Draft Study Material

HOME HEALTH AIDE

(Qualification Pack: Ref. Id. HSS/Q5102)

Sector: Healthcare

(Grade X)

PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION
(a constituent unit of NCERT, under Ministry of Education, Government of India)
Shyamla Hills, Bhopal- 462 002, M.P., India
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Preface

Vocational Education is a dynamic and evolving field, and ensuring that every student has access to quality learning materials is of paramount importance. The journey of the PSS Central Institute of Vocational Education (PSSCIVE) toward producing comprehensive and inclusive study material is rigorous and time-consuming, requiring thorough research, expert consultation, and publication by the National Council of Educational Research and Training (NCERT). However, the absence of finalized study material should not impede the educational progress of our students. In response to this necessity, we present the draft study material, a provisional yet comprehensive guide, designed to bridge the gap between teaching and learning, until the official version of the study material is made available by the NCERT. The draft study material provides a structured and accessible set of materials for teachers and students to utilize in the interim period. The content is aligned with the prescribed curriculum to ensure that students remain on track with their learning objectives.

The contents of the modules are curated to provide continuity in education and maintain the momentum of teaching-learning in vocational education. It encompasses essential concepts and skills aligned with the curriculum and educational standards. We extend our gratitude to the academicians, vocational educators, subject matter experts, industry experts, academic consultants, and all other people who contributed their expertise and insights to the creation of the draft study material.

Teachers are encouraged to use the draft modules of the study material as a guide and supplement their teaching with additional resources and activities that cater to their students' unique learning styles and needs. Collaboration and feedback are vital; therefore, we welcome suggestions for improvement, especially by the teachers, in improving upon the content of the study material.

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Module 1

Human Body Structure and Functions

Introduction

The excitement of understanding about body parts and its functions has developed from the beginning of life when humans have experienced hunger and thirst at birth. A trained Home Health Aide can understand the demands of a normative adjunct medical condition, only if it is aware of the basic structure and function of the human body. This unit provides brief knowledge about basic human structure and various body systems and the role of nutritional food in the growth and development of human body.

Anatomy

It is a branch of medical science in which deals with the structure of human body and the functional relation of different parts to each other is known as Anatomy. Human anatomy is basic essential science of human body structure, size and shape. It is very important for understanding the functions of the body. The human anatomy is divided into gross anatomy and micro anatomy. Gross anatomy in which the study of human organ is grossly that can be seen with the general vision by the naked eye. Micro anatomy in which the deep study of human structure and organs that are made up tissue and cells and use of microscopic examination scale for study. and also called cytology and histology. Cyto-cell and histo-tissue logy-study.

Physiology

It is a branch of medical science in which relates to the study of the functions of organs and explains how different organ and system are work together. All organs functioning as a single unit is called physiology. Human physiology is the science of the physical, mechanical and biochemical functions of normal human tissues and organs. Anatomy and physiology is closely interrelated subjects of study. Anatomy – the study of structure and Physiology – the study of organs functioning. This helps in the studies of disease known as pathophysiology.

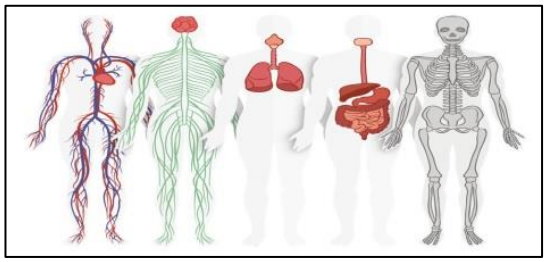


Fig. 1.1: Diagram of the Human body organ system

The specific Anatomy terminology is helpful of medical health workers have a general methods of identify without any confusion. Often chosen to highlight the relative location and structure and the human anatomy can be described as per the following:

Median Line: The central plane which divides the body into two halves i.e. right and left.

Medial	:	Nearby to the median line.
Lateral	:	Away from the median line.
Anterior	:	Towards the front surface of the body, also called Ventral.
Posterior	:	Towards the back surface of the body, also called Dorsal.
Superior	:	Nearer to the head, also called skull.
Inferior	:	Nearer to the foot, also called Caudal.
Proximal	:	Position that is closer from the trunk of the body.
Distal	:	Position that is further from the trunk of the body.
Superficial	:	Nearer to the skin and surface.
Deep	:	Deeper from the skin and surface.

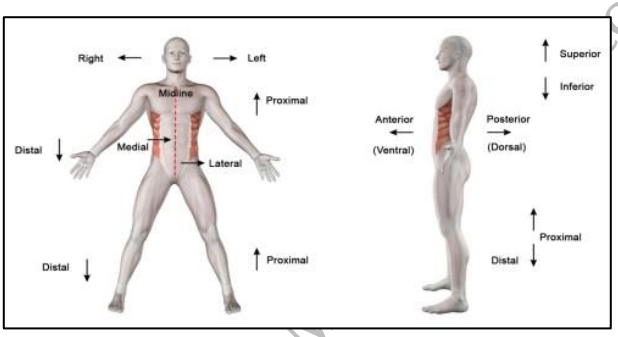


Fig. 1.2: Region of human body

Learning Outcomes

After completing this module, you will be able to:

• Identify the structure, bones, organs and parts of human body.

Module Structure

Session 1: Human Cell and Tissue

Session 2: Human Anatomy and Physiology

Session 1: Human Cell and Tissue

Composition of Body

The human body is organized into different levels that start from very small and basic and come together to form the whole body whose different parts work

together. This can be seen as a kind of 'ladder' which is much more complex than the original. At the simplest level, a body consists of atoms.

Cell

Just like the buidlings are built of bricks, our body is made of unit structures called cells. Cells are specilised to form various tissues and organs of the body. So it is necessary to know briefly about the structure of the cell. The cell is the basic unit of body structure. It is outer layer of cell membrane like a brick of a wall which is the outer covering. Mitochondria is also called power house of cell. All cells for its living and functioning needs food, water and oxygen. The cells metabolizes food and oxygen, they release carbon dioxide and other wastes. The cell consists of a cell membrane. It surrounds the cell and helps to hold its shape. The nucleus is the control center. It directs the cell's activities. The cytoplasm surrounds the nucleus. Organelles are structures that are suspended in the cytoplasm. Protoplasm refers to all structures, substances and water within the cell. Generally human cell containing organelles have their own membrane covering the cytoplasmic fluid and organelles present inside the cell are:

In Animal Cell

A cell is a mass of living material enclosed by a wall called cell membrane. It has the following parts.

Cell membrane: Forms the outer wall for the cell. Exchange of substances takes place between the protoplasm inside and tissue fluid outside the cell.

Protoplasm: Is the mass of living substance inside the cell membrane. It consists of small globular and more solid portion called the Nucleus near the middle and fluid component called cytoplasm.

Cytoplasm: Is a jelly like substance consisting chemically of protein, lipids, inorganic salts, water and cell inclusions. Cytoplasm presents the appearance of a net work called spongioplasm; the more fluid portion which occupies the meshes of the reticulum is called the hyaloplasm. The pigment granules, fat globules, watery fluid in vacuoles and glycogen present in the protoplasm constitute the paraplasm.

Centrosome: Is a small spherical mass of protoplasm and lies near the nucleus. One or two minute particles called centrioles are present in its interior. These play an important part in cell division.

Chondriosomes: Consist of minute particles of rods, granules or filaments called mitochondria. They are the store-houses of energy.

Golgi bodies: Consists of a groups of canal like structures near the nucleus. Protein synthesized in the cell is concentrated or processed here for secretion.

Endoplasmic reticulum: It is a network of membranous structure scattered throughout the cytoplasm. These are concerned with protein synthesis.

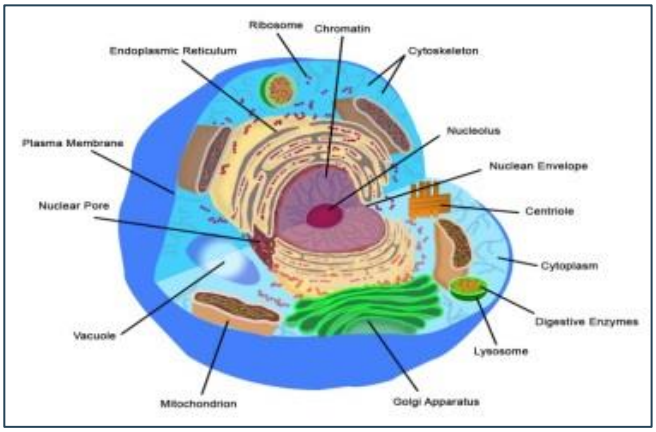


Fig.1.4: Animal cell

The Nucleus

It is a round or oval mass in the protoplasm. Usually four distinct parts may be differentiated in the nucleus.

- Nuclear membrane bounds the nucleus and separates it from the cytoplasm.
- Nucleoplasm is the fluid component containing granules called chromatin.
- Nucleolus is a highly refracting body in the nucleoplasm.
- Chromatin granules, when condensed, form rod like structures called chromosomes. These chromosomes carry the genes which carry hereditary characters of the individuals. There are 46 chromosomes in the human cell.
- Protection.
- Absorption.
- Secretion.
- Sensory reception.
- During the process of growth and maintenance cells divide to form new generations. This process of reproduction mainly takes place in two ways in the human body.
- Mitosis: Here the cell divides into 2, each of which have the same number of chromosomes and other structures.
- Meiosis: The result of this type of division is 4 cells. This type of division takes place in germ cells and the resulting cells have only half the number of chromosomes.

Basic Tissues

Human body consists of billions of cells. They are derived from the single fertilized egg cell in the mother's womb. The fertilized egg cell divides and re-divides and differentiates to form various tissues, organs and systems of the body. As development of the individual proceeds, groups of cells become differentiated from one another and are built up in different patterns to form the tissues of the body, in which the constituent cells are immobilized. There are five widely distributed basic tissues which are built up, in varying pro- portions, to form the organs within the body, the body wall and the appendages of the body.

These primary tissues are:
Epithelial tissue
1. Connective tissue
2. Sclerous tissue
3. Muscular tissue
4. Nervous tissue

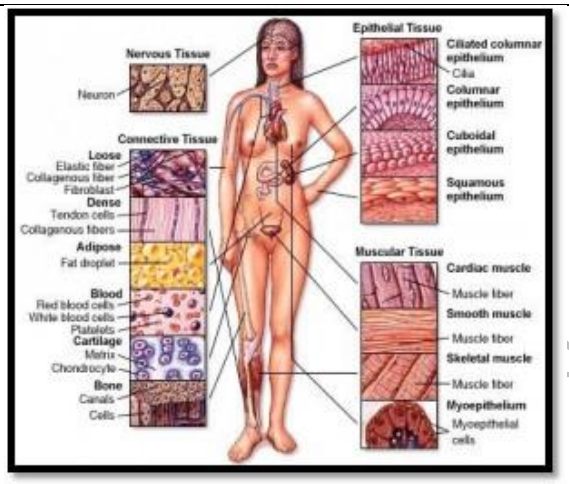


Fig. 1.5: Tissues of human body

1. Epithelium tissue

Consists of a layer of cells lying on a basement membrane made up of connective tissue. Epithelium covers the surface of the body or lines the interior of hollow organs. Epithelium with the subjacent connective tissue form a functional unit called a membrane. Epithelium consisting of a single layer of cells is called simple epithelium. When contains many layers it is called stratified epithelium and is protective in function. Simple epithelium is classified according to the shape of its cells as follows:

- Columnar epithelium-tall cells, secretory or absorptive in function;
- Cuboidal-short and broad cells;
- Squamous epithelium-flat and thin cell.

2. Connective tissue

Consists of fibres in a ground substances (cement). The fibres are of mainly three types:-

a) Collagen fibres which give tensile strength,
b) Elastic fibres which give elasticity and
c) Retifular fibres.

Apart from these, the connective tissue contains different cell types like fibroblasts which produce the connective tissue fibres, plasma cells, macro phages, fat cells etc. Connective tissue exists in different densities in different parts of the body.

3. Sclerous tissue

Consists of bones and cartilages. Bone is hard, rigid and forms the most of the skeletal system of the body. Bones contain bone cells called osteocytes, fibrous tissue and inorganic salts, mainly phosphate of calcium. Bones subserve the following important functions:

- Give support to the body.
- Act as lever for the action of muscles.
- Provide the sites of formation of blood cells.
- Act as storehouses of calcium.

There are 206 bones in the body. These together constitute (1) axial skelaton forming an axial support to the body and (2) an appendicular skeleton supporting the limbs. These bones are joined by ligaments forming the Interior of bones is filled by a soft tissue called bone marrow. This marrow is of yellow or red variety. Red

marrow produces the blood cells. In the adult red marrow is present only in certain bones like sternum (breast bone), ribs, vertebrae etc.

Vertebral column forming the main component of axial skeleton is of smaller segments called vertebrae, Above vertebral column is joined to the skeleton of the head and face called skull.

In the middle of the back of the neck is a vertical depression called nuchal furrow. Its lower end presents a bony elevation produced by the spine of 7th cervical vertebra. This can be used as a landmark to count the spines at the lower levels. A horizontal line corresponding to the highest point of iliac crest corresponds to 4th lumbar vertebra. This plane can be used to count the vertebrae from below.

4. Muscular tissue

Muscle is the contractile tissue which by its contraction results in various movements of the body like:

- movements of different joints;
- peristaltic movements, respiratory movements,
- uterine contraction etc. and
- pumping of the heart.

There are three types of muscles:

Skeletal muscle: Here the muscle cells or fibres have many nuclei and show transverse striations. They are mostly voluntary. Each muscle is surrounded by a connective tissue sheath called epimysium. Within each muscle bundles of muscle fibres are surrounded by another sheath called perimysium.

Cardiac muscles: Present only in the heart. It is involuntary. Its fibres are also striated but branched and they join with that of adjacent fibre. Each cell in the fibre has one nucleus.

Smooth muscle: It is involuntary. It forms the muscular wall of the organs in the body. Muscle fibre has a single nucleus and is in the centre. Fibres are spindle shaped.

5. Nervous tissue

Nervous tissue consists of neurons and connective tissue. Connective tissue of nervous system is called neuroglia. Neuron consist of cell body and its processes called nerve fibres. Nerve fibres are of two types-

- Dendrites which carry the impulses to the cell body and
- Axons which carry the impulses away from the cell body.

Nervous system consists of a central nervous system and peripheral nervous system. Central nervous system includes brain and spinal cord.

Central Nervous System: Brain is situated in a bony case called cranium. It is surrounded by three protective covering from within outwards they are pia mater, arachnoid mater and dura mater. It contains larger blood vessels supplying the brain and a fluid called cerebrospinal fluid. Cerebrospinal fluid provides a floating medium for protection and partly gives nutrition.

Brain is continued down into the vertebral canal as the spinal cord as far as the level of lower border of 1st lumbar vertebra. Coverings of the brain also continued around the spinalcord as far as the level of lower border of 2nd cacral vertebra. There are 12 pairs of cranial nerves attached to the brain and 31 pairs of spinal nerves attached to the spinal cord.

Activities

1. The teacher should give the students an assignment on the diagram of the animal cell in the classroom.

2. The teacher should take the students to the anatomy lab and organize a group discussion on human cell and tissue.

Check Your Progress

A. Fill in the Blanks

1. The cell is the basic unit of.....
2. The outer layer of cell membrane like a .....
3. ..... is also called power house of cell.
4. The study of human tissue is called .....
5. Brain is situated in a bony case called .....

B. Multiple Choice Questions

1. Study of cells is .....
   a. Mycology
   b. Osteology
   c. Cytology
   d. Arthrology

2. The cells metabolize food and oxygen they release .....
   a. CO_2 and other wastes
   b. O_2 and energy
   c. Nitrogen and wastes
   d. All the above

3. Which organelle is not found in human cell?
   a. Cytoplasm
   b. Centrosome
   c. Chloroplast
   d. Golgi bodies

4. Chromosomes are present in human cells.
   a. 23 Chromosomes
   b. 46 Chromosomes
   c. 21 Chromosomes
   d. 47 Chromosomes

5. Functions of the human cells.
   a. Protection
   b. Absorption
   c. Secretion and sensory reception
   d. All the above

6. Which type of division are four cells.
   a. Mitosis
   b. Meiosis
   c. Nucleus
   d. Protoplasm

7. All tissues except one are…
   a. Epithelial
   b. Connective
   c. Nucleus
   d. Sclerous

8. There are all types of connective tissue except one.
   a. Collagen fibres
   b. Elastic fibres
   c. Reticular fibres
   d. Nerve fibres

9. Skeletal muscles are….
   a. Voluntary muscle
   b. Involuntary muscle
   c. Both a &b
   d. None of the above

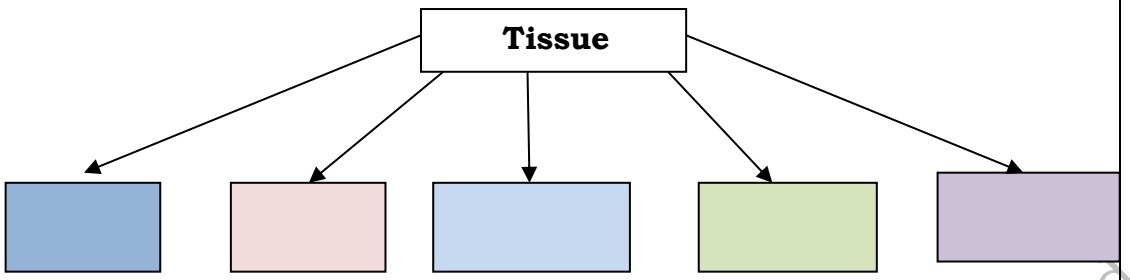
C. Match the Column A and B

Column A	Column B
1. Epithelium tissue	a. Act as store house of calcium
2. Connective tissue	b. Present on the heart
3. Sclerous tissue	c. Neurons and connective tissue
4. Smooth muscles	d. Reticular fibres
5. Nervous tissue	e. Involuntary muscle
6. Cardiac muscles	f. Stratified

D. Write the Short Answer Questions

1. Define the human cell and tissue.
2. Write the functions of animal cell.
3. Write a short note on following parts of animal cell.
4. Write the important functions of sclerous tissue.
5. Write short note on nervous tissue.

E. Write the Name of the Primary Tissues



Session 2: Human Anatomy and Physiology

Organ System

Digestive system deals with the reception of food and with the preparation of it for assimilation by the body. Alimentary canal consists of following parts: Mouth, Pharynx, Oesophagus Stomach, Small and Large Intestine.The entire alimentary canal is lined by mucous membrane. During the process of digestion food is broken down into simple substances which can be absorbed and used by the cells of the body tissues. These various changes in the food are brought about by the fermentation or by activity of the enzymes contained in different digestive fluids.

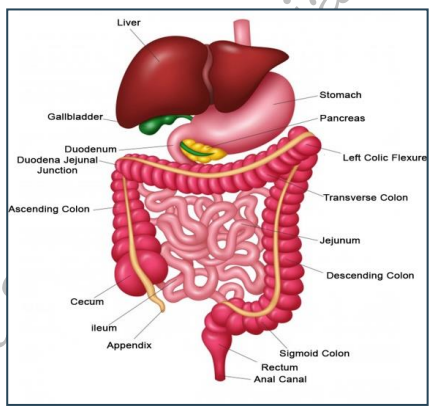


Fig. 1.6: Alimentary Canal and Associated Organs

The Mouth

The mouth is an oral cavity at the beginning of alimentary canal. It consists of two parts an outer vestibule and the inner cavity Of the mouth. Vestibule is the space between the gums and teeth inside and the lips and cheeks outside. Cavity of the mouth is bounded at the sides by maxillary bones, the teeth and lower jaw.

Mucous membrane of the mouth is very vascular. Beneath the mucous membrane lie tiny glands, which secrete mucous. Palate consists of two parts, anterior hard palate formed by bone and posterior soft palate formed by fibrous tissue and muscles covered by mucous membrane. Its movements are controlled by its own muscles.

Teeth are used to cut the food in the mouth. In the child there are 20 temporary or milk teeth, ten in each jaw, named from the mid line on each side, two incisors, one canine, two molars. In the adult permanent teeth are 32 - 16 in each jaw-named from the centre, two incisors, one canine, two premolars, three molars.
A tooth possesses (a) crown, projecting beyond the gum, (b) root, surrounded by the gum and (c) neck, at the junction between the two. Mastication is the process of biting and grinding of food between the upper and lower teeth.

Salivary glands

These are the glands which secrete the saliva. They are composed of groups of sac-like alveoli, like the bunches of grapes which constitute the lobules of the gland. Parotid glands are the largest salivary glands. They lie one on each side below and infront of the ear. Secretion of the parotid gland is carried by the parotid duct which opens on the oral surface of the cheek opposite the crown of upper 2nd molar tooth.
Submandibular glands are the next largest glands. They lie one on each side beneath the lower jaw-bone, and they are about the size of a walnut. Their secretion is poured into the mouth through submandibular or wharton's duct which opens into the floor of the mouth.

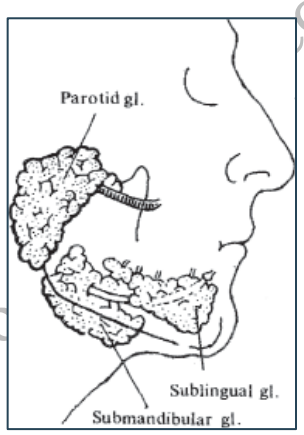


Fig. 1.7: Salivary Glands

Pharynx and Oesophagus

Pharynx is musculomembran passage lying behind the nose, mouth and larynx. It is about 5" long. Tonsils are collections of lymphoid tissue in the lateral walls of oropharynx. They are permeated with blood vessels, lymph vessels and contain masses of lymphocytes. Surface of the tonsil is covered by mucous membrane.
Oesophagus is a muscular tube connecting the pharynx to the stomach. It is 9 to 10" long. In the neck it lies behind the trachea and infront of vertebral column. It passes through the diaphragm which is a muscular partition between thoracic and abdominal cavities and enters the abdomen to open into the stomach. The remaining larger part of the alimentary canal is present in the abdomen.

Abdomen

The abdomen is the lower part of the trunk. Upper part of the trunk is the thorax. Abdominal cavity is bounded above by diaphragm and below by the pelvic brim. In front and at the sides it is bounded by abdominal muscles, iliac bones and the lower ribs, at the back by vertebral column and some muscles. Below the abdominal cavity is continuous with pelvic cavity. Contents of the abdomen: The main organs that occupy the abdominal cavity are the greater part of alimentary canal, liver, pancreas, spleen, kidneys.

Liver occupies upper and right part of the abdomen just beneath the diaphragm. It overlaps the stomach and first part of small intestine. Gall bladder lies on the under surface of the liver in a depression. Pancreas lies across the posterior abdominal wall behind the stomach. The spleen lies near the tail of pancreas. Kidneys and adrenals lie on each side of the vertebral column. From the kidneys ureters pass downwards through the abdomen. In addition abdomen also contains lymph glands and vessels, nerves, peritoneum and fat.

Stomach

Stomach is the most dilatable portion of alimentary canal. It lies in the epigastric region. Stomach consists of an upper part called fundus which normally contains air. Below the fundus is the main body and a lower horizontal part, the pyloric portion. Its communication with the oesophagus and its opening into intestine is the pyloric orifice.

Gastric glands are also present with distinct peptic cells producing pepsinogen and oxyntic cells producing HCI. The pepsinogen is converted to pepsin by the action of HCl. Partly digestion of food takes place in the stomach.

Small Intestine

Small intestine is a tube of about 18 feet long in life. In the cadaver it is about 20 feet due to the loss of tone of the muscle. It starts from the pyloric orifice of the stomach. The junction between the two being guarded by pyloric sphipcter. Small intestine terminates at the ileocolic junction where it joins the large intestine.

Small intestine is divided into three parts.
Duodenum is the first 10 inches of the small intestine. It forms a C-shaped curve which encircles the head of pancreas. Bile and pancreatic ducts open into the duodenum on a small projection called major duodenal papilla.

Large Intestine

Large intestine or colon is about 5 feet long. It is continuous with the small intestine. It receives the residual food from the ileum.
Rectum is the lowest 5 inches of the large intestine and ends in the anal canal. It ends in an aperture called the anus. Rectum and anal canals are empty except during the passage of faeces.

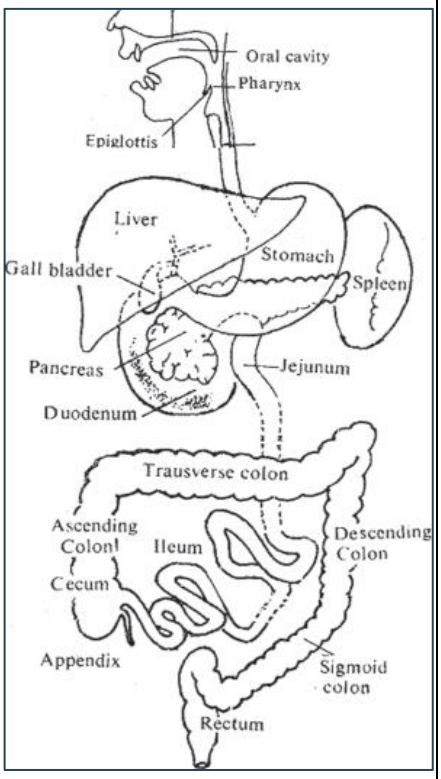


Fig.1.8: Diagram of Digestive System

Peritoneum

Peritoneum is the largest of the serous membranes in the body. It is double layered, one layer lining the walls of abdominal cavity is the parietal layer, the other layer covering the organs in the abdomen is called visceral layer. Both the layers are continuous with each other. Potential space between these two layers is called the paritoneal cavity or sac. In the male it is a closed sac. In the female the uterine tubes open into the peritoneal cavity.

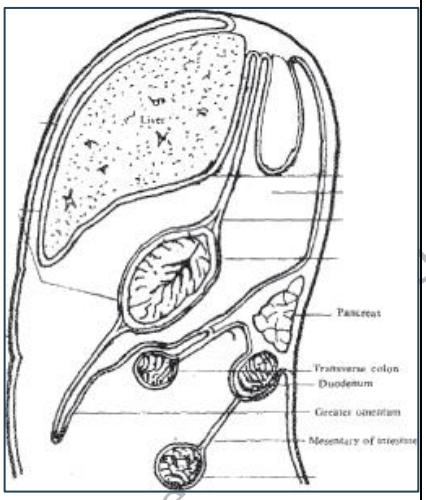


Fig. 1.9: Peritoneum

Liver Anatomy

The liver is the largest gland in the body, situated in the upper most part of the abdominal cavity on the right side below the diaphragm. It is largely protected by the ribs. It is about 3 lbs in weight. Liver consists of two main lobes, right and left. The upper surface is convex and lies beneath the diaphragm. A longitudinal fissure separates the right and left lobes. Large number of vessels within the liver are united together by connective tissue. Liver has a double blood supply by means of hepatic artery and portal vein. The hepatic artery supplies the oxygenated blood and Portal vein brings the blood rich in nutrients. Bile capillaries collect the bile from the liver cells and unite to from the bile duct containing large number of enzymes.

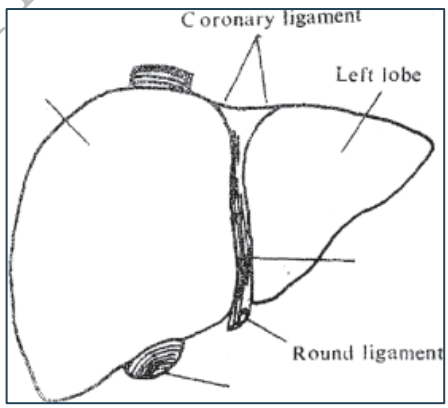


Fig. 1.10: The Liver from the Antirior

Gall-Bladder

It is a pear-shaped membranous bag, lying in a fosse on the under surface of the liver. It is about 3 to 4 inches in length and holds about 50 ml of bile. Gall bladder stores the bile and concentrates it. Gall bladder and bile duct are supplied by branches of hepatic artery.

Pancreas

Pancreas is a soft, lobulated, greyish pink gland, 5 to 6 inches long. It is situated across the posterior abdominal wall. It extends from the duodenum to the spleen. Pancreatic juice and exocrine secretion secreted by the pancreas passes through the pancreatic duct which joins with the bile duct to form the hepatopancreatic duct and amuplla which open into the duodenum .

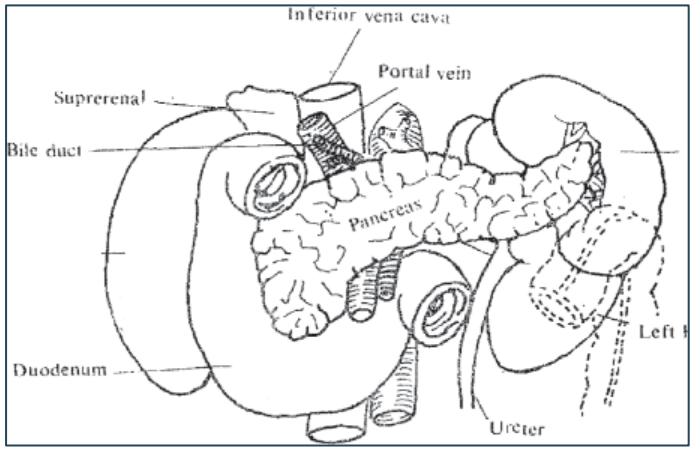


Fig. 1.11: Abdominal Viscera

Between the clusters of pancreatic alveoli there are irregular areas called Islets of Langerhans. The cells of the Islets secrete the insulin which directly pours into the adjacent enlarged blood capillaries. So this portion of the pancreas is the endocrine portion. This is mainly concerned with the secretion of insulin. Degeneration and dysfunction of Islet tissue leads to diabetes.

