

HEALTH & HYGIENE

Life Skill Course



III SEMESTER

Life Skill Course - HEALTH & HYGIENE

Unit I: Basics of Nutrition 10 Hrs.

1. Nutrition – definition, importance, good nutrition and mal nutrition; Balanced Diet: Basics of Meal Planning
2. Carbohydrates –functions, dietary sources, effects of deficiency.
3. Lipids –functions, dietary sources, effects of deficiency.
4. Proteins –functions, dietary sources, effects of deficiency.
5. Brief account of Vitamins- functions, food sources, effects of deficiency
6. Macro and micro minerals –functions, effects of deficiency; food sources of Calcium, Potassium and Sodium; food sources of Iron, Iodine and Zinc
7. Importance of water– functions, sources, requirement and effects of deficiency.

Q. 1. Define Nutrition and Explain good and mal nutrition and Balance diet

Ans. Food, nutrition and health are intimately connected aspects of our life.

Food can be defined as anything solid or liquid which when swallowed, digested and assimilated in the body Food supplies energy, enables growth and repair of tissues and organs. It also protects the body from disease and regulates body functions

Nutrients are the constituents in food that must be supplied to the body in suitable amounts. These include carbohydrates, proteins, fats, minerals, vitamins, water and fibre. Nutrients can be classified as macronutrients and micronutrients based on the quantity we consume. We need a wide range of nutrients to keep ourselves healthy.

NUTRIENTS	
Macronutrients	Micronutrients
Fats	Vitamins
Carbohydrates	Minerals
Proteins	
Water	
Fiber	

Carbohydrates and fats are Energy rich foods. Proteins are body building foods and Vitamins and minerals are called protective foods. The following table shows various foods based on their functions.

Nutrition is the intake of food, considered in relation to the body's dietary needs. Good nutrition is one with an adequate, well-balanced diet combined with regular physical activity and is important for good health.

Health WHO has defined **Health** as the “state of complete physical, mental and social well-being and not merely the absence of disease”

Function	Major nutrients	Sources	Other Nutrients
Energy Rich Foods	Carbohydrates & fats	- Whole cereal grains and millets - Fats and Oils - Nuts and oilseeds - Sugars	- Protein, fibre, minerals, calcium, iron & B-complex vitamins - Fat soluble vitamins, essential fatty - Proteins, vitamins, minerals - Nil
Body Building Foods	Proteins	- Pulses, nuts and oilseeds - Milk and Milk products - Meat, fish, poultry	- B-complex vitamins, invisible fat, fibre - Calcium, vitamin A, riboflavin, vitamin B12 - B-complex vitamins, iron, iodine, fat
Protective Foods	Vitamins and Minerals	- Green leafy vegetables - Other vegetables/fruits - Eggs, milk and milk products and flesh foods	- Antioxidants, fibre and other carotenoids - Fibre, sugar and antioxidants - Protein and fat

Balanced Diet

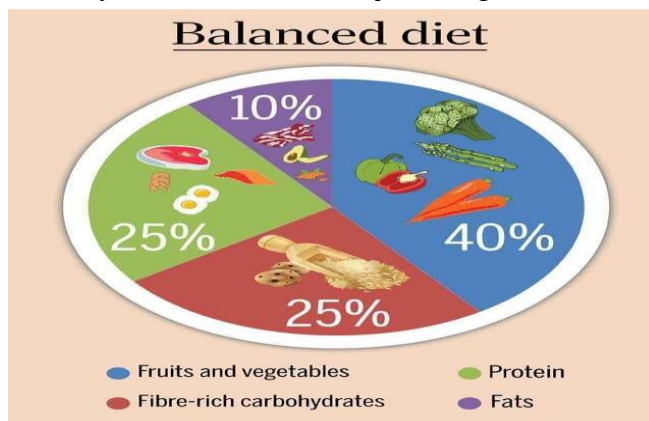
Balanced diet is one in which all the nutrients such as proteins, carbohydrates, fats, vitamins, minerals, water, and fibre are present in the right amounts as required by

the body. Eating a balanced diet helps people maintain good health and reduce their risk of disease.

There are four key essential nutrients that make up a balanced diet. They are fruits and vegetables, Proteins, carbohydrates and good fats.

At least **forty percent** of our nutritional intake every day has to be through fruits and vegetables. This helps in getting vitamins, minerals, potassium, antioxidants required by the body naturally.

Twenty-five percent of our daily nutritional intake should ideally come from healthy proteins found naturally like meat, fish, cheese, pulses, legumes etc.



Twenty five percent of our daily nutritional intake should ideally come from Carbohydrates. These are important because they give energy to the body. There are 3 kinds of carbohydrates namely sugars, starches (rice, wheat) and fibre (oatmeal, barley etc). Sugars are restricted, starches are taken moderately and fibre rich carbs are to be taken abundantly.

Ten percent of our daily nutritional intake should be fats. Fats and oils are concentrated sources of energy. The major sources of fats are butter, ghee, milk, cheese, eggs, groundnut oil, mustard oil, sunflower, safflower, etc.

Physical fitness: Balanced diet combined with Physical fitness gives good bodily health. Physical fitness is defined as the body's ability to function efficiently in work and leisure activities. It involves muscular strength, flexibility, capacity of heart, lungs, and blood vessels to work normally. Good nutrition and fitness makes the life healthy and fit.

Malnutrition

Malnutrition is a major public health problem in most developing countries, including India.

Malnutrition is primarily caused due to insufficient supply of one or more essential nutrients

Malnutrition leads to ill health. Mal nutrition may be of two kinds. **A. Undernutrition** where insufficient quantity of nutrients are taken. **B. Over nutrition** in which excessive intake of one or more nutrients takes place.

Consequences of malnutrition in children and adolescents

- Growth failure and stunting
- Delayed sexual development
- Reduced muscle mass and strength
- Impaired intellectual development

Diseases of Malnutrition - Kwashiorkor and Marasmus:

Kwashiorkor is a form of malnutrition caused by a lack of protein in the diet. Children exhibit oedema. Poor appetite. Fatty liver. Less chances of recovery.

is caused by severe deficiency of nearly all nutrients, especially protein, carbohydrates and lipids, usually due to poverty and scarcity of food. Children exhibit no oedema. Voracious appetite. Normal Liver. Recovery chances are more.

Micronutrient Deficiencies like Vitamin A deficiency leads to vision problems, Iron deficiency causes anemia, Iodine deficiency causes goitre etc.

Over nutrition is also a kind of Malnutrition. It leads to obesity and impair health. Diseases like diabetes, heart problems, hypertension, reproductive disorders arise out of over nutrition.

Meal Planning

Meal planning is making a plan of meals with adequate nutrition for every member of the family within the available resources.

Importance

Meal planning is important for meeting the nutritional requirements of the family members. It helps us to decide what to eat each day and in each meal.

