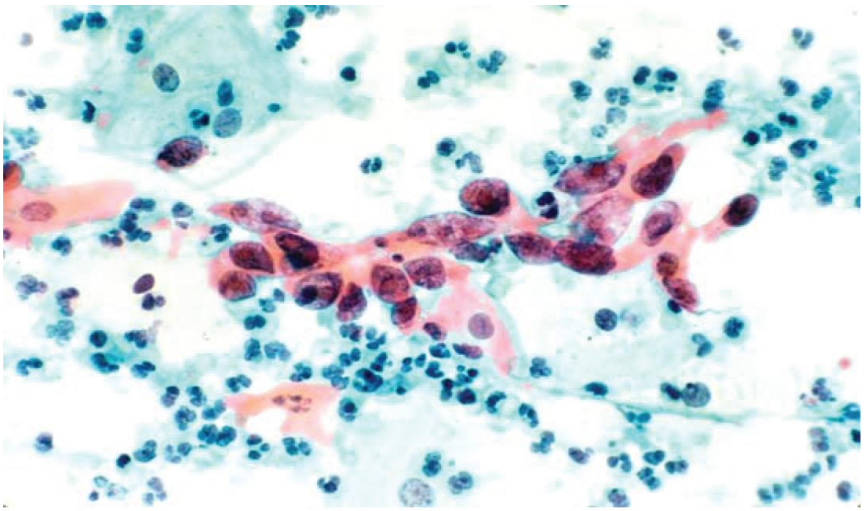


Figure 1.13: Pap smear of cells from the cervix magnified by a microscope

Oral Cancer

- Oral cancer in the mouth is a less common cause of disability and death, which is often neglected because the signs and symptoms are not recognised, or are thought to be due to infection in the mouth.
- It may occur in any part of the mouth or throat
- It is curable if discovered early. This type of cancer is associated with the use of alcohol & tobacco.

Predisposing factors

- Smoking & alcohol
- Old age
- Prolonged exposure to sun & wind

Risk Factors

- Poor oral hygiene.
- Oral cancers are twice as common in men as compared to women.
- Unhealthy diet - Low intake of fresh fruits and vegetables.
- Family history.
- Tobacco use.
- Alcohol consumption.

- Betel nuts and other form of chewing tobacco.
- Sharp teeth and ill-fitting dentures.

Common Signs and Symptoms of Oral Cancer

- It has no symptom during early stages
- Painless sore or mass that will not heal
- A white/red patch in the oral cavity.
- A typical lesion in oral cancer is painless indurated (hardened) ulcer with raised edges.
- Any ulcer of the oral cavity that doesn't heal in 2 weeks should be examined through biopsy.
- As the cancer progresses, the patient will complain tenderness; difficulty in chewing, swallowing or speaking, coughing of blood – tinged sputum; or enlarged cervical lymph nodes.

Diagnoses and evaluation

- Clincal (History & P/E)
- Biopsy

Screening of Oral Cancer

Like other cancers, every individual (woman or man) of 30 years and above should be screened by a trained provider, at least once in five years. Those who use tobacco in any form should be encouraged to be screened more often. In the case of individuals who have been using tobacco from a young age, they should be motivated to undergo examination by a trained provider, even if they are not thirty years old.

Screening for oral cancer can be done by a trained health workers such as an ANM at the sub centre. This is called Oral Visual Examination.

Oral cavity should be examined thoroughly using a mouth mirror and a white light. A torch can be used for proper light. Any abnormal patch (white/red), ulcer, rough area, granular area or swelling is to be considered for further examination at a referral facility.

- Self-examination can detect oral lesions at an early stage.

- All habitual tobacco users should do self-examination of oral cavity on a monthly basis.
- Method of doing Self-examination of oral cavity:
  - ✓ Rinse the mouth with water and stand before a mirror in adequate light.
  - ✓ Normal oral cavity lining is soft and pink.
  - ✓ Look in the mirror for any abnormal white or red patch, ulcer or roughened area, granular area or swelling in the mouth.
  - ✓ Consult a doctor if any abnormal area is found.

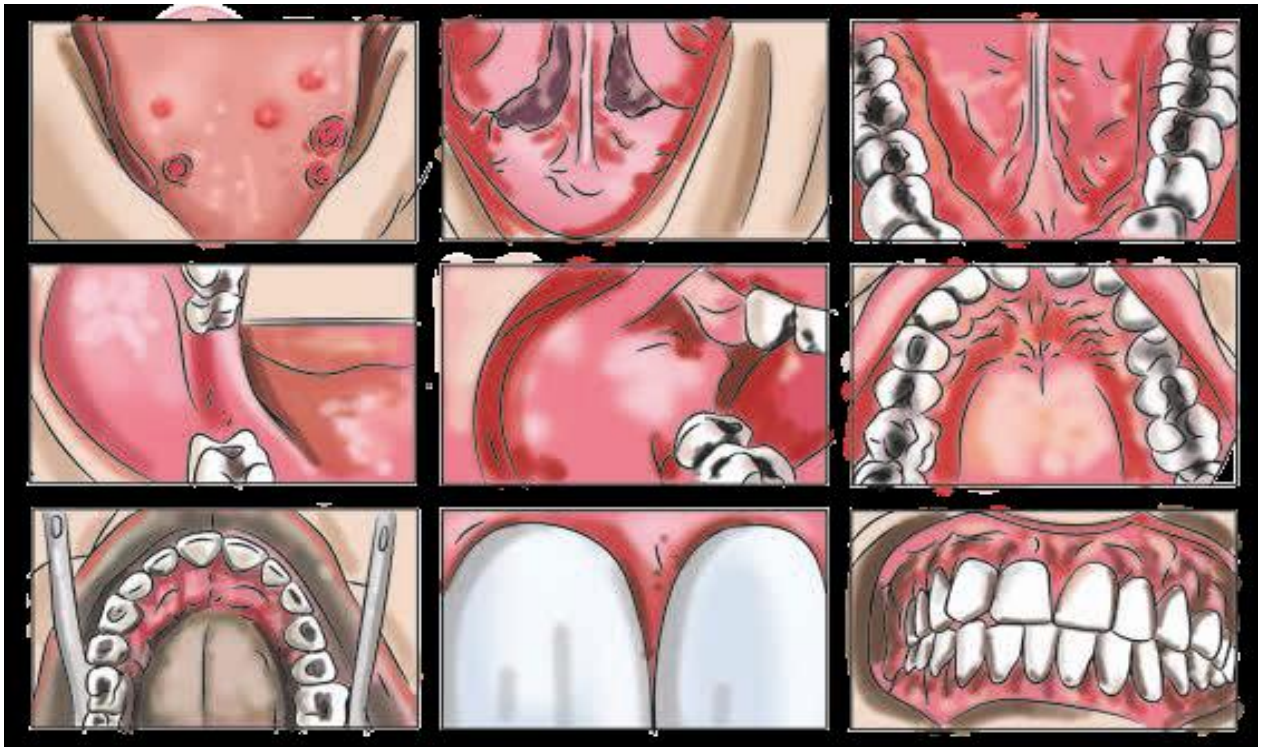


Figure 14. oral cavity

Management of Cancers

During screening, if an individual is found to have a sign that could indicate cancer, a test called a biopsy would need to be taken done by a trained service provider.

- Treatment for cancer can be provided at the district hospital, in the medical college or in special centres created for treatment of cancer.
- Treatment for cancer could be through surgery, medicines or radiotherapy (treatment using X-rays).

Medical Management:

- Resectional surgery or
- Radiation therapy or
- Chemotherapy or
- combination of these therapies

1.2.4. Chronic Obstructive Pulmonary Disease (COPD)

Chronic obstructive pulmonary disease (COPD) is very common respiratory diseases (i.e. affecting the respiratory system) all over the world, including in Ethiopia. Patients with COPD are usually in the older age groups and have a combination of two clinical conditions – emphysema and chronic bronchitis

A chronic disease is one that begins slowly, gradually gets worse over time and lasts for a long time, usually for the rest of the person's life. Chronic obstructive pulmonary disease (COPD) is a progressive respiratory disease that makes it hard to breathe.

COPD: - include chronic bronchitis, bronchiectasis, emphysema, & asthma

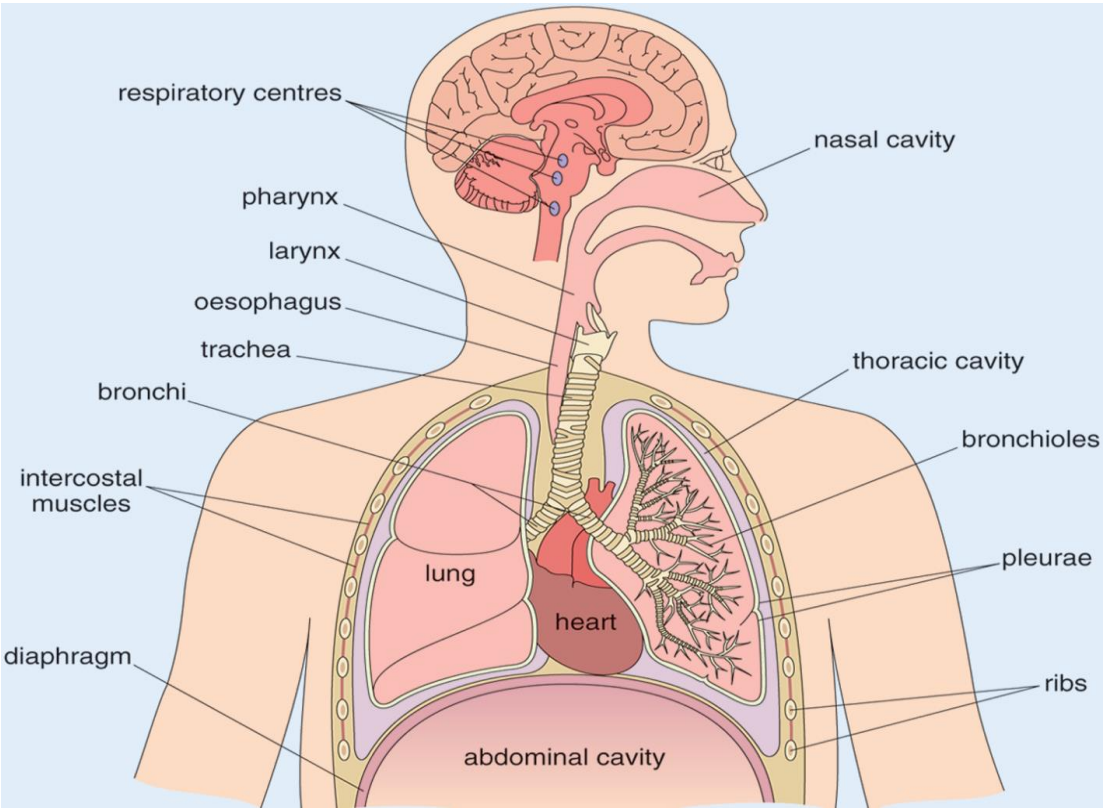


Figure 1.15: The human respiratory system (also known as the pulmonary system)

The lungs in COPD

- People with COPD have inflammation in their lungs that causes the production of large amounts of mucus – a clear slimy fluid secreted by cells lining the inside of the lungs. The mucus is a very good place for bacteria to grow, so lung infections are common in people with COPD.
- The mucus blocks the fine bronchioles and causes wheezing – squeaky breathing; you can often hear a quiet whistling or squeaking sound coming from the lungs when the person breathes in.

Risk factors for COPD

- Age is a risk factor for COPD: most people who have COPD were at least 40 years old when their symptoms began. However, the main risk factor is smoking tobacco. Most people who have COPD smoke or used to smoke cigarettes. People who have a family history of COPD (older relatives who developed it) are also more likely to develop the disease if they smoke. Long term exposure to other lung irritants is another risk factor for COPD. These include:
  - ✓ second hand-smoke from someone who is smoking tobacco in the same house every day
  - ✓ industrial air pollution (smoke, chemical fumes and dust)
  - ✓ most important of all in low-income countries – indoor smoke from cooking fires

Figure 1.15: Breathing smoke from indoor cooking fires (Photo: Basiro Davey)

Nursing Diagnosis

- Impaired gas exchange related to ventilation – perfusion inequality
- Ineffective airway clearance related to broncho constriction, increased mucus production
- Ineffective breathing pattern related to shortness of breath, mucus
- Self– care deficits related to fatigue 2^0 to increased work breathing.
- Activity intolerance due to fatigue, hypoxemia, & ineffective breathing patterns.
- Knowledge deficit a bout self- care procedures.

Goal: - Plan

- Improvement in gas exchange
- Achievement of airway clearance
- Improvement in breathing pattern
- Independence in self – care activities
- Improvement in activity tolerance
- Compliance with therapeutic program & home care

Nursing Intervention;

1. Administer bronchodilators as prescribed
2. Administer oxygen
3. Encourage fluid intake
4. Deep breathing exercise
5. Perform postural drainage
6. Encourage patient to begin to bathe self, dress, self & walk
7. Support patient in establishing a regular regimen of exercise
8. Discuss with patient about drugs

Potential Complication of COPD

- Atelectasis
- Pneumothorax
- Status asthmatics
- Pulmonary hypertention

COPD screening at community level

Table 3: COPD screening questions

Questions		Yes	No
1	Have you been coughing a lot and producing thick mucus (sputum) coughed up from your lungs?		
2	Have you had shortness of breath?		
3	Have you heard wheezing from your lungs when you breathe?		
4	Do you smoke cigarettes, or did you smoke cigarettes in the past? If not, do you live with someone who smokes cigarettes?		
5	Does anyone in your family have asthma and or allergies?		
6	In your work, have you been exposed to dust or chemicals that you often breathed in?		
7	Have you often been exposed to smoke from cooking fires inside your house?		

- Interpretation of the results of the COPD screening questionnaire is as follows:
  - ✓ If the person answers 'yes' to at least two out of Questions 1, 2 and 3, refer him or her to the health centre for further evaluation. It is likely that they have COPD.
  - ✓ If the person answers 'yes' to only one of Questions 1, 2 or 3, and also has one or more of the risk factors mentioned in Questions 4 to 7, then advise them about the need for regular screening for COPD and educate them on the prevention of COPD by reducing their exposure to the risk factors.

Prevention of COPD

- The good news is that COPD is a preventable disease!
- Educate people in your community how they can protect themselves from developing it by not smoking (or stopping from smoking) tobacco, which is dangerous to health not only in terms of COPD.

Chronic bronchitis

Def: - It is the presence of a productive cough that lasts 3 months a year for two consecutive years, in the absence of major lung disease (WHO).

The accumulated secretions in the bronchioles interfere with effective breathing.

Patients with chronic bronchitis are more susceptible to recurring infections of the lower respiratory tract. Chronic bronchitis occurs mostly during the winter.

Causes: - The major causes are:-

- ✓ Cigarette smoking
- ✓ Exposure to pollution

Clinical Manifestations:-

- A chronic, productive cough in the winter months (recurrent coughing and sputum production)
- History of cigarette smoking & frequent respiratory infection
- Production of thick, gelatinous sputum (greater amount's produced during super imposed infection)
- Wheezing and dyspnoea as disease progresses
- Recurrent acute respiratory infections followed by persistent cough

Diagnostic Evaluation

- A complete history, including family, environmental exposure to irritating substance, & occupational history, and also history of smoking (number of packs per day)
- Physical examination
- Chest x-ray
- Lung function studies
- Arterial blood gas analysis

Medical Management

- Remove bronchial secretions
- Bronchodilators are prescribed to relieve bronchospasm & reduce air way Obstruction.
- Postural drainage

- Increase fluid intake
- The patient must stop smoking

A. Bronchiectasis

Def:- Bronchiectasis is a chronic abnormal & permanent dilatation of the bronchi and bronchioles.