Spleen

Spleen lies in the left hypochondriac region of the abdomen, between stomach and the diaphragm. It is a blood forming organ, it consists of lymphocyts and red blood corpuscles. In the adult it mainly functions as storage organ of blood cells. It is not very essential for the life.

Heart

The heart is a hollow, muscular organ of a some what conical form. It lies in the thorax between the two lungs and pleurae, posterior to the body of the sternum and adjoining parts of the cartilages of the ribs. One third of the heart lies on the right of the median plane; 2/3 of the heart lies on the left of the median plane. (Fig. 1.12). Size: In the adult, heart is about 280 grammes.

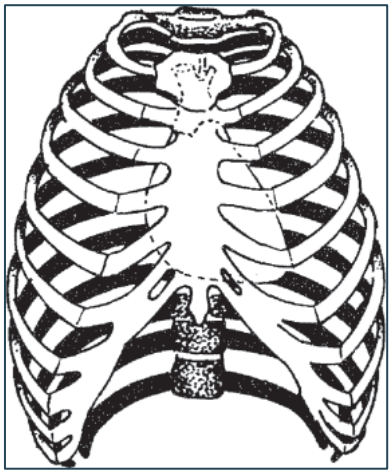


Fig. 1.12: The Position of the Heart in Relation to the Sternun, Ribs and Costal Cartilages

Base of the heart is directed backwards. Apex is directed downwards and forwards. In its interior it consists of 4 chambers. Two are receiving chambers called the atrium, other two are pumping chambers called ventricles. These chambers are separated by septa in the interior, the position of which is indicated on the surface of the heart grooves. These grooves contain the blood vessels supplying or draining the heart. Right portion of the heart that is right atrium and right ventricle contain the impure (Deoxygenated) blood. Left portion, that is, left atrium and ventricle contain the oxygenated blood. The right atrium receives the blood mainly from the

head, neck and upper limbs through a large vein called the superior vena cava. It also receives deoxygenated blood from the lower limbs, major part of the trunk and abdominal organs, through the inferior vena cava. Venous blood from the walls of the heart is brought to the right atrium by a vein called coronary sinus shown in Fig. 1.13).

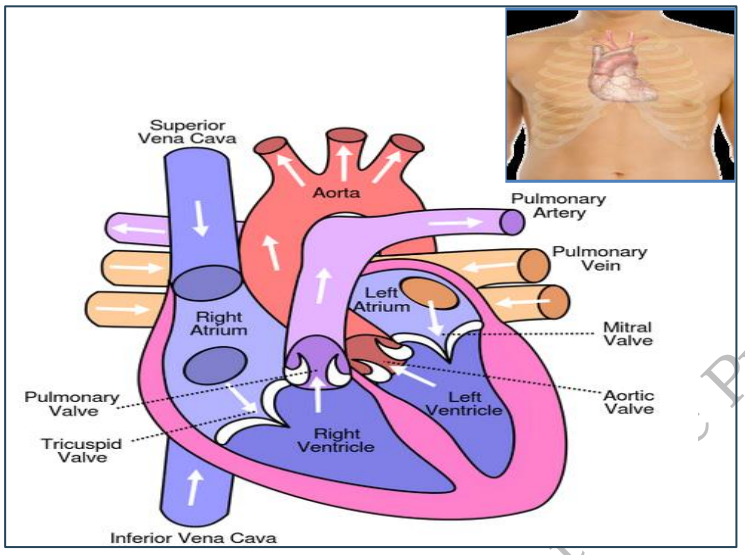


Fig. 1.13: The Interior of the Heart

The blood from the right atrium is pumped into the right ventricle through the right atrio ventricular opening. This communication between these two chambers is guarded by a valve which has three segments. So it is called tricuspid orifice. These segments or cusps of the valve prevent the back flow of blood from the right ventricle to the right atrium. From the right ventricle a large artery called pulmonary trunk arises but the junction between the two is called pulmonary orifice which is again guarded by pulmonary valve. This prevents the backflow of blood from the pulmonary trunk to the right ventricle. Pulmonary trunk divides into two pulmonary arteries, one for each lung.

Oxygenated blood from the lungs is returned to the left atrium by pulmonary veins. There are two such veins from each lung. Thus the 4 pulmonary veins open into the left atrium. Circulation of blood through the lungs constitutes the pulmonary circulation.

There are cusps which prevent the back flow of blood into left atrium. Left ventricle leads to the ascending aorta, the junction between the two is the aortic orifice guarded by aortic valve. Ascending aorta is the large artery which carries the blood from the heart to be distributed to various parts of the body, from where large veins bring the deoxygenated blood back to the right atrium. This constitutes the systemic circulation.

The blood vessels are the part of the systemic circulatory system that is transports blood in the whole body organs.

There are three major kinds of blood vessels:

- **Arteries** - which carry the oxygenated blood away from the heart to other organs
- **Veins** – this is carry deoxygenated blood from the capillaries to the heart

- **Capillaries** (Thinnest, smallest, located between Arteries and Veins) - which enable the exchange of certain chemicals, water and nutrients between the blood and the tissue cell.
- **Pulmonary artery carry** (CO_2) deoxygenated blood and pulmonary vein is carry (O_2) oxygenated blood. They are opposite artery and veins in circulatory system.

Lymphatic System

Lymphatic system consists of lymph capillaries which drain the tissue fluid. Lymph capillaries unite to form lymph vessels. These lymph vessels drain the lymph to the great veins, at the root of the neck through lymph nodes. lymph vessel in the body is called thoracic duct which opens into a large vein called left bronchiole into phalic vein at the root of the neck.

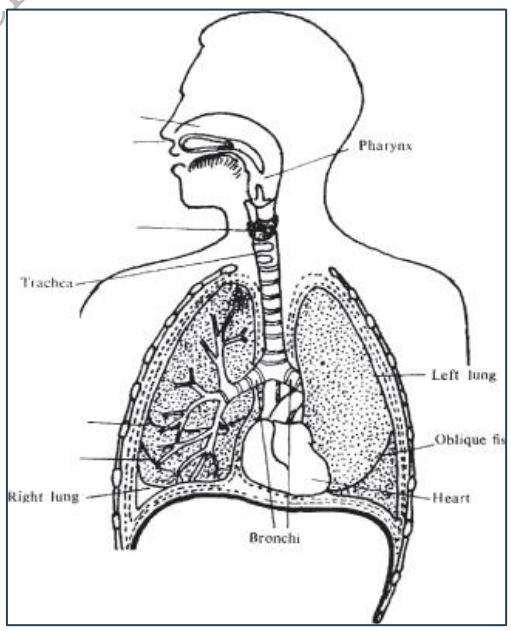
Respiratory System

Respiratory system includes the parts concerned with air passage and the lungs where gaseous exchange takes place shown in Fig.1.14.

Nasal passage and pharynx

Air entering the nose through the anterior nasal aperture passes through the nasal cavity and enters the nasopharynx. Hairs present near the apertures act as sieve to remove the dust and other foreign particles in the air. Uppermost part of nasal cavity is lined by olfactory epithelium supplied by olfactory nerves. This part perceives the odour or smell of the inspired air.

Air passes through the pharynx. Thus the lower part of the pharynx is the common passage for both food and air. From the lower part of the pharynx air enters the larynx through a slit like aperture called inlet of the larynx. This inlet is usually closed by epiglottis during the passage of food and thus prevents the food from entering into the larynx. It is an organ of production of voice and air passage. Passage of air through this interval and vibration of vocal folds produces the voice.



Lungs are the respiratory organs. They are situated one in each half of the thoracic cavity. They are conical in shape and each is enclosed in a serous sac called the pleura. Pleuras are serous sacs covering the lungs and lining the thoracic wall.

Fig. 1.14: Diagram of respiratory system

Right lung is broader and shorter where as left lung is longer and narrower. Inside the lungs consist of subdivisions of the bronchial tree, blood vessels, nerves and lymph vessels. Exchange of gases takes place between the air in the alveoli and blood in the capillary network. Pulmonary vessels supply the lungs for oxygenation. Nutrition to the lungs is provided by bronchial vessels.

Kidney and Associated Organs

Kidneys are bean shaped organs situated in the lumbar region of abdomen on each side of the vertebral column. They are concerned with the production of urine. On the medial border of the kidney there is a depression called hilus where blood vessels enter or leave the kidney and the ureter emerges. Arterial supply is derived from renal artery. Renal vein draining the kidney empties into the inferior vena cava. Near the upper pole of each kidney adrenal gland is closely related.

Interior of the kidney consists of two main parts- an outer cortex and an inner medulla. Functional unit of the kidney is called a nephron. Each nephron consists of a renal corpuscle and renal tubules. In the renal corpuscle there is a capillary bed called glomerulus within a double layered cup called Bowman's Capsule.

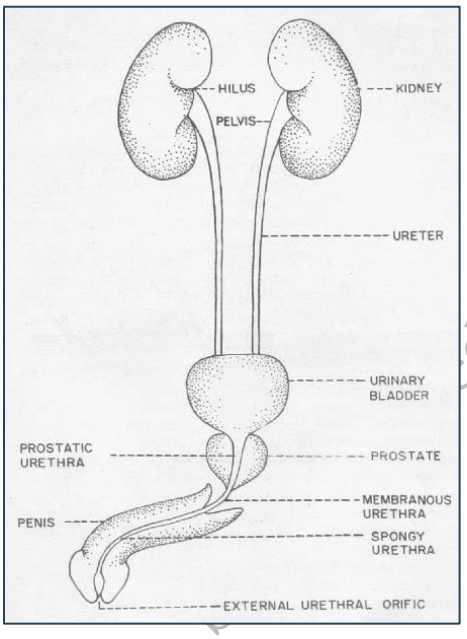


Fig. 1.15: Urinary system in male

Most of the fluid component of the blood of the glomerulus is filtered into the cavity of the Bowman's Capsule which in turn is continuous with the renal tubule. As the fluid is passes through the tubules reabsorption of water and certain salts takes place. Remaining small portion of the fluid component enters into the larger ducts called collecting ducts as the urine. From the collecting ducts urine passes to the ureter. Renal corpuscles and tubules are present in the cortex but a small segment of renal tubules is present in the medulla. Ureters are cylindrical thick walled tubes which carry the urine from the kidneys to the bladder. Ureters pass down in the abdomen and enter the urinary bladder. Urinary bladder is the reservoir for urine. In the empty condition it is tetrahedral in shape. Its average capacity is about 220cc but it can be distended upto 500cc under will shown in Fig. 1.15.

Reproductive Organs

The reproductive organs include the gonads which are concerned with the production of germ cells or gametes and associated organs concerned with passage and maintenance of these gametes. In females the organ which shelters the prenatal development of its offspring and the copulatory organs in both sexes are also included in this system.

Male reproductive organs

Testes: These are the male gonads concerned with the production of gametes called sperms. They are situated one in each half of the scrotum which is a pouch of skin between the two thighs. Tail of the epididymis continues as the vas deferens which is a thick walled muscular tube. On the posterior surface of the urinary bladder there is a conical body called seminal vesicle. Beginning of urethra is surrounded by a gland called prostate.

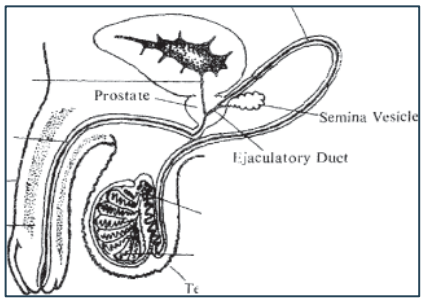


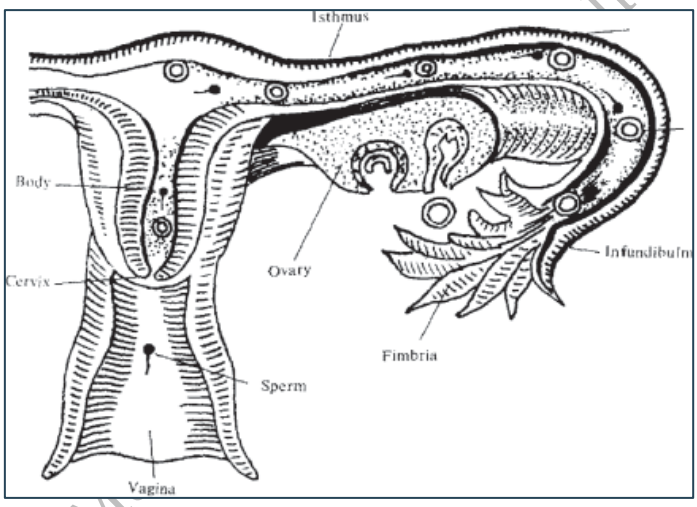
Fig. 1.16: Diagram of reproductive system in male

Secretions of prostate and seminal vesicle form the bulk of the semen. Penis acts as the male copulatory organ.

Female Reproductive Organs

Female reproductive system consists of ovaries, uterine tubes, uterus and vagina.

Ovaries: Ovaries are two in number situated one on each side wall of the pelvis. They are the female gonads producing the gametes called ova. In each menstrual cycle only one ovum matures from any one of the ovaries. Within the ovary the ova are situated in structures called ovarian follicles. When a ovum matures within the ovarian folicle the follicle enlarges to form Graafian follicle and ruptures. The ovum thus liberated from ovary comes into the peritoneal cavity. After the discharge of ovum the empty Graafian follicle develops into an endocrine organ called corpus luteum. Life span of corpus luteum depends only on fertilization of ovum.



Uterine tubes are cylindrical muscular tubes one on each side of uterus. Each tube is 4 inches in length. Its medial end opens into uterus and lateral end opens into the peritoneal cavity.

Fig. 1.17: Diagram of reproductive system in female

Uterus: It is a thick walled muscular organ situated in the pelvis infront of the rectum and behind the urinary bladder. It is about 3 inches in length, 2 inches in breadth and 1 inch in thickness. Its weight is about I-1/2 oz. It has an upper portion called fundus, middle portion called body and a lower portion called cervix. Mucous membrane of the uterus is called endometrium, superficial portions of the endometrium are shed off in each menstrual flow and repaired subsequently under the influence of female sex hormones (Fig.1.18). Vagina is the female copulatory organ. It is a muscular organ lined by stratified squamous epithelium.

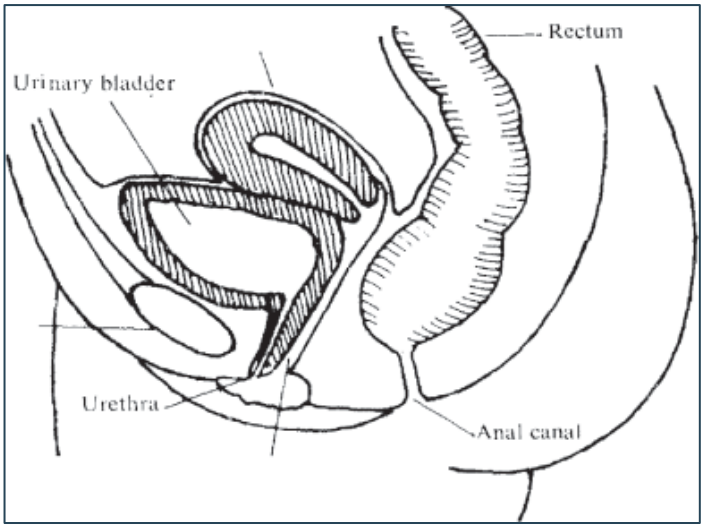


Fig. 1.18: Diagram to show the positions of rectum uterus and urinary

Integumentary system

The skin forms a covering envelope for the entire surface of the body.

Structure

There are 2 main layers for the skin. The outer layer is called Epidermis, the inner layer is called Dermis.

The epidermis is divided into several layers:
Stratum corneum - horny layer,
Stratum Lucidum - transparent layer,
Stratum granulosum - granular layer,
Stratum Malphigian - prickle celled layer.

Dark pigment melanin is present in the deep layers of epidermis which gives the colour to the skin. The epidermis contains no blood vessels, but lymph circulates.

The dermis consists of the following:

Connective tissue

- Sweat glands - produce sweat & regulate body temperature.
- Sebaceous glands - secrete Sebum which helps to keep skin supple and the hair from becoming dry and brittle.
- Nerve ending and receptors - are mainly sensory and responsible for general sensation.
- Hair follicles are present. The hair arises from these follicles. A tiny muscle Arector pili is attached to the hair follicle. Contraction of this miscle causes the hair to become straight.
- Adipose tissue acts as an insulator.
- Blood vessels.

Functions of the Skin

Protection: Skin protects the body from external injuries.

General sensation: It keeps us in contact with the external environment by informing us of touch, temperature, pain, pressure, vibration, sensation etc.

Temperature regulation: Normal body temperature is 37°C or 98.6°F. Temperature is regulated by increasing or decreasing the blood flow and sweat formation by the skin.

Absorption: It is capable of absorbing small amounts of oily substances.

Vitamin D production: The skin contains dehydrocholesterol. This substance is converted into Vitamin D by the action of sunlight.

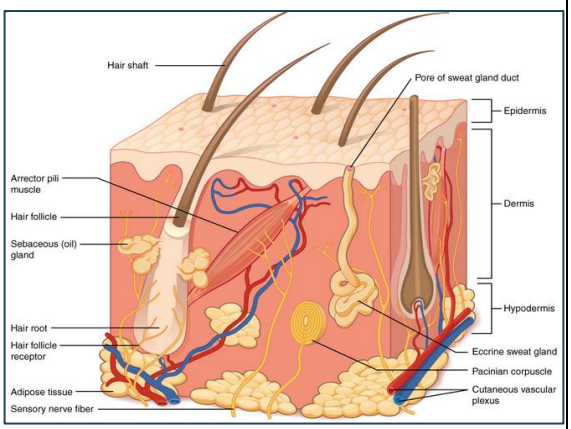


Fig.1.19: Structure of the Skin

Activities

Activity 1: Visit a Anatomy Lab and identify the following:

- Gross and microscopic slides of various body parts.
- Identify the types of saynovial joint and give their exampels.
- Identify the anterior, posterior, superior and inferior parts of liver.

Activity 2: Visit a Anatomy and Physiology science Lab and identify the following:

- Gross and microscopic slides of various body parts.
- Study the gross and microscopic slides of various body parts
- Identify the human body organs and their function.
- Identify the anterior, posterior, superior and inferior parts of kidney and liver.

Activity 3: Visit a nearby anatomy and physiology lab and observe various body tissues. Fill the table given below:

Types	Tissue obtained from which body parts
Epithelial	
Connective	
Muscular	
Nervous	

Check Your Progress

A. Fill in the Blanks

1. The functional relation of different parts to each other is known as..... .
2. Secretion of HCL in the.....
3. The small intestine starts from .....of the stomach.
4. Peritoneum is the largest of the .....in human body.
5. The lever is situated below the.....
6. Pancreatic juice and exocrine secretion secreted by the .....
7. The pulmonary vein is carry ..... from lungs.
8. ..... is prevent the foods from entering in to the lungs.
9. Kidney is bean shaped organs situated .....of abdomen.

B. Multiple Choice Questions

1. The following term are used to study the eye.
   a. Neurology
   b. Gynecology
   c. Ophthalmology
   d. Endocrinology

2. Choose the human teeth correct sequence
   a. Incisors- canine- premolars- molars
   b. Canine- incisors - premolars- molars
   c. Incisors- canine- molars- premolar
   d. Molars- Incisors- canine- premolars

3. Choose the correct meaning of the superior
   a. Nearer to the skin and surface
   b. Nearer to the head, also called skull
   c. Nearer to the foot
   d. Nearby to the median line.

4. The length of the small intestine is
   a. 16 feet
   b. 20 feet
   c. 18 feet
   d. 24 feet

5. The largest gland in human body
   a. spleen
   b. Liver
   c. Gall bladder
   d. Salivary gland

6. Pancreas is secreted
   a. Pancreatic juice
   b. pepsin
   c. HCL
   d. bile

7. The heart is a hollow muscular organ that is the weight of the heart in an adult
   a. 360 grams
   b. 250 grams
   c. 280 grams
   d. None of the above

8. The lungs are situated in human body
   a. Thoracic cavity
   b. Pelvic cavity
   c. Peritoneal cavity
   d. Nasal cavity

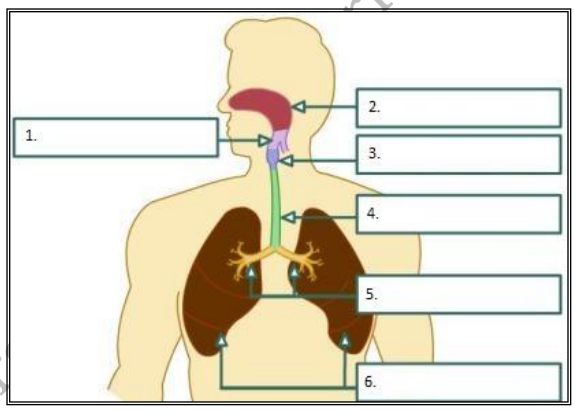
9. The functional unit of kidney is called
   a. Capillary
   b. Nephron
   c. Bowman's capsule
   d. Glomerulus

10. The dark pigment melanin is present in the deep layers of skin
    a. Hypodermis
    b. Dermis
    c. Epidermis
    d. All of the above

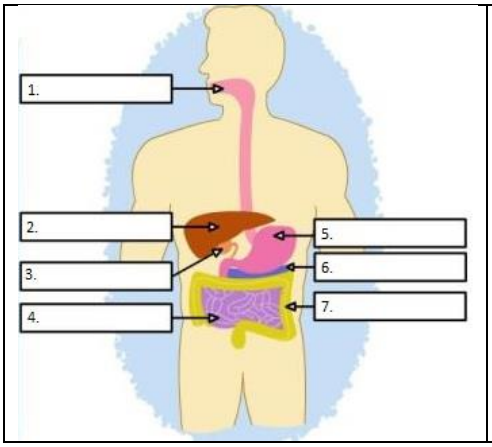
C. Match the following

Colum A	Colum B
1. Oral cavity	a. Male and female genital organs
2. Larynx	b. Sebaceous gland
3. Trachea	c. kidney, urinary bladder
4. Large intestine	d. Heart, vessels, blood supply
5. Pancreas	e. Salivary glands
6. Spleen	f. Vocal cord
7. Cardiovascular	g. Wind pipe
8. Urinary	h. Water absorption
9. Integumatery	i. Grayish pink gland
10. Reproductive system	j. Lymphocytes and red blood corpuscles

D. Fill in the Box following appropriate Words
(Pharynx, Larynx, Bronchus, Trachea, Nasal cavity, Lungs)



E. Write the Name of Human body Organs



a. Mouth
b. Stomach
c. Gall Bladder
d. Pancreas
e. Liver
f. Large Intestine
g. Small Intestine

F. Shorts Answer Questions

1. Define digestive system.
2. Write the anatomy of liver.
3. Write the functions of heart.
4. Write the exchange of gases in lungs.
5. Explain the filtration of urine.
6. Write short note on male and female reproductive system.

G. Draw the well Diagrams of the following Organs and Label them

a. Heart
b. Kidney
c. Liver
d. Skin
e. Digestive system
f. Urinary system

1. What is one of the primary application of drones in agriculture?
   (a) Virtual Reality Gaming
   (b) Crop Monitoring
   (c) Deep-Sea Exploration
   (d) Fashion Design

2. Which agricultural task can drones efficiently assist with?
   (a) Mixing Concrete
   (b) Playing Musical Instruments
   (c) To identify plant stress
   (d) Making Coffee

3. How do drones contribute to pest management in agriculture?
   (a) By attracting more pests to the area
   (b) By providing a comfortable habitat for pests
   (c) By efficiently spraying pesticides in targeted areas
   (d) By creating obstacles for crop growth

4. What do drones rely on to provide accurate location and position?
   (a) Infrared sensors
   (b) GPS technology
   (c) Battery power
   (d) Camera systems

5. Which technology helps drones to avoid obstacles in their flight path?
   (a) Sensor technology
   (b) Propulsion systems
   (c) Communication signals
   (d) Lighting systems

6. Hyperspectral sensors in drones are primarily used for:
   (a) Improving battery life
   (b) Enhancing video quality
   (c) Detailed spectral analysis
   (d) Speed control

Module 2	Health care Delivery System

Introduction

Healthcare is one of the major service sectors in India. Healthcare services include all the health and wellness related support provided to a person or population by various agencies and resources. The purpose of healthcare services is to effectively meet the total health needs of community in which hospitals play a key role in maintaining and restoring the health of person. "Healthcare system" involves management of health sector and its organizational structure to provide healthcare services. The very essential part of any healthcare system is the good delivery system. Healthcare delivery system is the system of inter-related services provided to citizens or populations to maintain or restore or prevent health of an individual or population. Healthcare services delivered by medical and paramedical professionals working in various under public and private organization which offer different level of medical care ranging from primary to quaternary level of healthcare facilities.

Hospital provides comprehensive health facility under one roof with its well-equipped technology and team of medical professional. The performance of all type of healthcare services is dependent on the cooperation and coordination of various components/departments within the system to provide clinical, non-clinical and support services to person. Hospital has many departments ranging from administrative, in-patient department, out-patient department, laboratories, house- keeping and other kitchen for complete care of the patient. Providing good nutrition for the faster recovery is one of the primary targets of Healthcare delivery services. Dietetic aide works in dietary department of the hospital. Department of dietetics has the responsibility of ensuring nutritional support and quality food service to the wide range patient according to their physiological conditions.

Fig. 2.1: Healthcare services

The student will be empowered with knowledge of healthcare delivery system in our country and role of Dietetic Aide in Healthcare sector after learning the sessions of this unit.

Learning Outcomes

After completing this module, you will be able to:

- Describe the Health Care Delivery Systems
- Identify the components and activities of Hospital
- Describe the Role and functions of Clinics
- Describe the functions of rehabilitation centre
- Demonstrate the knowledge of hospice care

Module Structure

Session 1: Levels of Healthcare Delivery System

Session 2: Hospital

Session 3: Describe Rehabilitation Care Facilities

Session 4: Describe Long Term Care Facilities

Session 5: Hospice Care

Session 1: Levels of Healthcare Delivery System

According to World Health Organization (WHO)"A health system consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health. Healthcare services include all the health and wellness related support provided to a person or population by various agencies and resources. This includes efforts to influence determinants of health through inter-sectorial action covering all health activities, programmes, institutions by health professional and other engaged personnel providing medical care to a population. The purpose of healthcare services is to effectively meet the total health needs of community in which hospitals play a key role in maintaining and restoring the health of person. A health system is therefore more than the pyramid of publicly owned facilities that deliver personal health services. “Healthcare system” involves management of health sector and its organizational structure to provide Healthcare services.

The very essential part of any healthcare system is the good delivery system. Healthcare service delivery has a principal role and act as basic input to community health status. Healthcare delivery system is the system of inter-related services provided to citizens or populations to maintain or restore or prevent health of an individual or population. Healthcare services delivered by medical and paramedical professionals working in various under public and private

organization which offer different level of medical care ranging from primary to quaternary level of Healthcare facilities.

In India, provision of healthcare facility is a state subject. The healthcare system/models in India can be classified as public and private sector. The government and the private sector are working to make healthcare accessible in all areas of India; both rural and urban. However, Private sector owns majority of healthcare services in urban areas of India.

1. Public Healthcare Sector: This is run by government and its undertakings institutions across the country. Public Healthcare services are free or subsidize for the citizens especially belonging to below poverty line and low socio-economic status population. Healthcare services provided by Public institutions owned by central government, state government and local bodies. The central government is chiefly liable for monitoring and developing national standards and regulations. Centre government sponsors numerous schemes for the effective implementation and links the states with funding agencies. Union ministry of Health and family Welfare handle healthcare system at national level and it has department in every state which is responsible for the proper functioning of Healthcare services in state covering all rural and urban area for its citizen. Public health system is assembled structure of all government functioning that works to prevent disease and promote health and wellness among its people.