Meal planning helps us to:

- (a) fulfill the nutritional requirements of the family members
- (b) make the food economical
- (c) cater to the food preferences of individual members
- (d) save energy, time and money
- (e) use left over food

Meal Planning is influenced by many factors like -

- Age, sex, of the family member. If the family member is a small child he drinks only milk. If he is an adult male he needs more Energy giving meals.
- The Economic condition of the family is to be kept in mind to plan a balanced diet to suit every budget as fruits, meat, nuts are expensive.
- Region, religion, food habits affect the meal planning. For example if one is from north India meals should have more wheat products like chapatti and for south Indians rice products are included in meals. Likes and dislikes of the family members should also be taken into consideration
- Meals are to be planned accordingly for pregnant woman, lactating mother, school going child, adolescent or elderly people to meet their bodily requirements

Tips for meal planning

- Consider whole day as a unit rather than individual meals.
- Try to distribute carbohydrates, fats and proteins throughout the day.
- Use seasonal foods because they are cheap and good in variety
- Money can be saved by buying in bulk, at wholesale markets, by cooking only required quantities.

Q. 2 Write a notes on Carbohydrates –functions, dietary sources, effects of deficiency.

Carbohydrates

Carbohydrates occur in foods such as sugars, starches and fibre and are major source of energy in the diet. Each gram of carbohydrate, as starch or sugar, provides 4 calories.

A. Functions of carbohydrates in human body

1. Carbohydrates are a source of readily available energy, which is needed for physical activities and also for cell function.
2. Carbohydrates act as reserve fuel supply in the form of glycogen, stored in muscles and liver. The total amount of glycogen in the body is over 300g.
3. Lactose, the milk sugar, provides galactose needed for brain development. It aids absorption of calcium and phosphorus, thus helping bone growth and maintenance.
4. Lactose forms lactic acid in the intestinal tract due to the action of the bacteria (lactobacilli) present there. These lactobacilli synthesise some of the B-complex vitamins.
5. Carbohydrates are needed for ensuring complete normal metabolism of fats.
6. Dietary fibre acts like a sponge and absorbs water. It helps easy movement of food waste through the digestive tract and smooth elimination of soft, bulky stools.

B. Dietary Sources

The major sources of carbohydrate in the human diet are:

1. Cereals 2. Root crops 3. Sugar crops 4. Pulses 5. Vegetables 6. Fruit 7. Milk products

C. Effects of deficiency

Carbohydrates are degraded into sugar which, as a primary energy source, is required for the brain, muscles and other parts of the human body to function normally. When we don't get enough carbohydrates, the level of sugar in our blood may drop to below the normal range (70-99 mg/dL), causing hypoglycemia. Then our body starts to burn fat for energy, leading to ketosis.

Symptoms of hypoglycemia include: Hunger, Shakiness, Dizziness, Confusion, Difficulty speaking,

Symptoms of ketosis include- Mental fatigue, Nausea and headache, Painful swelling of the joints and kidney stones in severe ketosis

Q.3 Write notes on Lipids –functions, dietary sources, effects of deficiency.

Fats are essential part of our body. Cells and tissues of our body have fat as an integral part. Fats supply 10–30 per cent of the total energy needs. Oils and fats are concentrated sources of energy and each gram of fat supplies 9 calories.

There are two types of fatty acids:

1. *Saturated fatty acid* has a single bond between its carbon atoms. Saturated fats are unhealthy fats.
2. *Unsaturated fatty acids* have one or more double bonds in their molecule. Unsaturated fat is considered healthier than saturated fats as they are easily digestible and have better health benefits.

A. Functions of fats in human body

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1. Food fats are source of two groups of essential nutrients and fat-soluble vitamins like vitamins A, D, E and K, and their precursors.
2. Cholesterol is an essential lipid synthesised in the liver. Some important hormones and bile acids are formed from cholesterol.
3. Fat stored in various parts of the body is known as adipose tissue. Fats act as a cushion for certain vital organs. Nerve fibres are protected by the fat covering and it aids relay of nerve impulses.
4. Since fat is a poor conductor of heat, a layer of fat beneath the skin helps to conserve body heat and regulate body temperature.
5. The flavour, palatability and satiety value of foods is increased by fats.
6. The fat around joints in the body acts as a lubricant and allows us to move them smoothly.

B. Dietary Sources

Unsaturated fats: Unsaturated fats, which are liquid at room temperature, are considered beneficial fats because they can improve blood cholesterol levels, reduce inflammation, stabilize heart rhythms, and play a number of other beneficial roles. Unsaturated fats are predominantly found in foods from plants, such as vegetable oils, nuts, and seeds.

There are two types of “good” unsaturated fats:

1. Monounsaturated fats are found in high concentrations in: Olive, peanut, and canola oils, Avocados, Nuts such as almonds, hazelnuts,
2. Polyunsaturated fats are found in high concentrations in Sunflower, corn, soybean, and flaxseed oils, Walnuts, Fish. Omega-3 fats are an important type of polyunsaturated fat. The body can't make these. An excellent way to get omega-3 fats is by eating fish 2-3 times a week. Plant sources of omega-3 fats include walnuts, soybean oil.

Saturated Fats Saturated fat. This is solid at room temperature. It's found in butter, lard, full-fat milk and yogurt, full-fat cheese, and high-fat meat.

Trans Fats: Trans fatty acids, more commonly called trans fats, are made by heating liquid vegetable oils in the presence of hydrogen gas. Trans fats are the worst type of fat for the heart, blood vessels, and rest of the body.

C. Effects of deficiency

Since essential fatty acids play such important roles in the functioning of your body, a deficiency of fats is likely to show up in a number of ways. The following are the key signs you need to be looking out for.

1. *Skin problems:* the skin is the most obviously affected due to fat deficiency. Skin is more likely to be inflamed and swollen but you may also develop scaly or dry rashes due to fat deficiency.
2. *Hair loss:* Certain fat molecules called prostaglandins are crucial for hair growth and health. When you don't eat enough fats, the hair follicles and shaft get damaged too. This leads to hairloss
3. *Hormone issues:* Sufficient vitamins and minerals like vitamin D, vitamin B12 and selenium are crucial for the proper function of your endocrine system,

which produces the hormones. For women, it can cause irregularities in the menstrual cycle but for both genders, it can affect sexual and mental function

4. *Fatigue:* The absorption of vitamins, minerals and antioxidants are not absorbed properly so that fatigue is caused due to fat deficiency.

5. *Low immunity:* Because fat deficiency indicates malabsorption, which ends up weakening your immune system.

Q. 4. Write a notes on Proteins -functions, dietary sources, effects of deficiency.

A. Proteins are the building blocks of our body and main solid matter in the muscles, major constituents of blood, bones, teeth, skin, nails and hair. Proteins also provide energy to our body; each gram of protein provides 4 calories.

Proteins are made up of amino acids; when amino acids are put together in different combinations, they make up thousands of different proteins in the body.

A. Functions of proteins in human body

1. *Body building or building of new tissues:* Protein is an essential part of every cell. Proteins provide amino acids needed for the formation of new cells.
2. *Maintenance of tissues:* The need for protein to maintain and repair old tissues continues throughout life.
3. *Regulatory functions:* Proteins in fluids such as blood help to regulate body processes. Haemoglobin, a protein and iron complex, ensures the smooth running of respiratory cycle by being the vital oxygen carrier in the red blood cells. Plasma proteins influence the exchange of water between tissue cells and the surrounding fluids and on the water balance in the body.
4. *Proteins as precursors of enzymes, hormones and antibodies:* A small amount of protein (or amino acids) is needed for synthesising enzymes, hormones and antibodies. All enzymes are proteins and are essential catalysts in digestion and metabolic processes in the tissues. Hormones secreted by various glands that regulate and coordinate body processes and activities, are proteins in nature. Proteins form antibodies and white blood cells that defend body against infection and disease and thus participate in the body's immune system.
5. *Transport of nutrients:* Proteins are ideal carriers of nutrients across cell membranes. Proteins as lipoproteins, transport triglycerides, cholesterol, phospholipids and fat-soluble vitamins across the cell wall.