Pathology

The dilatation is due to destructive &inflammatory changes in the wall of medium-sized air ways.

The normal components of the wall, including cartilage, muscle, & elastic tissue, are destroyed &may be replaced by fibrous tissue.

The dilated airways are frequently contains thick, purulent materials, while peripheral airways are often occluded by secretion or obliterated& replaced by fibrous tissue.

Causes:-

- pulmonary infections
- Obstruction of the bronchus
- Aspiration of foreign bodies & vomitus
- Pressure from tumors, dilated blood vessels & enlarged lymph nodes.

Predisposing factors:-

- Infection in early child hade (measles, influenza, tuberculosis, & immuno-deficiency disorders
- Surgery (when patient is unable to cough)
- Infection
  - ✓ Damage bronchia wall
  - ✓ Thick sputum production
  - ✓ Sputum Obstruct bronchi
  - ✓ Wall of bronchi will be Distended by cough
  - ✓ Distended air way.

- S.aureus & Klebsiella& anaerobes remain important causes of bronchiectasis when *antibiotic treatment of pneumonia is not given.*

C/M

- Chronic cough (persistent or recurrent)
- Copious amount of purulent sputum
- Haemoptysis (50-70%)
- clubbing of the fingers
- P/E: crackles,rhonchi,& wheezes may be heard

Diagnosis

- Bronchography
- Bronchoscope &
- CT Scan

Medical management:

- Antibiotic based on the results of culture & sensitivity
- Postural drainage
- Bronchodilators may be given..

Surgical interventions

- Segmental resections - remove a segment of a lobe.
- Lobectomy - remove lobe
- Pneumonectomy – remove an entire lung.

Pulmonary Emphysema

Def[1]: - It is an abnormal distention of the air spaces beyond the terminal Bronchioles with destruction of the wall of the alveoli & finally lung losses its elasticity

- It is the end stage of a process that has progressed slowly for many years.
- It is irreversible problem

Predisposing Causes: -

9. Cigarette smoking : - is the major cause
10. Air pollution & Infection

C/M :

- Dyspnea
- Patient usually has a history of cigarette smoking and history of chronic cough
- Wheezing,
- Teachypnea
- The symptoms are exacerbated with a respiratory infection
- The an set is insidious
- Barrel chest & hyper resonant on percussion, decreased brith sound with ronchi
- Anorexia, weight loss, & weakness

DX:

- History & physical examination
- Chest x – ray

Medical Management

- Bronchodilator:- given to dilate air way & these medications include:
  - ✓ Aminophylline, 5 mg/kg by slow i.v push over 5 minutes
  - ✓ Theophedrin 1 tab po tid
- Aerosol: - Salbutamol aerosol inhalation 2 puff 3 – 4x/day
- Treatment of infection;
  - ✓ Patients with emphysema are susceptible to lung infections& must be treated at the earliest signs of infection. The most common organisms are S.pneumonia & H. influenza.
  - ✓ Ampicillin 500 mg po Qid for 7 – 10 days OR
  - ✓ Amoxicillin 500 mg po Tid for 7 – 10 days OR
  - ✓ CO – trimoxazole 960 mg po bid for 7 days
- Oxygenation
  - ✓ Administer oxygen

Bronchial Asthma

Def[n]: - It is an intermittent, reversible, obstructive air way disease in which the trachea & bronchi respond in a hyperactive way to certain stimuli.

Types of asthma

- **Allergic asthma:-**
  - ✓ It is caused by known allergen/ dust pollens, animals, dander, & food/.
  - ✓ Most of the allergens are airborne & seasonal
  - ✓ Family history of allergies
  - ✓ Post medical history of eczema

- **Idiopathic or non allergic asthma**
  - ✓ It is not related to a specific allergens.
  - ✓ Aggravating factors include common cold respiratory tract infections, exercise, emotions, & environmental pollutants.
- **Mixed asthma**
  - ✓ It is the most common form of asthma
  - ✓ It has the characteristics of both allergic & idiopathic asthma.

C/M

- Cough
- Dyspnea
- Wheezing
- Personal & or family history of allergic disease.

DX

- Complete history & P/E
- Chest x – ray :- over inflated lung
- Sputum & blood study (IGE ↑)
  - ✓ Tenacious, rubbery, & whitish

Treatment

Acute asthma attacks RX:-

- Administer concentrated oxygen by mask (6 liters/ min)
- Rehydrate the patient
- Drugs Rx –

I. Initial Mx:-

First line

- Salbutamol 2 puff & repeat after 20 minute for the first hour

OR

- Aminophylline, 5mg/kg slow iv push over 5 minutes. The same dose could be repeated after 30 minutes.
- minophylline drip load dose 3-5 mg/kg in dextrose & water over 20 minutes. Then maintenance dose 0.6 mg/kg hour in 5% D/W.

  Plus Hydrocortisone, i.v 200 mg stat

  AND/ OR Prednisolone, 40 – 60 mg po in divide dose immediately after hydrpcortisone for 5 – 7 days.

Alternative

- Adrenaline, 1:1000, 0.5 ml sc. Repeat after 30 minute to 1 hour if patient doesn't respond.
- If response to initial therapy is poor, give the following

II. RX of chronic asthma

- **Intermittent Asthma**

  First Line: - salbutamol, inhalation 2 puff, 3 times a week

  Alternative: - Thephedrine1 tab 3 times per day
- **Persistent Asthma**

  First Line: - salbutamol inhalation 2 puff 3 times/ day

  OR

  Theaphedrine 100 mg tid

  Plus Beclomethasone inhalation puff daily for two weeks.

  OR

  - Prednisalone, 0.5 mg, po/ day.

Prevention: - a void causative agents whenever possible.

1.2.5. Cataracts, Eye and Ear, Injuries

Anatomy and function of the eye

The eyelids are muscular folds of skin above and below your eyes, which can open and close like a gate covering and revealing the eye. They protect the eye from foreign matter, such as dust, dirt and other debris that might damage the eyes. When you blink, the eyelids also help spread tears over the surface of the eye, keeping it moist and comfortable.

Eyelashes are small hairs growing from the edges of the eyelids. They filter out dust and debris from the air close to the eye, preventing it from getting into the eyeball.

The sclera is a tough, leather-like, white tissue that extends all around the eye. Similar to an eggshell surrounding an egg and giving its shape, the sclera surrounds the eye and gives the eye its shape. The sclera is also attached to small muscles around the eye, which, in turn, move the eye left and right, up and down, and diagonally. When you look at yourself in the mirror the white part of your eye that you see is the front part of the sclera. Outside the sclera is a very thin transparent membrane, called the conjunctiva.

The cornea is a clear layer at the front of the eye which is continuous with the sclera

The iris is the coloured part of the eye and is made of muscle. The iris controls the amount of light that enters the eye through the pupil. The central opening in the ring-shaped muscular tissue of the iris is called the pupil, and the amount of light that enters the eye, can be altered by the iris changing its shape.

The lens of the eye is a clear flexible structure that is located just behind the iris and the pupil. The lens focuses the light as it passes through the eye onto the retina at the back of the eye. The aqueous humour (it means ‘watery matter’) is the fluid found just behind the cornea; its function is to nourish the lens.

The retina is a complex layer of tissue at the back of the eye, where the image from the light entering the eye is focused. When light hits the retina, it sends signals to the brain along the optic nerve. The brain interprets these signals and turns them into information

about what the eye is seeing. Damage to any of the structures of the eye due to physical injury or infection, or their gradual wearing out due to age, reduces the quality of vision.

Figure 1.16: The human eye, front view.

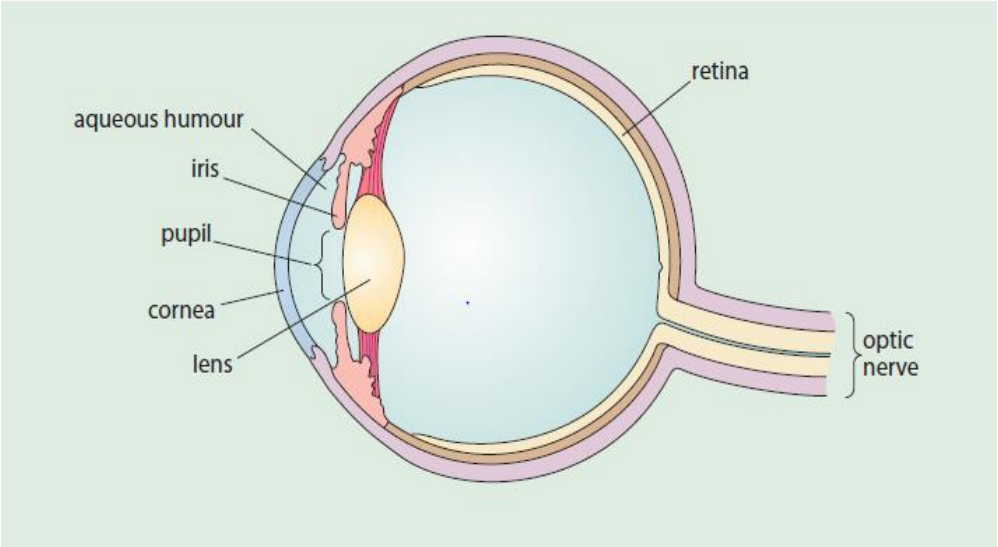


Figure 1.17: Cross section of the eye showing the different parts viewed from the side.

Cataracts

Cataracts are changes in clarity (clouding) of the lens in the eye, which interferes with the passage of light into the eye. As the lens gets increasingly cloudy (opaque), less and less light can get through it.

Recognition of cataracts

- You should suspect cataracts are the problem when a person comes to you with complaints of visual changes, such as blurred vision, difficulty in seeing in bright light, inability to see distant objects or scenes, poor colour vision, and difficulty in reading.
- As cataracts continue to progress and the lens become more opaque, the person will say they feel like they are looking through cloudy glass. The area of the pupil appears white or cloudy when the cataract is found at a late stage.
- Cataracts are usually progressive and painless and not associated with any redness of the eye.
- When you look at a person with advanced cataract you can see the clouding or milky appearance of the lens, which is particularly obvious if you shine a light into the eye

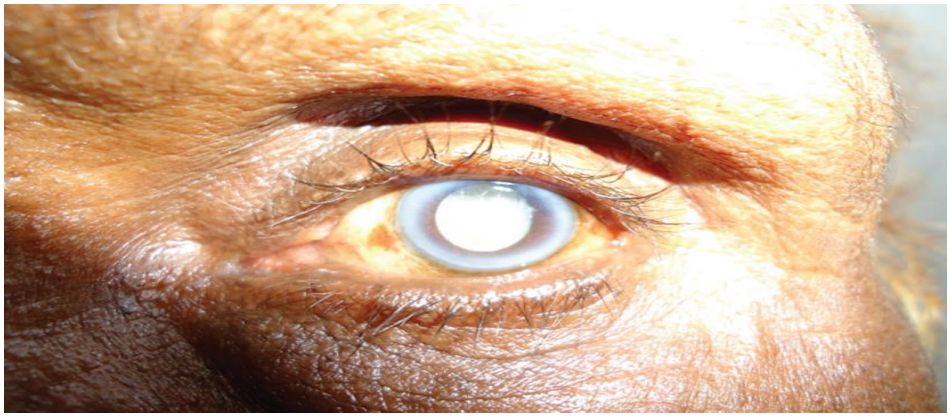


Figure 1.18 a cataract clouding the lens. (Photo: Dr Amir Bedri Kello)

Prevention of cataracts

- By getting treatment if they are diabetic, because effective blood-sugar control delays the progression of cataracts, shading their eyes with dark glasses to protect them from the harmful rays from the sun, not smoking cigarettes, and ventilating their room if smoke from a cooking fire is collecting in the house.
- Preventing and treating trachoma

- For late-stage cataract with blindness, the best intervention is surgical treatment to remove the cloudy lens

Eye injuries:

Eye injuries: are very common in most communities, especially in children and people younger than 30 years. Injury to the eye is one of the causes of cataracts. Eye injuries are the leading cause of blindness in only one eye worldwide. When you study the types of injuries described below, you will understand why young people are more likely than older people to suffer a blinding injury to one eye.

Causes and types of eye injuries:

- Chemical injury (splash)
- Scratch by a foreign body
- Penetration by sharp objects
- Blunt (non-penetrating) injury
- Injury to the eyelids

Figure 1.19: A young man at risk of a penetrating eye injury.

Supportive care in the case of eye injury

- If you are treating someone with a chemical splash injury, or dust in the eyes, simply rinse the eye with plenty of clean water.
- Foreign bodies which are not attached to the eye, or do not cause penetration to the eyeball, can simply be removed with the edge of a clean piece of cloth.
- Getting the chemicals, dirt or other foreign body out of the eye quickly, protects it from further damage.
- If the foreign body is difficult to remove because it is attached to the eye, or if there is penetration or injury to the eye ball cover the eye with clean cloth and transfer the person to the health centre or hospital.

Figure 1.20. The cornea has been partly torn away in this person's eye.

Ear injuries

- Very common ear problem in children is caused when they put foreign objects into the ear canal when they are playing. They often put small objects such as beans, peas, rice, beads, fruit seeds, or small stones into their ears.
- If these foreign bodies remain in the ear for a long time, they make it more likely that the child will develop an ear infection. This in turn may lead to a loss of hearing, if untreated.
- You should suspect the possibility of something foreign in a child's ear if the child complains of pain in the affected ear, a bad smell or discharge comes from the ear , or the parents or school teacher tell you that the child doesn't seem to hear them talking if they speak into that ear.

- Simple removal of a foreign object from the ear helps to reduce the risk of deafness resulting from chronic (long-term) infection. Shine a torch into the child's ear and if the foreign object is visible, try to remove it by using a thin blunt instrument– the end must not be sharp! If the ear drum is broken or scarred by infection, the child could suffer some permanent hearing loss in that ear.
- If you don't see a foreign object when you look into the ear with a torch, transfer the child to the nearest health facility for specialist help. If there is any discharge from the ear, the child will need medical treatment with antibiotics.

Figure 1.21: Pus discharge as a result of chronic ear infection (otitis media).