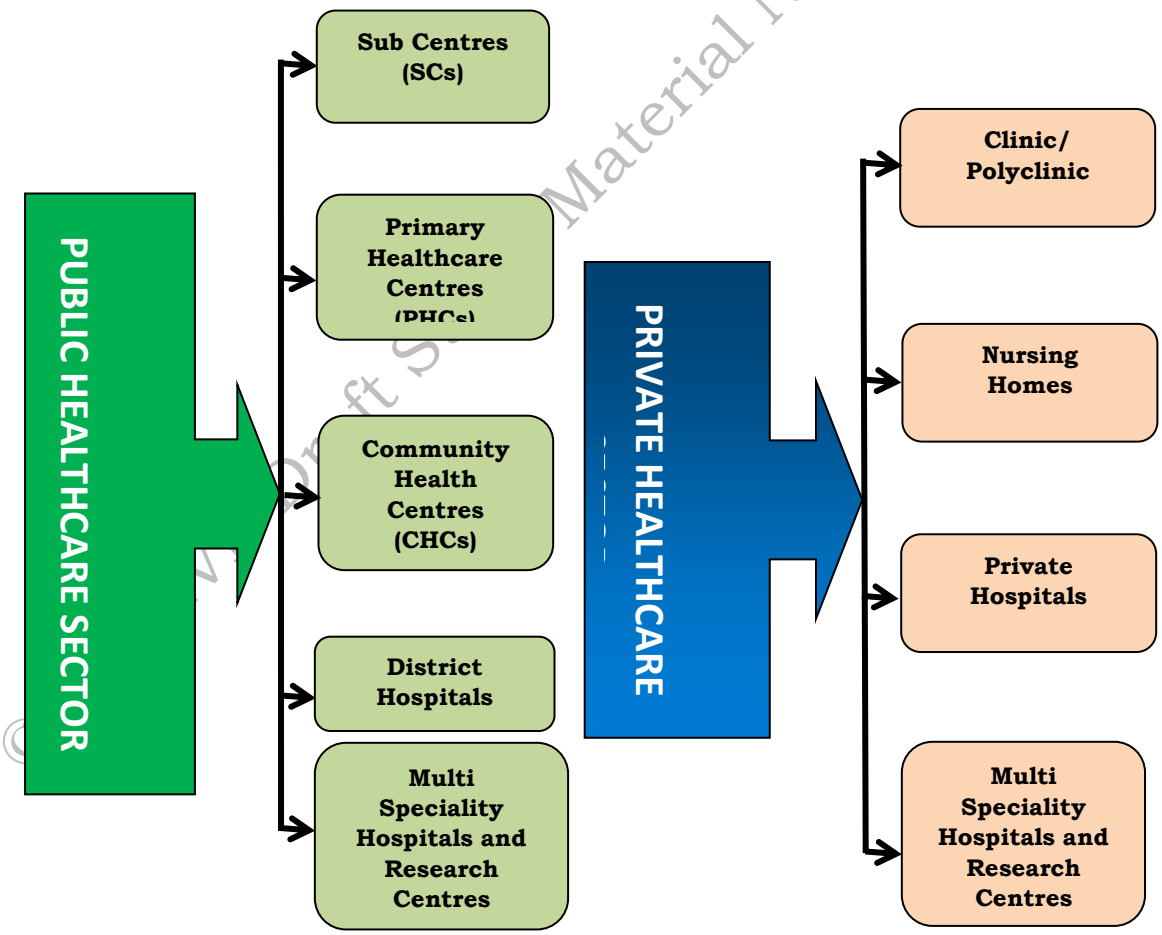


Fig. 2.2: Healthcare delivery system

Public Healthcare system has following structure to deliver health facility mainly in rural areas:-

Sub Centres (SCs) - Sub centers are the first line of contact between community person and primary Healthcare. These centers offer basic facility for mother and child care, safe institutional delivery of child, vaccination, family welfare services, primary medical facility and prevention or control of diseases at grass root level. The function of sub-centers is to provide preventive and curative care to community. Each sub-center has one auxiliary nurse Midwife and one health worker. One sub-center has been established for every 5000 population in general areas and one for every 3000 population in hilly areas.

Primary Healthcare Centres (PHCs) - Primary healthcare centers act as first interaction center between community and medical officer. Primary healthcare center has its importance in delivering Healthcare services as health promotive and welfare services in rural set-up including family planning, medical care, disease preventive services, health education, referral services, training and laboratory services. Primary healthcare centers are established and maintained under Minimum Need Programme (MNP) by the state government. Primary Healthcare centers manned with one medical officer and fourteen allied Healthcare staff including mid-wife, health worker, block extension educator, laboratory technician and other supportive staff. Provision of two additional contractual staff nurse has been made under National Rural Health Mission (NRHM).One primary Healthcare center cover 30,000 population in general areas and 20,000 populations in hilly or interior areas.

Community Health Centers (CHCs) - *One* Community Health Center is established over four Primary Healthcare centers for every 80,000 to 120,000 population as referral units and maintained by state government. Community Health Center has four medical officers with expertise in surgery, physician, gynecology and pediatrics with allied healthcare staff. A Community Health Center has capacity of 30 beds, X- ray machine, laboratory and operation theatre. Community Health Center provides the services of routine and emergency care, institutional delivery, diagnostic, blood bank, maternal and new born care and surgeries as well.

District Hospitals - District hospitals serve as secondary referral level for a district. Every district has a district hospital thus it caters urban as well as its rural population. Depending upon the population of the district, the bed capacity of a district hospital differs ranging from 75 to 500 beds. District hospitals are fundamental unit to implement health programmes and policies and it attached with all sub-centers, primary centers, and community centers. It offers comprehensive healthcare service to the population such as curative, preventive and promotive health facilities. To fulfill the objectives, district hospitals have equipped with all technical and administrative and medical staff with all diagnostic facilities.

Teaching cum Research Centres - These type of hospitals are teaching and training based. Their job profile is to advance knowledge, conduct the research activities and training the medicos. Example are like, All-India Medical Institute, New Delhi, Postgraduate Medical Education and Research Institute, Chandigarh, Postgraduate Medical Education and Research Institute,lucknow etc.

Healthcare workers under Public Healthcare sector:- Auxiliary Nurse Midwife (multipurpose health workers, Accredited Social Health Activist(ASHA)and anganwadi workers. They work in village level and are grass root health workers.

- *Auxiliary Nurse Midwife (ANM)* - Auxiliary Nurse Midwife is a village-level female health worker based in sub-centres. ANM act as first contact person between the community person and the health services at sub-centers. Auxiliary Nurse Midwife are given 18 months training to manage community health such as immunization, health education in village level by regular villages visits. Auxiliary Nurse Midwife is now known as Multi-purpose workers with new responsibilities of supporting ASHA and aaganwadi workers.
- *Accredited Social Health Activist (ASHA)* - They are village level community health workers who received 23 days of training. Accredited Social Health Activist (ASHA) works to encourage for family welfare, institutional delivery, immunization and preventive care. Accredited Social Health Activist (ASHA) provides basic medical care and supplies such as first-aid, ORS, contraceptive pills, iron-folic acid tablets. They refer rural people to primary healthcare and community healthcare centres and are assisted by ANM.
- *Anganwadi Worker (AWW)* - Anganwadi worker employed by women and child development department works under Integrated child development schemes(IDCS). Anganwadi workers are chiefly engaged in maternal and child care such provision of supplementary food to young children, pregnant and lactating mothers. Adolescent girls receive health education iron and folic acid tablets. Anganwadi worker ensures immunization of children, good nutritional status of mother and children and institutional delivery. Early childhood care and education are also provided to young children in anganwadis.

2. Private Healthcare Sector: Any Healthcare organization or enterprises that are not owned or directly controlled by government are private healthcare providers. The healthcare organization can be profit earning or non-profit organization (NGO).Private Healthcare are mainly concentrated in urban areas and has important play in Healthcare delivery system in India. From the last few decades there has been extensive growth in private health sector in terms of facilities, quality and number of medical or allied Healthcare professionals. Private Healthcare sector includes clinics, specialty hospitals, nursing homes or medical hospital and research centers owned by any individual, private administration or agencies. The facility provided by private Healthcare organizations are chargeable and the fee varies from hospital to hospital.

Levels of Medical Care

It is customary to describe healthcare service at 4 levels, viz., primary, secondary, tertiary and quaternary care levels. These levels represent different types of care involving varying degree of specialization.

a) **Primary healthcare level**: primary healthcare level are the basic unit or back bone of healthcare delivery system and include services for day to day medical care needs of the community thus it is regularly used by person. This essential care is offered by the Primary Health Centres (PHCs) and their sub-centres which involves multipurpose health workers, village health guides and trained Dais. Primary care givers are doctors, nurses or physician assistants who provide whole care ranging from promotion of health, prevention of diseases, treatment and rehabilitation. Thus primary Healthcare address broader determinant of health as mental, social and physical health.

b) Secondary healthcare level: This is next higher level of care and served by subject specific experts to deal more complex problems. These includes specialist like cardiologist, nephrologists, endocrinologist. This type of Healthcare is mainly offered in district or multispecialty hospitals.

c) Tertiary healthcare level: The tertiary level is a further specialized level than secondary care level and serves specific facilities and attention of highly specialized health professionals. This facility is supplied by the regional or central level institutions. For example, to conduct coronary artery bypass surgery, distinguish equipment and expertise is needed. Tertiary Healthcare provider institute is generally well equipped with modern medical technology for intensive Healthcare and in emergency condition as well.

d) Quaternary Care: Quaternary care is an expansion of tertiary care and is more precise and highly unusual; therefore only particular every medical center offer quaternary care. It includes experimental medicine and procedures.

DID YOU KNOW?

- Public Healthcare Sector,
- Delivery System of Public Healthcare like Sub Centres, Public Health Centres, Community Health Centres, Diagnostic Hospitals and Teaching cum Research Centres,
- Various types of Healthcare Workers based on level of delivery system like Auxillary Nurse, Midwifery (ANM), ASHA Workers and Anganwadi workers, and
- Various levels of Healthcare services such as primary, secondary and tertiary and Quanternary healthcare.

Activities

Activity Teacher will take students visit sub centers, primary Healthcare and community healthcare centers near your locality observe the facilities available there and healthcare workers. Collect pictures.

Activity 1 : Discuss: Even though most of the Indian population still lives in villages/rural areas but there are more hospitals in urban areas why? Give reasons.

Activity 2: Visit sub-centers, primary Healthcare and community Healthcare centers near your locality observe the facilities available there and healthcare workers. Collect pictures.

Check Your Progress

A. Fill in the Blanks

1. The Healthcare services should be promotive, _____and rehabilitative.
2. In India, Healthcare services are generally provided by ..... government.
3. A highly specialized Healthcare comes under ..... level.
4. One sub – center is established for every .....in general area.

B. Write the short answer questions

1. Define the following:
   a. write Healthcare delivery system.
   b. write levels of Healthcare system

Session 2: Hospital

According to World Health Organization (WHO), a hospital is defined as "an integral part of social and medical organization, the function of which is to provide complete healthcare, both preventive and curative for the population". The outpatient services of the hospital diagnose and treat the disease without admitting the patients. The hospital is also a centre for the training of health workers and bio-medical research. The main objectives of a hospital are to save lives, restore the health of person and maintain quality of life. Hospital also provides training to healthcare professionals and conduct bio-medical or bio-social research.

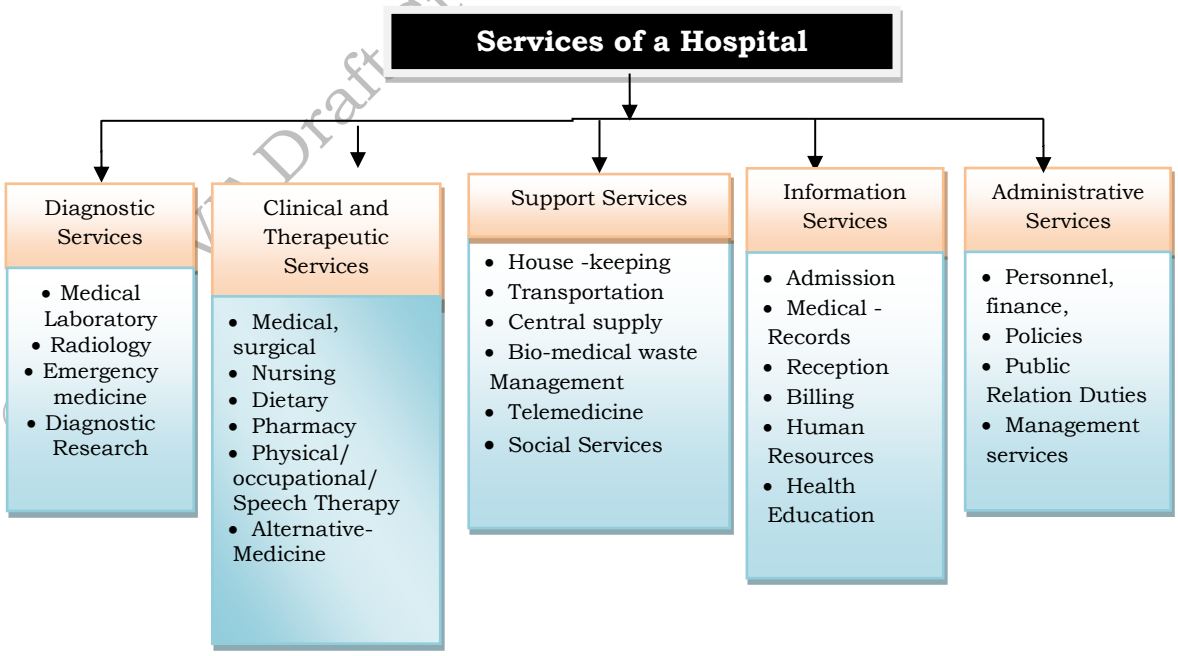


Fig. 2.3: Components of hospital

Hospital can be categorized on the of ownership, which can be private type, semi-government or government hospital type. Private hospitals are owned by voluntary agencies and have no financial interference of government. Semi-government hospital are collectively managed by private organization and by the government for internal matters. On the basis of range of specialties available, hospital can be of general type, single specialty or multi-specialty hospital. Single specialty hospital can be of any specialization ranging from children hospital, cancer hospitals, kidney or gastro-intestinal specialty. Multi-specialty hospital has all specialization under one institution providing tertiary level of Healthcare facilities. Multi-specialty hospital varies in bed capacity and other facilities available like teaching, training, research activities. For instance, All India Institute of Medical Sciences (AIIMS) of India and Post graduate Medical Education and Research Institute, Chandigarh serving as teaching cum research hospital under public Healthcare system.

A hospital is an important social institution which gives advantage to both population and society. In hospital a large number medical and allied healthcare professional along with technical staff apply their skill and expertise to work for healthcare of the person. Hospital organization offer proper care to sick and injured person in emergency without discrimination. Some private organizations are also working for the welfare of the weaker section of society as free and subsidized healthcare facilities.

Nowadays, there is rapid growth in the number of hospitals offering wide range of specialized healthcare facilities and quality service to gain recognition as good hospital and to facilitate patient satisfaction. The modern hospital structure and organization is a complex type which provides all facilities for 24 hours a day for whole year. These hospital works as industry and equipped with huge workforce, technologies, medical experts, allied health professional for 24 hours with effective coordination of its entire network like staff and service providers. Some hospitals have the facility of medical education and research bodies as a part of their services.

Services of a Hospital: Hospital is a complex organization which coordinates between its all components to deliver complete care to patient in various medical conditions. These services range from clinical, non-clinical, administrative, and information services.

a) **Diagnostic Services:** Most of the hospitals have their own diagnostic facilities. Diagnosis is the process of determining cause of disease on the basis of blood testing, Radiation report of a person is suffering from. Diagnostic services are important for investigating the disease or illness in order to provide best therapy required as quickly. The reasons required for diagnosis is determined by history and physical examination of the person who is looking for Healthcare. Sometimes more than one diagnostic procedure is required to examine disorders in patient's body. Diagnosis can be done on biological samples of body such as blood, urine, sputum, stool, cerebro-spinal fluid (CSF) and other body fluids. Diagnostic services are the basic requirement in any Healthcare setting and it includes facilities of Pathology and laboratory, radiology and nuclear medicine to investigate fluctuation in bodily parameters. Health professional engaged in diagnostic services may be a laboratory technician, radiologist, phlebotomist, microbiologist, virologist, system analyst

etc. Timely diagnosis is very essential to initial the treatment of diagnosed illness at the earliest possible.

b) **Clinical and Therapeutic Services:** These clinical services include medical and surgical facilities offered by medical health experts and surgeons to treat any type of mental or physical abnormalities and to handle causality or medical emergencies. The therapeutic services target to enhance health of person or population through direct or indirect intervention such as counselling, health awareness, care, treatment and various therapies for in-patients or out-patients within the hospitals. It involves Healthcare practitioners, occupational therapist, physiotherapist, recreational therapist, dieticians, counsellor, healer, psychologist, social workers etc.

c) **Support services:** Support services works to keep up every other service of hospitals and includes material supply, house-keeping services look after maintenance, cleanliness of hospital building and laundry. Bio-medical waste management ensures the safe disposal of hospital waste while bio-medical technology is responsible for repair and maintenance of all equipments.

d) **Information services:** All people seek information to reach right medical expert in the hospital. Here information services works for both; for medical care seeker and medical service providers. At the time of admission, hospital needs information of the patients, all general data and medical history. Information services also deals admission procedures, billings, medical record keeping, clearance of insurance claims and maintenance. Benefits of employee as well as patients also taken care under information services.

e) **Administrative Services:** These include the persons who owns or run the hospital. They frame the policies and procedures of the hospital. They handle and supervise the functioning of hospitals, budget management, public relation responsibilities. Board of administration may comprise chairman, director, president, vice president, executives and departmental heads.

Functions of Hospital

The purpose of healthcare services is to effectively meet the total health needs of community. The hospitals play a key role in maintaining and restoring the health of the community. The main functions of the hospitals can be listed as follows:

Restorative Functions – Restorative care includes diagnostic, curative, rehabilitative and Emergency services activity. The aim of restorative care is to recover the patient from severe or acute illness. A team of medical and allied health professional works in comprehensive way to restore quality of life and brig the patient to normal life by all physical and mental mean. This comprises all diagnostic, medical or clinical and therapeutic services.

Preventive Functions – prevention of illness and communicable diseases, immunization, supervision of pregnancy, normal growth and development of children, health education services, health screening, check-ups included in preventive functions. Preventive function target to assist population or person to remain healthy and aware of early sign of any disease or health emergency so as to manage the illness at early stage with less complication.

Training and Research in health and medicine- training of medical, paramedical and other support staff to enhance the skills or knowledge of medical and health professionals. Research carried out in hospitals in the area of Physical, psychological, Clinical medicine, Hospital practices and administration and social aspects of health and diseases for better services and exploring newer medical technologies and knowledge of medical care.

Various Departments of Hospitals

A hospital is an open system with various components that are integrated by common purpose of achieving a set of objectives. The performance of all these services is dependent on the cooperation and coordination of various components/departments within the system. It includes clinical, supportive and administrative departments. Departments like medicine, diagnostic, pathology, nursing and dietetics work with team of specialist in hospital as support service. Every department comprised of medical experts in their respective medical field and well-trained staff.

a) In-Patient Departments (IPD)

Every multi specialty hospitals facility of specialized medical team of every multi specialty hospital take care of every types of diseases and body parts like a cardiologist looks after heart diseases and nephrologists are expert of urinary system. Hospital usually have departments for every branch or department of medical sciences viz. as orthopaedic(bones), gynaecologist (female reproductive health), paediatrics (child specialist), neurologist (neurons specialist), ophthalmologist (eye specialist), dermatologist(Skin expert), gastroenterologist (gastro-intestinal), dentist, physiotherapist, Ear nose throat(ENT), psychiatry (mental health),Oncology (Cancer), emergency (causality) and dietetics departments.

b) Out Patient Department (OPD)

The outpatient department is important component of a hospital organization in providing the medical care without admitting the person. Outpatient department managed by medical and health professionals of a hospital who runs inpatient department of their respective specialization. All diagnostic procedure and medical and therapeutic services offered to the out-patients. Usually all hospitals have out-patient departments in their ground floor in close proximity to parking and diagnostic facilities. Arrangement of transport of patient by wheelchairs or stretchers is available in outpatient department.

The advantage of OPD is that much of the investigative and treatment work can be done there without admitting the patient, thus helping the patient in bring down the cost of treatment. OPD is located at the entrance area of the hospital.

The scope of OPD includes:-

- Consultation and investigation
- Preventive and promotive healthcare
- Rehabilitation services
- Health education
- Counseling

Fig. 2.4: Department of hospital

c) Laboratories

The following laboratories are usually found in a hospital:-

Bacteriology laboratory: It conducts tests related to bacteria and the toxins produced by them.

Clinical Biochemistry laboratory: It is involved in conducting tests and research in biochemical basis of diseases and clinical trials of new drugs.

Haematology laboratory: It is responsible for testing blood related investigations, haemoglobin determinations, coagulation time studies, red and white cell counts and special blood pathology studies for anaemia, leukaemia, etc.

Parasitology laboratory: It involves study of the presence of parasites and the cyst and ovas of the parasites that are found in the faeces.

Fig. 2.5: Laboratory in hospital
Courtesy: https://goo.gl/AJu9w5

Blood Bank: It has the role of collecting the blood and screening them for all blood related disease, and then put them into use for benefit of patient in the hospital through transfusions.

Laboratory services must be available day and night and the laboratories must be located on the ground floor. Laboratory services should be easily accessible to the outpatients.

d) Kitchen/ Dietary Department

The dietary department has the responsibility for ensuring quality food service to the client and according to their needs and doctor's prescription. This department is responsible for teaching the client with regard to proper diet after their discharge from the hospital. One dietary staff member is required for about 15 to 20 patients. Dietician, food storekeeper, cook, cook helpers and dish washer are engaged in this Department. One dietician can look after up to 200 beds. One cook, one cook helper, one bearer and one dishwasher are sufficient to prepare and serve meals for 20 patients and staff members. The food service department functions round the year.

Fig. 2.6: Kitchen/dietary department in hospital

Courtesy: https://goo.gl/KrDkEX

e) Cleaning and Laundry Department

The cleaning and laundry department takes care of the entire linen of the hospital. It has the following functions:

1. Washing the dirty linen
2. Repairing the torn linen
3. Replacing the condemned linen

Fig. 2.7: Cleaning Department in hospital

Courtesy: https://goo.gl/8eEhrV

One laundry operator can wash linen of 25 to 30 beds. One Laundry orderly can assist in washing the linen of 50 – 60 beds. The appointment of laundry supervisor, mechanic and clerk and the number employed depend upon the size of the hospital. One supervisor, one laundry mechanic and one laundry clerk are

required in each shift. One washerman can take care of 150 to 200 kg linen per day. Each operation in Operation Theatre produces 7 to 8 kg of soiled linen. Each delivery in labour room produces 7 to 8 kg of soiled linen. Each ward patient produces about 5 to 6 kg of bed linen.

f) Housekeeping

The housekeeping department has the main function of keeping the hospital clean. Housekeeping in-charge should know the simple facts about bacteriology. Sanitation in-charge should also be able to train his employees in cleaning techniques that prevent the spread of disease, since all cleaning is meant to remove organic matter in which bacteria is harboured. A sanitary attendant should be allocated a work-area of 1200 to 1500 square feet, keeping in view the policies of the hospital, the degree of cleanliness required, and the electrical cleaning equipment used such as scrubbing machine, vaccum cleaner, etc. For a nursing unit one sanitary attendant over 10 beds is recommended on the basis of round the clock service. In Intensive Care Unit (ICU) and Critical Care Unit (CCU) of higher degree of cleanliness is required, therefore more sanitary attendants are provided there. One supervisor to supervise 10 sanitary attendants is generally kept. For a 300 bed hospital, there should be 01 sanitation incharge, 04 supervisors and 40 sanitary attended (30 sanitary attendants for the daily requirement and 10 sanitary attendants as leave reserve).

Fig.2.8: Housekeeping in hospital
Courtesy: https://goo.gl/DZ7CXt

g) Administration

The administration of the entire hospital cannot be vested on the administrator alone. It is the collective responsibility of the medical professionals and supporting staff. The administrative staff, depending upon the size of the hospital, comprises the administrator, the assistant administrator, the business manager and the departmental heads.

Purchasing Department: The purchasing department has the responsibility for purchasing all supplies and equipment for the hospital.

Finance and Accounts Department: The Finance and Accounts Department has the responsibility for collecting the money, paying for the supplies and equipment, handling all records pertaining to hospital finance, keeping records of assets and liabilities and assist in budget preparation. The business manager is responsible for the functions of the department and the accountants help the business manager.

DID YOU KNOW?

- Services of a Hospital like Diagnostic Services, Clinical and Therapeutic Services, Support services, Information services, Administrative Services.
- Functions of Hospital- Restorative Functions, Preventive Functions, Training and Research in health and medicine.
- **Various Departments of Hospitals -** In-Patient Departments (IPD), Out Patient Department (OPD), Laboratories, Kitchen/ Dietary Department, Cleaning and Laundry Department, Housekeeping, Administration.

Activities

Activity 1: The teacher will take the student to the nearest hospital and collect all the picture of different various departments in the hospital.

Check Your Progress

A. Match the following

Colum A	Colum B
1. Diagnostic services	a. Medical and surgical
2. Therapeutic services	b. Housekeeping, Transport
3. Information services	c. Management services
4. Support services	d. Record and report
5. Administrative services	e. Medical laboratory

B. Short Answer Questions

1. Define hospital according to WHO?
2. write the components of hospital ?
3. write the functions of hospital?
4. prepare a list of various departments of hospitals and their functions.
5. classify the hospital on their ownership ?

Session 3: Describe Rehabilitation Care Facilities

Rehabilitation/Convalescent care facilities help in restoring a person back to normal position and to get a useful place in society. As such, a rehabilitation center is a location in which rehabilitation can occur. People get displaced from society for various reasons. Some may experience, say for example after accident and illness he is unable to perform their physical function normally. Rehabilitation

center is essential part of Healthcare system that provides services such as physiotherapy, speech therapy, and it is therefore a supportive system which restores person's their place in society. Rehabilitation is started only when a patient contacts Healthcare personnel.

Functions of a Rehabilitation Center

The function of a rehabilitation center is to provide rehabilitative care to help in the recovery process. This process varies depending on the level of rehabilitation that is needed. Rehabilitation centers use a combination of therapy, small groups, individual sessions and highly structured living. The function of a rehabilitation center is to both increase the quality of life and to help the patient integrate back into the community. These Programs provides 24-hour care to people who require specific medical and therapeutic services in a supportive environment. The program will help in rebuilding strength, endurance and functioning before returning home.

Fig. 2.9: Physiotherapy rehabilitation center

Rehabilitation center/ Convalescent care provide the care needed when required, it includes:

- Medical and therapeutic support;
- A specialized care plan to help regain strength and independence of the individual.
- Guidance to the family and caregivers needed to support the individual.

Depending on a person's need, a specialized care team plan is led by doctors and nurses with support from professionals such as physiotherapists, occupational therapists, dietitians and social workers, develop a plan to help in rehabilitation.

Rehabilitation centers are categorized into four types:

1. Occupational Rehabilitation Centers: Occupational rehabilitation centers are often found in clinics and hospitals. The use occupational therapy is provide Healthcare services for assess and treat a person to develop their daily life working skills improve their ability of physical, mental and cognitive disorder. These rehabilitation centers focus on helping their clients regain skills needed to function. For example, an occupational therapist may work with a patient who has had a severe spinal cord injury and help regain the use of her arms or legs. An

occupational rehabilitation center can help the patient in talking, writing, dressing herself and eating without assistance. The occupational therapist uses consistent rehabilitation exercises that help retrain the body.

2. Physical Rehabilitation Centers: They focus on the use of physical therapy for rehabilitation. Physical therapy or physiotherapy is a physical medicine and rehabilitation specially physiotherapy is provide in treatment of illness, bone injury, accidental, muscles strait, disability and deformity condition to improve quality of life. It is physical methods of treating patient using massage therapy, body movement exercise. Physical intervention (therapy using mechanical force and movements).they improve health all age groups. Physical rehabilitation centers are similar to occupational rehabilitation centers, except they focus more on using physical exercises to help patients regain motor skills. Physical therapy (also called as physiotherapy) rehabilitation centers Specialize in helping rehabilitate patients who have accident-related injuries or who have lost a limb, they also help rehabilitate those who have spinal, muscular or bone problems due to degenerative diseases.

3. Addiction Rehabilitation Centers: The addiction rehabilitation centers give the comprehensive care of drugs and alcohol addict person. that person need to left alcohol and drugs bad habits that he/she can back on the right path and live a better a happy and productive, successful life. Rehabilitation centers also work with those who have addiction problems. Addictions rehabilitation centers provide both in-patient and out-patient programs. Rehabilitation centers are an important part of treating those addicted to drugs and alcohol. However, rehabilitation centers can also treat eating disorders and other addictions, such as gambling, etc.

4. Psychosocial Centers: Psychiatric rehabilitation, also known as psychosocial (involving both psychological and social aspects) rehabilitation is the process of to make able individual and recover mental ability, that is component of a community functioning. it is well-being and diagnosed a person's mental health or mental or emotional disorder and whom mental disorder can be considered. Psychosocial rehabilitation centers focus less on physical rehabilitation and more on the rehabilitation of the mind. Psychosocial rehabilitation centers specialize in the treatment and rehabilitation of psychiatric disorders such as major depression, bi-polar disorder, and schizophrenia. Psychosocial rehabilitation was implemented as an alternative to long-term institutionalization. It works to help those suffering from psychiatric disorders stabilize themselves through therapy and medication. Patients also learn skills to cope with their disorder while living in society.

General Motion

The various parts of the body move with respect to each other and the plane of the body and these movements can be described in general as follows:

- Flexion is a movement that decreases the angle between body parts.
- Extension a movement that increases the angle between body parts.
- Abduction a motion that pulls a structure away from the midline of the body or limb.
- Adduction a motion that pulls a structure towards the midline of the body or limb.

- Internal rotation (or medial rotation) refers to rotation towards the center of the body.
- External rotation (or lateral rotation) refers to rotation away from the center of the body
- Elevation refers to movement in a superior direction.
- Depression refers to movement in an inferior direction.