B. Dietary Sources

There are nine essential amino acids that the human body does not synthesize, so they must come from the diet.

Both animal and plant foods can be excellent sources of protein. The following are the sources of proteins in our daily diet - seafood, meats and poultry, eggs, legumes, which include beans and peas, nuts, seeds, soy products, Dairy products, such as milk, cheese, and yogurt etc.

Animal products tend to contain higher amounts of protein than plant foods,

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The FDA recommend that adults consume 50 grams (g) of protein a day, as part of a 2,000-calorie diet. Many factors can affect how much protein a person needs, including their activity level, weight, height, and whether they are pregnant.

C. Effects of deficiency

When your body doesn't get the required protein amounts or isn't able to use protein efficiently, research has shown that it can lead to the following symptoms:

1. Brittle nails, Faded hair colour, hair fall redness on skin are some of the symptoms of protein deficiency.
2. Increased infections and illnesses
3. Reduced muscle mass, often referred to as sarcopenia in older patients
4. Swelling in the legs
5. Slower wound healing times
6. High blood pressure during the second trimester of pregnancy
- 7 Protein helps maintain the strength and density of bones. protein deficiency Increases the risk of bone fractures
8. Fatty liver: Another common symptom of protein deficiency is fatty liver, or fat accumulation in liver cells.

5. Write essay on Vitamins their functions, food sources, effects of deficiency

A. What are Vitamins?

The vitamins are natural and essential nutrients, required in small quantities and play a major role in maintaining health of the individual.

There are thirteen different types of vitamins and all are required for the metabolic processes. The discovery of the vitamins was begun in the year 1912 by a Polish American biochemist Casimir Funk. Based on his research and discoveries on vitamins, their sources, functions and deficiency disorders, he is considered as the father of vitamins and vitamin therapy.

Similar to minerals, vitamins cannot be synthesized by our body. Therefore, we need to get them from the food we consume or in extreme cases supplements to keep ourselves healthy.

B. Types of Vitamins

Based on the solubility, Vitamins have been classified into two different groups:

Fat-Soluble Vitamins: Fat-soluble vitamins are stored in the fat cells and as the name suggests, these vitamins require fat in order to be absorbed. Vitamin A, D, E and K are fat-soluble vitamins.

Water-Soluble Vitamins: Vitamin B and C are water-soluble vitamins. Water-soluble vitamins are not stored in our body as its excess gets excrete through the urine.

1. Vitamin A (Retinol):

Clinical name: It is clinically called axerophthol

Plant sources: Yellow ripe fruits, vegetables like: carrot, tomato, green leafy vegetables like cabbage, lettuce etc.

Animalsources: Fish liver oils (e.g. cod liver oil, shark liver oil, halibut liver oil etc.), fatty meat, milk, butter, ghee, egg yolk, and kidney.

Functions:

1. It is essential for synthesis of visual pigments of rods and cones (rhodopsin and iodopsin).
2. Plays a vital part in the structural integrity and functioning of epithelial cells, particularly the mucus membranes.
3. Helps in normal growth, reproduction and metabolism.
4. Keeps the skin smooth, healthy and moist and Kelps In the functioning of sweat and sebaceous glands, and hair follicle.

Deficiency symptoms:

1. A deficiency in the very early post-natal development leads to permanent blind-ness, and later in life produces poor vision in dim light, more precisely night blindness or nyctalopia.
2. Malformed and keratinised epithelia in the cornea of eye cause a disease called xerophthalmia.
3. Ill-formed epithelia in skin and lining the tracts of intestine and lung lead to susceptibility to infection by pathogens.

2. Vitamin B Complex:

This group comprises in heterogeneous collection of chemicals. There are at least twelve substances, classed as B vitamins. Although the members of the vitamin B complex differ chemically, they are placed in the same group because they all act as coenzymes and their actions are closely related. Man requires at least ten of them to maintain normal function of the body. Some members of this group were named numerically as B1, B2, B6, B12 etc.,

(i) Vitamin B1 (Thiamine):

Clinical name: It is clinically called as aneurin or anti-beriberi vitamin, because it prevents neuritis and beriberi.

Plant Sources:

Seeds of pea, beans and soybean, nuts and cereals like rice, wheat are good source of thiamine. Yeast is very good source.

Animal Sources: Meat, liver and egg-yolk are good sources

Functions:

1. It acts as a vital coenzyme in the oxidative decarboxylation reaction, in TCA cycle. Thus it is involved in carbohydrate metabolism and energy production.
2. It helps in fat metabolism, where long chain fatty acids are broken down and de-carboxylated slowly.
3. It helps in nerve impulse transmission by forming some constituent of nerve membrane and neurotransmitter acetylcholine.

Deficiency symptoms:

1. Deficiency leads to a disease called beriberi, which is characterised by neuritis (inflammation of peripheral nerve cells). Beriberi is characterized by oedema, cardiac problems and weakness.
2. Pyruvic acid and other toxic metabolites accumulate and upset membrane functioning resulting in paralysis.

(ii) Vitamin B2 (Riboflavin):

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Clinical name: It has no clinical name because its deficiency does not produce any typical disease.

Plant Sources: It is found in most of the natural foodstuffs. Yeast, germinated seeds (pea, gram, beans etc.) and leafy vegetables are good plant sources.

Animal Sources: Important animal sources include liver, meat, fish, egg and milk.

Functions:

1. In cells it acts as a co-enzyme called flavoproteins. It has two forms – flavine adenine dinucleotide (FAD) and flavine mono-nucleotide (FMN).

2. Flavoproteins are H² acceptors or oxidoreductases that take part in cellular respiration

3. It helps in general growth of the body and proper maintenance of health and functioning of ectodermal tissues like skin and oral mucosa.

Deficiency symptoms:

1. Causes lesions of the skin and shedding of hair in mammals – called Seborrheic dermatitis.

2. Causes invasion of the cornea by blood capillaries, with itching eyes and photo-phobia.

3. Causes magenta coloured inflammation of the tongue – called Glossitis.

4. Causes swelling and reddening of lips with angular fissures – called Cheilosis.

(iii) Vitamin B3 (Nicotinic acid/nicotinamide/Niacin):

Clinical name: P-P factor or Pellagra preventing factor.

Plant sources: It is abundant in yeast, legumes, peanuts and outer coat of cereals.

Animal sources: Liver, meat, fish etc. Egg and milk are poor sources of this vitamin.

Functions:

1. It acts as coenzyme nicotinamide adenine dinucleotide (NAD) or its phosphate (NADP) and their reduced forms NADH₂ and NADPH₂, respectively.