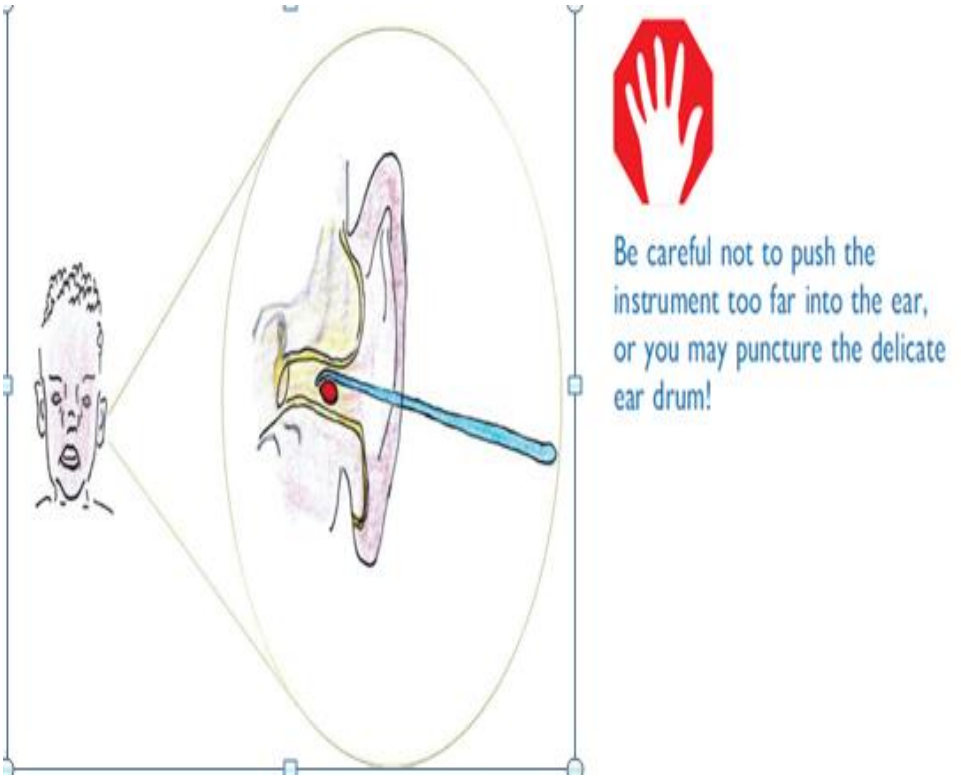


Figure 1.22: Foreign object being carefully removed from a child's ear by a thin blunt instrument.

Disability

Disability: is present when a person has a health condition (in this case, mental illness) which impairs their day-to-day functioning in some way. The level of disability experienced depends partly on the seriousness of the impairment, and partly on the social exclusion that further disables people with mental health problems.

Disability includes difficulty in one or more of the following areas:

- Understanding and communicating
- Getting around
- Self-care
- Getting along with people
- Working (including housework)
- Participating in society, e.g. attending a funeral or coffee ceremony

Major causes of impairment

- Disease
- Poverty
- Wars
- Drought
- Famine
- Harmful traditional practices
- Household, work place and traffic accidents

Figure 1.23: Physical disability& physical aids

Mental health problem

- Mental health can be defined as ‘a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community’. (World Health Organization).
- Mental illnesses occur in the absence of mental health, and are generally characterized by some combination of abnormal thoughts, emotions, and behavior and relationships with others.
- Around 1 to 2% of the adult Ethiopian population, that is around 400,000 to 800,000 people across the country, are affected by psychosis. People with psychosis may

believe things that aren't real, hear things that aren't there, and have disturbed behavior.

Figure 1.24: Psychosis can lead to abnormal behavior.

- A further 10 to 15% of the adult population (4 to 6 million people)suffer from depression at some point in their lifetime – approximately 5% (2 million) at any one time. In depression, people have an abnormal level of sadness that doesn't go away. Depression can lead to a person giving up on life and wanting to die. If very severe, somebody with depression may even consider killing themselves (suicide). We don't know for certain how many people commit suicide in Ethiopia every year, but it is probably at least 4,000 people (10 per 100,000 adults per year).

Figure 1.25: a depressed person.

- In addition, we estimate that around 5% of the adult population of Ethiopia (around 2 million people) will suffer from an anxiety illness at some point during their lifetime.

Anxiety is when a person worries too much about something, for example their health, their problems, or even what will happen in the future.

Figure 1.26: somebody who is very anxious.

- In summary, without including childhood disorders, estimate that at least 1 in 6 Ethiopians will suffer from a mental illness that needs treatment during their lifetime .

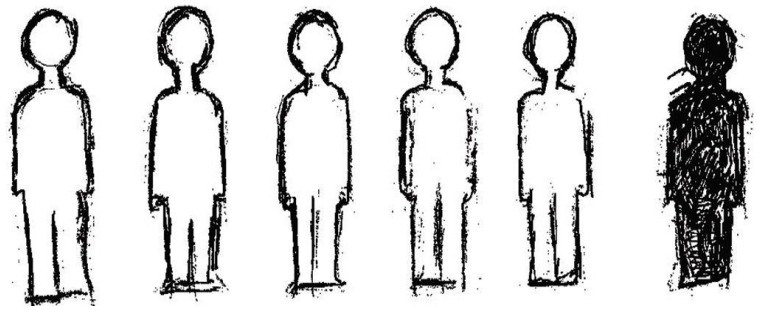


Figure 1.27: One in six Ethiopians will be affected by mental illness during their Lifetime

Table 1.3: The frequency of mental illnesses in Ethiopia

Mental illness	**Estimated % of Ethiopian population affected**
Psychosis	1–2%
Depression	10–15%
Anxiety disorders	5%
Alcohol and khat abuse	3–5%

What causes mental illness?

- The biopsychosocial model

- The causes of specific mental illnesses vary but most are caused by a combination of biological, psychological and social problems
  - ✓ **Biological causes:** genetic (inherited) causes, a chemical imbalance in the brain, head injury, alcohol or khat use, under nutrition
  - ✓ **Psychological causes**: not loved in childhood, too many worries, the stress of somebody dying, disappointment, frustration, severe shock
  - ✓ **Social causes:** poverty, not living in a good house, not having somebody who they can talk to about their problems, discrimination, migration.

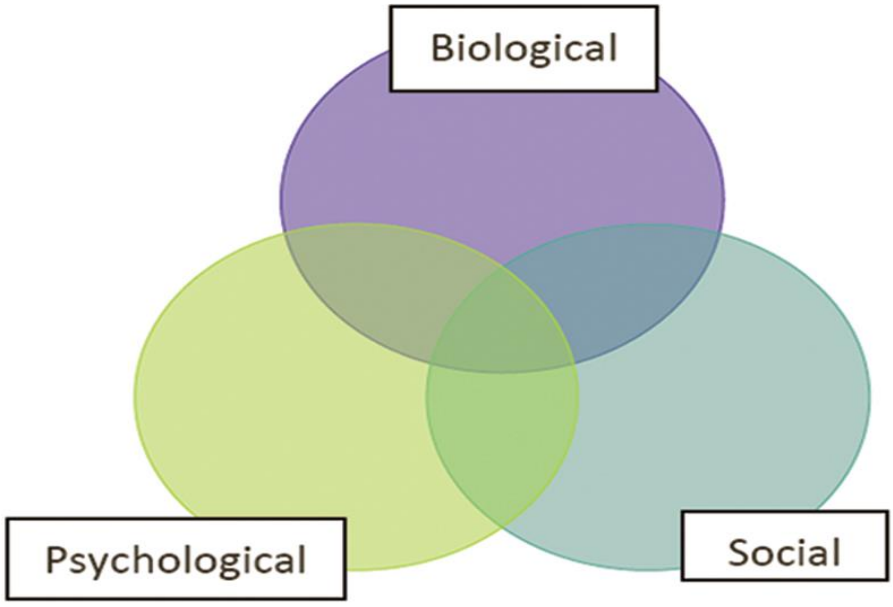


Figure 1.27: The biopsychosocial model of mental illness.

Table 1.4: Comparing explanatory models.

Questions	Biopsychosocial model	Local cultural model
Why did I get ill?	Because I was drinking and had lost my family and friends.	Because my neighbor bewitched me.
Will I get better?	Things could get better if I stopped drinking	This is a serious thing. I might even die unless this curse is removed from me.

What treatment might help?	If I had help to stop drinking, and was able to talk about my problems to somebody.	Going to see the witch doctor (tanquaye) and slaughtering a sheep.

Cultural explanations for mental illness

- Spirit possession (likift, zar, wuqabi)
- Punishment for sins
- Evil eye
- Bewitched/cursed
- Thinking too much
- Exposure to cold air (berrd)
- Exposure to sun rays (mitch).

Priority mental health disorders (WHO)

- **Psychosis**: this is the collective name for a group of serious disorders characterized by changes in behavior (for example poor self-care, restlessness), strange thoughts or beliefs (for example believing that others wish to do the individual harm) and related dispositions.
- **Mania**: a form of severe mental illness in which a person is excessively happy or irritable (experiences extreme mood swings), appears over-active and sleeps poorly. People with mania have poor reasoning skills (they have difficulty understanding what is good and what is bad), and display excessive self-confidence.
- **Depression**: this is the most common priority disorder and is characterized by excessive sadness, loss of interest, lack of energy and related symptoms.
- **Suicide**: this will be discussed in more detail in this session and refers to the intentional ending of one's own life.
- Abuse of alcohol and other substances
- Childhood mental disorders

- **Dementia**: this condition is more common in older people and is characterized by memory problems and broader problems with thinking and understanding.
- **Epilepsy**: this is a chronic or longstanding condition caused by abnormal electrical conductions in the brain. In its most obvious form, it is characterized by episodic loss of consciousness and repetitive jerky movements of the body.

Common symptoms of a person with Severe Mental Illness

- **Delusions**: believing things that are untrue, for example that people are in love with them, or that people are trying to poison them
- **Hallucinations**: hearing or seeing things that no one else can hear or see
  - ✓ Agitation and restlessness
  - ✓ Withdrawal and lack of interest
  - ✓ Increased speed of talking
  - ✓ Irritable mood (getting angry easily)
  - ✓ Grand ideas (out of keeping with reality)
  - ✓ Talking in a way that does not seem to make sense
  - ✓ Poor self-care (not related to poverty).

Suicide risk indicators in people with mental illness

- **Suicidal thoughts:** if a person tells you they are thinking about suicide, you should take this very seriously; about 66% of those who commit suicide have previously told someone about their intention.
- **Severity of mental illness:** the more severe the illness, the higher the risk of suicide. Someone young with a severe mental illness like psychosis, may be at increased risk if they have developed awareness about how ill they are; this is particularly the case if they also develop depressive symptoms
- **Substance misuse:** the risk increases when the person also misuses substances like alcohol and khat.

- **Social isolation and lack of support:** for example, when someone does not have family to care for them, is single, and/or jobless. Marriage reinforced by children is thought to be a protective factor in relation to the risk of suicide.
- **History of suicide attempts or self-harm:** the risk is increased if there have been previous attempts. When someone has already attempted suicide, their risk of suicide is about 100 times higher than that in the general population. This risk is particularly high in the first year after the original attempt. It is therefore crucial that you closely monitor the risk of suicide after an attempt has been made. Be open with the patient, asking about the risk as a matter of fact.

Risk indicators for life-threatening self-harm

- **Preparation for self-harm:** someone who has taken time to plan, considered the consequences of their actions, said goodbye to people or taken precautions to avoid being discovered by others represents a much higher risk than a person who self-harms without much thinking about it (i.e. self-harm as an 'impulsive' act).
- **Seriousness of the method used to self-harm:** violent methods such as hanging, stabbing or throwing oneself into deep water are considered serious and indicate higher risk.
- **Current mental illness:** at least 60% of people who self-harm have some form of mental illness.
- **Factors that reduce self-control:** the use of alcohol or other drugs, or having an impulsive personality, reduce self-control and increase the risk of serious self-harm.
- **Presence of ongoing 'real life' difficulties:** marital problems, financial problems, difficulties at work, or other problems in daily life increase the risk of self-harm.

Questions to help assess the risk of suicide in someone with a mental illness

- How do you see the future?
- Do you think things will get better for you?
- Are there times when you feel you have had enough of life itself?

- Are there times when you wish you were dead, or when you feel it would be better if you had died?
- I know this may be a difficult question, but have you even considered ending your own life?
- If you have thought of suicide, have you thought how you might do it?

If the person answers yes to any of the last three questions, you must refer them to a higher health facility for further assessment.

The roles of Health professional Practitioners in mental healthcare

- Improving detection of mental illness by identifying people who are affected in your community
- Referring people with possible mental illness to the nearest health facility for further assessment and treatment
- Supporting people with mental illness and their families in the community
- Encouraging people to attend follow-up appointments and to keep taking their medication
- Educating patients, their families and the wider community
- Reducing stigma, discrimination and abuse against people with mental illness.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Diabetes is a condition in which the blood glucose level is always too high.
   A. True B. false
2. Behavioral risk factors for cardiovascular diseases **exclude**?
   A. Healthy diet C. Physical inactivity
   B. Tobacco use D. Regular screening
3. Which of the following is incorrect?
   A. COPD is not preventable
   B. indoor smoke from cooking fires is risk for COPD
   C. Screening is use full for early detection
   D. Blood pressure above 140/90 is considered hypertension
4. hearing or seeing things that no one else can hear or see
   A. Hallucinations C. Dementia
   B. Epilepsy D. Depression

Note: **Satisfactory rating 2 points** **Unsatisfactory - below 2 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

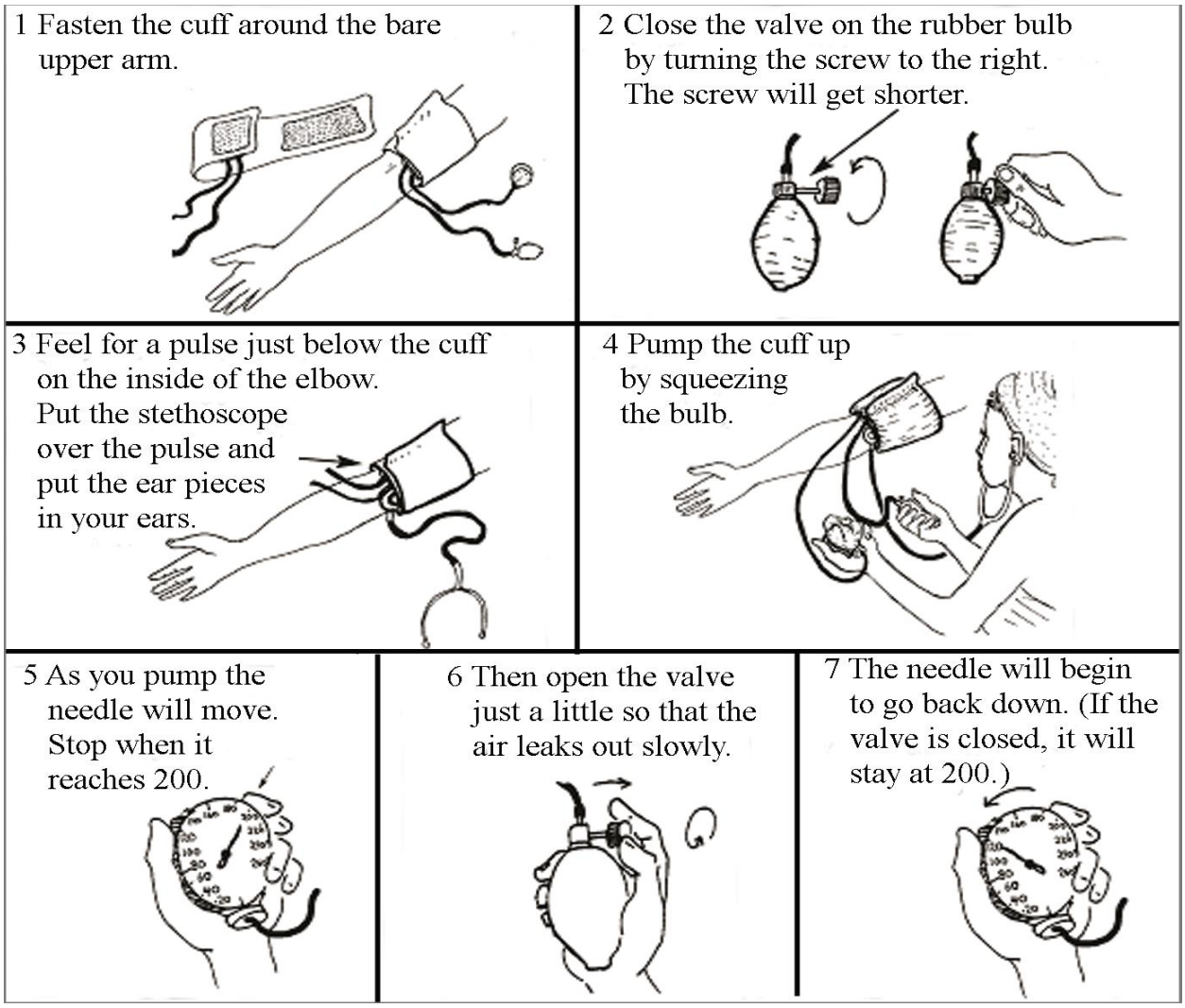
Short Answer Questions

1. _____
2. _____

3. _____
4. _____

Operation sheet 01	Techniques of blood pressure measuring

2.1. The technique of measuring blood pressure



Operation sheet 02	**Techniques of education on Diabetes mellitus**

Procedure of effective education on DM ("ASSURE")

Step 1: Analyze the learner

Step 2: State the objectives

Step 3: Select appropriate teaching methods

Step4: Use effective instructional materials

Step 5: Require learner performance

Step 6: Evaluate the learning

LAP test

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 02:00 hour.