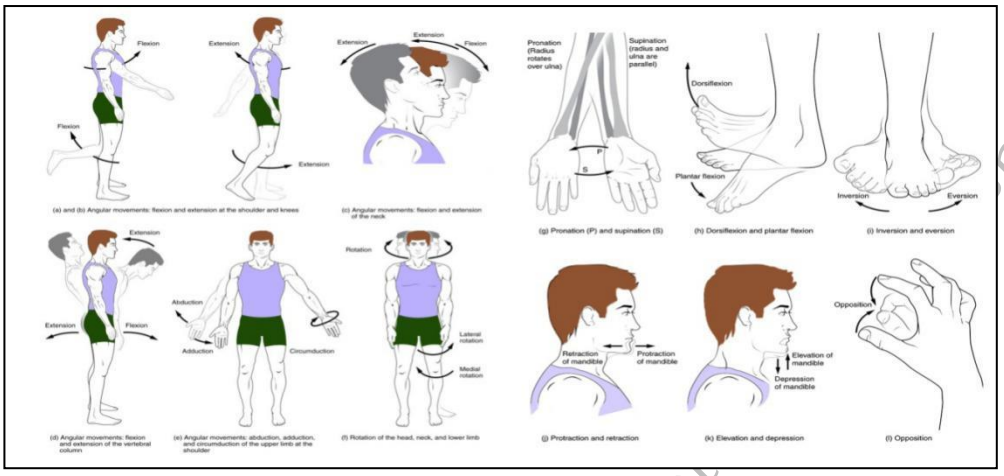


Fig. 2.10: General human body parts movement

Activities

Activity 1: Teacher will take student visited a rehabilitation center and physiotherapy clinic and collect the photographs of therapy and exercise equipment's and machines.

Activity 2: Write an assignment on various exercises in physiotherapy. Explain the importance of physiotherapy to a patient who is suffering from back pan.

Check Your Progress

A. Multiple Choice Questions

1. Rehabilitation center helps an sick person to ..... activities to function normally.
   a) Restore
   b) Reciprocate
   c) Determinate
   d) Retort

2. A 24 year person lost his left limb following an accident. Which all rehabilitation procedure will he have undergo.
   a) Drug addiction center
   b) Physical and occupational therapy center
   c) Psycho-social
   d) None of the above

3. Rehabilitation center is provided services.....
   a) Physiotherapy
   b) Speech therapy
   c) Cognitive therapy
   d) All of the above

B. Fill in the blanks

1. The addiction rehabilitation centers treat people those candidate to .....and .....
2. The motor skills of patient can be treated in .....
3. Psychosocial rehabilitation specialized in the treatment of.....

C. Shorts Answer Questions

1. Write the functions of rehabilitation center?
2. Write the categories of rehabilitation center?
3. Explain the drug addiction center?
4. Write the importance of physiotherapy in our life?
5. Write the General human body parts movement?

Session 4: Describe Long Term Care Facilities

Long Term Care (LTC) Long term care is various types of services which is serve both the therapeutically and non medical require of people during suffering a chronic disease or disability who is unable to care for themselves for long time period in chronic disease condition.

Generally, the LTC provides the non-skilled services, such as assisting daily life basic activity like dressing, bathing, and use the bathroom. Essentially, it is to provide a level of therapeutic care. That involve the expertise of skilled physician to identify the often multiple chronic conditions associated with older people. Long-term services facility can be provided by assistant at home or in nursing homes. Long-term care can be needed of any age group like child, adult, and more commonly needed for senior citizen. Those are suffering from chronic illness condition.

Medical Team for Formal Care

Definition

Long-term care is providing curative, preventive, rehabilitative and restorative and ongoing better nursing services to patients. or at home who are help of assistant they complete their daily life basic activity. Long-term care facilities include nursing home services, rehabilitation center facilities, inpatient behavioral health services, and long-term chronic disease condition care hospitals.

Need for Long Term Care facilities

Life expectancy is increasing in most countries, meaning that more and more people are living longer and entering an age when they may need care in their daily tasks. Present time world's 70 percent of all old age people live in low or middle income countries. in many countries largest ratio of old age people needed long

term care services but they are depend on informal care ,or services provide by unpaid care gives who are usually non professional family members, friends or other volunteers.

Types of Long Term Care services

Long-term care may be provided formally or informally.

Formal Care facilities of accommodation is provide for those are provide twenty four hours Healthcare delivery services, including professional health services, These facilities may be called as nursing home, personal care facility, residential continuing care facility, etc. long term care services to provide formally in the home is known as home care health services can also included medical services (e.g. nursing care services, drug therapy, physical therapy) and other activities such as home infrastructure according to the need of the patient.(e.g. renovating kitchens and bathrooms so that its easier for people to work). These services are mainly ordered by a physician or other professional. These kinds of service are paid given and it is provided by health professionals.

Informal care informal care is also called family caregivers it is provided by family members, friends and other unpaid volunteers . Personal care and services such as food and housekeeping, generally 90% of all home Healthcare is provided informally by a loved one at home.

Activities

Activity 1: Make a list of the items that will be required to provide services to the sick patient at home.

Check Your Progress

A. Fill in the Blanks

1. Long – term care is curative, preventive ..... and ..... services to the patient.

B. Multiple choice questions

1. Long - term care facilities is provided a patient in chronic disease condition.
   a) After discharge from hospital
   b) Post - operative patient
   c) At home
   d) All of the above

2. Which age groups people need long term care services.
   a) Child
   b) old age
   c) adult
   d) All age groups

C. Shorts Answer Questions

1. Define long term care facilities.
2. Write the long term formal and informal care facilities.

Session 5: Hospice Care

Hospice care is a type of therapeutic care that focuses primarily on reducing and relieving and preventing the suffering of a terminally ill, or critically ill patient's observe signs and symptoms of pain and participate in their emotional needs and mental appearance to relieve stress.

The focus of hospice care is on palliation of the patient's pain and symptoms. These symptoms may be physical, emotional, or psychosocial in nature. Hospice care focuses on bringing comfort, self-respect, and peace to people in the final time of life. Patients' pain symptoms are observed and controlled them, aims of Healthcare are discussed and emotional needs are supported. Hospitals believe that the end of life is not a medical experience; it is a human experience that benefits from expert medical and holistic support that hospital offers.

Fig. 2.11: Hospice care of a patient

Therapeutic care concentrates on quality rather than length of life. It provide caring and sympathetic care for people in the last stage of incurable disease so that they may live as completely and comfortably as possible. hospice care is provide preventive and curative care treat the individual rather than illness, Working to control the disease symptoms so a person's last days of life can be spent with dignity and happily is surrounded by dear ones. It is also family-focused - it involves patients and families in decision making. Hospitals services are used when you can no longer help with curative primary treatment, and when the

disease is continuous normally you are expected to live for about some months or less.

Hospice care services at home Healthcare services gives you supportive or preventive care, which is treat to reduce disease-related symptoms, but not cure the disease. Its main objective is to improve your quality of health and life.

Places where hospice care is provided

Hospice care is generally, designed to be available 24 hours a day, 7 days a week. it can be provided therapeutic care of patient, at home, hospital, private hospital and clinic or nursing home facility. The doctor, and other health team members guidance and counseling and which helps in select the program is best for the patient and the family.

Hospice can be provided at :-

1. Home hospice care : Most home health agencies and separately conduct owned hospice program, which providing home health hospice services such as nursing home care. A nurse, doctor, a hospital staff nurse, doctor and other professional staff member monitor home health hospice program but in home a main caregiver is family member or friend he is responsible for the patient care. This person is with the patient most of the time and is trained by the nurse to provide much of the hands-on care. his family member spent most of time with the patient and is trained through nurse to provide Healthcare.

2. Hospital based hospices : Hospitals who are treat critically ill patients often have their owned hospice policy. this policies are help the patients and their families easily to support services and Healthcare members. every hospital have a special various unit according need of patient such as casualty unit, cardiac unit, pediatric unit etc. while other peoples care by hospital health team they are only visited patients with serious disease in nursing unit.

3. Long Term Care facility based hospice : Many nursing homes and other long term care services have some small hospice units provide facilities of Healthcare. in which they keep well trained nursing staff provide care in hospital admitted patients, or they provide there Healthcare services through home health agencies or community based hospital. It is a best option for patient who needs of hospital care but not have any caregiver at home.

Fig. 2.12: A patient care in hospital

Support facilities extended by Hospice Care

Various types of services are given by the hospice care team, depend on the need of the patient and the family. The following are the main services extended by the hospice care:

Pain and symptom control: The goal of pain and symptom control is to help patient to be comfortable while allowing staying in control and enjoying life. This means that pain, side effects and discomforts can be reduced in the health of the patients so that the patient can be relieved of the pain and symptoms and reduce mental stress and enjoy life with the people around them. And be alert to make important decisions.

Home care and inpatient care: all health service of therapeutic care can be provide at home through health personnel such as after discharge of hospital and long term disease condition or geriatric care. a persons may be admitted in hospital in critical condition and provide advanced care facility or hospice inpatient department facility. the hospital in patient admitted according their disease condition such as medical ward, fracture ward, cardiac ward in provide inpatient care. in patient department nursing staff and other health personnel through observe patient's condition .the hospice arrange the inpatient care, and guiding and counseling the family through the process. When the patient is fully recovered and discharged from the hospital for home care with his family.

Family conferences: Conduction of family conference regularly, which always led by the hospital staff, nurse or multipurpose social worker, information to be should be given to family members about the patient's condition and what to expect. Family conferences give everyone opportunity to share feelings. Talk about what is expected and what is necessary, and learn about the process of death and dying. Family members can get great help and stress relief through family conferences. The daily conferences are can be conducted informally, because nurse and nursing assistants interact with the patient or caregiver.

Bereavement care: Bereavement meaning is death; bereavement is the time of mourning after a loss of some one dear. The hospice care team is work with living people, to help them through grieving process. a professional counselor and trained volunteer to help the survivors through visits or other communication sources such as phone calls or other contact and through support group. The hospice Healthcare team can provide services to family members, and if needed to other medical and professional care can given friends.

Activities

Activity 1: Go to a nearby hospital with the teacher and write the past and present history of the patients present there.

Check Your Progress

A. True and False

1. Hospice care services is a type of therapeutic and medical care.
2. Hospice care is not providing preventive and curative care.
3. Hospice care is generally provided to people in hospital.

B. Multiple Choice Questions

1. Places where sick people are provided hospice care .....
   a. At home
   b. In hospital
   c. Clinic
   d. All the above
2. Support facilities services extended by hospice care team.
   a. Pain and symptom control
   b. Home care and in patient care
   c. Family conference and bereavement care
   d. All the above

C. Shorts Answer Questions

1. What you think about the hospice care.
2. Write the places where hospice care can be provided.
3. What kind of services are provided by the hospice care team to the patient and his family.

Module 3 | Role of Home Health Aide

Introduction

Home health aide (HHA) provides physical, mental and emotional support to ill patients. They provide short/long term care in the comforts of the patient's home, under the supervision of trained staff. Same aides are trained in providing specialized care as in the case of geriatric or pediatric home health aide. They help the patient in performing daily tasks of personal hygiene, grooming, checking vital signs, looking, etc. and to meet their specific needs in some cases. The unit describes the essential duties, responsibilities professional qualities and role limitations of home health aide, so that the patient benefits by gaining the best Healthcare.

Fig. 3.1: Function of home health aide

Learning Outcomes

After completing this module, you will be able to:

- Identify the role and functions of Home Health Aide
- Prepare a daily care Plan of patient
- Identify basic components required for
- patient comfort
- Describe patient's safety
- Identify the qualities of a Home Health Aide
- Collect the specimen of urine, stool, sputum, blood, etc. using different methods

Module Structure

Session 1: Identify the Role of Home Health Aide (HHA)
Session 2: Activities of Patient's Care
Session 3: Basic Requirements for Patient Comfort
Session 4: Patients Safety & Rights
Session 5: Qualities of a Good Home Health Aide

Session 1: Identify the Role of Home Health Aide (HHA)

Home Health Aide (HHA) provides nursing and technical care to patients under the supervision of nurses in a hospital or home nursing care facility. Home Health Aide might spend more time with patients than other healthcare providers in a hospital or home. HHA$_S$ must be empathetic and have good communication and nursing skills to care for patients in a home.

Essential Duties and Responsibilities

The essential duties of a HHA include the following:

1. Assist professional healthcare staff helping performing physical examinations and patient procedures, which may include measuring and recording vital signs and measuring amount of liquid intake and output of patient.
   - Patient data, such as vital signs temperature, pulse, respiration and amount of intake and output are taken and recorded according to the policy and procedure of the Hospital.
   - Changes in patient data and unusual findings are reported to the registered nurse and other members of the health team in a timely manner.
   - Patient is assisted with personal hygiene and health services.
   - Patient is given assistance for ADLs (Activities of Daily Living), exercise and ambulation as directed by therapists and other members of the healthcare team.
   - Personal care and patient related services are provided in the patient's home needed as per guidelines set forth by the Home Health Agency.

2. Maintain patient safety
   - Patient's environment including but not limited to the patient's room, exam room or treatment area is kept neat and clean.
   - Meal preparation and light housekeeping duties may be necessary in the home setting to maintain a safe environment.
   - Equipment maintenance and safety checks are completed according to policy and procedure.
   - Incidents are reported promptly to appropriate parties using the Health System's quality reporting process.

3. Perform administrative support functions
   - Medical record duties, including file maintenance and recordkeeping, are completed when necessary.

- Supply inventory and job orders are completed according to guidelines.
- Duties, including scheduling diagnostic procedures, meeting and greeting patients, or delivering specific supplies and pharmaceuticals are performed efficiently.

Fig. 3.2: Organizational duties

4. Maintain necessary skills and competencies
   - Competency in the use of new equipment (i.e., lifting and moving patients) is achieved and maintained.
   - Strengths and opportunities for professional development are identified and goals for self-improvement are set and documented appropriately.
   - Identified goals for professional development are met through a variety of educational forum.
   - The education and development of others is fostered by sharing information learned through individual professional development.
   - A positive environment supportive of the professional development of co-workers is established on an ongoing basis, including but not limited to teaching and training, orientation, role modeling, and team participation.
   - Annual mandatory training activities and regulatory in-service hours requirements are completed within established time frames.

Organizational Duties

1. Using good interpersonal skills and proper communication.
   - Positive and professional manner through verbal communication and non-verbal communication.
   - Convey the message and information for hospital staff and patient is proper manner, that is timely, supportive, and understandable.
   - Interpersonal conflicts are solved using proper methods and organizational resources, it is not limited to employee Relations Services and Faculty Employee Assist Program.
   - Varied perspectives are accepted; communication, language and behaviors are modeled that build positivity in the work place atmosphere.
   - Ideas and suggestions are clearly communicated in employees and members.

2. Serves, manages and supports internal and external clients
   - Privacy is maintained at all times for patient and employee information.
   - Implementing "I Make the Difference" takes the initiative to meet or exceed the expectations of customers / co-workers in providing service (ownership

begins with me; eyeing customers and smiling greetings ; Providing positive, professional and instant responses.

- Assist visitors find out their way; close each conversation "Can anything else happen to you?
- Proper resources are continuously used in whole organization complete meet of customer need.
- Established relationship with staff in other work region, who is completed internal and external needs of customer.
- Positive working relationships with peers, management and customers are maintained at all times.
- Organizational mission and values of respect, integrity, leadership and excellence are evident in behavior.

3. Participates in performance improvement activities
   - Participate in skilled improvement activities and workshop and make to able, training initiatives continues.
   - Initiative is demonstrated to diagnose and solve problems.
   - Transformation is met with positive and supportive behavior.

4. Participates as a team member and he is responsible for the responsibilities of their own work
   - Time is set to avoid interrupting the workflow.
   - Others are helped to solve problems and complete tasks to facilitate communication and positive team dynamics.
   - Productive work habits are constantly displayed.
   - Accountability for actions and decisions is show in daily task.
   - Feedback is accepted in a positive way.
   - Creative input is presented to support the work unit.

Activities

Activity 1: Prepare a presentation on essential duties and responsibilities of home health aide in a hospital.

Check Your Progress

A. Fill in the Blanks

1. HHA provides physical .....care and services to sick patient.
2. HHA must be empathetic and have .....to care for patient in a home.

B. Multiple Choice Questions

1. Essential roles and responsibilities of HHA.
   a. Maintain patient safety
   b. Perform administrative function
   c. Maintain necessary skills and competencies
   d. All the above

2. Organizational duties of HHA
   a. Good interpersonal and communication skills
   b. To manage and support internal and external client
   c. Both a and b
   d. Only a

3. HHA is provide a special care in the area of
   a. Therapeutic care
   b. Geriatric care and pediatric care
   c. Post operative care
   d. Adult care

C. Shorts Answer Questions

1. Define HHA.
2. Write the role and function of HHA in the field Healthcare.
3. What are the organizational duties of HHA to provide Healthcare services?

Session 2: Activities of Patient's Care

The term Activities of Daily Living (ADLs) is used in Healthcare services is referring to daily personal care activities is provided individuals at home and in outdoor environments, or both places. Health professionals routinely refer to the ability or inability to perform an ADL and observe of persons functional activity, especially in relation to people with disabilities and the elderly. specially in younger children often need of help from adults to complete their activities of daily living, because they have not developed skills ability needed to perform independently.

Definition of Activities of Daily Living : The ADL is defined as "the things we normally do such as feeding ourselves, bathing, dressing, grooming, working, building and relaxing". And it is depend on the particular person in particular environment . Special people may vary.

Various aides required in Home Environment

Patients need help with various activities because they may not remember or they may not be in that position to do them, they may have physical disorders and lack of coordination and they may have lost interest in doing things, or they not know why something needs to be done. They may not be able to understand instructions when someone tries to help them.

- Bathing and showering (washing the body)
- Dressing
- Assist the patient taking food and eating and swallowing.
- To help the patient feeding food and bringing it to the mouth.
- Functional physical mobility such as physical exercise (move to one place to another while doing activities)
- Personal equipment care.
- Personal hygiene and grooming (including washing hair)
- Toilet hygiene (completing the act of relieving oneself)

Daily Care Plan of Patients

One very helpful way of reducing patient's stress is establishing a regular routine for the day–doing the same things at the same time every day. This routine can be fine-tuned to ensure that the patient seems comfortable with it. Necessary tasks are all fitted into this routine so that the patient's day is regular and predictable, and the patient can get used to it. They need less effort to get through the day as they sort of know what to expect. They get a greater sense of comfort, and also feel more in control of their lives. The daily routine should only be disrupted if it is very necessary.

In addition to a daily routine, the environment around the patient needs to be relaxed and friendly. Also, the patient should have access to whatever is needed to perform activities easily. There should be enough things to keep the patient oriented about where he/ she is, and what the time is. Also, depending on the patient's likes and dislikes, various other means of keeping the patient comfortable and relaxed should be adopted. This could include pictures of happy days, or incense, or music, if these are helpful to the patient.

Often, caregivers do not spend enough time making the environment comfortable because they are already have enough work and problems handling care. But even a few appropriate adjustments to the home can drastically improve the patient's emotional state, and consequently, the patient's ability to understand and do things. All of us work better when we are relaxed and happy and surrounded by things we like. So do the patients. When thinking of how to do something, we shouldn't think only of how to get the task accomplished, but also whether we can make it more pleasant for ourselves and the patient. That will change the activity from a daily chore to something we may enjoy.

Helping Tips

These are some of the tips that you can use for specific activities in healthcare:

Bathing a patient

Bathing is a common daily task that is necessary for our personal hygiene. Bathing is done to make a patient clean, remove any dust/dirt or any other external agent from the skin, increase blood circulation, promote confidence, reduce body odor and encourage movement.

Types of bath

Cleansing Baths is part of routine patient care for personal hygiene. Often patients at home and in medical facilities are given baths based on their physical condition and need. They are following:

1. **Shower/Tub bath**: Ambulatory patients are usually able to take a shower. Patients who are physically hampered can use an easy drying chair inside the shower. The care giver can help the patient with the shower.

2. **Self Help:** If a patient is restricted to the bed, then this bath provides them the required hygiene. The HHA arranges the bathing equipment and helps in cleaning difficult to reach areas, like back, legs, feet, and external genitalia.

3. **Complete Bed Bath:** The HHA helps the patients, who are bedridden, with a complete body wash.

4. **Partial Bath:** The HHA helps in cleaning only those body parts that could cause inconvenience or odor, such as face, hands, and genital areas.

5. **Sitz Bath:** A sitz bath is used to wash the perineum region that is the area between the vulva or the scrotum and the rectum. It is a warm, shallow bath which can be used as a part of daily personal hygiene. It can even alleviate pain or itching in the genital region.

Role of HHA in bathing a patient

- Assist the patient during bathing because they are donot know the required temperature of warm and may be bathing with warm or very cold water.
- A bathroom can be very unsafe for a patient if left alone, so stay with the patient. Client may be feeling angry or uncomfortable during the presence of a caregiver.
- A thin towel can be used to cover the torso/ private parts while the caregiver soaps the rest of the body.
- A bath stool may be needed so that the patient sits down comfortably for the bath. Grab rails near the bath stool may also be needed.
- Be careful to dry in the folds, such as under the breast. Also, dry areas like between the toes.
- If bathing is tiring and difficult, reduce frequency to what is indicated by the weather and the needs of personal hygiene. Or give partial baths. A daily full bath may not be needed.
- Use the bath time to check the patient for injuries and sores.

Articles needed for giving a bed bath

- Jug of hot and cold water
- Bath towels -2
- Large basin -1
- Linens for bed making
- Screen Patient's clothes
- Bowl with clean cotton balls for eye care
- A large clean tray containing - Articles for mouth care, Sponge clothes – 2, Soap and soap dish ,Spirit, Talcum powder , Oil , Comb , Cotton dressing pads – 2 , Nail cutter, Mackintosh
- with cover , Kidney tray and paper bag , Gloves (optional).

Fig. 3.3: Arrange articles for pt. Sponge bath

Procedure of bed bath

- Wash hands and arrange all articles.
- explain the procedure to the patient to reduce anxiety.
- Place a stool at the foot of the bed. Place the articles near the patient.
- Arrange clean linen on the stool in order of use.

- Use Screen to provide privacy of patient.
- Ask the patient if he or she wants a bedpan.
- Remove all the top linen and patient's clothes except the sheet or blanket and place one pillow under the head if the patient is uncomfortable.
- Place the bath towel under the patient's chin.
- Give oral hygiene.
- Give eye care to the patient using wet cotton balls from inner to outer canthus.

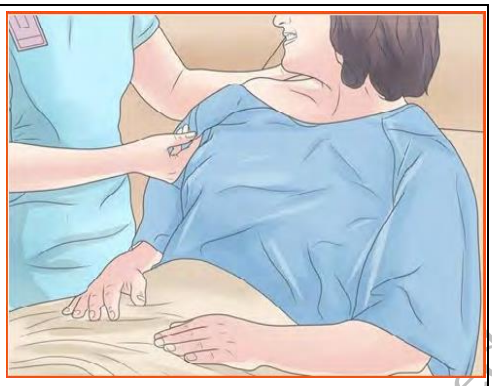


Fig. 3.4: Use sponge for clean body

- After checking the temperature of the water, fold a sponge towel around your hand, then wash the patient's face with water and dry the face with a bath towel.
  Take the sponge towel and fold it around your hand. Apply soap. Clean the patient's neck and ears and other body parts.
  - Spread the mackintosh with cover under the opposite arm. Clean the arm from the distal to the proximal end including the axilla. Wash and dry the arm with the bath towel.
  - Place the basin of water under the patient's hand and allow the patient to rinse their hand in the water and then dry it.
  - Cover the patient's chest with the bath towel. Fold the top linen at the level of the umbilical area.
  - Spread the mackintosh with cover under the leg.
  - Place the mackintosh and the towel over the bed, then place the basin of water over it, and bend the patient's knees, place one foot in the basin of water, and wash it. Dry the foot with a towel and repeat the procedure for the other foot.
  - Turn the patient onto the opposite side. Spread the mackintosh with cover on the patient and tuck it under the patient. wash and dry the back and buttocks, with special care to the bony prominences. Apply spirit, powder.

Fig. 3.5: Wear clean clothe

- Give a wet cotton pad to the patient, and ask them to clean the genitalia. If the patient is unconscious, clean and dry the genitalia with two different cotton pads.
- Apply powder to the body. Put a clean dress on the patient, then comb and set the hair.
- Remove and replace the articles.
- Be sure to leave the patient feeling comfortable and tidy.
- Wash your hands.
- Record and report to the nurse or supervising staff. If there is any redness, cracks on the skin, or any abnormality.

Fig.3.6: Patient taking rest after bath

Dental care

- You may need to help the patient brush properly.
- Denture cleaning will probably have to be done by the caregiver.
- You may also, in later stages, have to assist the patient put in and remove the dentures; dentures should fit well, or the patient will get sores in the mouth.

Grooming

- Patients can harm themselves when shaving with a simple blade, so used twin blade or electric trimmer. Caregiver is assist the patient during this activity.
- Patients hair combing is another activity this is provide by caregiver.
- Nail care of a patient's is necessary to prevent from infection.
- Even the patient is not use face creams themselves, but they prefer to look clean and hygienic. The caregiver require to take over these tasks as the patient is unable to complete this work is independently.

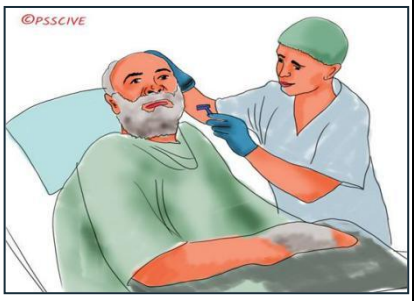


Fig.3.7: Assist patient hair care

Dressing

- Many clothes kept in the cupboard can be confused to the patient. Remove all excess clothing and keep only few comfortable, loose clean cotton clothes.
- Patient clothing should be simplified and comfortable.
- When patients remove clothes to wear, they should be laid out in the order in which they are to be worn.
- The patient's clothes are should not too long, patient is feel difficulty in walking.
- Patient clothes are should be without zippers and button, easy to wear.
- Instead of pajamas/gown, Instead of pajamas /gowns, use of salwars with strings is easily pulled and removed.
- Replace the shoes and instead use velcro straps.
- Replace sari with nightgown.

Fig.3.8: Comfort clothes of a patient

Toileting

Most ill people who are in a good medical condition can express and manage their needs themselves. However, many of them need some help to move to the toilet. For patients who are confined to the bed, different types of equipment can be used to manage their elimination needs.Some of the equipment used are:

Fig.3.9: Help the patient toileting

Bed Pan

Bed pan is used for patients who cannot get out of bed easily but are able to express their need to pass urine or excreta.

Fig.3.10: Urine pot

Urinal

Urinal Bed pan is a comfort device but is meant only for a male. But this device is used both male and female, mostly prefer by long time bed rest patient. The shape of urinal bed pan in a way that only a male patient can use on bed and feel comfortable.

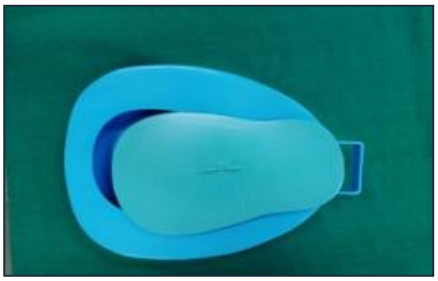


Fig.3.11: Bed pan

Diapers

Diapers are used for patients who are confined to the bed and are unable to express or control the need for elimination

Foley Catheters

These are tube like equipment that are inserted directly into the urinary bladder and are used to empty the urine directly from the bladder.

Based on the condition of the patient the doctor would suggest the use of the appropriate equipment.

You must know the equipment to be used depending on the medical condition of the patient.

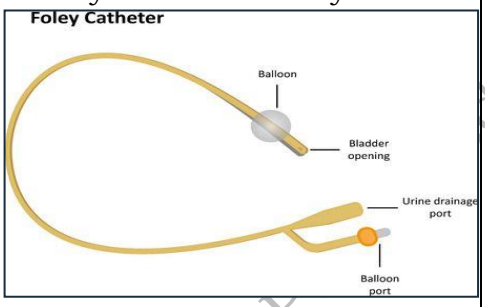


Fig.3.12: Parts of Foley catheters
https://www.clipart1001.com/foley-catheter-clipart-vector-indwelling-stock/

Role of HHA care of a patient

- Incontinence of bladder is main causes of trouble, some time patient is unable to reach the bathroom in time, or forgets where the bathroom is. Use signage to point the way, have nightlights, have grab rails that the patient can use while reaching the bathroom, and have clothing that can be taken off easily.
- Timed visits to the bathroom often reduce accidents.
- Watch out for signs of constipation and dehydration (note color of urine) and change diet and water intake accordingly.
- If the patient shows signs of pain while passing urine or during bowel movements, consult with the doctor.
- Be ready for accidents, and set up the house for quick cleaning after such accidents.
- Persons who have been used to different styles of toilets in their childhood may forget what a commode is for, and may need to be reminded.
- Grab rails or toilet seats with rails may make the experience of sitting on the toilet seat less frightening for the patient.
- Watch the patient for ensure proper cleaning and washing of hands.
- For visits outside, diapers may be a good option. Even patients, who could be tense about finding a suitable bathroom outside, may easily agree to using diapers for outside visits (such as to the doctor). Patients will need to assist in wearing and removing diapers.