2. These coenzymes are required in glycolysis, TCA cycle, pentose phosphate pathway, β -oxidation of fatty acids and many other important metabolic pathways.

Deficiency symptoms:

1. Causes the disease pellagra, which is characterised by diarrhoea, dermatitis and dementia.

2. With beriberi the condition would be fatal in an extreme form.

3. Symptoms indicate general break down in membrane functioning.

(iv) Pantothenic acid:

Clinical name: Previously it was called 'chick anti-dermatitis factor'.

Plant: Sources: Sweet potato, legumes, nuts, fresh fruits and vegetables are good sources

Animal sources: Liver, egg, milk and meat are good sources of this vitamin.

Functions:

1. It is a constituent of coenzyme A and required in the formation and metabolism of acetyl CoA and acyl CoA. Therefore, involved in carbohydrate and lipid

metabolism, e.g., TCA cycle, synthesis and oxidation of fatty acids, cholesterol synthesis etc.

2. It is vital in the synthesis of acetylcholine (synaptic transmitter).

Deficiency symptoms:

1. Gastrointestinal disorder

2. Easy fatigue

3. Disturbance in sleep

4. Mental disorder.

(v) Vitamin B6 (Pyridoxine):

Clinical name: Adermin or rat anti-dermatitis factor

Plant: Sources: Yeast and outer coating of cereals, like wheat, rice, maize etc.

Animal sources: Meat, liver and egg yolk.

Functions:

1. Acts as a vital coenzyme in transamination of amino acids necessary in protein metabolism,

2. It helps in the absorption of amino acid from the intestine.

3. It participates in muscle glycolysis.

4. It takes part in the synthesis of sphingomyelin lipids.

Deficiency symptoms:

1. Produces convulsion, dermatitis, gastro-intestinal abnormalities, and microcytic anaemia.

2. Produces neuropathy.

3. Vitamin H or Vitamin B7 (Biotin):

Clinical name: It was named Biotin. Intestinal bacteria usually synthesise this vitamin.

Plant Sources: Yeast, legumes, peanuts, molasses, tomato, green vegetables etc. It is also synthesised by intestinal bacteria.

Animal sources: Liver, kidney, egg yolk, milk etc.

Functions:

1. It acts as coenzyme for the enzymes catalysing carboxylation reactions

Deficiency symptoms:

Biotin deficiency in man produces dermatitis, anorexia, pain, fatigue and weakness of muscle.

4. Vitamin M (Folic acid, folionic acid, folacin):

Clinical name: It is pteroyl glutamic acid.

Plant: Sources: It is found in yeast and widely distributed in green leaves of vegetables, It is also synthesised by intestinal bacteria.

Animal sources: Kidney and liver.

Functions:

1. It is a co-enzyme in the transfer of single carbon fraction from one substance to another.

2. It is vital in synthesis of purine, pyrimidine and some amino acids.

3. It promotes the formation of red and white blood cells.

Deficiency symptoms:

1. Symptom of deficiency in man is pernicious anaemia (characterised by large, nucleated RBC with little haemoglobin) and leucopenia (fall in number of WBC).

2. Diarrhoea and gastrointestinal lesions may be associated with the above mentioned anaemia.

5. Vitamin B12 (Cobalamin):

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Clinical name: It is termed as anti-pernicious anaemia factor or Castle's extrinsic factor. As it is a compound of cobalt, it is called Cobalamin.

Plant Sources: It is not found in foodstuffs of plant origin.

Animal sources: It is abundant in animal food e.g. liver, meat, fish, egg yolk, milk, cheese. In man this vitamin is synthesised by intestinal bacteria.

Functions:

1. It acts as coenzyme in the form of cobamide, which is involved in DNA synthesis.
2. It also helps in the action of folic acid.
3. Helps in general growth.

Deficiency symptoms:

1. Pernicious or megaloblastic or macro-cytic anaemia.
2. Disorders of nervous system including demyelination and degeneration of nerves, loss of sensation or paralysis.

6. Vitamin C (Ascorbic acid):

Clinical name: It is called antiscorbutic vitamin.

Plant Sources: In more or less all fruits and vegetables. Citrus fruits e.g. lemon, orange, amlaki, pineapple, mango are outstanding sources.

Animal sources: Many animals, except the primates (e.g. man, monkey), can synthesise ascorbic acid in their liver

Functions:

1. It acts as coenzyme for oxidation-reduction and hydroxylation reaction.
2. Helps in metabolism of amino acids, synthesis of collagen and other intercellular cementing materials, iron absorption.
3. It is necessary for the formation of connective tissue, maintenance of the integrity of tissues like bones, teeth and capillaries and wound healing. It helps in erythropoiesis and anti-stress action.

Deficiency symptoms:

1. Causes scurvy, which is characterised by haemorrhages.
2. Due to lack of cement synthesis, fragility of capillaries and other issues occur causing haemorrhage.
3. Defective formation and loosening of teeth associated with spongy and bleeding gums.
4. Skeletal weakness and fragility of bones occur.

7. Vitamin D (Calciferol):

Sources: Skin prepares vitamin d in the presence of sunlight from de hydro cholesterol. It is also found in Meat, liver and milk.

Functions:

It allows the absorption of calcium from the gut which can then be used in blood, bone and muscle.

Deficiency symptoms:

If the gut absorption decreases their Ca^{++} ion is released from bones and muscle, which lead to demineralization of the bones and to muscular paralysis. Demineralization of bones is called rickets.

8. Vitamin K (Phylloquinone):

Clinical name: Phylloquinone

Sources: Green leaves of alfalfa, spinach, lettuce, cabbage etc. and vegetable oils.

Functions:

1. Helps in coagulation of blood.
2. Involved in mitochondrial oxidative phosphorylation.

Deficiency symptoms:

It is important to maintain the amount of prothrombin in blood and affects its clotting.

9. Vitamin E (Tocopherol):

Clinical name: Tocopherol

Sources: Almost all vegetables contain some amount of vitamin E. Reliable sources are wheat-germ oil, cottonseed oil, sunflower oil, corn oil etc.

Functions:

It is concerned with reproduction. It is called natural antioxidant. It induces chemical stress and lengthens life.

Deficiency symptoms:

Lack of vitamin E may result in diverse effects in different species ranging from ageing, sterility in both male and female rat, to muscular dystrophy.

Q. 6. Write an essay on Macro and micro minerals - functions, effects of deficiency; food sources.

A. The body needs many minerals; these are called essential minerals. Essential minerals are sometimes divided up into major minerals (macrominerals) and trace minerals (microminerals).

Macro minerals are required in large quantities. The examples are Calcium, Potassium Sodium etc. Micro minerals are required in smaller quantities. Examples are Iron, Iodine, Zinc Etc. These two groups of minerals are equally important.

Calcium

Total calcium in the human body is 1 to 1.5kg, out of which 99% is seen in bone and 1% in extracellular fluid. The main source of calcium is milk.

The daily requirement of calcium for child is 1200mg/day and for adult it is 500mg/day.

Sources: Milk and milk products; canned fish with bones (salmon, sardines); fortified tofu and fortified soy milk; greens (broccoli, mustard greens); legumes.