1. Demonstrate blood pressure measurement
2. Conduct effective education on Diabetes Mellitus(DM)
3. Demonstrate of client assessment with diabetes mellitus

Information Sheet -2- Carrying out community diagnosis

1.2.2. Concepts of community diagnosis:

Community - a group of people sharing common needs, interests, resources and environments. **Community diagnosis** is a systematic and comprehensive population-based assessment, policy development, and assurance. Performed through partnering with representatives of the people, setting priority for primary prevention and Intervention to create conditions for health.

- Data collection
- Data analysis
- Prioritizing problems
- Developing a plan.
- Implementation

Data collection

- Discussion with community members about their main health problems
- Reviewing records of the health services utilized by the community
- Undertaking a community survey or a small-scale project
- Observing the risks to health present in the community

Data analysis

- **Data analysis** refers to categorizing the whole of the data you collected into groups so as to make meaning out of it. For instance you can assess the magnitude of a disease by calculating its prevalence and its incidence from the numbers of cases you recorded and the number of people in the population in your community.

- **Prevalence:** refers to the total number of cases existing in the population at a point in time, or during a given period (e.g. a particular month or year). The number of cases can be more usefully analyzed by calculating the prevalence rate in the community: to do this you divide the total number of cases you recorded in a given period into the total number of people in the population. The result is expressed 'per 1,000 population' in a community as small as a kebele.
- **Incidence**: refers only to the number of new cases of a disease occurring in a given period. The incidence rate is calculated by dividing the total number of new cases of the disease in a certain period of time into the total number of people in the population, and is expressed as 'per 1,000 population.

Prioritizing health problems

- **Prioritizing** refers to putting health problems in order of their importance. The factors that you should consider in prioritizing are:
  - ✓ **The magnitude of the problem**: e.g. how many cases are occurring over what period of time?
  - ✓ **The severity of the problem:** how high is the risk of serious illness, disability or death?
  - ✓ **The feasibility of addressing the problem**: are the prevention and control measures effective, available and affordable by the community?
  - ✓ **The level of concern of the community** and
  - ✓ **The government about the problem.**
- Health problems which have a high magnitude and severity, which can be easily solved, and are major concerns of the community and the government, are given the highest priority.

Developing a plan

- **Planning:** is the process of defining community health problems, Identifying needs and resources, establishing priority goals, and setting out the

administrative action needed to reach those goals. After performing community diagnosis and priority setting, planning continuous

Advantage of community diagnosis

- It is one of the method used to identifying the health problem in the community
- Uses as baseline information for decision making for intervention
- It forms base line information for further comparison purpose
- To set priority for intervention
- To identify resources for intervention
- To implement intervention with full community participation

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. A group of people sharing common needs, interests, resources and environments
   A. Community C. Population
   B. Team D. community diagnosis
2. The first step of community diagnosis
   A. Data collection C. priority setting
   B. Data analysis D. preparing action plan
3. The process of defining community health problems, Identifying needs and resources, establishing priority goals.
   A. Community diagnosis C. Outcome identification
   B. Planning D. Assessment

1. From priority setting criteria which one answers the question of how many of the community was affected by that health problem
   A. Magnitude C. Severity
   B. Community concern D. government concern

Note: **Satisfactory rating 2 points** **Unsatisfactory - below 2 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Short Answer Questions

1. _____
2. _____
3. _____
4. _____

Information sheet 3- Action plan

1.3.1. Action plan

An action plan sets out the ways in which you will implement the interventions required to prevent and control the disease. It contains a list of the objectives and corresponding interventions to be carried out, and specifies the responsible bodies who will be involved. It also identifies the time and any equipment needed to implement the interventions.

Once you have prepared an action plan you should submit it for discussion with your supervisor and other officials in the woreda Health Office to get their approval.

Then implement the work according to your plan. Now that you have learned the basic concepts and methods relating to communicable diseases in general, it is time for you to move on to consider the diagnosis, treatment, prevention and control of specific diseases.

- **Priority setting includes:**
  - ✓ Magnitude of the problem; it answers the question of how many of the community was affected by that health problem.
  - ✓ Severity of the health problem; it answers number of death or admission because of that health problem.
  - ✓ Community concern; is to mean that what is the health felt of the community? What is the need of the community?
  - ✓ Government concern; is similarly to mean that what is the need of the government to be solved for that community first.

Importance of planning

- Planning enables you to match your resources to the problem you intend to solve.
- Planning helps you to use resources more efficiently so you can ensure the best use of scarce resources.
- Planning can help avoid duplication of activities.
- Planning helps you prioritize needs and activities.
- Planning enables you to think about how to develop the best methods with which to solve a problem.

A plan of work is simply putting together all the components you have worked out to deliver your health education messages. It is a picture or mapll of what to do, when to do it, who will do it, and at what cost each step of activities be accomplished.

The plan should contain the following elements:

- Clear objectives
- Your strategies
- A list of activities that you will do
- Who will help you?
- Resources to be used
- Timing

What Is A Community Health Action Plan?

A CHAP is a written document that lists plans for achieving health improvements in the community. This is developed in response to needs and gaps identified from data collection. The plan is written by the community coalition and typically includes establishing and clarifying desired outcomes, goals, objectives, activities, assignments, and deadlines for coalition members supporting the action plan. A CHAP offers built-in deliverables and focuses on doing work in the community to support priority health needs.

Having an action plan:

- Lends credibility to your organization. An action plan shows members of the community (including grant makers) that your organization is well ordered and dedicated to getting things done.
- Prevents the possibility of overlooking details.
- Helps understand what is and isn't possible for your organization to do.
- Helps your community be more efficient by saving time, energy, and resources.
- Increase the chances that people will do what needs to be done by making them more accountable.

An action plan may take one, three, or even up to 10 years to complete. The number of years it may take is determined by

- The coalition - content of the CHAP,
- How long it might take to reach the desired outcomes and goals, and
- Community support or resistance. The action plan is constantly progressing. It is not something to write, lock in a file drawer, and forget about. Keep it visible. Display it prominently. As the organization changes and grows, continually (usually monthly) revise and update the action plan to fit the changing needs of the community.

Components of CHAP

Developing the components of a CHAP that support the work of the community coalition may seem like a lot of busy work; but if done properly, it saves money, time, and increases the odds that the coalition's initiative will succeed. Documenting these plans will help keep the coalition focused on "where it is going" and "how and when it will get there" and "what to expect when it does."

Community Health Action Plan Terms

Vision	Where the coalition is headed, what it is trying to do, what is important and why
Mission	The coalition's principles and purpose, determines the focus and sets the direction
Goals	What is expected to be achieved in the long run

Objectives	The process steps to meet the goals and how the coalition plans to achieve them
Activities	The work of the community coalition that drives and supports the objectives and goals
Outcomes	The desired effect on the community, what the measure of success would be

Self-Check -3	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is An action plan?
2. List down the elements that plan should contain

Note: **Satisfactory rating 2 points** **Unsatisfactory - below 2 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

1. _____

   _____

2. _____

   _____

Information sheet 4- Selecting methods to resolve the problem

1.1. Selecting methods to resolve the problem

1. **problem solving**

a. Identify the problem

- First, find out what precisely is the problem. For instance, could it be that staff are not familiar with work practices? Or do staff know what to do but have been taking 'short-cuts' as they under a lot of pressure to complete daily work targets? Does individual staff feel overworked? Do they feel unsupported?
- Problem solving skills are essential to the networking process, as we need to be able to accurately identify problems so that we can assist our colleagues or work team.

b. Identify and assess potential solutions

- One you have gathered relevant information and analyzed the needs and concerns of the people involved, the next step is working out the possible solutions and which solution is the most appropriate one.
- This step will utilize your knowledge of what services are available in the community and also requires research skills.

The problem-solving process

In order to effectively manage and run a successful organization, leadership must guide their employees and develop problem-solving techniques. Finding a suitable solution for issues can be accomplished by following the basic four-step problem-solving process and methodology outlined below.

Step	Characteristics
1. Define the problem	Differentiate fact from opinion Specify underlying causes Consult each faction involved for information State the problem specifically Identify what standard or expectation is violated Determine in which process the problem lies Avoid trying to solve the problem without data
2. Generate alternative solutions	Postpone evaluating alternatives initially Include all involved individuals in the generating of alternatives Specify alternatives consistent with organizational goals Specify short- and long-term alternatives Brainstorm on others' ideas Seek alternatives that may solve the problem
3. Evaluate and select an alternative	Evaluate alternatives relative to a target standard Evaluate all alternatives without bias Evaluate alternatives relative to established goals Evaluate both proven and possible outcomes State the selected alternative explicitly
4. Implement and follow up on the solution	Plan and implement a pilot test of the chosen alternative Gather feedback from all affected parties Seek acceptance or consensus by all those affected Establish ongoing measures and monitoring Evaluate long-term results based on final solution

1. Define the problem

Diagnose the situation so that your focus is on the problem, not just its symptoms. Helpful problem-solving techniques include using flowcharts to identify the expected steps of a process and cause-and-effect diagrams to define and analyze root causes.

The sections below help explain key problem-solving steps. These steps support the involvement of interested parties, the use of factual information, comparison of expectations to reality, and a focus on root causes of a problem. You should begin by:

- Reviewing and documenting how processes currently work (i.e., who does what, with what information, using what tools, communicating with what organizations and individuals, in what time frame, using what format).
- Evaluating the possible impact of new tools and revised policies in the development of your "what should be" model.

2. Generate alternative solutions

Postpone the selection of one solution until several problem-solving alternatives have been proposed. Considering multiple alternatives can significantly enhance the value of your ideal solution. Once you have decided on the "what should be" model, this target standard becomes the basis for developing a road map for investigating alternatives. Brainstorming and team problem-solving techniques are both useful tools in this stage of problem solving.

Many alternative solutions to the problem should be generated before final evaluation. A common mistake in problem solving is that alternatives are evaluated as they are proposed, so the first acceptable solution is chosen, even if it’s not the best fit. If we focus on trying to get the results we want, we miss the potential for learning something new that will allow for real improvement in the problem-solving process.

3. Evaluate and select an alternative

Skilled problem solvers use a series of considerations when selecting the best alternative. They consider the extent to which:

- A particular alternative will solve the problem without causing other unanticipated problems.
- All the individuals involved will accept the alternative.
- Implementation of the alternative is likely.
- The alternative fits within the organizational constraints.

4. Implement and follow up on the solution

Leaders may be called upon to direct others to implement the solution, "sell" the solution, or facilitate the implementation with the help of others. Involving others in the implementation is an effective way to gain buy-in and support and minimize resistance to subsequent changes.

Regardless of how the solution is rolled out, feedback channels should be built into the implementation. This allows for continuous monitoring and testing of actual events against expectations. Problem solving, and the techniques used to gain clarity, are most effective if the solution remains in place and is updated to respond to future changes.

Here are seven-steps for an effective problem-solving process.

1. Identify the issues.

- Be clear about what the problem is.
- Remember that different people might have different views of what the issues are.
- Separate the listing of issues from the identification of interests (that's the next step!).

2. Understand everyone's interests.

- This is a critical step that is usually missing.

- Interests are the needs that you want satisfied by any given solution. We often ignore our true interests as we become attached to one particular solution.
- The best solution is the one that satisfies everyone's interests.
- This is the time for active listening. Put down your differences for awhile and listen to each other with the intention to understand.
- Separate the naming of interests from the listing of solutions.

3. List the possible solutions (options)

- This is the time to do some brainstorming. There may be lots of room for creativity.
- Separate the listing of options from the evaluation of the options.

4. Evaluate the options.

- What are the pluses and minuses? Honestly!
- Separate the evaluation of options from the selection of options.

5. Select an option or options.

- What's the best option, in the balance?
- Is there a way to "bundle" a number of options together for a more satisfactory solution?

6. Document the agreement(s).

- Don't rely on memory.
- Writing it down will help you think through all the details and implications.

7. Agree on contingencies, monitoring, and evaluation.

- Conditions may change. Make contingency agreements about foreseeable future circumstances (If-then!).
- How will you monitor compliance and follow-through?
- Create opportunities to evaluate the agreements and their implementation. ("Let's try it this way for three months and then look at it.")

Self-Check -4	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List down The problem-solving process
2. Write seven-steps for an effective problem-solving process.

Note: **Satisfactory rating 2 points** **Unsatisfactory - below 2 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet -5- Preparing IEC materials

1.4. Preparing IEC materials

Concepts of IEC materials: are materials used at changing or reinforcing health-related behaviors in a target audience, concerning a specific problem and within a pre-defined period of time, through communication methods and principles. Common teaching materials in health education include all materials that are used as teaching aids to support the communication process and bring desired effects on the audience. These are important aids needed to make easy or facilitate the health education teaching-learning process. And they can be broadly classified into four categories:

- Printed materials,
- Visual materials,
- Audio materials,
- And audio-visual materials.

Printed materials---Examples of printed materials include posters, leaflets and flipcharts

- **Posters**-- A poster is a large sheet of paper with words and pictures or symbols that put across a message. It is widely used by commercial firms for advertising products, but can also be used for preventive purposes. Since a poster consists of pictures or symbols and words, it communicates health messages both to literate and illiterate people. They should be posted where many people can see them when passing by - market areas, meeting halls, etc.

Purpose of posters

- ✓ To give information and advice
- ✓ To give directions and instructions (prevention strategies)
- ✓ To announce important events and programs

- **Leaflets--**these teaching materials are prepared with a simple language containing both short sentences and illustrations (pictures or simple drawings). Leaflets are

more appropriate for those you can read. Some people are too shy to ask an advice so that they simply pick-up a leaflet and read it. Leaflets are also reminders and are helpful for some sensitive health education like health education on sexuality. Although, they need educational experience written words have the advantage to be distributed to the audience so that they read and understand them at their convenient times.

- **Flipchart--**A flipchart is made up of a small number of posters that are meant to be shown one after the other. In this way, several steps or aspects of a central topic can be presented

Figure 2.1: Health professional using flip chart (A)and poster (B)

Visual materials: Visual materials are something seen (apart from written words) E.g. poster. Visual materials are one of the strongest methods of communicating health education messages, especially where literacy is low amongst the population.