Eating

Very important roles of Home Health Aide is to feed a patient. It is required according to patient's need and medical condition. It is provided in different ways:

Types of feeding

Feeding is the process of ingesting food. It is a critical activity as food ingested into our body is converted into energy by the process of digestion. Doctors decide the methods of feeding that needs to be followed depending on the patient physical

condition and the type of nutrition needed by the patient. The different types or methods of feeding are classified as:

- Oral feeding
- Nasogastric Tube feeding
- Fluids or intravenous route

Oral Feeding

Oral feeding is providing food or fluids through the mouth. Patient is able to intake Oral feeding is done using spoons and other normal plates. This is suggested for a patient who can perform the daily activities normally and is able to respond to the instructions given by you.

Tube Feeding

A feeding tube is medical process used to give nutrition to patients who are unable to feed themselves by mouth, are incapable of swallowing safely, or require to be given nutritional supplements. In tube feeding, a type of external nutrition is delivered into the digestive system in a liquid form. A tube is inserted into a part of the digestive system, often through the throat or nose. The tube carries the food directly into the digestive system. Sometimes, it is used in addition to the oral feeding method. The most common type of tube used for feeding is called the Ryle's tube. Ryle's tube is also called a nasal gastric tube or NG tube.

Fig. 3.13: Nasal gastric tube

Intravenous Fluid (IV Fluids)

An intravenous or IV fluids is used in case of patient who is unable to intake orally food. It is a short time duration used to give fluids containing essential nutrients directly in to the blood stream through vein. Intravenous line is connected in vein by the nurse on the instruction of doctor. You must monitor the level of IV fluid and keep patient input and output record.

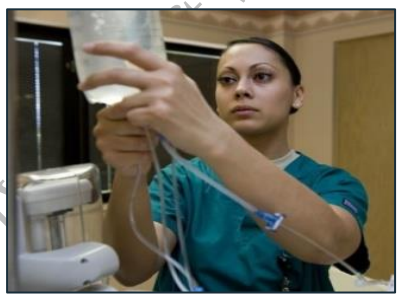


Fig. 3.14: Intravenous fluid

General Instructions for HHA in Feeding Patients

- Patients may forget to eat if family members have gone out and leaving the food on the table for them. Someone may need to ensure that the patients have consumed it.
- Eating becomes messier over time, and patients who are accustomed to use a spoon may switch to eating with hand. They may have problems handling larger pieces, and food may need to be cut down in smaller sizes they can handle.

- Patients may not mix food while eating. They may eat all the *daal/ sambhar* first, and the curds and then try to eat the rice without anything mixed. They may finish off the vegetable or curry, and then be left with the *roti* and nothing to eat with it. They may even eat the pickles separately. This is because they find it a problem to handle multiple items.
- Caregivers may need to supervise that the all foods are mixed and give the patient, or all combined food such as *khhichadi, pulao, bisibelebath* and curd rice prepare for patient.
- Denture does not fitted properly in the oral cavity, so the patient may be lose more teeth.
- Chewing is a problem with over time, food may need to be made softer and liquid diet and give the patient.
- consult the doctors for supplements of diet like vitamins, calcium, and find out may be patient need to serving balance diet

Drinking water

- Sometimes, patients, in order to avoid repetitive trips to the bathroom, reduce their water intake.
- The patient may also forget to drink water, the caretaker is responsible for provide the water.

Fig. 3.15: Clean drinking water

Caregivers to make sure that, patient is drinking enough water. Lack of water may be causes electrolyte imbalance. Doctors advises for electrolyte drink in the daily routine of patient, if the patient in showing signs an electrolyte imbalance.

- Caregiver should ensure to provided boiled and clean water to patient.

Taking Medication

In the beginning, patients may find it problematic to keep track of their medicines. Using small labeled boxes for the medicines can help.

Soon, however, more care needs to be taken to ensure that patients continue taking their medicines as prescribed.

Forgetting to take medication is a common problem. Even if the patient is reminded, they can't trust that they need medication *(they may say things like, but I don't have high blood pressure).* If caregivers insist, patients sometimes place the medicine under the mattress or pretend to swallow it and then spit it out. It is good to be alert on this, and if necessary, supervise the patient to ensure that the medicines are taken as prescribed. In later stages, as swallowing becomes difficult, doctors should be asked to switch prescriptions to medicines that can be crushed and given or can be substituted by syrups.

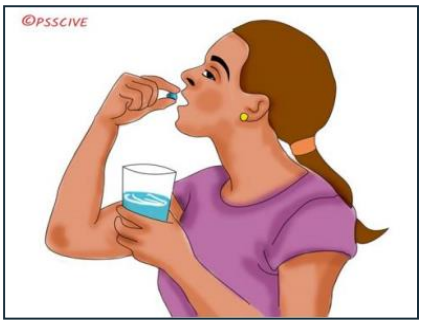


Fig. 3.16: Taking medicine routinely

Transferring and Shifting of Patient's

A patient is often carried into the ward on a stretcher. The patient needs to be carefully and safely transferred from the stretcher onto the bed. This process is very important because while transferring, the patient should not suffer any injury or pain. Also, the medical condition of the patient must also be kept in mind while doing it.

Fig.3.17: Stretcher trolley
Courtesy: Govt. J.P. hospital, Bhopal

Transportation by Stretcher

Stretcher is used for transporting seriously ill or injured victim.

Fig. 3.18: Foldable stretcher

Types

- Farley stretcher (general stretcher)
- Utile stretcher (foldable from middle)
- Pale and canvas stretcher.
- Scoop (orthopedic) stretcher.
- Trolley bed (general with trolley)

Neil Robertson stretcher (used for rescue purpose)

- Para guard stretcher (foldable above)
- Improvised stretcher

The steps to follow shift the patient from the stretcher to the bed safely are:

- Before shifting from stretcher to the bed, report to the nurse about the transfer of the patient in to the ward.
- Ensure that there are at least two other home health aides to help when the patient is shifting on the bed.
- Place the stretcher close to the side of the bed. Ensure that both the bed and the stretcher are stabilized or locked before moving the patient.
- You can use the lock of the stretcher and the hospital bed in order to prevent the stretcher or bed from moving. Lower any side rails present.
- Roll the patient gently to a side and place a sheet on the stretcher. Roll back the patient onto the sheet.
- Ask the other assistants to hold the sheet from the remaining sides.
- Gently lift the patient with the sheet and shift the patient onto the bed.
- Place the patient comfortably on the bed. Raise the rails to protect the patient from falling off the bed.

Patient transferring using wheel chair

Patients who are too weak and unable to walk on their own In case of a moveable patient you can use a wheelchair for transferring the patient. Before the ambulance arrives, keep the wheelchair ready for use. The wheel chair is designed to facilitate easy and comfortable movement of the patients. Below are the involved steps:

- **STEP 1:** With the help of the ambulance team, align the wheelchair with the ambulance bed.
- **STEP 2:** Assist the patient in stepping out of the ambulance.
- **STEP 3:** Carefully shift the patient in a wheelchair. Ensure that the patient is comfortably seated in the wheelchair.
- **STEP 4:** Collect the belongings of the patient and place them on the patient.
- **STEP 5:** In case the patient has been attached with a medication drip, ensure that the drip is also moved with the patient during the transfer.
- **STEP 6:** While transferring the patient on the wheelchair, block the wheels of the chair.
- **STEP 7:** Transfer the patient smoothly without any jerks while moving the wheelchair. Do not rush the patient.

Fig. 3.19: Transferring patient by wheel chair

Transferring a patient from the ambulance to the ward is a team effort. You should be ready with a plan of transfer for each patient. You should be prepared to plan and coordinate for the easily transfer of the patient from the ambulance to the ward.

Transferring the patient from the stretcher to the bed

A patient is often carried back home on a stretcher. The patient is needs to be carefully and safely transferred from the stretcher into the bed.

This process is very important because while transferring, the patient should not suffer any injury or pain. Also, the medical condition of the patient must also be kept in mind while doing it. There are certain steps you must follow while transferring:

- Before transferring a patient from the stretcher to the bed, report to the nurse about the transfer of the patient into the ward.
- Ensure that there are at least two other Home Health Aides to help you when the patient is transferred to the bed.
- Place the stretcher close to the side of the bed. Ensure that both the bed and the stretcher are stabilized or locked before moving the patient.
- Roll the patient gently to a side and place a sheet on the stretcher. Roll back the patient onto the sheet.
- Ask the other assistants to hold the sheet from the remaining sides.
- Gently lift the patient with the sheet and shift the patient onto the bed.

- Place the patient comfortably on the bed. Raise the side rails to prevent the patient from falling off the bed.

Transferring the patient from the bed to the stretcher

There are some steps are follow to shift the patient from bed to stretcher. They are following:

- Ensure that there are at least two other Home Health Aide to help when the patient is transferred from bed to the stretcher.
- Place the stretcher close to the side of the bed.
- Roll the patient gently to a side and place a sheet on the bed. Roll back the patient on the sheet.
- Get on to the patient's bed and hold the sheet from one side. Ask the other assistants to hold the sheet from the sides.
- Gently lift the patient with the sheet and shift the patient onto the stretcher. Get down from the bed.
- Place the patient comfortably on the stretcher.
- Remove the wheel locks of the stretcher and move the stretcher gently.
- Inform to the nurse about the shifting of the patient.

Fig.3.20: Shifting the patient from bed to the stretcher

Transferring the patient from the bed to the wheel chair

There are many ways of transferring the patient to the wheelchair from the bed. But you have to use the safe and most comfortable way for the transfer of patient. Before you start the procedure, collect information about the patient's condition from the nurse.

- Ensure that patient is comfortably seated on the bed. Roll the patient to one side and place a belt around the patient.
- Now get into a standing position with the patient and gently move the patient close to you.
- Place the patient on the edge of the seat on the wheelchair and rock the patient into the chair.
- Ensure that wheels are locked to prevent movement of the wheelchair.
- Instruct the patient to use the arm rests for support.
- Place the feet of the patient on the footrest of the wheelchair.
- Remove the wheel locks of the wheelchair and move the wheelchair.

- Place the medical records on the patient while moving the wheelchair.

Role of Home Health Aid:

- When you use a stretcher, you must understand the condition of the patient before planning the process of transfer.
- Ask the nurse of the patient about the need for transfer of the patient. Learn about the condition of the patient to plan a safe technique of transfer.
- In many cases, some parts of the patient's body are damaged or very weak. You should know about those areas and ensure that those areas are not affected when the transfer is carried out.
- The patient might be provided with medication and support for breathing. In such cases the support equipment must also be carefully moved along with the patient.
- Necessary documentation and equipment should be available and an experienced staff can come handy in this situation
    - The receiving ward should also be prepared for the patient. Ensure that you organize the facilities that are required for the transfer.

Activities

Activity 1: Prepare a presentation on essential duties and responsibilities of home health aide in a hospital.

Check Your Progress

A. Fill in the Blanks

1. The daily self-care activities is provided individuals at……..
2. Feeding is the process of ……
3. Ryle's tube is also called……..

B. Multiple Choice Questions

1. Bedpan is used for the patient who is ……
    a. Unable to get out of bed easily
    b. Able to walking
    c. Both a and d
    d. Bed ridden patient

2. Intravenous fluid is given the patient directly in to the blood stream through
    a. Artery
    b. Vein
    c. Oral
    d. None the above

3. If a patient is unable to take food orally, what methods are used to provide nutrition?
   a. Oral feeding
   b. Intravenous route
   c. Nasal gastric tube feeding
   d. All of the above

4. The environment around the patient needs to
   a. Hostile
   b. Suspicious
   c. Relaxed and friendly
   d. All the above

5. What is the responsibility of HHA to deliver medicines to the patient.
   a. Right patient and right drug
   b. To give the right dosage and right method
   c. Check drug expiry
   d. All the above

C. Identify the following Pictures.

	
a.	b.

D. Write the full form of following Words

ADL .....

wh..... chair

Groo.....

Dres.....

Eat.....

E. Shorts Answer Questions

1. Write the importance of bathing and routine personal hygiene.
2. Write the various types and methods of feeding.
3. Prepare a list of resources used to assist the patient. Which is used to move the patient from one place to another?
4. Write the role of HHA in transferring and shifting the patient.

Session 3: Basic Requirements for Patient Comfort

Besides having elegant pleasurable facility, in which, proper sound and hygiene is most important. The human environment needs to be provided with air, light and thermal facility. The comfort should be well defined in comparison to discomfort. Patient may feel discomfort when the weather is too hot and too cool and bad air odor. Positive rest comforts are those conditions in which the humans do not get distracted. Ideally, in a properly air-conditioned place, individuals do not feel the noise, heat, or wind speed of any equipment. Thermal comfort is mental status of brain that is satisfied through the thermal environment; this kind of condition is skin's heat sensory aspect. If the environmental conditions are not suitable for thermal comfort then it changes the person's metabolism.

Factor that affects humans adversely:

- Climate and weather change
- High temperature of the surrounding surface
- Humidity of air
- Air motion
- Odorous
- Dust
- Aesthetics
- Acoustics
- Lighting
- Room hygiene
- Sound
- Bed comfort
- Patient's hygiene

Make Bed for Patient

Comfort is appreciated by all human beings. Every individual require basic comfort like mattress, pillow, good environment, comfort devices for a good sleep. Bed making is the procedure adopted for making beds using scientific principles of nursing to provide maximum comfort of the patient.

Bed Making

The need for bed making is as follows:

- To provide the patients comfort rest and sleep.
- To give the ward a neat appearance.
- To be ready to meet any emergency needs of the patient or critical condition of illness.
- To efficiently manage time, material and effort.
- To check for bedsore, oral hygiene, client's ability of self care, etc.
- To promote cleanliness.
- To teach the relatives to care for the sick at home

Fig.3.21: Prepare bed for

Principle involved in Bed Making

- Micro-organisms are found every place in the environment especially in places that deals with diseases. Care should be taken to reduce the transference of microorganisms from the source to other and prevent the multiplication of the micro-organisms.
- A safe bed will ensure and prevent several disease complications in bedridden clients e.g. bedsore, foot drop, etc.
- Maintain Good body mechanism ensures the body alignment and prevent from unnecessary fatigue.
- Systematic methods of bed making save both time and energy.

General Instructions for Bed Making

1. When preparing the bed, Home Health Aide must have clean hands before and after the procedure of bed making.
2. Inform the patient and family member before the start of the procedure.
3. Avoid changing the patient's position several times, because the patient feels discomfort.
4. always keep the bed linen clean separately away from dirty linen
5. Never place the woolen blanket near the client's body except the bath blanket and never allow the client to lie down on the mackintosh without lining.
6. Shake the linen gently.
7. The linen should not touch our uniform or body and prevent from cross infection.
8. Maintain good body mechanics.
9. Make the bed fixed, smooth and plane.
10. Explain the bed making practices proper use of time, energy and material.
11. The cotton mattress should be turned often, aired and made smooth.
12. Provide help to make bed for helpless clients and to prevent them from falling. The side rails of cot prevent patient's fall.
13. Keep distance from the face of the client while making bed to prevent cross infection.
14. Inspect the cot, mattress and pillow frequently for the presence of pests and destroy them if found on the bed.

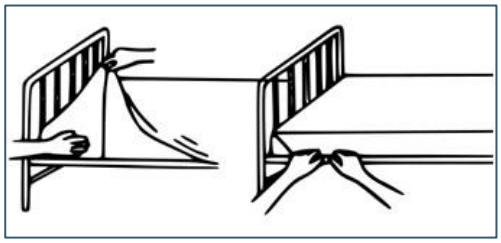


Fig.3.22: Make metered

Preparation

The usual articles in the patient's unit are:

- Cot
- Mattress and pillow
- Chair or stool
- Bedside table or locker

- Mackintosh
- Blanket

The essential things for the complete change of linen are:

- Bed cover
- Two bed Sheets (Bottom and top sheets)
- Draw sheet
- Pillow Case
- Counterpane
- Urinal

Additional articles needed	**Purpose**
Laundry Bag	To dispose the used bed sheets and to send the soiled linen to the laundry
Dusters	One dry duster to clean the mattress. One damp duster cleans the furniture.
A bowl with antiseptic lotion	To carbolise the furniture.

Different Types of Bed

1. Open bed
2. Closed bed
3. Admission bed
4. Occupied bed
5. Cardiac bed
6. Fracture bed
7. Amputation bed
8. Blanket bed

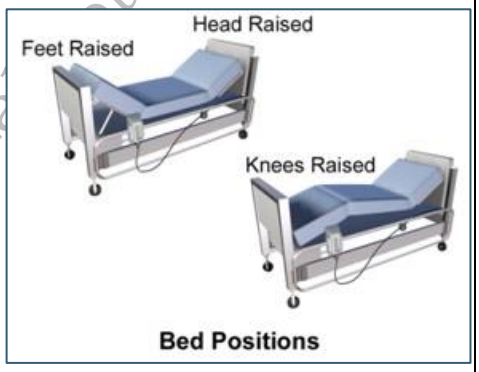


Fig.3.23: Different types of bed

Stripping and Remaking an Open Bed

- Wash hands
- Remove the pillow and keep on the seat of the chair with the open end away from the entrance.
- Remove the top linen.
- Fold the draw sheet.
- Bring the opposite end to the middle of the bed and the near end over it and thus fold them into three parts. Place it on the chair.
- Roll the mackintosh and place it on a chair.
- Remove the bottom sheet by folding it into six parts.
- Soiled mattress cover should be removed at the earliest.
- Turn the mattress
- Mattress is dried with a dry duster.
- Use antiseptic solution to clean furniture. Dust the cleaner areas first and then the less clean area.
- Pull the mattress to the top. Put on the mattress cover. If it is loose on the mattress, the excess can be under the mattress.
- Prepare the base of the bed to a side.
- Return to the edge of the bed first made. Place the top sheet with the opposite

side out. Unfold it with the top edge even with the top of the mattress.

- After complete the procedure if needed keep the blanket over the top sheet and 15 to 20 cm below from top of the mattress
- If the bedspread is used place it over the blanket with the outer side out.
- Tuck the bed sheet near patient's foot end below the mattress or separately and make
- Put the pillow in the pillow cover and place the pillow under the head of the patient. While putting on the pillow case the pillow should not touch the HHA uniform.

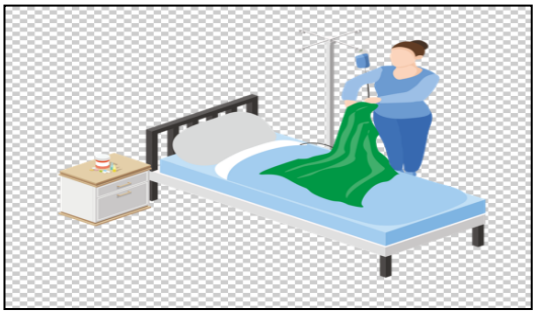


Fig.3.24: Making bed for

Activities

Activity 1: Prepare a list of various elements that can help in providing comfort to patients.

Activity 2: The teacher will take the student visit to the nearest hospital and demonstrate the process of making different types of patient beds.

Check Your Progress

A. Fill in the Blanks

1. A safe bed prevents many complications of a bedridden patient such as……

B. Multiple Choice Questions

1. A 45-year-old person suffering from heart disease will need which bed to rest admission to the hospital.
   a. Open bed
   b. Occupied bed
   c. Cardiac bed
   d. Amputation bed

C. Shorts Answer Questions

1. Prepare the list of beds according to the requirement of the patient present in the hospital.
2. Write the factors that affects humans adversely.
3. Write the principle of bed making.

D. Write the Purposes of following

Additional articles	Purposes
Laundry Bag	
Dusters	
A bowl with antiseptic lotion	

Session 4: Patient Safety and Rights

The environment of a patient is vital to assist in the recovery process. As such, the environment must be maintained so that it contributes to and not be a detriment to healing. The patient's environment consists of the setting around him, equipment, furniture, as well as people. The patient's environment should have the following characteristics:

1. The environment should be conducive to rest;
2. The environment should be well lighted to ensure safety;
3. The environment should be free from noise and outdoor activity;
4. The environment should be well ventilated;
5. The environment should be predictable.

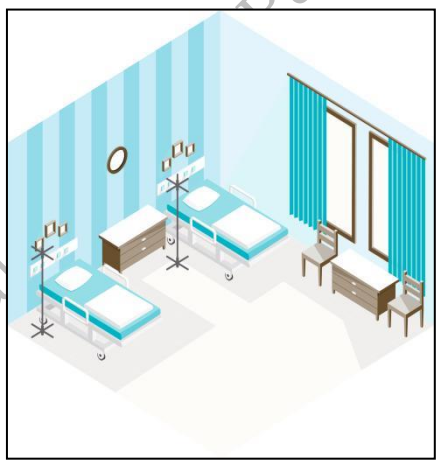


Fig.3.25: Well arrange patient ward

Environment conducive to taking proper rest

When a person is sick, he/she requires plenty of rest among other things as part of his/her therapy. It should allow the patient to regain his/her resources so that he restores his/her health. Many factors should be considered to make this possible, such as scheduling procedures promptly. In addition, assisting the patient in their activities of daily living should be as close to the personal routines the patient has at home. For example, some patients prefer to have their baths in the morning, while others prefer them in the evening. Schedule for visitors should be adhered to so that the patient can focus on physical rest.

Fig.3.26: Patient ward environment

Well-lighted rooms

Since many elderly individuals are usually hospitalized, their needs must be kept in mind. Accidents may be prevented by the use of good lighting in corridors and rooms. Well lighting includes avoid of high glare because they affect patients vision.

Free from noise and extraneous activity

Noise pollutes. If the environment of the hospital is noisy, it is reducing the treatment that is providing comfort. Health personnel should be controls their voice during talking and avoids use of other personal electronic equipment such as telephone, mobile in patient area. Trolleys, carts, stretchers, and wheelchairs should not be noisy so as to distract the patient.

Well ventilated rooms

Maintaining good ventilation can be achieved in air-conditioned as well as non-air-conditioned rooms. The Patient care Assistant should ensure that good ventilation is achieved by not allowing crowds of people to visit at the same time, as well as to maintain a good air circulation by opening or closing windows or doors as needed.

Making environment familiar

As part of the admission procedure, patients and their families are oriented to the room. Since patients are in unfamiliar surroundings, consistency in the placement of personal effects, equipment and furniture should be maintained. They should know where the urinal or bedpan is or where they can obtain water and their personal effects. The patient care assistant should always return these equipment or furniture to their original placements so as not to confuse the patient. In addition, routines should be followed closely as much as possible, such as the schedule for meals, as well as Doctors visits.

Patient Environment and its Components

1. Typical equipment/accessories in the patient's room include the following:
   - Bedside locker
   - Overhead table
   - Sink
   - Bed
   - Calling Bell
   - Bedpan
   - Urinal
   - Sputum cup
   - Water jug
   - Mattress
   - Intravenous (IV) stand
   - Soap dispenser
   - Gloves container
   - Sharps and needle trash
   - Bin for different color coding biomedical waste
2. Essential supply in the patient's room, they are following:
   - Bed sheets
   - Soap
   - Towels

Nursery Unit/Ward

A nursery unit /ward typically comprise the following:

- Nursing station
- Medication room
- Physical examination room
- X – ray room
- Pathology room
- Dressing room
- Treatment room
- Procedure room
- Clean utility room
- Dirty utility room
- Kitchen (dietary room)

Traffic Patterns in Patient Rooms and Hallways

One aspects of creating a safe environment in the hospital is follow the traffic pattern in patient room and ward. It includes the following:

- Generally used elevators for transporting drugs, equipment's and seriously ill patients in hospital, should not be permitted to non hospital personnel.
- Delivery carts should never be keeping standing in hallways, and they always should be park away from the patient room.
- Always follow the rules of street traffic.
- Always use stairs instead of a elevator when one floor is going up or two floor is going down.
- Ensure that hallways hazards such as wet floor, progressive construction work, use caution and warning sign or notice.

Proper Functioning of Equipment and Patient Room Accessories

Equipment and accessories in patient rooms are designed to either contribute to the therapeutic regimen of a patient or to assist the patient in maintaining activities of daily living. As such, equipment and accessories should be functional at all times. It should be part of the ward activity for personnel to check these at regular intervals as part of a preventive maintenance program. Rooms should be checked before a patient is admitted to the make sure that equipment are in working order. Defective equipment should be tagged and sent to the appropriate department for repair. In addition, all equipment should have a regular schedule of being calibrated, tested, and updated as recommended by the manufacturer. Remember that prevention is better than repair. Do not wait for an equipment to fail while it is used on a patient.

Patient rights

As a HHA, you have to impart certain information about patients' rights to patients and caregivers. Tell your patients that you want their experience to be excellent.

As a patient, you have the right to:

- Get kind compassionate and respectful care in a safe, secure environment, free from all forms of abuse, harassment, neglect and mistreatment.

- Be treated with respect and regard for privacy, personal value and beliefs, spiritual and cultural traditions.
- Be informed rights and the policies both verbal and written in which you or your representative understands.
- Consultation, examination, treatment and case discussion are confidential.
- Receive timely and qualified care in a setting appropriate to Healthcare needs.
- Receive referrals to staff and services on time, consistent with quality professional practice.
- Access protective and advocacy services in case of misuse or neglect.
- Get knowledge about professional status of the care giver.
- Participate in decision of your care/treatment as per your desires and understanding.
- Get information of your health, diagnosis, prognosis, benefits and risk of treatment.
- Refuse care and services, to the extent permitted by law.
- Express satisfaction for services given and suggest for improvement of the quality of the care and services provided.
- File a complaint and receive a response time without fearing discrimination.
- Access medical record, approve and refuse the release of your medical records.
- Know in advance of services, the cost of services and any applicable payment policy.
- Agree or refuse to participate in research or experimental activities.

Ethical aspects of legal rights:

- Right to know the facts about your condition get proper explanation for your medical records and can ask adverse effects of the particular prescribed drug to doctor.
- Doctor must get your consent to make physical touch for examination purpose.
- You can investigate on doctors qualifications.
- Patient have a right to confidentiality regarding an illness.
- A doctor must explain the detail about medical treatment and their side effects.
- If the patient is unconscious or for some other reasons must be informed nearest relatives before consent to the operation.
- In case of any emergency situation on discharge or moving to another hospital you must be informed on the reasons and you have rights to choose hospitals of your choice by consulting physician.

Transportation of Specimen

Importance of Transportation of Specimens

A specimen might comprise of a blood, urine or a tissue sample that is tested for making a diagnosis. A large majority of specimens is collect in a place, and send for analysis to other place. The specimen should be transported to the lab as soon as possible. If we delay, the cells in the sample may get contaminated leading to wrong result. Therefore, timely send to the laboratory in (sample) specimens for testing. Full cooperate and of health team members,

nursing staff, for the sample collecting, labeling, storage and transporting.

Fig.3.27: Collecting sample

As a home health aide, your role is to assist the nurse or the doctor while the sample is collected, labeled and making sure that the sample is delivered to the lab at the right time.

Procedure to Transport Specimens

The following procedure should be adopted for the transport of all specimens. These apply within hospitals and laboratories as well as for specimens sent to the reference laboratory:

- Once the sample is collected from the patient, Store the sample following the standard procedure.
- The primary container should be screwed tight, labeled and placed in an intact plastic bag. A "Bio Hazard" label should be affixed on the specimens. Bio hazard label indicates a potential danger if the contents are leaked or opened without proper protection.
- The bag should be sealed, using tape or heat sealer. Pins, staples and metal clips should not be used. A separate bag should be used for each specimen.
- Each specimen should be carefully placed in a leak-proof container with sufficient amount of absorbent material, occur leakage condition absorb all the content. The secondary container outer surface should be disinfected.
- It is the responsibility of assistant and lab in-charge to ensure the accurate labeling, packaging, designation and documentation of all infectious substance material, and diagnostic samples in good condition.
- The efficient transport and transfer of infectious materials requires good coordination between the nurse, the assistant and the lab technician (receiving laboratory), to ensure that the material is transported safely and arrives on time. Such coordination depends upon well established communication between the three parties.
- The systematic transport and transfer of infectious container need of good communication between the nurse, assistant and lab technician, to ensure that is transported specimen is arrive safe and timely manner. Such a good communication is helpful in three parties.

Fig.3.28: Maintain record of specimens

Importance of Labeling

Labeling the specimen is considered to be very important step while collecting specimens. The importance of labeling is as follows:

- Fill the request form in all information about the specimen container should be describe nature of specimen, source, patient information. It allows the laboratory staff to identify the source quickly in the event of the specimen and form getting separated.
- An additional "Danger of Infection" sign should be attached on specimen's container and patient information forms for known or suspected high risk pathogens.
- If staff does not have no sign of biohazards, the information form and sample must be clearly identified as 'Bio' Hazard'. (Staff may be writing in red or using a highlighter pen).
- If the specimen has 'Bio Hazard' label on it then while transporting it through rail, ship, air, the specimen is given a special packaging. The package should be certified to the standard and carry appropriate certification numbers on the tertiary packaging along with the following information:

Fig.3.29: Labeling of specimen's container

- BIOHAZARD - danger of infection symbol.
- Instructions on not to open if found.
- Labeling plays an important role in the transportation of the correct sample to the lab for testing and is a critical step to ensure the timely delivery of the sample. (Reference: NSDC book on GDA)

Activities

Activity 1: Teachers should take the children to a laboratory in a nearby hospital and ask them to make a list of all laboratory equipment and machines.