Function: Important for healthy bones and teeth; helps muscles relax and contract; important in nerve functioning, blood clotting, blood pressure regulation, immune system health.

Effects of Deficiency:

The deficiency of calcium leads to decreased calcium density in bones which results in a condition called osteopenia. This condition increases the risk of bone fractures. Severe calcium can also cause kidney failure. The symptoms are cramping of muscles, fatigue, poor appetite, numbness, etc.

Potassium

Potassium is an essential mineral that is needed by all tissues in the body. It is sometimes referred to as an electrolyte because it carries a small electrical charge that

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activates various cell and nerve functions. Sodium, its counterpart, maintains normal fluid levels outside of cells.

It is estimated that the average daily intake of potassium in adults is about 2,320 mg for women and 3,016 mg for men

Sources

Meats, milk, fresh fruits and vegetables, whole grains, legumes

Functions:

Needed for proper fluid balance, nerve transmission, and muscle contraction

Effects of Deficiency:

The common cause of potassium deficiency is an excessive fluid loss which can happen through vomiting, kidney disease.

Severe potassium deficiency can cause hypokalemia. Hypokalemia is characterized by constipation, fatigue, muscle weakness, polyuria (large volume of dilute urine); muscular paralysis; poor respiration; and cardiac arrhythmias etc.

Sodium

The minimum physiological requirement for sodium is estimated to range from about 120 milligrams per day in newborns to 500 milligrams per day over the age of 10.

Sources: Table Salt, Cheese, Milk, Soy Sauce, and Unprocessed Meat, Onions, fresh fruits, sweet potato, broccoli, eggs, etc.

Functions

In humans, sodium is an essential mineral that regulates blood volume, blood pressure, osmotic equilibrium and pH.

Helps in proper functioning of muscles and nerves.

Deficiency

Sodium deficiency is also known as **hyponatremia** and it arises from excessive fluid loss. It generally occurs due to severe dehydration and prolonged deficiency can lead to heart diseases.

Iron

Total body content of iron is 3 to 5 gm out of which 75 % is present in blood and rest is found in liver, spleen, bone marrow and muscle.

The normal limit for iron consumption is 20 mg/day for adults, 20-30 mg/day for children and 40 mg/day for pregnant women.

Sources

The main source of iron is jaggery. Other source of iron includes leafy vegetables and meat etc., Milk is considered as a poor source of iron. Meat, Eggs, Beans, Baked Potato, Dried Fruits, Green Leafy Vegetables, Whole and Enriched Grains

Function:

Part of a molecule (hemoglobin) found in red blood cells that carries oxygen in the body; Iron is needed for energy metabolism

Effects of Deficiency:

Iron deficiency in the body results in anaemia. The symptoms include feeling weak and tired. Children exhibit signs of slow cognitive and social development.

Iodine

The body needs iodine to make thyroid hormones. These hormones control the body's metabolism. Healthy adult requires 150mcg of iodine per day.

Sources

Seafood, foods grown in iodine-rich soil, iodized salt, bread, dairy products

Functions

Found in thyroid hormone, which helps regulate growth, development, and metabolism.

Essential for healthy hair, skin, nails, teeth. Controls body weight and growth.

Effects of Deficiency:

The deficiency of this mineral can result in goiter. The major sign is a swelling in the base of your neck. The symptoms include difficulty in swallowing and breathing, hoarseness in voice, coughing, etc.

Zinc

Zinc is an essential mineral that is naturally present in some foods, added to others, and available as a dietary supplement. The dietary requirement of zinc for an adult male is 11 mg per day and for female is 8 mg.

Sources

Leavened whole grains, vegetables, Pork, beef, nuts, turnips, onions, Split Peas, and Lentilfish, wheat germ.

Functions

Part of many enzymes; needed for making protein and genetic material; has a function in taste perception, wound healing, normal fetal development, production of sperm, normal growth and sexual maturation, immune system health

Effects of Deficiency:

Zinc deficiency causes loss of taste, smell, and appetite. It can decrease the function of the immune system and growth rate.

Q. What are RDA and RDI

Recommended Dietary Allowances (RDA)

RDA is defined as the average daily dietary *nutrient intake* level sufficient to meet the nutrient requirement of body.

Recommended Dietary Intake (RDI)

RDI is the recommended level of *intake of food groups* that is required to meet the RDA.

It is essential to meet atleast 70% of the RDA and RDI.

Q. 7. Write a short note on the Importance of Water

Water is the major constituent of our body. It forms about two-thirds of the body weight. We can do without food more readily than water. It is present in all the cells, being a vital part of all living tissues. It surrounds tissues and organs, and gives protection from shock.

Water helps in digestion, absorption and transportation of nutrients in the body. It helps to excrete

Life Skill Course - HEALTH & HYGIENE

unwanted materials in the form of urine and maintains body temperature through perspiration. Normally, we need to drink 6-8 glasses of water everyday. Other forms in which we can receive water are milk, juice, etc.

Effects of Dehydration

Symptoms of dehydration that may occur with as little as a 2% water deficit:

Fatigue, Confusion or short-term memory loss, Mood changes like increased irritability or depression,

Dehydration can increase the risk of certain medical conditions: like Urinary tract infections, Kidney stones Gallstones, Constipation etc.



MODULE II

Unit II: Health 10 Hrs.

8. Health - Determinants of health, Key Health Indicators, Environment health & Public health; Health-Education: Principles and Strategies

9. Health Policy & Health Organizations: Health Indicators and National Health Policy of Govt. of India-2017; Functioning of various nutrition and health organizations in India viz., NIN (National Institution of Nutrition), FNB (Food and Nutrition Board), ICMR (Indian Council of Medical Research), IDA (Indian Dietetics Association), WHO-India, UNICEF-India

10. National Health Mission: National Rural Health Mission (NRHM) Framework, National Urban Health Mission (NUHM) Framework

11. Women & Child Health Care Schemes: Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+); Janani Shishu Suraksha Karyakaram (JSSK); Rashtriya Bal Swasthya Karyakram (RBSK); India Newborn Action Plan (INAP); Adolescent Health- Rashtriya Kishor Swasthya Karyakram (RKS)

12. Disaster Management – Containment, Control and Prevention of Epidemics and Pandemics – Acts, Guidelines and Role of Government and Public

QNo.8 What are the determinants of health and Key health Indicators

Ans. Health is an issue of social Justice.

Determinants of Health

Health is influenced by many factors, which may generally be organized into five broad categories known as determinants of health: They are as follows

1. genetics, 2. behavior, 3. environmental influences 4. medical care 5. social factors. These five categories are interconnected.

Genetics:- inheritance plays a part in determining lifespan, healthiness and the likelihood of developing certain illnesses. Men and women suffer from different types of diseases at different ages.

Behaviour: Personal behaviour and coping skills – balanced eating, keeping active, smoking, drinking, and how we deal with life's stresses and challenges all affect health.

Higher income and social status are linked to better health. The greater the gap between the richest and poorest people, the greater the differences in health.

Education – low education levels are linked with poor health, more stress and lower self-confidence.