- Photographs or picture and other real objects are immediate and powerful where people can see and even touch them.

Audio materials: As the name indicates it is anything that can be heard such as the spoken word (health talk) or music. Radio and audio cassettes are good examples of audio aids. Health talks are the most commonly used audio teaching methods. Health talks have been, and remain, the most common way to share health knowledge and facts.

In preparing a health talk, consider the following points:

- Know the group: their interests and needs
- Select single and simple topic: e.g. Nutrition is too big as a topic. Thus, select subtopic such as breast-feeding, weaning diet etc.
- Have corrected and up-to- date information.
- Limit the points to only main once.
- Write down what you will say, use examples, proverbs and stories to help emphasize points.
- Make use of visual aids.
- Practice your whole talk
- Make the talk as short as possible - usually 15-20 minutes talk and 15 minutes discussion.

Audio-visual materials

They combine both seeing and listening. These materials include TV, films or videos which provide a wide range of interest and can convey messages with high motivational appeal.

The selection of the teaching methods and materials depends on:

- Type of the message,
- Purpose of message,
- People addressed (the target audience),
- Availability of resources (materials) and
- Skills.

Self-Check -5	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. From IEC materials, a large sheet of paper with words and pictures or symbols that put across a message
   A. Poster C. manual
   B. Leaflet D. flipchart
2. _____ is made up of a small number of posters that are meant to be shown one after the other.
   A. Poster C. flipchart
   B. Leaflet D. manual
3. The selection of the teaching methods and materials depends on:
   A. type of the message C. the purpose of message,
   B. The people addressed (the target audience) D. All

Note: **Satisfactory rating 3 points** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

1. _____
2. _____
3. _____

Information Sheet -6- Providing education on healthy life style and early detection of diseases

1.6.1. Concept of health education:

Health education is one of the sixteen packages of Health professional program and a cross cutting approach of achieving other components.

Goal of health education include but not limited to:

- **To provide appropriate knowledge:** provision of correct knowledge, facts and information. E.g. facts about diabetes
- **To help develop positive attitude*:*** has a lot to do with changing opinions, feelings and beliefs of people. E.g. to develop positive attitude towards the practice of prevention behaviors.
- **To help exercise health practice/behavior:** concerned with helping people in decision-making and actually performing. Helping people choosing alternatives
- **Help in Decision-making:** means choosing between and/or among alternatives in the future about health. Health education has top importance to help people develop the skill of decision-making.
- **Help in social change:** Goal of changing the physical and/or social environment so that people are encouraged to adopt healthier behavior.
- **Reducing the Burden of disease:** Obesity, Diabetes, Asthma, Cancer, Heart Disease and Stroke

Health education on healthy life style: is a health behavior that helps for adopting healthy living and focuses on Health" pillars

- Be physically active
- Eat a nutritious diet
- Get preventative screenings
- Make healthy choices
- To prevent disease, disability and death and help to lead safer, healthier, long live

Figure 5.1 providing Health education

Figure 5.2 physical exercise

Health education on early detection of disease:

- Includes general interventions and teaching of early signs of disease.
- It is secondary prevention of disease b/c treatment will be initiated earlier.

Health education on cultural care:

Cultural differences will affect the receptivity of a person to person education and willingness to accept information and incorporate it into his or her lifestyles. It is important to remember that every client education interaction has a cultural dimension. Culture is a way of living, thinking, and behaving. The influence of culture on health is vast. It affects perceptions of health, illness and death, beliefs about causes of disease, approaches to health promotion, how illness and pain are experienced and expressed, where persons seek help, and the types of treatment patients prefer.

Possible Cultural Differences

- Personal space
- Family patterns
- Time orientation
- Nutritional choices
- Pain response
- Communication

- Death and dying
- Religion and spirituality

Conveying Cultural Sensitivity

- Introduce yourself and state your role.
- Address clients by their name
- Be honest if you lack information about cultural practices.
- Be careful to use culturally sensitive language.
- Having a regular doctor or a usual source of care facilitates the process of obtaining health care when it is needed. People who do not have a regular doctor or health care provider are less likely to obtain preventive services, or diagnosis, treatment, and management of chronic conditions.

Self-Check -6	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Healthy life style education includes?
   A. physically inactive C. Nutrition and Diet
   B. preventative screenings D. Make healthy choice
2. Included in Possible Cultural Differences
   A. Personal space C. Family patterns
   B. Time orientation D. All
3. Culture has importance in non communicable disease
   A. It affects perceptions of health
   B. Affects beliefs about causes of disease
   C. Affects approaches to health promotion
   D. Affects where persons seek help, and the types of treatment patients prefer

Note: **Satisfactory rating 3points** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Score = _____

Rating: _____

Answer Sheet

Name: _____ Date: _____

Short Answer Questions

1. _____
2. _____
3. _____

Information sheet 7- Reporting and follow up cases

1.7.1. Writing a report on community diagnosis of non communicable disease

Preparing good summary reports

You should ensure that the summary reports you prepare on your activities are:

- **Complete:** Ensure all the sections of the reports have been completed; no parts have been left blank and all reports due from outreach sites or mobile teams have been received.
- **Timely:** When reports are sent and received on time, there is a greater possibility of a prompt and effective response to any problems you have identified.
- **Accurate:** Before sending the reports, check the totals and all calculations to make sure that the reported figures correspond to the actual figures in the tally sheets, the EPI Registration Book and the immunization cards.

This helps you to evaluate the accuracy of your recorded data and identify and resolve any discrepancies. The district, provincial and national levels should keep track of the completeness and timeliness of reporting at your level, and remind you about any missing or late reports.

In Ethiopia, non communicable disease is not immediately reportable

Report preparation will be:

- Weekly situation reports for Woreda's if required
- Monthly situation reports
- Quarterly activity progress reports and annually

Self-Check -7	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Activity report is expected to be the following but not?
   A. Complete C. Inconsistent
   B. Accurate D. Timely
2. Non communicable disease is immediately reportable in Ethiopia
   A. True
   B. False

Note: **Satisfactory rating 2 points** **Unsatisfactory - below 2 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

References materials

1. Central Statistical Agency (CSA) [Ethiopia] and ICF. 2017. 2016 Ethiopia Demographic and Health Survey Key Findings. Addis Ababa, Ethiopia, and Rockville, Maryland, USA. CSA and ICF.
2. Barbara Bates-A Guide to Physical Examination and History Taking, 6th Edition, 1995
3. Mental Healthcare Manual (2003), published by Gaskell, London.
4. website at **www.open.ac.uk/africa/heat**

L #1	LO2. Screen and refer clients requiring further investigation and management

Instruction sheet #1

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

- History taking and physical examination (P/E)
- Management of minor symptoms
- Identifying and counseling individual with risk factors
- Referral of suspected cases

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

- History taking and physical examination (P/E)
- Management of minor symptoms
- Identifying and counseling individual with risk factors
- Referral of suspected cases

Learning Instructions:

9. Read the specific objectives of this Learning Guide.
10. Follow the instructions described below.
11. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
12. Accomplish the “Self-checks” which are placed following all information sheets.
13. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
14. If you earned a satisfactory evaluation proceed to “Operation sheets
15. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
16. If your performance is satisfactory proceed to the next learning guide,

If your performance is unsatisfactory, see your trainer for further instructions or go back to

“Operation sheets”.

Information Sheet -1- History taking and physical examination (P/E)

2.1.1. History taking

Definition: - history is a collection of data both (either) subjective & objective to identify the patient’s actual & potential problems.

History taking: The process of gathering all the information and recording it using clear, accessible questions is called history taking, it demands: Tact, Patience, Tolerance, Sympathy and Understanding.

Purposes

- To establish a trusting relationship between the nurse and client
- Develops understanding about the client
- Helps the patient the feel understood
- Guide on which body parts or system to focus during physical examination
- It can be therapeutic

History can be classified as:

- **Subjective data :** symptom of health problem that the pt. complains
- **Objective data:** sign of health problem that the health worker identifies

During history taking the most key factor is the effective communication of the interviewer.

Components of history taking:-

- Demographic data
- Chief complaints or motivation for seeking health care
- History of present illness or present health status
- Past health history
- Family health history
- Review of systems

- **General history (social, familiar):-**It is demographic or identifying data which includes name, age, date, address, family history, occupation, marital status etc.
- **Present illness (chief complaints):-** Client's subjective statement about problem, duration, reasons for seeking health care.
- **Past medical history:-** any illness in the past, type of illness, medications (treatment) that had taken, improvement, hospitalization if any health history etc.
- **Past surgical history:-** if any surgical procedures done, type of out come
- **Obstetrical history (reproductive):-**
  - ✓ LMP, cycle, duration, amount of flow, pain etc.
  - ✓ Gravida, para, abortion, still birth, number of children
  - ✓ Sexual drive (activity)
  - ✓ Impotence
  - ✓ Sterility
  - ✓ Frigidity
  - ✓ Premature ejaculation
  - ✓ Prostate problem
  - ✓ Rash, lesions (STD)

Guide lines for effective history taking

- Greet the patient
- keep comfort and privacy
- Never be in a hurly
- Design questions appropriately
- Facilitation
- Reflection
- Clarification
- Empathic response

2.1.2. Physical examination:

Physical Examination is designed to locate and begin the initial management of the signs and symptoms of illness or injury.

The physical examination (assessment) is usually performed after the health history is taken. It should be done in a well lighted warm area to facilitate easy data collection.

The complete P/E usually proceeds in a logical head to toe sequence as follows:-

Skin ⟶ head & neck ⟶ thorax & lungs ⟶ breast ⟶ CVS ⟶ abdomen ⟶ Rectum & genitalia ⟶ Neurological system ⟶ Musculo-skeletal system

Vital signs

Vital signs are Observation of body temperature, respiration, pulse rate & blood pressure reflects the physiological state of the body. Vital sign is governed by the activities of vital organs (brain, heart and lung). Since, alterations in body function often are reflected by alteration in vital signs.

Vital signs are the key signs used to evaluate a patient's condition. The first set is known as baseline vitals. **Vital signs include:**

- Respirations,
- Pulse
- Blood pressure,
- Skin temperature and condition,
- Capillary refill time,
- Pupils reaction and
- Level of consciousness

The basic steps of physical examination are:

- Inspection
- Palpation
- Percussion
- Auscultation

The Process of Physical Examination:-

There are 4 fundamental processes which are employed in physical examination

- **Inspection:-** is the power to observe. Since, we can observe.
  - ✓ **Degree of illness** (duration) acute, chronic (appearance)

- ✓ **Posture & stature (**preferred by the patient) sitting, standing:-indicates the type of illness
- ✓ **Body movements:-** abnormal movements indicate disruption of voluntary or involuntary movements (cerebral ataxia, Parkinson's disease, alcohol withdrawal delirium)
- ✓ **Nutritional status**:- weight (body mass index)
- ✓ **Speech pattern**
- ✓ **Body temperature**

- **Palpation:-** helps to feel & locate the body parts. It helps to detect abnormal growth or sounds (thrills) fluid shift, tactil fremitus abnormal sounds of the lungs.
- **Percussion:-** to detect sounds different sounds may be detected (tympany, hypersonance, resonance, dullness, flatness). Percussion is applied to the chest & abdomen
- **Auscultation:-**is a mechanism applied to detect sound by using a stethoscopes & it is applied to the chest & abdomen.

Figure: 2.1. Health professional worker measuring Blood pressure

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

5. Objective data: sign of health problem that the health worker identifies
   A. True B. false
6. Which of the following is Vital signs except?
   A. Respirations,
   B. Pulse
   C. Blood pressure,
   D. Medical history
7. Which of the following is incorrect for the steps of physical examination?
   A. Inspection
   B. Palpation
   C. Percussion
   D. Level of consciousness

Note: **Satisfactory rating 2 points** **Unsatisfactory - below 2 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

1. _____
2. _____

3. _____
4. _____

Operation sheet 01- Techniques client clinical assessment

Demonstration of client clinical assessment

Step 1: History taking

Step 2: Physical examination

LAP test

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 02:00 hour.

1. Demonstration of client clinical assessment

Information Sheet -2- Management of minor symptoms

2.2. Management of minor symptoms

Management and control of high blood pressure,

- Stop the use of tobacco in any form (smoking or chewing), also avoid exposure to second-hand smoke.
- Reduce the intake of alcohol.
- Reduce the amount of salt - maximum of 1 teaspoon (5 gms) of salt for the whole day.
- Decrease consumption of refined cereals, high fat/oily foods, sugary foods.
- Decrease excess amount of tea, coffee, cola drinks (rich in caffeine).
- Increase fresh fruits, vegetables and whole grains and whole pulses.
- Maintain healthy weight; people who are overweight need to lose weight.
- Ensure regular physical activity.
- Ensure monthly monitoring of blood pressure.
- Compliance to treatment plan for drugs.
- Regular check-up at the PHC/CHC as advised.

Management and control of high blood sugar levels (this also applies to those with high blood pressure).

- Increase consumption of foods rich in fibre - variety of seasonal and fresh fruits, vegetables (including green leafy vegetables); whole grains and whole pulses and their products.
- Decrease consumption of refined cereals, foods rich in excess amount of fat/oil, foods rich in salt and sugar.
- Reduce the amount of salt : A maximum of 1 teaspoon (5 gms) of salt for the whole day should be consumed by those who have high blood pressure.

- Sugar should be avoided amongst those diagnosed with diabetes.
- Stop the use of tobacco in any form (smoking or chewing), also avoid exposure to second-hand smoke.
- Reduce the intake of alcohol.
- Decrease excess amount of tea, coffee, cola drinks (all are rich in caffeine).
- Maintain healthy weight; people who are overweight need to lose weight.
- Ensure regular and adequate physical activity.
- Adopt strategies to cope with stress.
- Help the individual to maintain a healthy blood pressure and control of blood sugar levels by preventing and controlling the risk factors and ensure monthly monitoring of blood pressure and blood sugar.
- Follow-up of the patients referred to the health facilities/referral centres and support them through the consultation and diagnostic processes as required.
- Compliance to treatment plan for drugs as advised by the medical doctor.
- Be alert to new signs and symptoms - they may be due to side-effects of the medicines being taken.
- Regular check-up at the PHC/CHC or higher facilities as advised.
- Ensure that the patient and their family members receive education on diabetes management and life style modifications.
- Regularly conduct home-visits by prioritizing those households which are vulnerable and marginalized where there are treatment defaulters or those who experience complications and bring these cases to the notice of the ANM and the Medical Officer.
- Several people in your community will ask you about home remedies or other medicines from Ayurveda, Homeopathy etc. You should tell them to consult the medical officer before changing any medication.

Management of Hypoglycaemia If a patient's blood glucose drops below 70 mg/dl, remember the 15/15 rule and treat hypoglycemia, without any delay.

- Check blood glucose level (<70 mg/dl,)

- The patient has to eat or drink 15 grams of carbohydrates (such as sugar-rich foods). If blood glucose levels cannot be checked at the moment, the patient should be given 15 grams of carbohydrates to be safe. Give any of the following food items to the patient. w 5 or 6 pieces of toffee w 1 tablespoon of sugar or honey w 2-3 teaspoons (1 teaspoon is 5 grams) of glucose powder as is or diluted in water w 3-4 teaspoons of sugar/powdered sugar w ½ cup fruit juice or normal cold drink
- Wait 15 minutes. Check the blood sugar once again. If the blood sugar level, is still below 70 mg/dl, again eat one of the food items listed above and check blood glucose sugar after 15 minutes.
- If blood glucose level is still lower than 70 mg/dl or the patient still has symptoms of hypoglycemia, then the patient should be taken to the PHC for further management.