Check Your Progress

A. Fill in the blanks

1. The patient environment consists of the setting around him …… as well as people.
2. The environment should be free from…… activity.
3. A …… label should be affixed on the specimens.

4. Each specimen should be carefully placed in a.....

B. Multiple choice questions

1. What is the role of home health Aide in transporting the specimen?
   a. Collecting the specimen
   b. Labeling the specimen
   c. Assist the doctor and nursing health staff
   d. All of the above
2. If staff do not have Bio-hazards labels, employees can use writing.
   a. Use red or a highlighter pen
   b. Use green or highlighter pen
   c. Use blue and black pen
   d. None of the above

C. Shorts answer questions

1. Write the characteristics of the safe patient environment.
2. Write a list of patient environment and its components
3. Write the patients' rights.
4. Write the ethical aspects of patients' legal rights.
5. Write the importance of labeling.

Session 5: Qualities of a Good Home Health Aide

Home Health Aide (HHA) works in a range of healthcare settings and makes a valuable contribution in all areas of healthcare. They work under the supervision of nurse in the hospital. As per to the institutional guideline, the Home Health Aide has to have a good code of ethical conduct.

Medical Ethics

Some of the **important medical ethics** they should follow which are listed below as per Indian Medical standards:

Informed consent: Tell the truth and make sure that the patient understands it properly when they are obtaining the patient's consent to a procedure or treatment.

Confidentiality: The Home Health Aide should consider the details about his patients as purely personal between him and the patient. Except for professional reasons the details should not be discussed with others or in public.

Communication: Clear communication between the Home Health Aide and the patient is very important for successful treatment. Any doubt that the patient has should be dealt with care and cleared at once in simple language which he/she understands.

Control: It is the ability to purposefully direct or change.

Cultural concerns: To be sensitive to the cultural practices of the patient/client in any given circumstance e.g. Breast feeding practice.

Communication with family members of the patient: The Home Health Aide should understand the anxiety of the relatives of the patients and make them aware of the medical condition of the patient.

Business related issues: Healthcare providers should not entertain unethical practices in the hospital.

Telling the truth about illness, about medication, and side effects of medicines:
Telling the truth implies respect for autonomy - if a patient is lied to, they cannot make a reasoned and informed choice, because they do not have the information they need to do so.

Follow the guidelines of the hospital: The Home Health Aide should strictly follow the guidelines for hygiene, patient care, etc. This helps prevent hospital induced infections.
Accountability: As a professional, the Home Health Aide is to answerable for action and omissions in his/her training, he should be able to justify their decisions. He/she must always act lawfully, whether those laws relate to the certified practice or personal actions.

Qualities of a Home Health Aide

Empathy
- He should be able to know and comprehend another person's feelings, situation and motives.
- Must have a sincere interest in working with people;
- Must care about others and be able to communicate and work with them;
- Understand needs and learn effective communications is one way to develop empathy.

Honesty
- Truthfulness and integrity;
- Others must be able to trust at all times;
- Must be willing to admit mistakes so that they can be corrected.

Dependability
- Must accept the duty that your position requires;
- Must be immediate reporting to your work and maintain good presence record;
- Must perform prescribed work completed accurately and on time.

Fig.3.30: Good qualities of HHA

Willingness to learn
- Must be ready to learn and adapt to changes;
- Changes occur due to research, new inventions and many other factors;
- Changes can mean learning new techniques or procedures;
- At times, additional education may be required to remain competent.

Patience
- Must be tolerant and thoughtful;
- Must learn to control your anger and "count to ten".
- Learn to pact with frustration and overcome problems.

Acceptance of criticism
- Must be ready to accept criticism and learn from it;
- Patients, employers, co-workers and others staff may criticize you;
- Some criticism will be constructive and permitted to well improve your work.

Enthusiasm
- Must enjoy the work and present a positive attitude;
- Enthusiasm is constant.
  - Helps you do your best
  - Encourages others to do the same
  - Concentrate on positive points and negative points will not seem to be quite so important.

Self-motivation
- Ability to start or to follow through with a work;
- Should be able to determine things that need to be done and do them without constant direction.

Tact
- Ability to say or do the kindest or most fitting thing in a difficult situation;
- All individuals have a right to their own feelings and these feelings should not be judged as right or wrong;
- Shows consideration of the feelings of others;
- Requires regular practice.
- Every individual have a right to their own decision and these felling should not be judge as right or wrong.

Competence
- Qualified and able of performing a task;
- Follow instructions;
- Use approved procedures;
- Strive for accuracy in all you do;
- Know your limits and ask for help or guidance if necessary.

Responsibility
- Being willing to be held accountable for your actions;
- Others can rely on you and know you will meet your obligations.

Discretion
- In Healthcare career you have access to confidential information;
- Information should not be told to anyone without proper authorization;
- Patient is entitled to confidential care;
- Be discrete and make sure patient's rights are not violated.

Team player

- Learn to work well with others;
- Each member of a Healthcare team will have different responsibilities, but each member must do his or her part to provide the patient with quality care;
- By working together, a team can accomplish goals much faster than an individual.
- A team is working together and complete goals much faster than an individual.

Fig.3.31: Qualities of HHA

Personal Appearance

- Important to present a healthy appearance and a health hygiene that inspires confidence and a positive self-image;
- Should wear uniform as per to the place of employment;
- Wear the name badge with a photo identification as per to the norms of place of employment.

List of Do's and Don'ts for a Home Health Aide

DO's

- **DO** answer directly to the preceptor and instructor with regards to all facets of the rotation.
- **DO** communicate to the best of your ability with the patient

- **DO** follow laws and regulations that govern *Health Information Patient Privacy Act* (HIPPA) in the appropriate manner and seek clarification, when needed, from the preceptor regarding any professional, legal, or ethical issues.
- **DO** master the routine and site-specific procedures of each rotation quickly so you can focus on competencies and skills specific to the rotation.
- **DO** complete the various tasks assigned by the preceptor during each rotation (i.e., outline by the instructor).
- **DO** report to the assigned externship/internship site **ON TIME!**
- **DO** complete every assignment given to ensure you pass the program successfully and receive a passing grade!
- **DO** make up hours in case of illness and emergency at the site originally assigned
- **DO** follow facility protocol and procedures to make up any missed hours

DONT'S

- ***DON'T*** act without the authority of the preceptor, in regards to advising patients, health professionals or other professional activities.
- ***DON'T*** accept or receive pay, either directly or indirectly, from the patient
- ***DON'T*** request to be placed with someone you are related to.
- ***DON'T*** request changes to your externship once rotation assignments are made.
- ***DON'T*** "withdraw" from your rotation after the rotation has started.

Activities

Activity 1: Visit a hospital and patient home and observe the services provided by HHA and qualities of HHA. Prepare a report and submit your teacher.

Check Your Progress

A. Fill in the Blanks

1. HHA work under the supervision of..... in the hospital.
2. ..... between HHA and patient is very important for successful treatment.
3. Healthcare providers should not entertain .....in the hospital.

B. Multiple Choice Questions

1. Honesty is .....
   a. Truthfulness
   b. Others must be trust at all times
   c. Must be willing to admit mistakes
   d. All the above

2. What kind of patience should work in a home health aide.
   a. Must be tolerant and understanding
   b. Must learn to control your temper

c. Both a and b
d. Only option a

3. Professional, legal and ethical issues are followed and governed by _____ Act.
   a) Health Information patient privacy Act
   b) Personal privacy Act
   c) Health Act
   d) None of the above

4. A Home Health Aide named Manoj was caring for a patient with some chronic illness. Manoj understood the need of the patient and gave assuring answer to easy the patient's anxiety. Which ability of Manoj as an ideal patient care assistant is reflected in this:
   a) Distraction
   b) Indifferent
   c) Empathy
   d) None of the above

C. Short Answer Question

1. According to Indian medical standards, create a list of which important medical ethics we should follow.
2. Write the good qualities of HHA.

Module 4 — Personal Hygiene and First Aid

Introduction

Human body provides the base for disease causing microorganisms to grow into it. Personal hygiene habits prevent these germs from entering the body. To preserve hygiene, care should be taken to maintain domestic and personal hygiene. Personal hygiene activities are the activities we perform to keep our body clean and include taking bath, hand washing, cleaning hair, dental hygiene etc. Indian cultural traditions focus on the value of maintaining personal hygiene. We follow a set sequential of oral care, bathing, and dressing. This inculcates the daily habit of keeping clean our body.

This unit describes the methods of washing hand, personal grooming practices and its role in maintenance of health. It also explain tool for home health aide. After completion of this unit, you will be able to comprehend personal hygiene methods and first aid practices which are very essential tools for a Home Health Aide.

Learning Outcomes

After completing this module, you will be able to:

- Demonstrate good hygiene practice
- Identify factors affecting good Health
- Perform hand washing
- Describe the principles and rules of First Aid
- Identify facilities, equipment and materials used for First Aid
- Perform the role of first aider in cardiac arrest, unconsciousness convulsion fever, heat stroke, back pain, asthma and food borne illness
- Perform the role of first aider in cuts, bleeding, burns, insect bites and stings, dog bites and snake bites

Module Structure

Session 1: Good Hygiene Practice

Session 2: Hand Washing

Session 3: Demonstrate Personal Grooming

Session 4: First Aid

Session 5: Identify Facilities, Equipment And Materials For First Aid
Session 6: Role & Functions of First Aider

Session 1: Good Hygiene Practice

On completion of this Session, student will be able to explain good hygiene practices including hand washing, personal grooming practices and its role in maintaining sound health.

Hygiene is a set of practices performed for the preservation of health. While in modern medical sciences, standard of hygiene varies in different situation. What is considered hygienic or not may vary between different cultures and gender groups. Some regular hygienic habits can be considered as good habits by a community, when they ignore of hygiene may be disrespectful, impolite or even denunciative. Sanitation involves the systemic dispose of waste and treatment through the civic authority of potentially unhealthy human waste, such as sewage and drainage.

Personal Hygiene

Good grooming and Good health is the first step of personal hygiene. Primary hygiene is common knowledge of individual. Negligence of hygiene causes problems that you may not even know about. Many persons unaware of bad breath irritate the people around them and so damage their image. Some hygiene problems can't be your mistake, but we can improve quality of hygiene standards that will control this condition such as dandruff and lice infection that cause hair fall and itching condition. The more you care about your hygiene level, the more you develop a habit of healthy living.

Grooming Routines

Our body's every external parts need basic care and cleanliness. Here are some daily grooming routines to avoid complaints.

- Hair
- Skin
- Teeth
- Hands
- Nails
- Feet
- Menstrual Hygiene
- Dressing and Undressing
- Bathing
- Shaving

Hair

Hair is humans head crowning glory. So hair needs regular care. Wash your hair in a week at least two times using soap and shampoos and rinse well. Avoid hair washing with chemicals borax or alkalis. Dry your hair after a wash. Brush your hair three to four times a day with a soft bristled brush or a wide toothed comb. Wash your brush and comb every time you wash your hair. Oil the scalp, once a week, preferably an hour before hair wash. There are no completely safe or permanent hair dyes yet. In addition to causing scalp allergies, dyes can also cause

allergic colds and throat infection. Every time you use a hair color, do a sensitivity test before use hair dyes or color.

Skin

In many culture, bathing is a part of daily activity. Bathing with soap and water keep our skin healthy and clean. In daily lives, bathing may be done for two times in, in tropical regions like India. Peoples who are involved actively in sports or heavy work like to be sweat a lot thus; they need to take bath after the activity. We may use Bathing brushes/sponges or scrubbers to exfoliate dirt. But don't use abrasive material ob body. Washing of every part is essential after using soap. Drying the body should be done by using clean towel. Always, avoid soaps and towels sharing with another person. After bath change your underwear and using clean washed underwear. Use moisturizing cream for hydrating the skin. Before going to bed, cream or oil can be applied to skin.

Teeth

Teeth are very important part of our life. White and clean teeth make our smile attractive and also help in eating food. Teeth require cleanliness and oral care twice daily.

Have you heard about battery operated wonder brush that operates for sixty second?

You have to hold the brush in your teeth and say cheese (and then perhaps S-A-U-C-E for the brush to get a good scrub inside!). So, you can use neem twig or tooth brush but you should never miss brushing. Brush and clean the teeth in two times a day and rinse them well after every meal. Brushing is important before sleeping (especially needed for people with a sweet tooth). While brushing, clean the teeth all around places because during eating, some food particles stuck in-between the teeth in the gap of flatter teeth at the back of molar and premolar teeth and serve as growing media for the micro-organisms. Brushing should be done on both upper and lower teeth. Use a vertical zigzag motion with normal speed. Pay attention to the inner surface of teeth and tongue. The brush should be flexible. It should be well clean and left to dry after use. Always prefer good quality toothpastes and powder available in the market. Daily brushing prevents from getting oral disease such as mouth smell, gingivitis, yellowish teeth and layer of cavity.

Fig. 4.1: Oral care

Hands

Micro-organisms are present all around the world in crowd and some invisible bacteria are found in human bodies. A layer of dust or grime reduces the sensibility of the hands. Washing your hands clean with soap and water before and after every meal and after visiting the toilet is a must. Soap should cover the area between fingers, nails and back of the palm. After thorough washing, hands should be wiped and dry with a clean towel. The towel has to daily washed and changed at the wash stands.

While preparing food, especially during packing of lunches, we can also prevent food from spoilage or waste and reduce contamination by keep your hands clean. While handling the food avoid rubbing, or touching the nose, ears, mouth or other body parts. If you need to use a tissue paper or handkerchief, after that wash and clean your hands. Keep your nails short because big nails carried germs and causes disease. Avoid Nail Polish because it may enter in our digestive system with meal and affect our health. Always keep your hands neat and clean.

Fig.4.2: Hand hygiene
https://www.discovermagazine.com/health/the-biology-of-hand-washing

Nails

Nails are dead cells of our body, made up of keratin. For a health professional, nails should be regularly trimmed and clean. Also home health aide need to maintain the cleanliness of patient's nail. To maintain healthy nails, always cut the nails short along their shape, don't cut them so deep because it may damage the skin. A healthy body ensures healthy nails. Fragile or discolored nail shows the deficiencies or disease such as anemia – lack of "Hemoglobin" in blood. Do not use nail polish or nail painted constantly. It causes the keratin, to split the nails. Take care of hands and nail once in a weeks with manicure. For this you may soak your hands in luke warm water for minimum ten minutes, massaging of hands and shaping and cleaning of nails. You can also purchase your manicure kit of your choice.

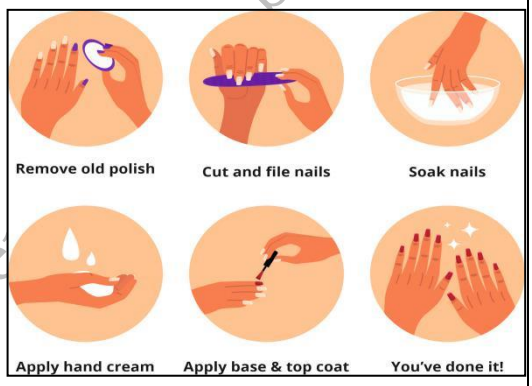


Fig.4.3: Nail care of patient (step 5 ???)

Feet

Care of feet should be done on routine basic like other body parts. You can opt for pedicure once in a three week by using good scrub with sponge and pumice stone or foot scrubber during bath time, but this it should not be made of harmful material. Clean and dry the space between the fingers of toes after bathing. Those who use shoes constantly need to slip them off now and then. Always wear cotton socks in which easily pass air and makes them less smelly. Wear cotton socks. Wear a clean pair socks every day and use talcum powder on feet before wearing socks. This will help in reducing sweat and fungal infection. Many people sweat excessively on feet so their socks and shoes get quite smelly. Do not repeat the same pair of shoes.

Fig.4.4: Care of feet

Keep one pair extra shoes in bag and use them alternatively. Select the foot wear, which is comfortable to wear. If some people enters barefoot indoors, have door

mats to clean the dirt of the feet. Special kind of foot care is needed to diabetic patient.

Menstrual Hygiene

The woman feels completely uncomfortable when menstruation begins. There may be sign of tension, abdominal pain, cramps, anxiety or stomach cramps during menstruation. Comfortable sanitary pads of different sizes and absorbing capacity are available in the market. Menstrual cups or caps and tampons may also be used during menses. Absorbent pads may be considered as best option. Pants or inner garments should be loose enough for air passage as tight fitting cloths may cause some soreness and itching on the inner thighs areas.

Some women's prefer tampon over external pads which is a plug of absorbent cotton or gauze to be inserted into the vagina. Tampon absorbs all menstrual blood. But these should not be left unchanged beyond six hours. Approximately 1% women's carry the bacteria (*Staphylococcus aureus*) in their vagina during menstruation. The menstrual cup or cap is a reusable device inserted in to the vagina and to collects the all blood flow and can be emptied, cleaned and to use it again. During these times the preference maintains personal hygiene is important. Bathing and cleaning of private parts during menses is a must. Some woman may have complaint of odor during menstruation this could be reduced by changing pad/tampon frequently and should visit to the doctor. Don't give the advice to use perfume pads/tampons in reality, using of powder in the genital area is not recommended. Women need to clean or hygienic during menses to prevent genital disease.

Health and Hygiene Education

Health education plays an important role in the community hygiene. To prevent illness and have positive health attitude, correct and complete knowledge of health is necessary. Health is cleanliness; cleanliness is one of the main defenses against diseases, whether infectious or self-generated.

In this session, we will learn the concept of health and hygiene in our daily life as good hygienic habits and healthy living are the way to achieve good health.

Hygiene is same as the health promotion, it's concerned not only upto the transmission of information, but to understand and promote the capacities of people and to improve their own health chiefly through:

- Improving environmental health condition and changing behavior to reduce certain hazards at the household level.
- Best uses of available health services and facilities.

Health or hygiene education is promotion of hygiene practices and concerned to achieve and improvements in health through the efforts of persons, families or society and community and external agencies, health authorities etc. Mostly in every culture, hygiene practices are inculcated in children's behavior from the early life itself by the family. On the other, through health education, health and hygiene related situation, services, knowledge and behavior of individual or community may be improved. Key aspect of hygiene promotion is that it depends on the careful analysis of people's problems, opportunities and power in any situation, it seek to solve the hygiene problems, that are realistic and applicable to people's desires and

ways of living. Recent work on hygiene awareness in development and emergency condition has emphasized the benefits of hygiene promotion over the more traditional and limited aspects of hygiene education and health education. Hygiene promotion and hygiene education are needs to be employed on large scale so as to involve in various aspects of health, such as avoiding all type of exposure hazards contact, protection from communicable disease during pandemic.

Importance of Personal Hygiene

Maintaining personal hygiene is important in many aspects; such as personal, social, health reasons as this is a kind of psychological or simple way of living life. Need of maintaining a good standard of hygiene helps to prevent from germs growth and spread of infections, disease and bad smell. Personal hygiene has various important aspects ranging from personal, social, health and psychological ways.

Personal Aspect

Importance of personal hygiene practices had been taught at early age, and in school also we learn about oral cavity, head lice infection and gastro intestinal infection. Personal hygiene practices mostly reflected on our ability to care for ourselves and maintain good health such clean and healthy teeth with bright white smile can make positive image, while yellowish and cavity in can cause shame or unhealthy reflection. Healthy skin, hair and nails are indicators of good nutritional status and a good healthy body that gives good confidence in daily life.

Social Aspect

Mostly people hate to talk with unhygienic person or person who does not maintain cleanliness. So always ensure that our body is clean and well presented. We are more likely to project a positive image that reflects our personality. Children and student should be taught the necessity of hygiene in daily life, and how to achieve good hygiene in early age and keep themselves and others keep good healthy, and reduce the risk of begin bullied.

Health Reasons

Whenever a person goes into hospital, he or she becomes very aware about his or her personal hygiene. The thought of being insecure and exposed to ignorance can make the person very strict maintain to their hygiene needs. If you are injured, the wound should be cleaned and use antiseptic lotion and dressing the wound. Suitably; this can help to control blood flow and will reduce risk of infection and pain. Some situation such as lice infection on head, sport injury etc. some communicable disease should be treated early to prevent it from infecting others. Hand washing should be a priority because this simple procedure can prevent plurality of disease and developing disorders. Many people forget washing their hands after using toilet or before taking foods; this mistake can cause a big deal of illness and may be fatal sometimes.

Psychological Issues

By maintaining personal hygiene and being well presented, looking neat and clean, person can feel more confident and energetic especially in social situation. When we meet any person for the first time or during job interviews people closely observe

the candidate's personal hygiene and many decisions are made by first impression. This kind of decision is made in the sub conscious. The chances of succeeding either in work and social situation, or even for making an impression on other person or society, we should maintain hygiene habits. Maintaining our hygiene practices is important to reduce the risk of illness, and at the same time it equally affects how we and others people observe ourselves and impact our level of confidence and self esteem.

Activities

Activity 1: Students prepare a chart on health and hygiene and will go to rural areas and provide health education about personal hygiene and disease awareness.

Check Your Progress

A. Fill in the Blanks

1. Hygiene is a set of practices performed for the .....
2. Good grooming and good health is the first step of .....
3. Hair is humans head .....

B. Match the following Columns

Column A	Column B
1. Skin	a. Made up of keratin
2. Nails	b. To prevent genital disease
3. Health education	c. Clean and healthy
4. Menstrual hygiene	d. Community hygiene

C. Multiple Choice Questions

1. Daily brushing is protect from getting oral disease
   a. Gingivitis
   b. Yellowish teeth and cavity
   c. Mouth smell
   d. all the above

2. Health and hygiene education play an important role in the community hygiene.
   a. To prevent illness
   b. Health promotion
   c. Both a and b
   d. To promote causing disease

3. Healthy skin, hair and nails are indicators of...
   a. Good nutritional status and personal hygiene
   b. Poor nutritional status
   c. Malnutrition

d. Poor personal hygiene

D. Short Answer Questions

1. What is personal hygiene?
2. What are the daily grooming routines to be followed to make sure good health?
3. Write short notes on menstrual hygiene.
4. Write the relation between health and hygiene.
5. Write the various important aspects of personal hygiene.

Session 2: Hand Washing

Hand washing for **hand hygiene** is the act of cleaning one's hands with the use of water or another liquid, using soap to remove soil, dirt, and/or microorganisms.

Medical hand hygiene concerned to the self care hygiene practices related to administration of medicine and immediate medical care, that prevents or reduce disease and decrease spreading of infection. Hand washing with the use of soap or liquid, is the single most effective and inexpensive way to prevent diarrhea and acute respiratory infections (ARI). The main objective of washing hand is to clean the hands and to make them free from the germs and pathogens (bacteria and viruses) or chemical; they can cause personal harm and disease. This is mainly for people who are handling food and work in Healthcare sector, but it is also essential for the general public. People may be infected with respiratory disease such as influenza or common cold (sneezing), if they are not wash hands before touching their eyes, nose, or mouth. The Center for Disease Control and Prevention (CDC) has stated: "It is well established that effective hand washing is one of the most essential measures for preventing the spread of pathogens."

As common rule, hand washing is protect us from many communicable disease which spread through fecal- oral routes (such as many forms of stomach flu) and via direct physical contact (such as impetigo).Hand washing with soap and water can be replaced only during unavailability of water or soap with alcohol based gels sanitizer that is killed some types of pathogen, micro organism, but alcohol based sanitizer effectiveness is disputed and may lead to antibiotic-resistant bacterial strains.

Washing hands is important after using toilet, changing nappies, handling animals and before and after meal, this helps to prevent from spread of various disease form of gastroenteritis, and some may causes serious health problems. Liquid soap is best for the washing hands as it kill germs.

Why is hand hygiene important?

The hands normally have a “resident” population of micro-organisms apart from those accumulated during everyday activities termed “transient” organisms. Most of the germs on our hands are harmless, but some causes cold, flu, skin infections or diarrhea. Forgetting to wash our hands causes spreading of these germs to other people; also infect ourselves when we touch our eyes, mouths or open cuts. Hand washing prevents the microorganisms getting displaced to other surfaces, patient or vulnerable areas on the patient.

Why is hand hygiene important in Healthcare?

Patients are more vulnerable to infection from germs carried on their hands or other hospital people when brought into a healthcare environment. Patients, visitors, Healthcare workers, nursing staff and doctors can cut the risk of spreading infections by regularly cleaning their hands.

Advice to healthcare staff and patients

All Healthcare staff should wash hands with soap or use alcohol gel:

- Before and after direct patient contact;
- Attending to the toilet needs of the patient.
- After Medical procedures;
- Wearing and removing gloves.

The temperature of hot water used for hand wash is not sufficient to kill bacteria. Bacteria grow much faster at body temperature (37^{o}C). Warm water with soap is more effective than cold water for removal of micro-organisms as flowing water helps to dissolve the soil and dirt from hands easily. A hand sanitizer or hand antiseptic is a non-water-based hand hygiene agent. Hand sanitizers are effective against bacteria but not for some viruses which commonly cause contagious gastroenteritis. Reduce touching wound dressings, stitches, catheters or an intravenous line, unless it is unavoidable as it may lead to spreading of germs to other parts of the body. Medical hand-washing is ideally done for a minimum of 15 seconds, using soap and water or gel to lather and rub each part of the hands.

The main function of soap and detergents is to decrease barriers and increase solubility in solution. Water alone is not effective for skin cleanser because fats and proteins, which are components of organic soil, do not get easily dissolved in water. Therefore, for cleaning, use proper flow of water. A hand sanitizer or hand antiseptic is a non-water-based hand hygiene agent. Hand sanitizers are most effective against bacteria and less effective against some viruses. Alcohol-based hand sanitizers are not entirely effective against all type viruses, such as in gastroenteritis infection which is common cause of many disease. Regular use of alcohol-based hand sanitizers can cause dry skin unless added the amount of skin moisturizers in the formula.

Wound, stitches, catheters or an intravenous insertion sites should never be touched with bare hands unless it is absolutely necessary as it could spread germs to other parts of the body. Medical hand-washing procedure should be done for a minimum of 15 seconds, using proper amounts of soap and water or gel and rub each part of the hands wash and clean. Let us now practice the steps used for hand washing.

Steps for Hand Washing

Fig.4.5: Steps of hand washing

Activities

Activity 1: Students perform hand washing demonstrate in the classroom and explain the importance of hand washing to people in the community.

Check Your Progress

A. Multiple Choice Questions

1. The most essential measures for preventing the spread of pathogen.
   a. Contaminated hands
   b. Rubbing hands
   c. Washing hands
   d. Clean hands
2. All Healthcare staff should be hand washing
   a. Before and after direct patient contact
   b. After any medical procedure
   c. Wearing and removing gloves
   d. All the above

B. Short Answer Questions

1. What is hand hygiene?
2. Write the all steps of hand hygiene.
3. Write the importance of hand hygiene.
4. Make a beautiful picture of the steps of hand washing

Session 3: Demonstrate Personal Grooming

Personal grooming (also called **titivating** and **preening**) involves cleaning of body parts, trimming of nails and hair to improve the personal hygiene.

Importance of Personal Grooming

Personal grooming encourages the resident to maintain a pleasing and attractive appearance and develop a positive self -image.

- It makes a person neat and personally appealing.
- Grooming indicates the readiness of a person for work.

Basic Grooming

Basic grooming involves practices that are followed daily to keep healthy and to make effective presentation. Practices that can be followed regularly are :

- Groom your facial hair. Facial hair should be groomed by avoiding patchy beard, long black mustache, or chin pube goatee.
- Brush your teeth twice daily and wash your hair regularly.
- Wash your hair.
- Take care of your skin.
- Keep your finger nails and toe nails trimmed and clean.
- Wear deodorant.
- Pay attention to keep your ears and nose clean.
- Use clear communication skills while speaking to the patient and their

relatives.
- Wear identity card and clean uniform

Basic Dressing

Common mistakes while dressing for work:
- White socks with dark shoes and vice versa can be better avoided.
- Wear T-shirts that are properly fitting.
- Same outfit should not be repeated for two days or more in a row.
- Avoid wearing faded clothes.
- Do not wear clothes that are overly wrinkled, dirtied or stained.

Basic Appearance

- Get your hairs looking good.
- Trim it in fashionable style.
- Ensure you wear glass frames appropriate to the situation.
- Maintain your physique by involving in enjoyable activities like rock climbing, or kick boxing, or dancing.
- Pick something you enjoy doing.

Activities

Activity 1: Students Demonstrate personal grooming activity in class room.

Check Your Progress

A. Fill in the Blanks

1. Personal grooming is also called .....
2. Use effective..... while speaking to the patient relatives.

B. Short Answer Questions

1. What is personal grooming?
2. Write the importance of personal grooming.

Session 4: First Aid

First Aid is the first assistance or aid or treatment given to a patient in emergency situation before the formal and appropriate medical help is available. Any trained person, paramedical staff at any point of time can give their services. An ambulance should also be made available at the workplace to meet any emergency. The very purpose of giving first aid is to prevent further deterioration of the patient. The responsibilities of the first aid giver is to help the patient by winning the confidence of the patient. At the same time first aider must not endanger his own life while giving appropriate and adequate treatment bearing in the mind that casualty may have more than one injury.

When a person suffers any kind of injury or sudden illness, any immediate medical attention or treatment may be provided to reduce the discomfort, pain and deterioration of the condition. During these situations trained doctors are not available on the spot. Hence the first care provided before seeking professional medical help is called "First Aid". As a trained GDA it is necessary to understand the principles and procedures for providing first aid while awaiting the arrival of "Medical Aid".