Environmental Influences: safe water and clean air, healthy workplaces, safe houses, communities and roads all contribute to good health. People in employment are healthier than unemployed. particularly those who have more control over their working conditions

Medical Care: Access to Medical Services prevent the diseases and improves the health of the individual. Lack of Medical care facilities makes the people

Social factors: greater support from families, friends and communities is linked to better health. Culture - customs

and traditions, and the beliefs of the family and community all affect health.

Key Health Indicators (5Marks Question)

Health indicators are quantifiable characteristics of a population which act as evidence for describing the health of a population. Health indicators are often used by governments to guide health care policy.

A common example of a health indicator is life expectancy. A government might have a system for collecting information on each citizen's age at the time of death. This data about age at death can be used to support statements about the national life expectancy, in which case life expectancy would be a "health indicator". Good life expectancy indicates a healthy population.

The important health indicators are

A. Mortality or death rate B. Life expectancy C. Infant mortality rate D. Maternal mortality rate. E. Mental Health

Mortality or Death Rate: Mortality rate is typically expressed in number of deaths per 1,000 individuals per year; The average death rate in India from 2009 to 2019 is about 7.27 deaths per 1,000 people.

Life Expectancy: It is the average age an organism is expected to live. The majority of the Indian population is aged between 15 and 64 years, with only about 5 percent being older than 64.

The average life expectancy at birth in India in 2019 was 69.66 years.

Infant mortality rate: Infant mortality is the death of young children under the age of 1 year. This death toll is measured by the infant mortality rate (IMR), which is the number of deaths of children under one year of age per 1000 live births. The number of deaths below 5 years age are referred as Child Mortality Rate.

This rate is an important key indicator for a country's health and standard of living; a low infant mortality rate indicates a high standard of healthcare.

In 2019, the infant mortality rate in India was at about 28.3 deaths per 1,000 live births.

Maternal mortality rate: The World Health Organization (WHO) defines maternal death as the death of a pregnant person due to complications related to pregnancy. It includes the deaths during pregnancy period, child birth or due to complications that arise from child birth. Everyday 808 women die from pregnancy or childbirth related causes from all over the world.

Maternal mortality is considered a key health indicator and the direct causes of maternal deaths are well known and largely preventable and treatable.

Maternal Mortality Ratio(MMR) of India for the period 2016-18, is 113/100,000 live births. This is achieved by Schemes like The Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA), Janani Shishu Suraksha Karyakaram (JSSK) etc.

E. Mental Health: Mental health is a broad health Indicator. Most often mental health is associated with physical health conditions including diabetes, BP, heart, cancer, stroke etc. hence prevalence of mental health in a population is an indirect indication of health of the population.

Apart from the above important health indicator there are other aspects like Low birth weight, Obesity,

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diabetes, High blood pressure, Cancer incidence, hospital visits, mental illnesses, Doctor-population ratio, in the population are also act as health indicators.

QNo.8. Write a short notes on Environment health and public health.

A. Environment health and Public health are interrelated. Polluted Environment affects the public health.

What Is Environment?

The environment is the physical surroundings in which we live. It can either consist of living factors or non-living factors. It consists of everything real around us such as sunlight, soil, air, water, rains, mountains etc. The surroundings we dwell in is subjected to constant change; these factors are majorly contributed by human activity. For instance, climate change.

Environment And Human Health

Living entities, directly or indirectly depend upon their environment for pure water, clean air, unadulterated and nutritious food, disease-free community to live etc as these factors are known to influence the health of humans. It is also a known fact that sanitation, agriculture, treated water, personal and community hygiene have a visible impact on human health.

The environmental risks can pump up the chances of contracting heart diseases, cancers and various other illnesses. Untreated drinking water, poor hygiene, improper sanitation cause infectious diseases such as cholera, diarrhoea, dengue etc.

The environmental impacts on human health include physical, chemical and biological hazards. Air, water, soil, sound and land pollution are the major cause of illness in all humans.

Physical hazards include airborne particles, humidity, equipment design, and radiations, etc.

Biological hazards include viruses, microbial agents, insects, rodents, animals and plants, etc.

Chemical hazards include pesticides, insecticides, herbicides, lead, Acids, chlorine, and other caustic substances.

For the normal healthy living the following are required.

a. Clean Air b. Safe drinking water c. Nutritious food d. Safe places to live.

One's health is majorly controlled and influenced by its immediate surroundings. A healthy environment gives health to the public. Polluted environment causes diseases and ill health to public.

QNo. 8. Write a short notes on Health Education Principles and Strategies

Ans. Health Education is the process by which people learn about their health and more specifically, learn how to improve their health.

1. Principles of Health Education

- **Finding out the where the key problems are** – like child mortality, Menstrual health, Water pollution etc.

- **Know your audience:** Attempts to introduce new practices may fail if they are incompatible with local beliefs and practices.

Not require resources of money, materials, and time that are not available locally

- **Know the environment for health education**
Conducive environment is needed for effective HE, spacious and quiet Clinics, Health centres, Community centres are needed.

- **Timing for Health Education** Timing should be Convenient for the audience

- **Know what to talk-to Prepare** a health talk considering the time available, language, and audience mix

2. Roles of Health Education

- Promoting good health practices, for example, sanitation, clean drinking water, good hygiene, breast feeding, infant weaning, and oral rehydration;
- Promoting use of preventive services for example, immunization, screening, antenatal and child health clinics
- Promoting the correct use of medications and the pursuit of rehabilitation regimens for example for tuberculosis and leprosy respectively;
- Enhances recognition of early symptoms of disease and promoting early referral
- Promotes community support for primary health care and government control measures

3. Strategies for Health Education

Information, education and communication (IEC)

A technique used to communicate important information by employing a wide range of communication media aiming at changing behaviour by providing information to individuals and communities through, mass media, print, electronic, sermons, drama.

Behavior change communication (BCC)

A process for developing messages and approaches using a mix of communication channels to encourage and sustain positive and appropriate behaviour at individual, small groups, community level.

Status of audience

In terms of sex, age, education, social-economic status and language to be used, cultural beliefs and taboos.

Information needed by the audience

health education should fit with people's circumstances for example, education about nutrition should be based on foods that are available locally.

Media of communicating to the audience

For example, when giving Health Education to a small group one may use health talk of face to face but when you need to give HE to the whole population you may need a radio or television. to give HE to the whole population you may need a radio or television.

Purposes of Health Education

The ultimate aim of health education is to change behavior in a positive way by:

- Positively influence the health behaviour of individuals and communities, as well as living

Life Skill Course - HEALTH & HYGIENE

and working conditions that influence their health

- Promote, maintain, and improve individual, family, and community health
- Increases knowledge of people on health and health related matters
- Modifies beliefs and clarifies attitude and values
- Enables people to change behaviour
- Improvement of the health status of individuals, Reduces disease morbidity and mortality

Q.No.9 Write a brief note on National Health Policy

The National Health Policy, 2017 (NHP, 2017) aims at achieving universal health coverage and delivering quality health care services to all at affordable cost.

Goal

The policy envisages as its goal the attainment of the highest possible level of health and well-being for all at all ages. This would be achieved through increasing access, improving quality and lowering the cost of healthcare delivery.

Objectives

Improve health status through concerted policy action in all sectors and expand preventive, promotive, curative, palliative and rehabilitative services provided through the public health sector with focus on quality.