Ways to prevent Hypoglycaemia

- Creating awareness on hypoglycaemia
- Regular blood sugar testing/monitoring
- Taking correct dosage of medicines that are prescribed by the Medical Officer or a trained medical doctor
- Eating small and frequent meals
- Not skipping or delaying meals
- Checking blood sugar before exercise
- Not going empty stomach for morning walk

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write Management and control of high blood pressure?
2. List down Management and control of high blood sugar levels?
3. Write Ways to prevent Hypoglycaemia

Note: **Satisfactory rating 2 points** **Unsatisfactory - below 2 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Short Answer Questions

1. _____
   _____
   _____
   _____

2. _____
_____
_____
_____
3. _____
_____
_____
_____

Information Sheet -3- Identifying and counseling individual with risk factors

2.3. Identifying and counseling individual with risk factors

Risk factors for Non-Communicable Diseases

What are Risk Factors?

A risk factor is a condition or behaviour that increases the chances of developing a particular disease, injury, or other health condition.

A risk factor can be defined as “An aspect of personal behaviour or lifestyle, an environmental exposure, or a hereditary characteristic that is associated with an increase in the occurrence of a particular disease, injury, or other health condition.

Risk factors are of two types:

Non-Modifiable risk factors

These risk factors are inherent to an individual and cannot be changed, such as age, sex and family history.

- **Age:** With increasing age, our body undergoes changes. As we grow older, there is an increase in the risk of developing hypertension (high blood pressure), high blood sugar levels, and high levels of body and blood fats. These conditions can lead to Non-Communicable Diseases like cardiovascular and cerebrovascular diseases, diabetes, cancer, respiratory problems, etc.

- **Sex:** Both women and men are at risk of developing Non-Communicable Diseases. Men are at a higher risk of developing Non- Communicable Diseases. However, women who have reached menopause are more likely to suffer from heart attacks than premenopausal women. Some risk factors for developing Non-Communicable Diseases such as high blood pressure or high blood glucose can affect women even during pregnancy
- **Family history:** The chances of getting some Non-Communicable Diseases are higher if close family member-parents, siblings also have the disease. she/he has a high chance of getting the disease.

Modifiable risk factors

These are risk factors that can be changed by specific action. The harmful effect can be reduced with changes in lifestyle, behavior and treatment. These risk factors include: Unhealthy diets (high fat, sugar and salt content; and low fruit and vegetable and fibre intake), overweight/obesity, Tobacco use , Harmful use of Alcohol, Physical inactivity, stress etc

- **Diet:** Low consumption of fruits, vegetables and water has been identifi ed as a reason of developing a range of chronic diseases. Diet rich in salt, sugar, fat should be avoided by all.
- **Overweight/Obesity:** A person with body weight above a normal healthy range is more prone to get health issues.
- **Tobacco:** It causes cardiovascular, cerebrovascular, respiratory, digestive tract diseases and has a signifi cant adverse effect on pregnant women. All tobacco users should be encouraged to quit smoking/ chewing tobacco. All non-smokers should be encouraged not to use tobacco in any form.
- **Alcohol:** Harmful use of alcohol is linked with NCDs as well as trauma and injuries. If possible, the use of Alcohol should be avoided by everyone.
- **Physical activity:** Lack of physical activity not only leads to obesity, but also increases risk of getting NCDs.

- **Stress:** Stress is linked with all of the abovementioned risk factors. It infl uences the physical activity and diet, but also can draw people's attention towards tobacco and alcohol. It can worsen the physical and mental condition of an individual thus leading to disease conditions.

Intermediate risk factors

The non-modifiable and modifiable risk factors (lifestyle related) result in 'intermediate risk factors' or 'biological' risk factors. These are:

- Hypertension (high blood pressure)
- Impaired blood glucose levels High levels of harmful blood fats – Hyperlipidemia
- Overweight/Obesity (excess amount of body fat)

The other classification of risk factors categorized them under following headings:

- ***Physiological:*** It includes overweight/obesity, raised blood glucose/blood pressure and raised total cholesterol.
- ***Biological:*** It included non-modifi able factors like age, gender, family history.
- ***Environmental:*** It included factors like air, food and water pollution.
- ***Social:*** Poverty, living and working conditions, and cultural influences falls under this category.

Lack of awareness of risk factors, poor health interventions, incompetency at the level of health systems, poor social conditions and high cost of treatment are all responsible for the rise of NCDs.

These risk factors when present in a combination increase the risk of an individual for NCDs.

Risk factors	
Healthy Diet	▪ All meals to be taken at regular intervals. ▪ Wash food items properly before cooking. Boiling, steaming, roasting, cooking with minimal oil, as methods of cooking should be used rather than deep frying or using excess amount of oil. ▪ Consume a variety of fresh, seasonal and locally available fruits and

	vegetables. ▪ Eat whole fruits and whole cereals and pulses (with outer covering '*chilka*') as they are rich in fi ber or roughage. Fiber/roughage helps in slowing down the absorption of sugar and fats into the blood. ▪ Restrict eating processed foods or foods available in packets with high amount of fat/oil, salt and sugar. ▪ Reduce the consumption of sugar rich foods. Those with family history of diabetes should be careful of the amount and type of food consumed. Adding extra salt to cooked food and salads should be avoided. Those with family history of high blood pressure should especially reduce their daily salt consumption. Reduce the amount of salt- not more than 1 teaspoon (5 gms) of salt for each individual in the whole day. ▪ Restrict intake of red meat like mutton, liver, brain, etc. and consume lean meats like chicken, fi sh, etc. ▪ Use vegetables oils like mustard oil, groundnut oil, soybean oil, etc. for cooking. In practice, it is best to use a mixture of oils. Ghee, butter, coconut oil is harmful and should be used in small quantities. ▪ Drink plenty of water, at least 8-10 glasses daily. Increase intake of fl uids in diet.
Physical Activity	✓ Tobacco is consumed as various forms in India. Smoking tobacco is used in forms of *cigarettes, bidi, cigars, hukkah* etc. Smokeless tobacco is used in forms of chewing, sucking, inhaling, applying to teeth and gums etc. ✓ Alcohol is consumed widely in India. Its various forms includes alcohol made from locally grown grains, vegetables and fruits. Eg. *arrack*, *mahwa, tari* (*toddy*) etc; distilled alcohol/ foreign alcohol like whisky, rum, etc; beer and locally made illegal drinks. ✓ Tobacco and alcohol use is associated with diseases of the heart, stroke, lungs, kidney, cancers of lungs, oral cavity, respiratory

	problems, increased risk of tuberculosis, results in blindness, high blood pressure, diabetes, tooth decay/gum disease, bad breath, etc. ✓ Tobacco use in pregnancy leads to low birth weight babies and still birth. Tobacco use leads to impotence and low fertility among men. ✓ Consumption of alcohol during pregnancy leads to complications during delivery and defects in the child. ✓ If a person is on diabetes medication, alcohol consumption increases the risk of low blood sugar (hypoglycemia). ✓ Harmful use of alcohol and tobacco should be avoided. ✓ All non-smokers should be encouraged not to start smoking. All smokers should be strongly encouraged to quit smoking.
Overweight or Obesity	✓ The main causes of becoming overweight/obese are: ✓ Family history, unhealthy diet, lack of physical activity, psychological factors- Depression, anxiety, stress, and low esteem can result in over eating, hormonal imbalance in the body, over-feeding. ✓ Maintain healthy weight; people who are overweight need to lose weight by eating healthy and doing regular physical activity.
Stress	✓ Stress affects the body (physical) or mind (mental) or both. ✓ Stress may lead to digestive problems, back or neck pain, sleeping problems, substance abuse, headaches, sleeplessness, depressed mood, anger and irritability. ✓ Stress contributes to health problems, such as heart disease, stroke, ulcers, high blood pressure, diabetes, depression, anxiety disorder, and other illnesses. ✓ Avoiding stress is not possible for an individual; however, it can be handled with a positive approach with help of support and life style changes.

Are Non-Communicable Diseases increasing?

If so, then why? Over the past few years, we are noticing an increase in deaths and illnesses due to Non Communicable Diseases. Some of the reasons are:

- People shifting from rural areas to urban areas and making changes in lifestyles related to diet, exercise and other behaviours.
- Increase life expectancy of people and thus more people living at an increasing age.
- Decrease in physical activity due to availability of motor vehicles for transport.
- Lack of adequate, safe spaces for regular exercise.
- Availability and use of tobacco and alcohol for all age groups.
- Increased use of foods high in fats, salt, sugar and sugar sweetened beverages.
- Low consumption of fruits and vegetables because of high costs/lower availability.
- Increased consumption of refined and packaged foods.
- Growing environmental pollution (air, food, water).

Do Non-Communicable Diseases affect only rich people?

A common perception is that Non-Communicable Diseases are a disease of the rich. However, this understanding is not correct. Poor and vulnerable people can suffer from NCDs too. Two important factors that can cause NCDs are poverty and malnutrition.

- **Malnutrition:** As you know, many children are born with low birth weight (weighing less than 2.5 kg at birth). The lack of nutrition for the baby while in the womb has consequences in adulthood. While growing up, the bodies of such low birth weight babies are not able to adapt to fatty or sugary foods. This results in an increase in risk factors like hypertension, high blood fat levels, and high blood glucose levels.
- **Poverty:** contributes to NCDs in several ways, including maternal malnutrition. Also, poor people are not able to buy and consume healthy foods such as nuts, fresh fruits, etc. As a result, they often can only afford to eat rice or roti, with no pulses or vegetables. Also, particularly in the case of urban poor, long working hours do not leave them enough time to cook healthy meals, such as the use of leafy green vegetables or healthy grains that take longer to cook. The poor also live in places where there are higher risks of air pollution, such as near factories which release

harmful chemicals. So, you can see that the risks of NCDs can be higher among the poor, when compared to the rich, who may have more time and money to invest in healthier lifestyles.

- **Health care costs** Non-Communicable Diseases are also associated with higher health care costs due to long and expensive treatment. With NCDs, you cannot stop taking medicines once you feel better – you have to keep taking them to keep illness away, often for a lifetime. But many people stop taking medicines once they feel better or when they run out of money. These illnesses also require close monitoring and regular follow up by a health service provider. The poor may not be able to visit a health centre regularly as that would mean loss of wages. High transportation costs to and from the health facility, lower energy to do work, lack of money to make healthy food choices and stress, are added factors leading to higher levels of Non-Communicable Diseases among the poor. Treatment for Non-Communicable diseases is generally spread over a long period of time. In case of complications, people may need hospitalization. This can lead to financial hardship. Such illnesses of even one family member could affect the family's income. This may result in the children dropping out of school, or even affect the consumption of nutritious food for the rest of the family.

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Which of the following is incorrect for Non-Modifiable risk factors
   A. Age, C. Diet
   B. Sex D. Family History.
2. Which of the following is incorrect biological' risk factors
   A. Hypertension (high blood pressure)
   B. Impaired blood glucose levels High levels of harmful blood fats
   C. Overweight/Obesity (excess amount of body fat)
   D. Harmful use of Alcohol
3. The other classification of risk factors categorized them under following
   A. Physiological C. Biological

B. Environmental D. Social E. All

4.

5.

Note: **Satisfactory rating 2 points** **Unsatisfactory - below 2 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Short Answer Questions

1. _____
2. _____
3. _____

Information Sheet -4- Referral of suspected cases

2.4. Referral of suspected cases

Referral of suspected cases of hypertension and diabetes for confirmation to nearest PHC. Referral During the screening day, you will identify suspected cases of hypertension, diabetes or cancers. You should refer such individuals to the nearest Primary Health Centres (PHCs)/Community Health Centre (CHC)/ District Hospital (DH)/General Hospital (GH) for confirmatory diagnosis by the medical officer or trained specialists. Laboratory confirmation for early diagnosis and management of such cases will be undertaken at the appropriate health facilities. Table- 2, provides details about the referral and follow up process for each of these conditions.

An important fact to remember is that most of those who you may suspect of having a cancerous lesion may not actually have cancer. You must counsel people that they should not assume they have cancer but should visit the specialist for further confirmation. You should be very careful when communicating the news that you have seen a suspicious lesion, so that you do not create panic and fear. You should also be very careful not to spread rumours in the community about who has been referred for further investigation. In most communities, sickness, particularly cancer, is considered to be a stigma. If news about those going to higher facilities for cancer or any other treatment spreads, and becomes public knowledge, this will destroy people's faith in you and in the public health system.

Table 2: Referral process after screening and your role in follow up

Condition	Finding during	Screening First level of referral
Hypertension	Systolic BP of over 140 and/ or a diastolic BP of over 90 mm of Hg (140/90mm Hg)	Medical officer (MBBS) at the nearest facility, for confirmation, conducting relevant laboratory investigations
Diabetes	Random blood sugar over 140 mg/dl	Medical officer (MBBS) at the nearest facility, for confirmation, conducting relevant laboratory investigations
Breast Cancer	Suspicious lump/discharge	Referred to Surgeon at CHC/DH/ GH for confirmation
Oral Cancer	Suspicious lesion	Referred to Surgeon/Dentist/ENT specialist/Medical officer at CHC/ DH/GH for confirmation and biopsy
Cervical Cancer (screened at PHC)	Suspicious lesion	Referred to Surgeon and Gynecologist at CHC/DH/GH for confirmation

Self-Check -4	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Referral of suspected cases of hypertension and diabetes for confirmation to nearest PHC.

   True B. false

2. The following health facilities should refer such individuals to the nearest:

   A. Primary Health Centres (PHCs)

   B. District Hospital (DH)

   C. General Hospital (GH)

D. All

Note: **Satisfactory rating 2 points** **Unsatisfactory - below 2 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Short Answer Questions

1. _____
2. _____

.

LG #3	**LO3. Follow cases and promote community based rehabilitation**

Instruction sheet #1

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

- Following up of cases
- Mobilizing community taking care of disabilities
- Conducting training for selected family and organizations
- Follow up of reported cases

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

- Following up of cases

- Mobilizing community taking care of disabilities
- Conducting training for selected family and organizations
- Follow up of reported cases

Learning Instructions:

17. Read the specific objectives of this Learning Guide.
18. Follow the instructions described below.
19. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
20. Accomplish the “Self-checks” which are placed following all information sheets.
21. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
22. If you earned a satisfactory evaluation proceed to “Operation sheets
23. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
24. If your performance is satisfactory proceed to the next learning guide,

If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Information Sheet 1- Following up of cases

3.1. Following up of cases

Follow-up

Following your referral, the doctor at the higher health facility will examine the person with mental health problems, diagnose the nature of the illness and prescribe the appropriate treatment if necessary. After the treatment is essential to have follow-up visits to your clients and their family members to discuss how they are doing.

Follow-up is important to achieve adherence to treatment and improve the overall outcome. If for any reason the patient discontinues the prescribed treatment, all your efforts and the efforts of the doctor and the family members will have been fruitless.

Questions to ask during follow-up

- Is the client taking their medicines regularly as prescribed?
- How much improvement has the client made?
- Has the client developed any side effects following the drug use?
- Has the client started working again?
- Has the client seen the doctor for follow-up and review?