First Aid means initiating treatment for life support of people suffering with an injury or sudden illness. We have to understand that First Aid has its limitations and cannot be substituted for professional medical treatment. Proper assistance given by First Aider helps in saving the life of a patient. The ISO specified symbol for the First Aid is symmetrical white cross on a green background.

Purpose of First Aid

The primary intention for giving first aid is to sustain the life of the victim before the arrival of a qualified medical expert, reduce discomfort due to pain, help in early recovery and prevent condition from worsening.

Fig.4.6: First aid symbol

Principles of First Aid

The basic principles of first aid are to:

1. **Preserve life**: This includes preserving the life of the casualty and rescuer.
2. **Ensure protection of the casualty from further harm**: The place should be safe and not affected by the presence of excess people.
3. **Provide pain relief**: This includes the use of ice packs or applying a sling.
4. **Prevent the condition from becoming worse**: Ensure the First Aid procedures does worsen the condition.

Rules of First Aid

Important rules for First Aid are as follows:

- **Check**: Find out what has happened, and then what is wrong with the person. Comfort the victim and arrange shelter.
- **Call**: Arrange for professional medical aid.
- **Care**: Help the victim, preferably without moving him or her.

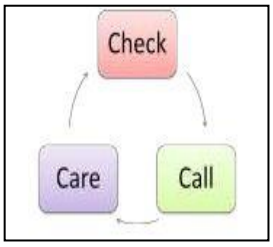


Fig.4.7: Rules of first aid

Health Emergency

A situation in which the health of a person is in danger because of sudden illness or accident, and immediate help is required to "save a life" is health emergency. The ill or injured person should be given immediate attention and first aid in case of emergency before the medical help arrives. The various situations which requires immediate medical care are: (i) electric shock, (ii) breathing difficulty (iii) burns, (iv) bleeding, (iv) injury, (v) fracture, (vi) heart attack, etc.

The Human Body

The human body works together continuously to perform countless tasks. The body by adulthood consists of close to 100 trillion cells, the basic unit of life. These cells are organized in systematic manner to form the whole body with various body systems. A newborn baby has over 300 bones at birth, whereas an adult human has 206 bones. The body includes the musculoskeletal system, cardiovascular system, digestive system, endocrine system, integumentary system, urinary system, lymphatic system, immune system, respiratory system, and reproductive system. We will now understand two vital aspects of life from the point of First Aid.

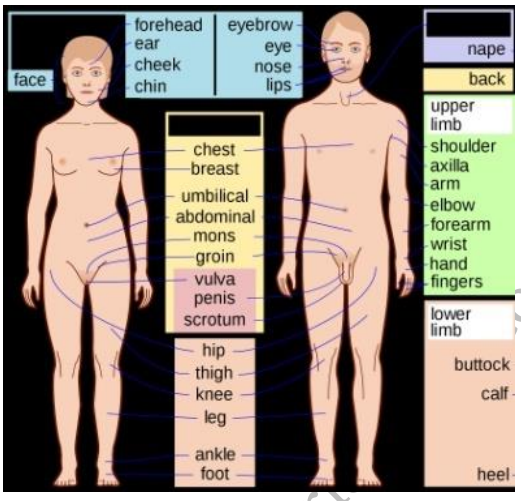


Fig.4.8: Human body
Courtesy: https://goo.gl/5UWYPD

Breathing

Breathing is vital to life and a person breathes about 20,000 times a day. Breathing process is assisted with the help of the respiratory system, which includes the nose, throat, voice box, windpipe, and lungs. We inhale air through the nose or mouth that meets together at the pharynx or throat, located at the back of the nose and mouth. The diaphragm that separates the chest from the abdomen moves up and down when we inhale and exhale. When we breathe in, the diaphragm moves down to enlarge the chest cavity to fill in maximum air. When we breathe out or exhale, the diaphragm moves up, forcing the chest cavity to push the gases in the lungs out through the nose and mouth.

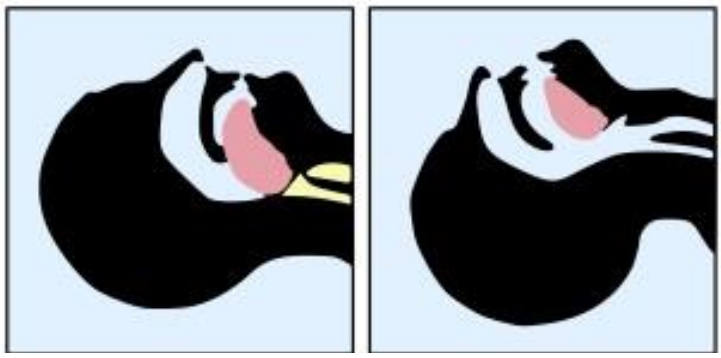


Fig.4.9: First aid for Breathing problem
Courtesy: https://goo.gl/9C4jfP

In case of tongue fallen backwards, blocking the airway, it is necessary to hyperextend the head and pull up the chin, so that the tongue lifts and clears the airway.

Table 4.1: Respiratory Rate

Respiratory rate/minute	
Infant	30 to 60
child	24 to 40
Adult	16 to 18
Old age	10 to 14

Blood circulation

Blood is composed of plasma and cells suspended in viscous medium. The blood consists of plasma, red blood cells, white blood cells and platelets. The heart, the main pumping organ of the circulatory system is made of muscles. It is located between the two lungs slightly inclined towards the left side. The pointed tip at the bottom of the heart touches the front wall of the chest each time the heart beats producing a sound . You can also listen to them with your ear. While the heart contracts, it pushes the blood out into two major loops or cycles, the systemic loop or the pulmonary loop.

The blood reaches the body's systems by circulating oxygen to all its organs, structures and tissues and collecting carbon dioxide waste through the systemic cycle. The pulmonary loop helps in oxygenation of blood. It circulates blood to and from the lungs, to release the carbon dioxide and pick up oxygen. The systemic cycle controls the left side of the heart and the pulmonary cycle the right side of the heart.

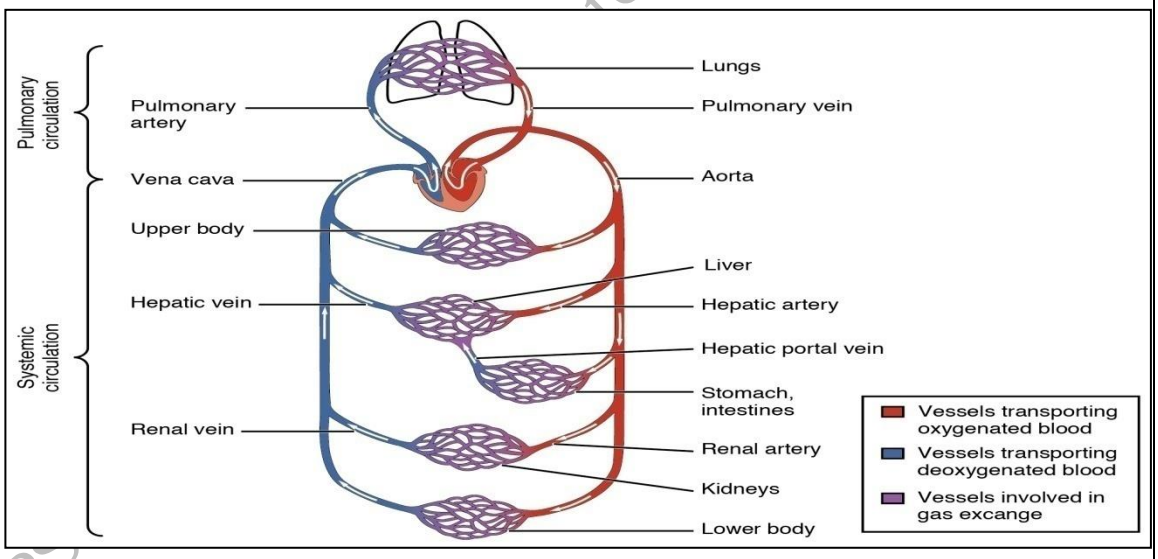


Fig.4.10: Systemic blood circulations in human body

Health and safety risks at workplace

The probability of a person to experience an adverse health effect if exposed to a hazard are considered the risk factors at work. Let us now learn about the various types of hazards and their cause. This helps to identify the various hazards that you may encounter at workplace.

Types of Hazards

- **Biological** – Biological hazards are caused by living organisms like bacteria, viruses, insects, plants, birds, animals, humans, etc.

- **Chemical** – Chemical hazards, which include acids, poisons, cleaning agents, etc. depends on the physical, chemical and toxic properties of the chemical. The severity of the hazard depends on the toxic properties of the chemical.

- **Radiation** – Radiation hazards are related to exposure to radiations from radioactive substances.

- **Ergonomic** – Ergonomic hazards are caused due to same posture and movements, improper lay out of workstation (e.g. computer workstation, workstation for repair of electrical gadgets, etc.), faulty designed chairs, tools and equipment, wrong postures, etc. Wrong postures also induces physical fatigue and/or bodily harm, including back pain, and discomfort in shoulders and lower limbs.

- **Physical** – Physical hazards are caused due to slippery surfaces, falling objects, manual handling (lifting, pushing, carrying), sharp tools and equipment, radiation, magnetic fields, extreme pressure (high pressure or vacuum), excessive loud and prolonged noise, and bullying (abnormal, repeated behavior directed against a worker or group of workers which results in a risk to health and safety). It may result in stress, depression, loss of self-esteem, feelings of guilt, phobias, sleep and eating disorders, sexual harassment (a situation in which unwanted behaviour with a sexual connotation, expressed physically, verbally or non-verbally takes place), verbal threat, abusing, use of weapons, etc.

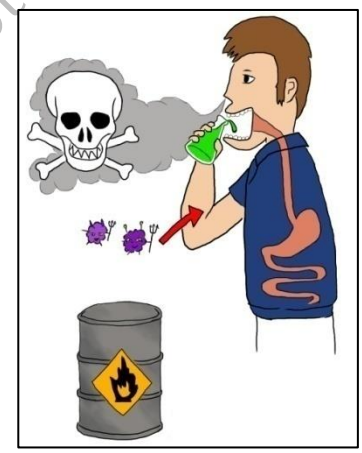


Fig.4.11: Types of hazards
Courtesy: https://goo.gl/XtzLYd

- **Psychosocial** –Psychosocial hazards are caused due to violence, excessive pressure or stress at workplace for meeting deadlines, conflicts at workplace, etc. It also includes hazards due to discrimination on the grounds of caste, race, skin colour, ethnic origin, sex, religion, etc.

- **Safety** – Safety hazards at workplace include slipping or tripping, inappropriate machine guarding, collision, bumps, road accidents, fire accidents, equipment malfunctions or breakdown and electrical accidents (it could result in skin burns affecting the areas that are in contact with the electrical current or electric shock due to electrical discharge).

Fig.4.12: Types of hazards

Activities

Activity 1: Visit a hospital and find out first aid measures adopted. In your school find out the steps taken by the administration to provide first aid during health/medical emergency.

Activity 2: Visit a nearby hospital and observed various hazards. Fill the common hazards in the table given below:

Type of Hazards	Place prone to get the Hazard in the Hospital
Biological	
Chemical	
Radiation	
Ergonomic	
Physical	
Psycho social	

Check Your Progress

Fill in the blanks

1. The medical attention that is given before professional medical help is called _____.
2. The ISO specified symbol for the first aid is _____ on a green background.
3. A health emergency is a situation in which immediate help is required to _____
4. The composition of the blood includes plasma, _____ and platelets.
5. Biological hazards are _____ and that are present in the environment.

B. Short Answers the following Questions

1. What is the purpose and principles of First Aid?
2. Write the rules of First Aid.
3. What is a Health Emergency? Write the various emergency situations?
4. Draw the diagram of systemic blood circulation in human body.
5. Explain various types of hazards that are affect our health and causes disease

Session 5: Identify Facilities, Equipment And Materials For First Aid

This session explains the various facilities, equipment, and materials used for First Aid. First Aid facilities should be easily available and located at points convenient to workers. An ambulance should also be made available at the workplace to meet any emergency.

Ambulance is a transport vehicle to shift critically sick or injured people to a medical facility. Ambulances are motor vehicles, that may be a helicopter, airplane, or even a boat. The interior of an ambulance can accommodate one or more patients and several emergency medical personnel's. It consists of supplies and equipment's to stabilize the patient's condition en-route. The head of the organization or the employer provides first aid facilities, such as a First Aid room, a First Aid kit, a health centre and First Aid equipment in the premises to meet any emergency.

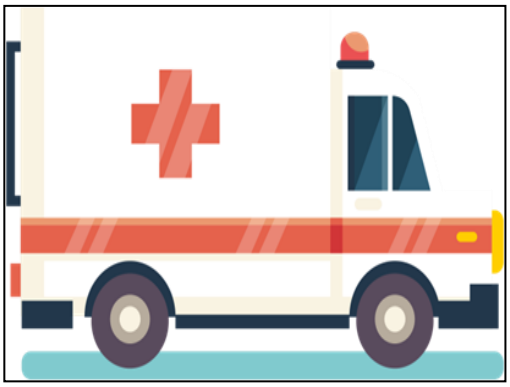


Fig.4.13: Facilities of transportation

Once the employer has set up First Aid facilities, one or two persons should be nominated as First Aider. They should be trained for First Aid facilities and services at the workplace. Now let us understand the facilities and the important aspects that we need to keep in mind when arranging these facilities.

First Aid Room

It is the place where equipment and materials are made available and systematically arranged for providing first aid services. It should have the following:

- A name plate with the symbol of FIRST AID.
- Proper lighting and ventilation.
- Toilets, which should be friendly for differently abled persons (Persons with disability). Facilities for easy movement of a person on a stretcher or a wheelchair.

The facilities at the First Aid Room should include:

- Table and chairs
- Telephone
- Directory of emergency telephone numbers. (For example, in India telephone number for fire service station is 101, for police it is 100 and for emergency services/Ambulance it is 108)
- First Aid kit
- Examination lamp
- Medical examinations couch with blankets and pillows
- A portable screen
- Container for sharp equipment like surgical knives, etc.
- Sink and wash basin with hot and cold running water
- Sterilizer
- Stretcher
- Workbench or dressing trolley

- Oxygen cylinder
- Sphygmomanometer – blood pressure measuring instrument
- Resuscitation equipment
- Cupboards for storing medicines, dressings and linen
- Electric power points
- Suitable seating
- Container for soiled dressings
- Medical waste containers.

First Aid Kit

The First Aid Kit consists of mainly contents for providing first aid in case of bleeding, bone fractures and burns. The first aid kit could also be made industry/organisation specific (nature of the job being undertaken at the industry/organisation). For example, in casting and forging industries, medicine used in burns and scalds should be kept in the First Aid kit. A basic First Aid kit should include the following:

- Band-aids of all sizes.
- 4" by 4" gauze pads - for cleaning wounds.
- 4" by 4" dressing bandages - for wounds, cuts, and abrasions.
- 2" dressing rolls or crepe bandage - for covering and bandaging injuries.
- Medical tape.
- Cotton balls.
- Safety pins.
- Alcohol pads or isopropyl alcohol for cleaning wounds.
- Antimicrobial hand wipes - placed in a sealed plastic bag to keep them moist.
- Hydrogen Peroxide for cleaning skin wounds.
- Sterile water bottle.
- Eye flushing solution bottle with an eye cup.
- Ace bandage for casing sprains and contused soft tissue.
- Arm sling.
- Chemical ice pack.
- Chemical hot pack.
- Thermometer - oral and rectal (for kids).
- Tweezers.
- Scissors.
- Torch.
- Nail clippers.
- Jack knife.
- Clean string for various purposes.
- Sterile gloves.

Fig.4.14: First aid kit
Courtesy: https://goo.gl/ann42h

Important medications and other relief materials to be contained in a First Aid kit and updated (check for expiry of the medicine and replace immediately with fresh batch) include the following:

- Antibiotic ointment - for cuts and scrapes of the skin.
- Medicated sunburn spray or cream.
- Calamine lotion. Insect sting relief pads.
- Tablet Tylenol (Acetaminophen) – It is used as pain and fever reducer.

- Tablet Advil (Ibuprophen) – It is anti-inflammatory, used for pain, swelling, and fever.
- Syrup Benadryl (Diphenhydramine) – It is antihistamine for allergic reactions, itching, and runny nose.
- Cough suppressant.
- Oral Rehydration Salts (ORS).
- Defibrillators: An electronic device that controls an electric shock of preset voltage to the heart through the chest wall. It is used to reinstate the normal heart rate during ventricular fibrillation.
- Tourniquet bandage (compression bandage): If bleeding persists even with pressure for more than 15 to 20 minutes, tourniquet bandage is applied.
- Slings: Sling is a bandage used rest an injured forearm. It is a wide triangular piece of cloth which is used to support the hand from around the neck.
- Splints: Splints are orthopedic mechanical devices used to restrain and protect a part of the body in the case of a fracture (such as a broken leg or hand).

Drugs for Common Ailments: There are a variety of common ailments from which people suffer. These ailments are not very serious and can be cured by referring to some home remedies or over the counter medicines. Many common illnesses are treated at home using non-prescription medicines. Some ailments are serious enough to require professional medical attention; even the common cold can become very serious if not treated correctly, as it can advance to other infectious diseases such as influenza and pneumonia. If ailments persist, then the patient should immediately consult a doctor.

Some of the common ailment and the drugs generally prescribed are given in the table below:

Table 4.2: Drugs for Ailments

Ailments	Drugs
Allergies	Tablet Cetrizine
Headache	Tablet Saridon, Aspirin (Aspirin is also used in case of chest pain)
Heartburn/ Acidity	Tablet/Syrup Digene
Nasal Congestion	Vaporub for rubbing on nose and chest
Cough and Cold	Tablet for cough and cold or syrup
Fever/Flu	Paracetamol (also used as a General Pain Killer)
Constipation	Isabgol Husk (with hot milk/water)
Sprains and Strains	Tablet Flexon/Combiflam (used as a anti-inflammatory painkillers)
Dehydration	Oral Rehydration Salt (ORS)

Activities

Activity 1: Prepare a First Aid box with all equipment and materials.

Activity 2: Prepare list of all essential medical equipment and medicines.

Activity 3: Visited nearby hospital and medical training center and collect the information about First Aid.

Check Your Progress

A. Fill in the Blanks

1. _____ is a vehicle specifically designed to transport critically sick or injured people to a medical facility.
2. _____ is the place where equip mental and materials are made available and systematically arranged for first aid services.
3. The contents of the _____ kit are mainly meant for providing first aid.

B. Match the following Column

Column A	Column B
1. First Aid	a) Electronic equipment
2. Ibuprophen	b) Orthopedic mechanical device
3. Defibrillators	c) Compression bandage
4. Splints	d) anti inflammatory
5. Tourniquet bandage	e) for emergency

C. Answer the following Questions

1. What is the first aid room and write the facilities of First aid room.
2. Explain the First aid kit and enlist the contents of first aid kit.
3. What are the drugs for minor ailments? Prepare a list of the medicines.
4. Write the names of medicines given in case of minor illnesses.

S.No.	Minor illness	Drugs
	Allergies	
	Fever (Flu)	
	Constipation	
	Sprains and strains	
	Acidity	

Session 6: Role And Functions of First Aider

A First Aider is a person who undertakes an emergency situation and gives first aid. Often the first aider at an emergency scene is passerby who is willing to help. A parent who help his/her child, a firefighter attending to an injured pedestrian, or an employee who provides care are all providing first aid. A First Aider do not diagnose or treat injuries and illnesses but offers help to the person in need.

This session describes how to give first aid to a casualty with fever, heat stroke, back pain, asthma and food borne illness. As a First Aider, the first thing is to manage the situation and stay in charge until the arrival of the medical help or ambulance. While in charge, many other people may offer to help and crowd the place. In an emergency, where there is a confusion and fear, a well-trained and

effective First Aider reassure everyone, and can make the whole experience less traumatic. Besides giving First Aid, one should ensure the following:

- Manage unnecessary crowd.
- Protect the casualty's belongings

General Considerations and Rules

The elementary lifesaving procedures are head tilt, First Aid at choking and recovery position. Now let us imagine that a person has met with an accident. The services of priority that should be followed by the first aider in an emergency are as follows:

Step 1: Check for bleeding: Stop bleeding by applying direct pressure on the wound site.

Step 2: Check for head, neck and spinal injury: If any of these are suspected, immobilize the victim to prevent further injury. Moving a victim will often increase the impact of spinal injuries.

Step 3: Determine responsiveness: If a person is unconscious, try to arouse by gently shaking and speaking.

Do not give fluid, the victim cannot swallow and could suffocate. Look for the victim's chest movements and listen for sounds of breathing (place your ear near the nose and mouth and feel for breath on your cheek). If the victim is not breathing then mouth to mouth resuscitation is to be given. If you are not trained to do that, then call for medical help at the earliest.

If the victim is breathing, but unconscious, roll the casualty on one side, keeping the head and neck aligned with the body. This will help drain the mouth and prevent the tongue or vomit from blocking the airway if the person remains unresponsive, carefully roll the casualty on back and open the airway.

- Keep head and neck aligned.
- Cautiously roll onto the back while holding the head.
- Open the airway by lifting the chin.

Observe ABC as follows:

A – Airway
B – Breathing
C – Circulation

Fig.4.15: Basic life saving steps
Courtesy: https://goo.gl/xDzoQr

Airway: Ensure that the tongue or any foreign body does not obstruct the airway.

Breathing: Make sure the victim is breathing. If you are trained to give mouth to mouth respiration, then facilitate breathing.

Circulation: Check for the pulse to ensure that the heart is beating properly. Check heart beat/pulse of the victim. If there is no pulse and if you are trained to

do Cardio Pulmonary Resuscitation (CPR), then begin CPR immediately.
(**Note**: CPR is administered when both heart and lungs have ceased to function)

Step 4: Call Emergency Services: Call for help or tell someone else to call for help as soon as possible. If you are alone, try to establish breathing before calling for help, and do not leave the victim unattended for an extensive amount of time. Stay calm and don't give up. Continue to aid the victim until medical help arrives.

Let us now learn about the basic first aid practices that may be utilized by the first aider to provide first aid to people working in various occupations, with special reference to the health sector. Considering your age and body strength, we will take up only those first aid practices that you can easily perform.

Fever

Fever is higher-than-normal human body temperature (normal body temperature is 37^0 Celsius or 98.6^0 Farenheit). Body temperature is a good indicator of your health. Fever is a symptom and not disease. Fever can be categorized as given below:

- Low fever: 98.8^0 F to 100.8^0 F
- Mild to moderate: 101^0 F to 103^0 F
- High fever: 104^0 F and above. If the temperature is high, then it is a sign that body is fighting illness.

Causes: Fever may be caused due to hot weather, bacterial or viral infection, spending too much time under the sun or allergy to medication or food/water.

Symptom: Symptoms may include hot flushed face, nausea, vomiting, head and body ache, constipation, diarrhea.

First Aid: Monitor temperature using a digital thermometer. Remove the excess clothing. Keep the person in a cool place and if required give a sponge bath in tap water. Give plenty of fluids and prescribed dose of tablet paracetamol.

Taking body temperature

In case of fever, the body temperature is measured using a thermometer. Let us now learn how to take body temperature.

Step 1– Prepare: Wash the tip of the digital thermometer with clean water and wipe it with a clean cloth. Wipe it with a paper tissue after cleaning the surface. This will remove certain germs on the surface.

Step 2– Switch On: Check the power button by switching the button on the digital thermometer to ensure it is working properly. The LCD screen should read "0". If the screen remains blank, replace the battery. Read the instructions given in the manual to replace the battery. Use the thermometer when the initial reading is correct.

Step 3– Position: Place the thermometer in the mouth of the person by laying the tip on a middle point at the back of the tongue before asking the patient to close the lips around it to hold the length of it.

Step 4– Take Temperature: Press the button to make the appliance read the temperature. This can take few seconds to a few minutes. Remove the thermometer from the mouth and read the temperature.

Step 5– Store: After you have finished using the thermometer, switch off the thermometer and clean the tip with water and wipe with tissue paper or dry cloth. Keep the thermometer in its protective case and store it at safe place, away from the reach of children.

Heat Stroke

Heat stroke is a severe heat-related condition. It could be life threatening. It is caused when the body's cooling mechanism fails due to excessive heat and humidity. Impairment in sweat gland function may be another cause of heat stroke.

Symptoms: Body temperature greater than 104^{0}F. Fever may cause headache, dizziness, fatigue, fluctuating blood pressure and irritability.

Fig.4.16: Head stroke dehydration

First Aid: Shift the person to a shady place. Cool the person by sponging with wet towel. Apply ice packs in armpits and groin. Give luke warm water with electrolyte.

Back Pain

Back pain is a short-term acute pain in the back of the body. It indicates that the body is under stress. It is caused due to problems in bones, ligaments and muscles of spine and nerves.

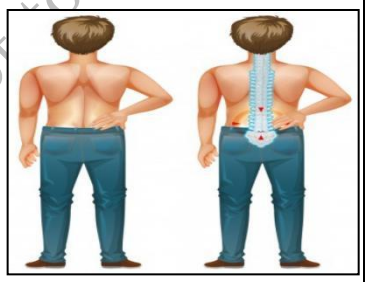


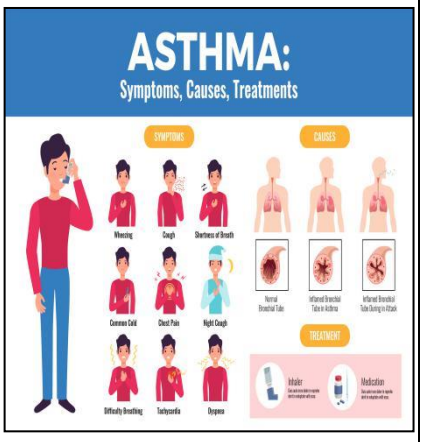
Fig.4.17: Back pain

Triggering Factors: Back pain may be aggravated due to poor posture, inappropriate footwear, incorrect walking habits, prolonged sitting, sleeping on soft mattresses, kidney, bladder prostate disorders, constipation, stress, etc.

First Aid: Massage with hot/cold packs and use painkillers or relaxants for pain relief.

Asthma

Asthma is a chronic inflammatory lung disease that causes airways to tighten and narrow. It creates narrowing of air passages of the lung and therefore produces difficulty in breathing.



Symptoms: Symptoms may include wheezing, cough and cold, tightness in the chest, sticky mucus, disturbed sleep, and breathlessness.

Causes: It is believed that heredity factors are the main cause of asthma. Environmental factors like dust, mite, pollen and occupational exposure to irritants aggravate asthma. Cold, viruses, cigarette smoking, scent, pollution, change in weather, etc. are the triggering factors.

Fig.4.18: Sign causes symptoms of Asthma

First Aid: In case of asthmatic attack, use asthma inhalers. Asthma inhalers are hand-held portable devices that deliver medication to the lungs. Asthma inhalers are available to help control asthma symptoms in adults and children.

Types of asthma inhalers include:

(i) Metered dose inhalers: These inhalers are equipped with a medicine canister that fits into a boot-shaped plastic mouthpiece. This gives quick relief and opening breathing way and is the best method of treating the asthma. This type of inhaler is mostly preferred by 40 years age peoples.

Fig. 4.19: Asthma Inhaler

(ii) Metered dose inhaler with a spacer: a spacer holder is there for the release of medication, making to easily inhale of full amount A spacer is collect the medicine, after that is released by spray, and it is easy to inhale thus works fast. Through open breathing airway and asthma patient feels comfort.

(iii) Dry powder inhaler: These inhalers does not use any type of chemical because Medication is released through deep breathing, fast breath.There are various types of inhaler, which are used in asthma treatment and patient select the inhaler according to their severity of asthma. Choose the accurate asthma inhaler because they can help you take the right amount of medication to prevent asthma attack.

Food Borne Illness

Food borne illnesses occur by eating unhygienic food and water. Bacteria are the common cause of food contamination.

Symptoms: Common symptoms include diarrhoea, which may be bloody, nausea, abdominal cramps, vomiting, fever, dehydration, shallow breath, rapid pulse, pale skin, and chest pain.

First Aid: Oral Rehydration Salt (ORS) should be given with luke warm water. In severe cases, the patient needs hospitalization immediately. Recipe for making a 1 litre ORS solution using Sugar, Salt and Water.

- Clean Water - 1 litre - 5 cupfuls (each cup about 200 ml.)
- Sugar - Six level teaspoons
- Salt - Half level teaspoon
- Stir the mixture till the sugar dissolves.

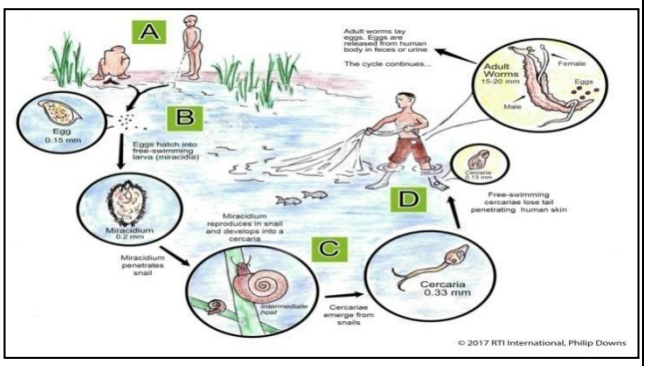


Fig.4.20: cycle of contaminated water food born disease
https://www.ncbi.nlm.nih.gov/books/NBK532415/figure/fig-01/

Preparation of ORS recipe at home: Oral Rehydration Solution necessary in maintaining the electrolyte balance of the human body. ORS can be collected in primary health centers or any medical shop. It can be prepared in home also.