Specific Quantitative Goals and Objectives

Health Status and Programme Impact

I Health Status/Goals of Health policy (5 Marks)

1. Life Expectancy and healthy life

- To Increase Life Expectancy at birth from 67.5 to 70 by 2025.
- Establish regular tracking of Disability Adjusted Life Years (DALY)

2. Mortality by Age and/ or cause

- Reduce Under Five Mortality to 23 by 2025 and MMR (Maternal Mortality rate) from current levels to 100 by 2020.
- Reduce infant mortality rate to 28 by 2019.

3. Reduction of disease prevalence/ incidence

- Achieve global target of 2020 which is also termed as target of 90:90:90, for HIV/AIDS i.e., - 90% of all people living with HIV know their HIV status, - 90% of all people diagnosed with HIV infection receive sustained antiretroviral therapy and 90% of all people receiving antiretroviral therapy will have viral suppression.
- Achieve and maintain elimination status of Leprosy by 2018, Filariasis in endemic pockets by 2017.
- To achieve and maintain a cure rate of >85% in patients for TB and reduce incidence of new cases, to reach elimination status by 2025.
- To reduce the prevalence of blindness to 0.25/ 1000 by 2025
- To reduce premature mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases by 25% by 2025.

II Health Systems Performance

1. Coverage of Health Services

Increase utilization of public health facilities by 50% from current levels by 2025.

- Antenatal care coverage to be sustained above 90% and skilled attendance at birth above 90% by 2025.
- More than 90% of the newborn are fully immunized by one year of age by 2025.
- Meet need of family planning above 90% at national and sub national level by 2025.

2. Cross Sectoral goals related to health

- Relative reduction in prevalence of current tobacco use by 15% by 2020 and 30% by 2025.
- Reduction of 40% in prevalence of stunting of under-five children by 2025.
- Access to safe water and sanitation to all by 2020 (Swachh Bharat Mission).
- Reduction of occupational injury by half from current levels of 334 per lakh agricultural workers by 2020.

III Health Systems strengthening

1. Health finance

- Increase health expenditure by Government as a percentage of GDP from the existing 1.1 5 % to 2.5 % by 2025.
- Increase State sector health spending to > 8% of their budget by 2020.

2. Health Infrastructure and Human Resource

- Ensure availability of paramedics and doctors in all districts by 2020.
- Increase community health volunteers to population ratio in all districts by 2025.

3. Health Management Information

- Ensure district - level electronic database of information on health system components by 2020.
- Strengthen the health surveillance system and establish registries for diseases of public health importance by 2020.

IV Policy thrust

1. Ensuring Adequate Investment - The policy proposes a potentially achievable target of raising public health expenditure to 2.5% of the GDP in a time bound manner.

2. Preventive and Promotive Health - The policy identifies coordinated action on seven priority areas for improving the environment for health:

- The Swachh Bharat Abhiyan
- Balanced, healthy diets and regular exercises.
- Addressing tobacco, alcohol and substance abuse
- Yatri Suraksha – preventing deaths due to rail and road traffic accidents
- Nirbhaya Nari – action against gender violence
- Reduced stress and improved safety in the work place
- Reducing indoor and outdoor air pollution

3. Organization of Public Health Care Delivery - The policy proposes key policy shifts in organizing health care services.

Q.No.9 Write an essay on various nutrition and health organizations in India

1.. NIN (National Institute of Nutrition) (5 Marks)

National Institute of Nutrition (NIN) was founded by Sir Robert McCarrison in the year 1918 at Coonoor, Tamil Nadu as "Nutrition Research Laboratory". It was shifted to Hyderabad in 1958. It was renamed in 1969 as National Institute of Nutrition (NIN).

Objectives

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1. To identify various dietary and nutrition problems prevalent among different segments of the population in the country.
2. To continuously monitor diet and nutrition situation of the country.
3. To evolve effective methods of management and prevention of nutritional problems.
4. To conduct operational research connected with planning and implementation of national nutrition programmes.
5. To develop Human resource development in the field of nutrition.
6. To disseminate nutrition information.
7. To advise governments and other organisations on issues relating to nutrition

Achievements

1. NIN has attained global recognition for its pioneering studies on various aspects of nutrition research, with special reference to protein energy malnutrition (PEM).
2. Institute's activities are broad-based, encompassing the whole area of food and nutrition. The Institute has achieved close integration in its research activities between the laboratory, the clinic and the community.
3. National Institute of Nutrition, over the Century years of glorious service to the nation, has to its credit an impressive record of achievements in the amelioration of several nutritional disorders of our people.
4. National Institute of Nutrition offers studies in M.Sc. (Applied Nutrition), Post-Graduate Certificate Course in Nutrition and Annual Training Course on Endocrinological Techniques and their Application.

2. Food and Nutrition Board (FNB) (5 Marks)

The Food and Nutrition Board (FNB), set up in 1964, is under the department of Women welfare and Child Development. The FNB has a technical wing at the centre, 4 regional offices at Delhi, Mumbai, Kolkata and Chennai. Some of the areas of FNB activities are as under.

1. **Nutrition Education and Orientation:** Nutrition Education of the people in rural, urban and tribal areas is one of the primary activities of the FNB.
2. **Training in Home Scale Preservation of Fruits and Vegetable:** to housewives and adolescent girls with a view to promote preservation and consumption of fruits and vegetable.
3. **Mass Media Communication:** Development of educational and training material on nutrition has been one of the important activities of FNB Headquarters. Some of the important publications include Handbook on Integrated Nutrition Education, Guidelines for Nutrition etc.
4. **Advocacy and Sensitization of Policy makers and Programme managers:** Advocacy and sensitization of policy makers for integrating nutritional concerns in developmental programmes is a key issue for promoting nutrition of the people in the country. Regional workshops are planned for this.
5. **Follow Up Action on National Nutrition Policy:** A number of initiatives have been taken up since National Nutrition Policy was adopted by Government of India in 1993. A National Plan of Action on Nutrition was formulated and approved by the Inter ministerial coordination Committee and released in 1995. A task force on micronutrient deficiency like Vitamin A and Iron was constituted and details are worked to eradicate them.

3. Indian Council of Medical Research (ICMR) (5 Marks)

The Indian Council of Medical Research (ICMR) is the premier autonomous organization of the Government of India for planning, promoting, coordinating and conducting biomedical research in India. The objectives of the ICMR are in consonance with the national health policy and aim towards improving the health of the people of India through biomedical research.

The ICMR established in the year 1911, is one of the oldest medical research organizations in the world. It conducts and supports biomedical research in all areas to improve the health of Indian people.

Objectives:

- To make scientists aware of the need and responsibility to protect new knowledge generated through intellectual property rights, ownership of biological and other materials and data generated using ICMR funds and facilities.
- To develop procedures at ICMR institutions to capture, assess and protect new intellectual property generated.
- To provide ICMR scientists information demand relating to patents in their areas of interest by maintaining appropriate national and international databases.
- To provide appropriate technological professional and legal expertise and services to assist ICMR scientists to file patents in India and abroad.
- To encourage and provide all support to universities and other institutions for protecting and commercializing new knowledge generated with ICMR support.
- To develop a licensing policy that ensures the maximal public health benefit and a fair return on investment from ICMR research.
- To develop and implement a royalty policy at ICMR institutions that encourages innovative scientists and technology generators through a system of royalty sharing and reward system.
- To serve in an advisory capacity to the Indian Government on IP related issues concerning public health.
- To forge appropriate strategic alliances with national and international Science and Technology agencies and industry to market its new inventions and develop professional knowledge network for ICMR's technology management professionals.