Based on the information you collect during the follow-up visits, you may identify some continuing issues that need to be addressed. In the remainder of this section we will discuss how you can deal with some of the problems that are likely to arise during follow-up of clients who are taking medication.

Adverse effects of medication

Some of the people who take medication to treat their mental illnesses may experience unwanted effects (also known as adverse effects). Different types of medical drugs are used to treat different mental health problems, and some drugs may produce side effects that are unpleasant to the client. Some of these effects are mild, in which case you can reassure the patient; for example, when a client complains about dryness of the mouth, light-headedness or constipation, reassure them that it is temporary. Dryness of the mouth can be helped by taking more water. However, severe unwanted effects, such as:

- Unclear speech,
- Walking unsteadily like a drunken person,
- Stiffness of the limbs, or twitching of the tongue, mouth, neck, hands or legs can also occur in some people.

A patient may also experience drooling of saliva or drowsiness. If any of these side effects occur you should refer the patient to the doctor immediately. Any necessary changes in the drug dosage will be carried out by the doctor.

When a person is very agitated they are often put on a high dose of medication. As they get better over time a lower dose is needed to adjust to the new situation. Because of the risk of relapse (return of the previous symptoms of mental illness), the drugs should not be stopped suddenly.

Similarly, people who are very sad and depressed and receive drugs to treat their problems should not suddenly stop their treatment when they start to feel better. Instead the drugs should be reduced gradually and then stopped, always in consultation with the doctor, to avoid relapse.

Making sure your client takes their medication

For a very ill or unmanageable person, one member of the household should be made responsible to make sure that the patient takes their medication. A neighbour or any other individual in the village who is close to the patient could also be given this responsibility. If the family is taking less interest in treating the person with mental illness, or if the family mainly has faith in traditional cultural methods of treatments talk to them repeatedly to convince them to (also) accept modern treatments for the patient. Geographical distance, financial difficulties and absence of a family member to accompany the patient to the health centre can also be reasons for not starting or continuing medication. You can solve these problems by mobilising other help, such as another person from the same village. In some cases, you could collect the drugs from the doctor yourself and deliver them to your client directly.

A person with mental health problems who shows improvement over time is the best example for others. Use these examples to demonstrate the value of modern treatment to other people with mental health problems and to the people in your community in general.

Self check 01	Written test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is Follow-up?

Note: **Satisfactory rating 3 points** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

1. _____
   _____

Information Sheet -2- Mobilizing community taking care of disabilities

3.2. Mobilizing community taking care of disabilities

Disability, in contrast, is not something individuals 'have', but has a wider social meaning. It is the exclusion of people with impairments due to attitudinal and environmental barriers that limits their full and equal participation in the life of the community and society at large. It is now accepted that the disabling environmental and social barriers are major causes of the disability experienced by individuals with impairments.

It is important to ensure the inclusion of disabled people in society.

Inclusion refers to the need to make sure that people with disabilities have access to all necessary services and that the barriers and limitations they experience in society are reduced.

Impairment refers to the physical, intellectual, mental and/or sensory characteristics or conditions that limit a person's individual or social functioning, in comparison with someone without these impairments.

Models of disability

A good way of understanding the distinction between impairment and disability is to consider some of the ways that disability has been thought of in the past. In this part of the session you are going to look at several models of disability. As you do this, think about what each model 'says' about the person with an impairment. This will help you to understand – and respond to – traditional beliefs about disability.

The charity model

The charity model of disability is a traditional way of viewing persons with disabilities as being dependent and helpless. In this model, people with disabilities are seen as:

- Objects of charity

- Having nothing to give, only to receive
- Being inherently poor, needy and fully dependent on charity or welfare for their survival.

The charity model is often related to traditional cultural and religious beliefs and practices such as the giving of alms. The problem with such practices is that they reinforce the idea that people with disabilities are helpless recipients of 'charity' from a 'caring' society, rather than subjects with rights.

The medical model

The medical model of disability focuses primarily on the medical problems of persons with disabilities and emphasises medical solutions. It assumes that:

- The problem of disability is due entirely to the individual's condition or impairment.
- People with disabilities are — first and foremost — 'patients'.
- The problem of disability requires a purely medical solution. In the medical model the problem of disability is addressed by medical experts through providing treatment for people with disabilities, rather than asking them what they want. Like the charity model, this approach is largely unconcerned with the social or environmental features of disability.

The social model

The social model of disability views people with disabilities as being disabled less by their impairment than by society's inadequate response to their specific needs. The social model emphasises that:

- Disability is best thought of as a social problem.
- The problem is not the person with disabilities or their impairment, but the unequal and discriminatory way they are treated by society.
- The solution lies in removing the barriers that restrict the inclusion and participation of people with disabilities in the social life of the community.

The emphasis on the removal of barriers focuses attention on a range of issues ignored in both the charity and medical models. For instance, it challenges inequalities before the law, restrictions caused by physical structures (the way buildings and villages are designed), and discrimination – the disabling aspects of negative attitudes towards people with disabilities.

The human rights model

The human rights model of disability can be seen as the most recent development of the social model. It states that:

- All human beings are equal and have rights that should be respected without distinction of any kind.
- People with disabilities are citizens and, as such, have the same rights as those without impairments.
- All actions to support people with disabilities should be 'rights based'; for example, the demand for equal access to services and opportunities as a human right.

Like the social model, the human rights model places responsibility for addressing the problems of disability on society rather than on the person with disabilities. It also places a responsibility on you to ensure that appropriate legislation designed by the government is complied with at a local level.

Types of impairments

There are many types of impairments; the most common types will be briefly discussed in this section.

Mobility and physical impairments

There are a variety of physical impairments that impact on functioning and mobility. These include limitations in the use of the limbs, limited manual dexterity, and limited coordination of limbs, cerebral palsy, spinal bifida and sclerosis. Physical impairment

can be congenital (something one is born with), or it can be the result of disease, accident, violence or old age.

Sensory impairments

- **Visual impairments:** Virtually everyone will experience a visual impairment at some point in their lives. Usually these are minor or treatable, e.g. temporary visual impairments caused by bright lights or headaches, or age-related visual impairment that can be 'self-treated' with reading spectacles. But they can also be serious, e.g. permanent visual impairment or more severe conditions requiring medical treatment. Visual impairment can be congenital (present at birth), due to genetic conditions, or the result of accidents, violence, or diseases such as trachoma, glaucoma and cataracts
- **Hearing impairments:** There is a wide variety in the form and severity of hearing impairments, ranging from partial to complete deafness. People who are partially deaf can often use hearing aids to assist their hearing. Deafness can be genetic, be evident at birth, or occur later in life as a result of disease or due to old age. Both deaf and partially deaf people use sign language as a means of communication. The lack of knowledge of sign language amongst the general population can create communication difficulties for deaf and partially deaf people and can also be thought of as a disabling barrier.
- **Intellectual impairments:** are characterized by significant limitations in intellectual functioning, which also impact on many everyday social and practical skills. The medical term for these impairments is 'intellectual disability' (see Study Session 17, which also discusses some common causes).
- **Multiple impairments:** Some people have to cope with several impairments, either permanently or for periods of time (e.g. during an illness). Examples of permanent multiple impairments include people who are both deaf and blind, and people with both a physical and intellectual impairment.

Appropriate and acceptable language

There is often much confusion around the language to be used when talking about disability and/or addressing persons with disabilities. Acceptable terminology changes over time and may be different in different countries.

Appropriate and inappropriate terms

In your daily work it is important to keep the following guidelines in mind:

- When describing a person, focus on their abilities and actions rather than their limitations, and avoids words that imply that they are passive 'objects' rather than active subjects. Expressions like 'she uses a wheelchair' or 'he is partially sighted' are preferred to terms such as 'confined to a wheelchair' or 'partially blind'.
- Avoid 'sensationalizing' an impairment by using expressions such as 'afflicted with', 'victim of', 'suffering from', and so on
- Emphasize the individual, rather than the impairment, by saying, for example, 'a person with paraplegia', instead of 'a paraplegic' or 'a paraplegic person'. For the same reason, avoid grouping individuals into generic categories through expressions like the deaf, the blind, etc.
- When talking about places or buildings designed to overcome the barriers faced by people with disabilities, use the term 'accessible' (e.g. 'an accessible parking space') rather than 'parking for the disabled' or 'for the handicapped'.
- Finally, people without disabilities should not be referred to as 'normal', 'healthy' or 'able-bodied'. People with disabilities are not – as such expressions suggest – 'abnormal', 'sick' or 'unable'.
- It is appropriate for you to continue using words such as 'see', 'look', 'walk', 'listen', when talking to people with various disabilities, even if the person is, for example, partially sighted or uses a wheelchair or hearing aid.

Table 3.1 Appropriate and inappropriate terms when discussing disability.

Inappropriate use	**Appropriate use**
The disabled, the handicapped	People with disabilities

Cripple, physically handicapped or wheelchair bound.	A person with a physical disability/impairment or wheelchair user
Spastic	A person with cerebral palsy
Deaf and dumb	A person with hearing and speech impairments
The blind	A person with hearing and speech impairments
The deaf	People who are deaf, or hearing-impaired people

Communication with people who have impairments

When introduced to a person with a disability, it is appropriate to offer to shake hands. People with limited hand use or who wear an artificial limb can usually shake hands. (Shaking hands with the left hand is an acceptable greeting.)

When you are talking with a person who has difficulty speaking, listen attentively. Be patient and wait for the person to finish, rather than correcting or speaking for them. If necessary, ask short questions that require only short answers, or a nod or shake of the head. Never pretend to understand if you are having difficulty doing so. Instead, repeat what you have understood and allow the person to respond.

When speaking with a person who uses a wheelchair or a person who uses crutches, place yourself at eye level in front of the person to facilitate the conversation. When speaking with someone with a visual impairment, make sure to introduce yourself by name. When conversing in a group, remember to identify the person to whom you are speaking.

To get the attention of a person with a hearing impairment, tap the person on the shoulder or wave your hand. Look directly at the person and speak clearly, slowly, and expressively to determine if the person can read your lips. Not all people with a hearing impairment can read lips. For those who do, be sensitive to their needs by facing the light source and keep hands, food and drink away from your mouth when speaking.

People with an intellectual disability may have difficulty understanding language that is complex, or contains difficult words.

Guidelines for talking with a person with an intellectual disability

- Speak slowly and leave pauses for the person to process your words.
- Speak directly to the person, and ensure they feel central to the consultation.
- Speak in clear short sentences. Don't use long, complex, or technical words and jargon.
- Ask one question at a time, provide adequate time for the person to formulate and give their reply.
- If necessary obtain information from parents/caregivers, maintain the focus on the person with the disability through your eye contact, body language and/or touch.

Myths and facts about disability

In the community, many people do not know much about disability and have a misunderstanding of what it is like to live with a disability.

Common myths about disability

Myth 1: People with disabilities are brave and courageous.

- Fact: Adjusting to impairment requires adapting to particular circumstances and lifestyle, not bravery and courage.

Myth 2: Wheelchair use is confining; people who use wheelchairs are 'wheelchair-bound'.

- Fact: A wheelchair, like a bicycle or an automobile, is a personal mobility assistive device that enables someone to move around.

Myth 3: All persons with hearing disabilities can read lips.

- Fact: Lip-reading skills vary among people and are never entirely reliable.

Myth 4: People who are blind acquire a 'sixth sense'.

- Fact: Although most people who are blind develop their remaining senses more fully, they do not have a 'sixth sense'.

Myth 5: Most people with disabilities cannot have sexual relationships.

- Fact: Anyone can have a sexual relationship by adapting the sexual activity. People with disabilities can have children naturally or through adoption. People with disabilities, like other people, are sexual beings.

As a healthworker, you can help remove barriers by encouraging participation of people with disabilities in your community through:

- Using accessible sites for meetings and events
- Advocating for a barrier-free environment
- Speaking up when negative words or phrases are used about persons with disabilities
- Accepting persons with disabilities as individuals with the same needs, feelings and rights as yourself.

Situation of disability in Ethiopia

According to available survey results from the 2006 census, of a total population in Ethiopia of more than 73 million, there are 805,535 (or 0.8 million) persons with disabilities. However, relevant government authorities, researchers, and people active in the field of disability all agree that the figures are very low compared to the prevalence of disability in neighboring countries and other developing countries. The number of persons with disabilities in Ethiopia is likely to be underestimated due to inadequate definitions or what constitutes disability and which disabilities should be included in the count. It is also likely that parents are not willing to disclose that they have a child or family member with a disability because of stigma.

The actual number of people with disabilities in Ethiopia is therefore likely to be much higher.

Major causes of impairment

- Disease
- Poverty
- Wars
- Drought
- Famine

- Harmful traditional practices
- Household, work place and traffic accidents.

The twin- track approach

To promote and facilitate equal opportunities for people with disabilities and their full participation in society, the twin track approach focuses on their inclusion in both a (mainstream and b) disability-specific development initiatives. Neither track (mainstream or disability specific) is better or more important than the other. They are both required to ensure that the needs of all people with disabilities are met.

Mainstream programmes and services

- The first track focuses on mainstream programmes and services, which are not specifically designed for persons with disabilities, such as public health services, mainstream schools, community development programmes, transportation, etc. This track focuses on making these mainstream services more accessible for people with disabilities. The approach in mainstream schools, for instance, might involve the construction of ramps to make classrooms accessible to wheelchair users. Similarly, textbooks and other written materials might be transcribed into Braille copy for students with visual impairments.

Disability-specific programmes and services

- The second track focuses on disability-specific programmes and services designed on purpose to address the needs of people with disabilities, such as orthopedic centres, special schools, etc. You should find out about any such projects that may be operating in your area. You could help in making these disability-specific programmes and services more accessible at community level. For example, you might direct the families of children with motor or sensory impairments to a project that provides physical aids such as crutches.

Community-based rehabilitation (CBR)

Community health centres are often the first point of contact for persons with disabilities and their families seeking healthcare. In addition, in some regions, Community-Based Rehabilitation (CBR) programmes provide home-based support to parents and children with disabilities as well as to older people with disabilities. Currently, these CBR programmes are primarily run by the non-governmental organizations (NGOs) that belong to the CBR Network in Ethiopia (CBRNE).

You can support CBR activities by finding out about impairments among children in your locality, focusing on the early identification of impairments, and providing basic interventions to children, youth and adults with impairments.

UN Convention on the Rights of Persons with Disabilities

The UN Convention on the Rights of Persons with Disabilities (UNCRPD) aims to protect the rights and dignity of persons with disabilities. Parties to the Convention (including Ethiopia) are required to promote, protect, and ensure the full enjoyment of human rights by persons with disabilities.

The UNCRPD introduced the concept of 'reasonable accommodation'. This acknowledges that people with disabilities face many barriers and reasonable accommodation should be made to redress this. Reasonable accommodation involves providing the necessary and appropriate modification and adjustments, while 'not imposing a disproportionate or undue burden'. This reflects the fact that addressing all the barriers faced by people with disabilities requires a lot of resources that may not always be available.

Nevertheless, there are a number of possible reasonable accommodations that providers could make. These include making existing facilities (such as health centres) accessible for people using crutches and wheelchairs, providing sign language interpretation, providing information in Braille, and so on. At a community level, you can help in making these changes.