Materials Required:

- Clean bowl/container, Pot
- Glass
- Spoon/stir
- Boiled drinking water
- Sugar and Salt.

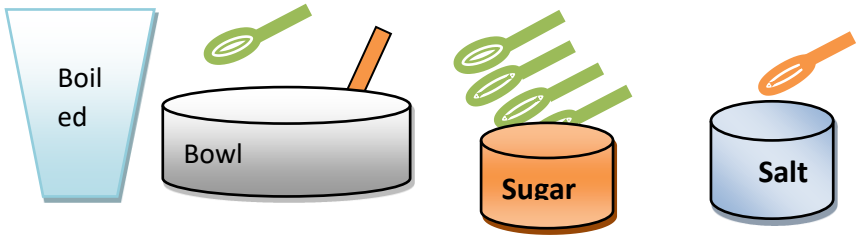


Fig.4.21: Preparation of ORS

These are following steps to prepare ORS:

- We should clean our hands thoroughly before making ORS recipe.
- All the material should be collected in one place so that we can save time and energy.
- All material should be of good quantity and quality.
- Boiled 1 liter clean drinking water and cool it at room temperature.
- Take a minimum of six teaspoon of sugar in a bowl.
- Add salt in half level tea spoon in bowl.
- Stir the mixture until the salt and sugar is dissolves.
- Oral Rehydration Solution is ready to feed patient.
- Ready ORS may be kept only upto 24 hrs.
- ORS should be given to a child of 24 months age 500 ml./day
- 2 to 10 years age of child should be given 1000 ml. /day
- Above 10 years to adult requirement are 2000 ml. /day

Precaution

- All articles must be clean.
- Wash your hands well before making ORS solution.
- Water must boil at a certain temperature range.
- Should be adding a certain amount of sugar and salt in Luke warm water.
- The prepared ORS solution should always be covered.
- ORS solution should be given to the patient for a period of time.

Activities

Activity 1: Practice the life saving procedure Cardio Pulmonary Resuscitation (CPR) procedure on simulation.

Activity 2: Demonstrate the recipe of prepare Oral Rehydration Solution at home.

Activity 3: Visit a nearby hospital and taking medical training how to provide good Healthcare services.

Check Your Progress

A. Fill in the Blanks

1. _____ is a person who takes charge of an emergency scene and gives first aid.
2. A healthy person body temperature is _____ .
3. _____ is a long term inflammatory respiratory disease.
4. Back pain is caused due to problems in bones, _____ of spine and nerves.
5. _____ illnesses occur by eating unhygienic food and water.
6. _____is provided to a patient when the heart and breathing of the patient has stopped due to a cardiac arrest.

B. Multiple Choice Questions

1. A 25-year-old woman suffering from chronic inflammatory lung disease asthma. What will we do first aid when he has a sudden asthmatic attack?
   a. Cardio pulmonary resucitation
   b. Hospital in admitted
   c. Provide asthma inhalers
   d. Administerd drugs

C. Write the following immediate basic life steps words in the given box below

S.No.	Words	Immediate Basic Life Saving Steps
1	A	
2	B	
3	C	
4	D	
5	E	

D. Answer the following Questions

1. Write the role and functions of first aider?
2. Write the steps of taking human body temperature.
3. Write a short note on asthma and food borne illness

Module 5 Primary Healthcare and Medical Emergency

Introduction

Primary healthcare focuses on the health and wellbeing of individual and community. The basic aim of preventive healthcare is the promotion of health by prevention of diseases. Preventive health practices does not limit itself to vaccination or quarantine (isolation), but includes identification of nutritional deficiencies, screening of diseases, health problems emerging in population. Attaining a level of health for the people of the community so as to lead a productive life was the goal for "health for all" by **WHO**. The health status of a community is measured through observing various factors related to health that helps to monitor and evaluate healthcare programs. The commonly used indicators are morbidity and mortality rate, disability rate, socio economic indicators. In this unit, we discuss about essential components of primary Healthcare, levels of medical care, goals of Millennium development, its indicator, medical emergency and how to respond in medical emergency conditions.

Learning Outcomes

After completing this module, you will be able to:

- Identify components of primary healthcare
- Demonstrate chain of survival

Module Structure

Session 1: Primary Healthcare

Session 2: Medical Emergency

Session 1: Primary Healthcare

On completion of this session, you will be able to understand importance of primary healthcare in community and various indicators of millennium development goals.

Primary Healthcare is medical care available to people at first level, it combines all the medical facilities at the community level for improving their health status. Primary Healthcare is essential Healthcare and is based on scientific methods. It

is the first level of contact of persons and integrates the family and the community with the national health system bringing Healthcare as close as possible to where people live and work. Primary healthcare is first level care in community which includes awareness on preventive health, immunization, preventive actions in case of epidemic, referral system facilities for emergency patient. Primary Healthcare is conceived as an integral part of the country's plan for socio economic development. In India, primary Healthcare is delivered by doctors, health team members, village level (ASHA) accredited social health activist, (ANM) auxiliary nurse midwifery, village health workers.

The healthcare services should be comprehensive, preventive, curative and rehabilitative. These services are provided through a network of various primary, private and community health centers in India.

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Definition

"Health" is defined as state of complete physical, mental and social well being and not merely absence of disease or infirmity.

Primary Healthcare: It includes

- Village level Accredited Social Health Activist(ASHA)
- Village level ANM (Auxiliary Nurse Midwife is a village-level female health worker in India who is known as the first contact person between the community and the health services)
- Sub centers
- Primary Health Centre

Components of Primary Healthcare

Essential components of primary Healthcare are as follows:

- Prevention and control of endemic disease.
- Immunization against infectious disease.
- Education about prevailing health problems and methods of preventing and controlling.
- Appropriate treatment of common disease and injury.
- Maternal and child Healthcare including family planning.
- Promotion of food supply and proper nutrition.
- Adequate supply of water and basic sanitation.
- Provision of essential medicines.

Levels of Medical Care:

It is customary to describe healthcare service at four levels, viz., primary, secondary, tertiary and quaternary care levels. These levels represent different types of care involving varying degree of specialization of medical care.

1. **Primary care level**: Primary care providers may be doctors, nurses or physician assistants. Primary healthcare is the first level of contact with individuals, the family and community, where "primary Healthcare" (essential healthcare) is provided. As a level of care, it is close to the people, where most of their health problems can be dealt with and resolved. At this level, healthcare is the most effective within the context of the area's needs and limitations. In the Indian context, primary Healthcare is provided by the Primary Health

Centre (PHCs) and their sub-centre through multipurpose health workers, village health guides and trained Dais. Besides providing primary healthcare, the village "healthcare centre" bridges the cultural and communication gap between the rural people and organized health sector.

2. **Secondary care level**: The next higher level of care is the secondary (intermediate) healthcare level. At this level more complex problems are dealt with. In India, this kind of care is generally provided in district hospitals and community healthcare centres which also serve as the first referral level. Secondary care simply means you will be taken care of by someone who has more specific expertise. Specialists focus either on a specific body system or on a specific disease or condition. For example, if there is problem with heart and its pumping system, then the client need to consult a Cardiologist. If someone is suffering from problems related to hormone systems and some specialize diseases like diabetes or thyroid disease, then he/she needs to consult an Endocrinologist.

3. **Tertiary care level:** The tertiary level is a more specialized level than secondary care level and requires specific facilities and attention of highly specialized health workers. This care is provided by the regional or central level institutions. For example, highly specialized equipment and expertise is required for coronary artery bypass surgery.

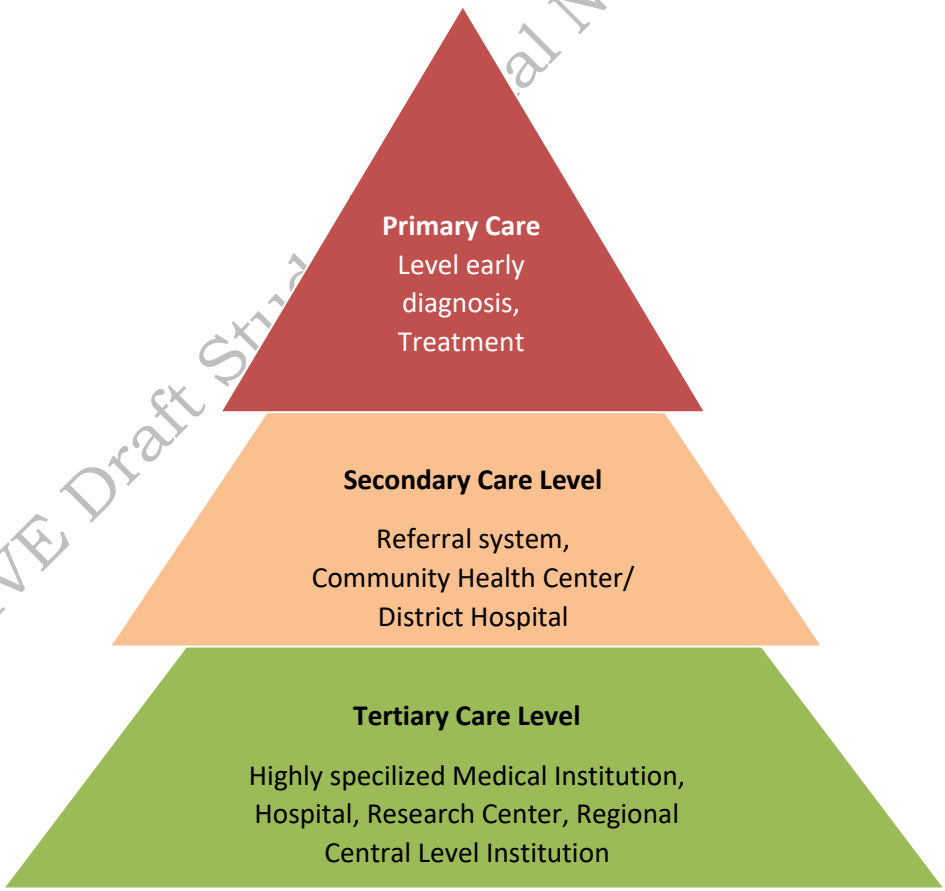

Fig.5.1: Level of Medical Healthcare

Millennium Development Goals (MDGs)

The eight Millennium Development Goals (MDG_s) adopted by the United Nations and its member all 189 nations at United Nations Millennium Summit in the year 2000 as an action to improve global health and their indicators. All 189 United Nations member states and at least 23 international organizations came together to agreed to achieve these goals by the year 2015. Millennium Development and multiple indicators were identified to be arranged in patterns to compare health status of various areas ,regions ,states and countries.

Eight MDGs the goals are :-

1. Eradicating extreme poverty and hunger.
2. Achieving universal primary education.
3. Promoting gender equality and empowering women.
4. Reducing child mortality rate.
5. Improving maternal health.
6. Combating HIV/AIDS, malaria, and other diseases.
7. Ensuring environmental sustainability.
8. Developing a global partnership for development.

The various indicators of MDGs directly related to health are given in the table below:

Goal 1. Eradicating extreme poverty and hunger
Prevalence of underweight children under five years of age.
Proportion of population below minimum level of dietary energy consumption
Goal 2. Achieving universal primary education
Enrollment ratio of student getting primary education proportion who reach last grade primary.
Literacy rate of male and female between 15 to 24 years of age.
Goal 3. Promoting gender equality and empowering women
Ratio of girls and boys in primary, secondary school and high school education.
Share of women in wage employment in non agricultural sector.
Equality of seats held by women in national parliament.
Goal 4. Reducing child mortality rate
Under – five years child mortality rate
Infant mortality rate
Proportion of 1- year old children immunized against measles
Goal 5.Improving maternal health
Maternal mortality ratio
Proportion of births attendant by skilled health personnel
Goal 6. Combating HIV/AIDS, malaria, and other diseases
HIV prevalence among young people aged 15 to 24 years
The contraceptive prevalence rate
Number of children orphaned by HIV/AIDS
Prevalence of death rate associated with malaria
Proportion of population in malaria –risk areas using effective malaria prevention measures.
Prevalence and death rates associated with tuberculosis.

Proportion of tuberculosis cases detected and cured under directly observed treatment short course DOTS
Goal 7. Ensuring environmental sustainability
ratio of land area covered by forest
Consumption of ozone layer depleting substances
Total water resources and proportion of population use clean water
Ratio of population using an improved sanitation facility.
Goal 8. Developing a global partnership for development
Improve in technologies like information education and communication
Developing countries in people are facing many health related problems in country. So provide generic medicine and affordable low-cost treatment in community.

Practical Exercise

1.

Activities

Activity 1: The teacher will take students visited nearby primary health center and write the assignments on the role and functions of the doctors and other health team members ANM, ASHA, village health guide.

Activity 2: Students collect the photographs of primary care hospital, secondary care hospital and tertiary care hospital.

Check Your Progress

A. Fill in the Blanks

1. The basic aim of preventive healthcare is the .....by prevention of diseases.
2. Primary healthcare is essential healthcare and is based.....
3. ..... is medical care available to people at first level.

B. Match the following Columns

Column A	Column B
1. Health for all	a. Against Communicable disease
2. Primary healthcare	b. Prevention and control
3. Healthcare services	c. WHO
4. Endemic disease	d. Essential healthcare
5. Immunization	e. Curative and rehabilitative

C. Write the full forms of following words they are given below in table

S. No.	Words	Full Forms
1	ANM	
2	ASHA	
3	SC	
4	PHC	
5	CHC	

D. Answer the following questions

1. Define health.
2. Write the levels of medical Healthcare.
3. Write the essential components of primary healthcare.
4. Write short note on MDGs.

Session 2: Medical Emergency

Emergency services are vital component of every hospital. In this unit, we will learn about medical casualty and skills required for responding to emergency calls. The word "Casualty" stands for medical emergency condition that needs to be handle on urgent basis. Casualty services in healthcare sector are the immediate life saving medical care round the clock. It is one of the most sensitive departments of any hospital that delivers acute medical care services to patients. The four types of emergencies are major Emergency (highly specialized facility), Basic emergency, combine emergency (first referral centre like PHC/CHC), and referral emergency (only for first aid). Hence services should be rendered in an effective efficient and sensitive way to meet the physical and emotional needs of the patients and their caretakers.

Responding to Medical Emergency Calls

Emergency or urgency is well defined. It is derived from the Latin word "urgent" mean "pressing". What is urgent should be call without delay. Emergency department of a hospital caters to the need of a person reaching hospital in urgency; accidents, serious health conditions or injuries".

Every hospital big or small, therefore, requires setting up a well-organized emergency unit, because the image of the hospital mainly depends upon the quality and type of treatment a hospital can provide to a patient suffering from any medical or surgical emergency.While responding to any medical emergency calls Healthcare provider needs to maintain confidentiality as per the clinic/hospital norms. The attended perception of emergency may be different for patients and doctors.

Fig.5.2: Emergency health team

Emergency may be dealt in the following manner:

- The emergency department should be open 24-a-day and admitted serious critically ill patients.
- The emergency team may consist of trained staff to provide vital support and transport services to the ill person.
- Clinical conditions are handled by experts available in the hospital like doctor, nurses, etc., and other health team members.
- Telephonically shall be handled by an expert or general physician.

Communicating for an emergency outside the hospital:

- Gather basic information that includes the location of the casualty, telephone number of the caller, and immediate condition of the person.
- Prioritize incoming calls, to evaluate the severity of the patient's illness or injury, so that immediate and appropriate resources can be identified at the nearest place.
- Provide and assist the caller with simple instructions. While communicating over phone, be calm and clear about the instruction.
- Coordinating help from other experts and communicating it to the patient needs good communication skill.

Communicating an emergency situation ("ON CALL DUTY DOCTOR")

On-call" duties come in with the privilege of practicing in a hospital. Hospitals follow certain policies to ensure handling emergency situations which include maintaining list of doctor's, including specialists and sub-specialists to evaluate and treat patients in the emergency department.

108 Emergency Medical Response Service

108 Emergency Response Service (ERS) provides ambulance services promptly. Ambulance service is equipped with trained paramedical staff and necessary consumables and equipment's, including five types of stretchers and a wheel-chair. Every aspect of quality of care during transport, before reaching a health facility is taken care of.

In an ambulance there is a paramedic staff to provide and handles the victim carefully. The victim is then taken to hospital and on the way medical help is given in the ambulance itself. With pre-hospital care, a life can be saved even in a critical condition. So if there is an emergency, call 108 and wait till the ambulance to reach.

Fig.5.3: **Emergency on call medical facility**

Admission of Patient in Hospital an Emergency

Hospital admission procedures can be stressful because of anxiety about the prognosis of the illness and the various medical procedures. The caretaker of the patient is required to go to reception and complete an admission form on behalf of the patient. In emergency, doctors, receptionist or other health team member accompany the patient to the ward after admission. A hospital environment may be uncomfortable for children. It is usually advised to the parents to explain to the children about the purpose of hospital stay, for example a check-up or assessment, a medical procedure, operation or treatment. Hospital staff should help answer any question a child may have. Allow bringing child's favorite toy or teddy bear for comfort.

Duties of health Assistant during an Emergency

- Assist while transferring the patient from ambulance, to emergency.
- Check for safety of patients while shifting on wheel chair.
- Contact the emergency control center for extra support,
- Diagnostic procedures should be performed only under direct supervision of nurse or doctor.
- Assist the delivery of first aid and minor emergency treatments.
- Monitor the patients till the professional arrives (pulse, B.P. blood pressure)
- Communicate clearly with patients and their family members.

In Emergency condition Handling and Monitoring Patients

There are techniques of handling and monitoring and providing essential services to the patients. Effective hospital management depends on its command and control centre. A hospital may designate a center that coordinates hospital emergency activities. Hospital should ensure application of the basic principles and accepted strategies related to planning and implementing a hospital incident action plan. Members should be trained on the structure and functions of the command centre (ICS) and all hospital staff and community networks should be aware of their roles.

Communication Arrangements

The following actions are to be taken by the hospital authorities to ensure effective and timely communication:-

- A public information spokesperson to be designated to communicate with the public, media and health authorities.
- A pre-designated area should be assigned near the emergency department for medias briefing.
- Draft of brief key messages is always kept ready for briefing audiences and media.
- The hospital superintendent approves all communication to the public.
- Establish mechanisms for the appropriate and timely reporting of information to stakeholders. (e.g. the government, health authorities), and through them to neighboring hospitals, private practitioners and hospital networks.
- Ensure that all decisions related to patient prioritization like admission and discharge criteria, are communicated to all staff and stakeholders.
- Ensure the availability of back-up communication systems such as satellite phones, mobile devices, landlines, Internet connections, etc.

Safety and Security in Hospital

The following actions are generally taken by the hospitals for the safety and security of patients:

- Hospital security team is responsible for all hospital safety and security activities. Customized security needs are designed according to the needs of the hospital.
- Prioritize identify areas where there are more sick patients are admitted.
- Ensure easy accessibility to triage site(s) and other areas of patient flow, traffic and parking etc.
- Limit number of visitors by deploying additional security staff.
- Provide easy access for medical personnel to patient care areas.
- Control crowd, so that all hospital staff can work free.
- The management of hazardous materials and the prevention and control of infection.
- Ensure confidentiality of information of patient.
- Establish an area for radioactive, biological and chemical decontamination and isolation of bio-medical waste materials.
- Ensure co-ordination with other security agencies if needed.

Practical Exercise

Activities

Activity 1: Students will demonstrate the process of handling and monitoring the emergency of the patient in the classroom.

Check Your Progress

A. Fill in the Blanks

1. Emergency is derived from the Latin word "urgent" mean …….
2. ……in healthcare sector are the immediate lifesaving medical care round the clock.

B. Match the following Columns

Column A	Column B
1. Communicating an emergency situation	a. Only for first aid
2. 108 emergency response service ERS	b. Highly specialized facility
3. Major emergency	c. Ambulance services
4. Referral emergency	d. On call duty doctor

C. Answer the following Questions

1. What is medical emergency?
2. Write the patient's admission procedure in case of emergency.
3. Write short note on "on call duty Doctor".
4. Role of health assistant during an emergency.
5. Write the safety and security of hospital.

Answers Key

Module 1: Human Body Structure and Functions

Session 1: Human Cell and Tissue

A. Fill in the Blanks

1. body structure
2. brick of a wall
3. Mitochondria
4. histology
5. cranium

B. Multiple Choice Questions

1. c
2. a
3. c
4. b
5. d
6. b
7. c
8. d
9. a

C. Match the Column A and B

1. f
2. d
3. a
4. e
5. c
6. b

D. Write the Name of the Primary Tissues

1. Epithelial tissue
2. Connective tissue
3. Sclerous tissue
4. Muscular Tissue
5. Nervous tissue

Session 2: Human Anatomy and Physiology

A. Fill in the Blanks

1. Anatomy
2. Stomach
3. pyloric orifice
4. serous membranes
5. Diaphragm
6. Pancreas
7. oxygenated blood
8. Epiglottis
9. lumber region

B. Multiple Choice Questions

1. c
2. a
3. b
4. c
5. b
6. a
7. b
8. a
9. b
10. c

C. Match the following

1. e
2. f
3. g
4. h
5. i
6. j
7. d
8. c
9. b
10. A

D. Fill in the Box following appropriate Words

1. Pharynx
2. Nasal cavity
3. Larynx
4. Trachea
5. Bronchus
6. lungs

E. Write the Name of Human body Organs

1. Mouth
2. Liver
3. gall bladder
4. small intestine
5. Stomach
6. pancreas
7. large intestine

Module 2: Health Care Delivery System

Session 1: Healthcare Delivery System

A. Fill in the Blanks

1. Preventive, curative
2. Central
3. Tertiary health care
4. 5000 population

Session 2: Hospital

A. Match the Colum

1. e
2. a
3. d
4. b
5. c

Session 3: Describe Rehabilitation Care Facilities

A. Fill in the Blanks

1. Drugs & alcohol,
2. Occupational or Physical rehabilitation
3. Psychiatric disorders

B. Multiple Choice Questions

1. a
2. b
3. d

Session 4: Describe Long Term Care Facilities

A. Fill in the Blanks

1. d
2. d

B. Multiple Choice Questions

1. Rehabilitative, restorative

Session 5: Hospice Care

A. True and False

1. True
2. False
3. False

B. Multiple Choice Questions

1. d
2. d

Module 3: Role of Home Health Aide

Session 1: Identify the Role of Home Health Aide (HHA)

A. Fill in the Blanks

1. Mental, emotional
2. Good communication and nursing skills

B. Multiple Choice Questions

1. d
2. c
3. b

Session 2: Activities of Patient's Care

A. Fill in the Blanks

1. Home and outdoor environment
2. Ingesting food
3. Nasal gastric tube

B. Multiple Choice Questions

1. c
2. b
3. c
4. c
5. d

C. Identify the following Pictures

1. Bed pan
2. Urinal pot

D. Write the Full form of following Words

Activities of daily Living
Wheel chair
Grooming
Dressing
Eating

Session 3: Basic Requirements for Patient Comfort

A. Fill in the Blanks

1. bed sores and foot drop

B. Multiple Choice Questions

1. Cardia

Session 4: Patient Safety and Rights

A. Fill in the Blanks

1. Equipment and furniture
2. Noise and outdoor
3. Bio-Hazards
4. leak- proof container

B. Multiple Choice Questions

1. d
2. a

Session 5: Qualities of a Good Home Health Aide

A. Fill in the Blanks

1. nurse
2. Good communication
3. unethical practices

B. Multiple Choice Questions

1. d
2. c
3. a
4. c

Module 4: Personal Hygiene and First Aid

Session 1: Good Hygiene Practice

A. Fill in the Blanks

1. preservation of health
2. personal hygiene
3. crowning glory

B. Match the following Columns

1. c
2. a
3. d
4. b

C. Multiple Choice Questions

1. d
2. c
3. a

Session 2: Hand Washing

A. Multiple Choice Questions

1. c
2. d

Session 3: Demonstrate Personal Grooming

A. Fill in the Blanks

1. titivating and preening
2. communication

Session 4: First Aid

A. Fill in the Blanks

1. First aid
2. White cross
3. Save file
4. Red white blood cells
5. Living organism

Session 5: Identify Facilities, Equipment and Materials for First Aid

A. Fill in the Blanks

1. Ambulance
2. First aid room
3. First aid kit

B. Match the following Column

1. e
2. d
3. a
4. b
5. c

Session 6: Role and Functions of First Aider

A. Fill in the Blanks

1. First Aider
2. 37^0Celsius or 98.6^0Farenheit
3. Asthma,
4. Ligaments and muscles
5. Food borne
6. Cardio Pulmonary Resuscitation

B. Multiple Choice Questions

1. c

C. Write the following immediate basic life steps words in the given box below

S.No.	Words	Immediate Basic Life Saving Steps
1	A	Airway
2	B	Breathing
3	C	Circulation
4	D	Disability
5	E	Exposure

Module 5: Primary Healthcare and Medical Emergency

Session 1: Answer key:

A. Fill in the Blanks

1. promotion of health
2. scientific methods
3. primary healthcare

B. Match the following Columns

1. c
2. d
3. e
4. b
5. a

B. Write the full forms of following words they are given below in table

S. No.	Words	Full Forms
1	ANM	Auxiliary Nurse Midwifery
2	ASHA	Accredited Social Health Activist
3	SC	Sub Centre
4	PHC	Primary Health Centre
5	CHC	Community Health Centre

Session 2: Medical Emergency

A. Fill in the Blanks

1. pressing
2. causality services

B. Match the following Columns

1. d
2. c
3. b
4. a

Glossary

Conservation Agriculture: Practices aimed at sustainable crop production that includes reducing soil erosion, conserving water resources, reducing greenhouse gas emissions, promoting biodiversity, and preserving ecosystems.

Crop Diversity: The practice of growing different types of crops on the same land, which can reduce risks associated with pests and diseases and enhance productivity.

Crop Rotation and Diversification: The practice of growing different crops in a specific sequence on the same land to break pest and disease cycles, improve soil health, and optimize resource utilization. Crop diversification involves methods like intercropping or mixed cropping to reduce risks and enhance productivity.

Crop Selection: The process of choosing which crops to cultivate, taking into account factors such as climate, soil type, market demand, and local expertise to maximize yields and minimize risks.

Environmental Stewardship: Sustainable crop production practices that minimize soil erosion, conserve water resources, reduce greenhouse gas emissions, promote biodiversity, and preserve ecosystems, ensuring agricultural sustainability.

Executive Summary: It is responsible to present a concise yet all- encompassing summary of the drone service business. It is a brief overview that summarizes critical information from the document, such as the problem or opportunity being addressed, objectives, key findings, goals, and recommendations.

Harvest and Post-harvest Management: The procedures for harvesting crops at the right stage of maturity and handling techniques to minimize post-harvest losses. Proper storage, processing, and transportation methods are used to maintain crop quality and market value.

Integrated Pest Management (IPM): An approach to managing pests and diseases that combines various strategies, including cultural, biological, and chemical methods, to minimize their impact while minimizing harm to the environment.

Irrigation Management: The efficient control and provision of water for crops based on their water requirements, soil moisture levels, and weather conditions to ensure optimal growth and yield.

Local Conditions: Considering the specific environmental, climatic, and soil characteristics of a particular region or location when making agricultural decisions and implementing best practices.

Nutrient Management: Balancing the application of essential nutrients, often through organic and inorganic fertilizers, according to soil nutrient levels and crop requirements to maintain soil fertility and prevent imbalances or deficiencies.

Online Presence: It describes the strategy for establishing and nurturing a robust digital footprint for the drone service business. This encompasses a detailed plan for website development, addressing how the online platform will be designed to effectively represent the services and engage potential clients.

Optimize Resource Utilization: Maximizing the efficient use of resources such as water, nutrients, and land to enhance crop yields and reduce waste.

Pest and Disease Management: The implementation of strategies, including Integrated Pest Management (IPM), to protect crops from pests and diseases while minimizing environmental harm through cultural practices, biological control, and judicious use of pesticides.

Scientific Advancements and Technologies: Incorporating the latest scientific knowledge and technological innovations into farming practices to continually improve crop production and management.

Seed Selection and Quality: The practice of selecting high-quality seeds with strong genetic traits and high germination rates, considering factors like purity, viability, and resistance to pests and diseases.

Service Portfolio: It is a comprehensive outline of the diverse drone services the business intends to offer, which may encompass a range of applications such as aerial photography, mapping, inspections, and more are identified.

Soil Management: The set of activities, including ploughing, harrowing, and land levelling, aimed at creating an ideal seedbed for crop growth.

Sustainable Agriculture: Agricultural practices that aim to meet current agricultural needs without compromising the ability of future generations to meet their own needs, considering environmental, economic, and social factors.

Weed Control: The techniques used to manage weed growth, such as timely weeding, mulching, and herbicide use, to reduce competition with crops and maximize yields.

Further Readings

1. https://digitalsky.dgca.gov.in/assets/files/UasRules.pdf
2. https://www.dgca.gov.in/digigov-portal