Self check 02	Written test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Disability, in contrast, is not something individuals 'have', but has a wider social meaning.
   A. True B. False
2. The following are causes of impairment **except**
   A. Disease C. Poverty
   B. Wars D. None
3. The following are Sensory impairments
   A. Visual impairments C. Hearing impairments:
   B. Intellectual impairments D. All

Note: **Satisfactory rating 3 points** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

1. _____
2. _____
3. _____

Information Sheet -3- Conducting training for selected family and organizations

3.3. Conducting training for selected family and organizations

Introduction

Training family care and support group is important since most of the care given for chronically ill persons is given at home level to reduce bed occupancy for long duration. A supportive partner and family will have a positive effect on improving the life outcomes for chronically ill individuals.

Example: as you have seen in previous sections, cancer may be treatable if it is diagnosed early and depending on its type. However, some cancers are untreatable and others are diagnosed too late for treatment to be effective. If the original cancer spreads to other part of the body, the secondary tumors can damage the function of many different organs and make the patient very sick. As the cancers grow, they can interfere with processes that maintain life and the patient becomes terminally ill (i.e. expected to die within weeks). The care given to a person who has advanced cancer (or any other chronic life-threatening condition) is referred to as palliative care. The aim of palliative care is to improve the quality of life of the sick individual and their family in the period before the death, and to help the family cope with the bereavement after the death. It involves prevention and relief of suffering, pain and other physical problems,

and attention to psychosocial and spiritual issues. It focuses on supporting the patient to enjoy what remains of their life as fully as possible, and helps them and their family to manage symptoms such as pain and nausea. It also helps the relatives to cope with the overwhelming feelings they may be experiencing about losing their loved one.

Palliative care is care given to chronically ill people to improve their quality of life and that of their families. It involves prevention and relief of suffering, pain and other physical problems, and attention to psychosocial and spiritual issues. Palliative care is also provided for terminally ill patients with conditions such as cancer, heart disease and stroke.

The four components of palliative care in Ethiopia are symptom management, including:

- Pain management;
- Psychosocial and spiritual support;
- Home-based care,
- End-of-life care.

The aim in palliative care is always to support the patient in their own home for as long as possible, and to involve others in the community who can give comfort to the patient and family members. In Ethiopia, an important contribution can be made by religious and spiritual leaders in the community. Don't forget that families who are caring for a dying person also need practical help and support, for example to lift a bedridden patient to change the bedding or make the person more comfortable.

Note that palliative care does not only mean the terminal care given to people dying from an incurable chronic illness.

Figure 3.3: A Health Extension Practitioner and a family member changing the position of a terminally ill person to make him more comfortable.

Preventing bedsores in bedridden patients

To prevent bedsores, you should do the following:

- Help the patient to sit out in a chair from time to time if possible.
- Lift the patient up off the bed slowly — do not drag the person's body as it breaks the skin. Ask a family member to help you — two people can do this much more easily, with less discomfort for the patient.
- Encourage the patient to move around in the bed as much as they are able to. If they cannot move, change their position on the bed frequently, if possible every one or two hours. Use pillows or cushions beside the patient to help them keep the new position.
- Keep the bed sheets clean and dry. Put extra soft material, such as a soft cotton towel, under the patient.
- Look for damaged skin (change of colour) on the patient's back, shoulders and hips every day. Massage the back and hips, elbows, heels and ankles every day

with petroleum jelly if available, or any other soothing cream or oil. This helps to prevent ‘bed sores’ from developing.

Self check 03	Written test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Training family care and support group is important since most of the care given for chronically ill persons

   A. True B. False

2. Palliative care is care given to chronically ill people to improve their quality of life and that of their families.

   A. True B. False

3. The four components of palliative care in Ethiopia are symptom management,

   A. Pain management;

   B. Psychosocial and spiritual support;

C. Home-based care,

D. End-of-life care.

E. All

Note: **Satisfactory rating 3 points** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

4. _____

Information Sheet -4- Follow up of reported cases

3.4.1. Follow-up Follow up of Common Non-Communicable Diseases Cases

The most important element in the management of chronic non communicable disease is follow-up care.

Following your referral, the doctor at the higher health facility will examine the person with mental health problems, diagnose the nature of the illness and prescribe the appropriate treatment if necessary. After the treatment is initiated, it is essential to have follow-up visits to your clients and their family members to discuss how they are doing. Follow-up is important to achieve adherence to treatment and improve the overall

outcome. If for any reason the patient discontinues the prescribed treatment, all your efforts and the efforts of the doctor and the family members will have been fruitless.

Follow up of patients with mental health

- Questions to ask during follow-up
  - ✓ Is the client taking his/her medicines regularly as prescribed?
  - ✓ How much improvement has the client made?
  - ✓ Has the client developed any side effects following the drug use?
  - ✓ Has the client started working again?
  - ✓ Has the client seen the doctor for follow-up and review?
- Based on the information you collect during the follow-up visits, you may identify some continuing issues that need to be addressed. In the remainder of this section we will discuss how you can deal with some of the problems that are likely to arise during follow-up of clients who are taking medication.

Figure 4.1: A man with mental illness taking his medication

Follow up on self-care and diet for someone with diabetes

- If they are already taking insulin or other drugs to treat their condition, you should advise them to take their medication regularly. Everyone with diabetes, regardless of treatment, should:
  - ✓ attend regular medical checkups

- ✓ be aware of possible wound infection if they hurt themselves and seek urgent treatment if this occurs
- ✓ always wear shoes that fit correctly; wounds, blisters or sores on the feet can lead to tissue damage that is difficult to heal
- ✓ have an eye test once every year to check for early signs of eye damage
- ✓ always include exercise as a routine part of their lifestyle
- ✓ Attend health education classes (if they are available) for people with diabetes to learn about self-care.

- Maintaining a healthy diet
  - ✓ Maintaining a healthy diet is one of the most important aspects of treatment for diabetes.

Table 4.1: Recommended diets in diabetes

Foods	**Can be eaten in moderate amounts**	**Limited to small occasional amounts**
Carbohydrates	Complex (starchy) carbohydrates should be the main part of any meal, e.g. injera, bread, other cereals, rice, potatoes, etc. Starchy carbohydrates are broken down slowly into sugars, so the glucose levels in the blood rise slowly.	Foods containing sugar are not encouraged, particularly if the person needs to lose Weight, because sweet foods are energy-rich and 'fattening'. Sugary foods and drinks can put up blood glucose levels very quickly and have very little or no nutritional value.
Fats	Fats, such as those in olive oil and avocadoes, are good for maintaining a healthy weight. Grilling, baking and steaming cooking methods produce less fattening foods than frying.	Fats should be limited to help control body weight, especially 'hard' fats such as butter and animal lard.
Proteins	Protein is found in meat, fish,	Avoid 'fatty' sources of

	eggs, nuts, pulses and dairy products and is recommended in a healthy diet.	protein such as fatty meat, or a lot of egg yolks.
Vitamins, minerals & fibre	Fruits and vegetables are an excellent source of dietary fibre, vitamins and minerals; try to eat five portions of fruit and vegetables each day, e.g. 'gommen' or kale, cabbage, carrots, spinach, tomatoes, mangoes.	Fruit contains sugar and tends to increase blood glucose levels. People are often surprised at this because fruit is a healthy-eating option.
Salt	A small amount of salt daily is all that is needed; this can mostly be obtained from fresh Natural foods.	Most people eat more salt than is required by the body; food should be tasted before salt is added, if necessary, at the table. Limiting salt intake can help decrease blood pressure.

Follow up of patients with Hypertension

- Follow-up visits are a good time to let your health care provider know about any side effects you are having from your medication. He or she will have suggestions for coping with side effects or may change your treatment.
- Follow-up visits are a great opportunity for monitoring other associated risk factors, such as high cholesterol and obesity.
    - ✓ Attend regular medical checkups
    - ✓ After starting high blood pressure drug therapy, you should see your doctor at least once a month until the blood pressure goal is reached.
    - ✓ Have an eye test once every year to check for early signs of eye damage
    - ✓ Always include exercise as a routine part of their lifestyle
    - ✓ Attend health education classes (if they are available) for people with diabetes to learn about self-care.
    - ✓ Maintaining a healthy diet(avoid salty and fatty food)

Follow up of patients with cancer

Follow-up care visits are also important to help in the prevention or early detection of other types of cancer, address ongoing problems due to cancer or its treatment, and check for physical and psychosocial effects that may develop months to years after treatment ends. All cancer survivors should have follow-up care.

The objective of Cancer follows up:

- To determine outcomes of treatment
- The patient's current vital status
- To collect information on any recurrence including treatment and any new primary cancer

Figure 4.1: observing patient with cancer

Follow-up care is important because it helps to identify changes in health. The purpose of follow-up care is to check for recurrence (the return of cancer in the primary site) or metastasis (the spread of cancer to another part of the body).

Follow-up care visits are also important to help in the prevention or early detection of other types of cancer, address ongoing problems due to cancer or its treatment, and

check for physical and psychosocial effects that may develop months to years after treatment ends. All cancer survivors should have follow-up care.

During each visit, patients should tell their doctor about:

- Any symptoms that they think may be a sign that their cancer has returned
- Any pain that bothers them
- Any physical problems that interfere with daily life or are bothersome, such as fatigue; difficulty with bladder, bowel, or sexual function; difficulty concentrating; memory changes; trouble sleeping; and weight gain or loss
- Any medicines, vitamins, or herbs they are taking and any other treatments they are using
- Any emotional problems they are experiencing, such as anxiety or depression
- Any changes in their family medical history, including any new cancers

Follow up of cases with cataract, eye and ear injuries

First aid care for eye injuries: Any kind of injury or trauma to the eyes should be taken seriously. Prompt medical attention for eye problems can save your vision and prevent further complications.

Chemical burns: Chemicals common at home or in the workplace can easily get splashed into your eyes. It is important to wear safety glasses when handling toxic or abrasive chemicals and use caution with household cleaners in order to prevent injury.

First aid care for chemical burns includes:

- Remain calm and keep eyes open until they can be flushed. Closing your eyes traps the chemical in and does further damage.
- Flush eyes generously with water for 15 to 20 minutes. Make sure you keep your eyes open during flushing.

- Get immediate medical care. You can also call local poison control center for instructions. Be prepared to give information about the name and type of chemical, if possible.

Foreign object: The eye often cleans itself of debris with tearing, so no treatment is needed until you are certain the eye cannot remove the object by itself.

First aid care for foreign objects in the eyes includes:

- Don't rub your eyes.
- Lift the upper eyelid up and out over the lower lid, and then roll your eyes around.
- Flush your eyes generously with water, and keep your eyes open during flushing.
- Repeat the previous steps until the object is eliminated.
- Follow up with a doctor to make sure all debris is gone and the eyes have not been scratched or damaged. Your doctor may evaluate you for damage by using a special eye drop that fluoresces under a certain type of light; it will help reveal any cuts or scratches in the cornea.
- If there is an object embedded in the eye, do NOT remove it, as this may cause further damage. Instead, cover the eye with an eye shield or gauze and seek prompt medical attention.

Blows to the eye: Impact to the eye is another form of eye trauma. Minor blows can often be managed at home. Any eye injury should be monitored for signs of a serious injury or potential infection.

First aid care for a blow to the eyes includes:

- Gently place a cold compress over your eye in 5- to 10-minute intervals. Do not place ice directly on the skin. Instead, use a cloth in between the ice and skin.
- Call your doctor. They may want to examine the eye for potential damage. If the trauma was significant (for example, skull fracture or displaced bones), you will need to go to an emergency department for immediate evaluation.
- After 24 hours, switch to warm compresses. This will help lessen bruising.

- Seek immediate medical attention if you notice any of the following symptoms: drainage from the affected eye, vision changes, persistent pain, any visible abnormalities or bleeding in the sclera, which is the white part of the eye

Self check 04	Written test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. The most important element in the management of chronic non communicable disease is follow-up care.

   A. True B. False

2. The objective of Cancer follow-up includes except
   A. To determine outcomes of treatment
   B. The patient's current vital status
   C. To collect information on any recurrence
   D. To stop medication

Note: **Satisfactory rating 3 points** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

5. _____

Reference materials

1. Barbara Bates-A Guide to Physical Examination and History Taking, 6th Edition, 1995
2. Mental Healthcare Manual (2003), published by Gaskell, London.
3. website at **www.open.ac.uk/africa/heat**
4. Central Statistical Agency (CSA) [Ethiopia] and ICF. 2017. 2016 Ethiopia Demographic and Health Survey Key Findings. Addis Ababa, Ethiopia, and Rockville, Maryland, USA. CSA and ICF.
5. https://opentextbc.ca/clinicalskills/chapter/3-7-transfers-and-ambulation/

Answer Key for self-check

Module Title: - Managing Common Non-Communicable Diseases

LG #1	LO1. Prevent non-communicable diseases through provision of adequate information and education

Self-Check -1	Written Test

1. A
2. D
3. A
4. A

Self-Check -2	Written Test

1. A
2. A
3. B
4. A

Self-Check -3	Written Test

1. What is An action plan?

   An action plan sets out the ways in which you will implement the interventions required to prevent and control the disease

2. List down the elements that plan should contain

   The plan should contain the following elements:

   - Clear objectives

- Your strategies
- A list of activities that you will do
- Who will help you?
- Resources to be used

Self-Check -4	Written Test

1.
2.

Self-Check -5	Written Test

1. A
2. C
3. D

Self-Check -6	Written Test

3. A
4. D
5. D

Self-Check -7	Written Test

1. C
2. B

L #1	LO2. Screen and refer clients requiring further investigation and management

Self-Check -1	Written Test

1. A
2. D
3. D

Self-Check -2	Written Test

1. Management and control of high blood pressure,

- Reduce the intake of alcohol.
- Ensure regular physical activity.
- Ensure monthly monitoring of blood pressure.
- Compliance to treatment plan for drugs.
- Regular check-up at the PHC/CHC as advised.

2. **Management and control of high blood sugar levels**
   - Reduce the intake of alcohol.
   - Reduce the amount of salt
   - Decrease consumption of refined cereals, foods rich in excess amount of fat/oil, foods rich in salt and sugar.
   - Stop the use of tobacco in any form (smoking or chewing)

3. **Ways to prevent Hypoglycaemia**
   - Creating awareness on hypoglycaemia
   - Regular blood sugar testing/monitoring
   - Eating small and frequent meals
   - Not skipping or delaying meals
   - Checking blood sugar before exercise

Self-Check -3	**Written Test**

1. C
2. D
3. E

Self-Check -4	**Written Test**

1. A
2. D

L G#3	LO3. Follow cases and promote community based rehabilitation

Self-Check -1	Written Test

1. **What is follow-up**

   Follow-up is important to achieve adherence to treatment and improve the overall outcome. If for any reason the patient discontinues the prescribed treatment, all your efforts and the efforts of the doctor and the family members will have been fruitless.

Self-Check -2	Written Test

1. A
2. D
3. D

Self-Check -3	Written Test

1. A
2. A
3. E

Self-Check -4	Written Test

1. A
2. D

The trainers who developed the learning guide

No	Name	Qualification	Educational background	Region	PHONE CELL	E-mail
1	Feysal Mohammed	A	Nurse	Somali	0913505944	Feysalm28@gmail.com
2	Nigatu weyesa	A	Nurse	Benishang	0920315171	nigatuwey@gmail.com
3	Farhan Abubeker	A	MPH in RH	Harari	0915742083	Feru_ab@yahoo.com
4	Tesgera Begize	A	Nurse	Benishang	0945747265	Tesgera125@gmail.com
5	Bekuma Tadesse	A	Nurse	Oromiya	0913427926	bekumatadesse@gmail.co
6	Shu'ayb ahmed	B	Nurse	Somali	0915727482	Shucayba5@gmail.com