Activities of ICMR (5 Marks)

- Network of 26 institutes: Involved in the evaluation of new drugs, insecticides, vaccines, devices, diagnostic kits and other health items.
- Spread of Health research to every corner of the country
- Clinical trial Data registry: Clinical trial of drugs data is maintained by registers and ICMR provides ethical guidelines to Clinical trials
- National Cancer registry programme: Generate reliable data on the magnitude of cancer in India
- Disease surveillance registry: produce reliable clinical, epidemiological features of various diseases.
- Provides guidelines for Nutrition, Epidemics, Hospitals, research, drug policy et.

4. Indian Dietetics Association (5 Marks)

In 1962, a group of like-minded nutritionists, dietitians and workers in the allied health fields resolved to form a scientific body to highlight the importance of

Life Skill Course - HEALTH & HYGIENE

dietetics and nutrition in the maintenance of health, and in the prevention and treatment of diseases. Thus, the Indian Dietetic Association was founded, with Prof. Kalyan Bagchi as Secretary and Dr. C. Gopalan as President. The association was affiliated to the International Congress of Dietetics in 1975. The Headquarters of IDA is located in Kolkata.

Aims and Objectives of the Association

1. To promote the cause of science by encouraging the spirit of active pursuit of knowledge and original scientific research particularly in the field of Nutrition and Dietetics.
2. To facilitate social, scientific and cultural fellowship and cultivation of goodwill among its members.
3. To safeguard the interests of scientists generally and its members in particular and work for their welfare.

National Executive Committee

The National Executive Committee (NEC) is elected once in 3 years. Currently there are 23 chapters of IDA in various parts of the country. Each chapter has its own Local Executive Committee (LEC) which runs scientific programs and meetings at a convenient periodicity. IDA has over 13000 members pan India.

Journal

IDA started its own scientific journal in 1963. It was named the "Journal of the Indian Dietetic Association". The journal has been renamed as "Journal of the Indian Dietetic Association" (JIDA) in 2003.

Annual National Conference

Each year a national conference is organized by one of the 23 chapters of IDA. This is open to members and students of the profession. The conference duration is usually 2-3 days.

Registered Dietitian (RD) Board

The RD Board is actively involved in setting standards of practice for dietitians in clinical practice. The Board conducts an annual exam and those who pass the exam are allowed to use the title 'RD' after their name.

Awards and Prizes

At every national conference, the following awards and prizes are given away to the best candidate who is chosen by a panel of judges based on a number of criteria. Entries for these awards are usually called for when the conference details are announced by the hosting chapter.

Pratima Kaushik Award – Clinical Dietetics

Swaran Padak Award – Experimental Nutrition

IDA Award – Community Nutrition

IDA Award – Food Science / Technology

Additionally, Prof Amiya Kumar Bose Memorial Lecture and Founders' Oration are presented in the conference by high achievers in the field of food, nutrition or dietetics.

DIETETICS DAY

10th of January is observed as Dietetics Day. A theme is decided every year and all chapters take active part in spreading the message of nutrition and dietetics to the community.

5. WHO-India (5 Marks)

World Health Organization (WHO) is the United Nations' specialized agency for Health. The World Health Organization is responsible for providing leadership on global health matters.

India became a party to the WHO Constitution on 12 January 1948.

Dr Roderico H Ofrin is the WHO Representative to India at present.

The WHO Country Office for India is headquartered in Delhi with country-wide presence.

WHO focuses its work on the following six core functions:

1. providing leadership on matters critical to health and engaging in partnerships where joint action is needed;
2. shaping the research agenda and stimulating the dissemination of valuable knowledge;
3. setting norms and standards and promoting and monitoring their implementation;
4. articulating ethical and evidence-based policy options;
5. providing technical support, catalysing change, and building sustainable institutional capacity; and
6. monitoring the health situation and assessing health trends.

WHO India Country Cooperation Strategy 2019–2023: A Time of Transition

'The WHO India Country Cooperation Strategy 2019–2023: A Time of Transition' has been jointly developed by the Ministry of Health and Family Welfare (MoH&FW) of the Government of India (GoI) and the WHO Country Office for India. The Country Cooperation Strategy (CCS), provides a strategic roadmap for WHO to work with the GoI towards achieving its health sector goals, improving the health of its population and bringing in transformative changes in the health sector.

6. UNICEF-INDIA (5 Marks)

UNICEF, also known as the United Nations Children's Fund, is a United Nations agency responsible for providing humanitarian and developmental aid to children worldwide.

The agency is among the most widespread and recognizable social welfare organizations in the world, with a presence in 192 countries and territories. UNICEF's activities include providing immunizations and disease prevention, administering treatment for children and mothers with HIV, enhancing childhood and maternal nutrition, improving sanitation, promoting education, and providing emergency relief in response to disasters.

The UNICEF began its work in India in 1949 with three staff members in Delhi. With some 450 staff members working in 17 states that together cover 90 per cent of India's child population.

The areas of UNICEF activities in India are as follows

1. Health: It works to improve maternal, newborn, child and adolescent health through collaboration with communities, governments and partners in India.
2. Child Protection: It works to ensure the realization of children's rights to grow up in a family environment, protected from violence, abuse and exploitation.
3. Education: UNICEF is committed to ensuring all children in India have access to inclusive and equitable quality education.

Life Skill Course - HEALTH & HYGIENE

4. Nutrition: It works to ensure that all children in the country are well nourished and receive optimal nutrition to promote their survival, growth and development potential.

5. Water, sanitation and hygiene: It works with government and partners to ensure that every child in India has access to clean water, basic toilets and practices good hygiene behaviors.

6. Social policy and inclusion: UNICEF works to create an enabling policy environment for equity and children's rights in India.

7. Adolescent development and participation: UNICEF is working to engage and empower adolescents in India to be the next generation of leaders and change makers.

8. Gender equality: Every child deserves to reach her or his full potential, but gender inequalities in their lives and in the lives of those who care for them hinder this reality.

QN.10 Write an Essay on National Health Mission: National Rural Health Mission (NRHM) Framework, National Urban Health Mission (NUHM) Framework

A. National Rural Health Mission (NRHM)

The National Rural Health Mission was launched on 12th April 2005 to address the health needs in underserved rural areas. NRHM seeks to provide equitable, affordable and quality healthcare.

Objectives

The mission commits to growing its focus on healthcare by increasing public spending to 2-3% of GDP. NRHM integrates Health and Family Welfare Programmes and increases the level of decentralization. The objectives of the mission are-

- * To reduce Infant Mortality Rate (IMR) to 30/1000 live births and Maternal Mortality Rate (MMR) to 1/1000 live births.
- * To bring population growth rate approaching zero.
- * To reduce mortality due to Malaria, Dengue, Kala-azar, Filiria, etc.
- * To upgrade all Community Health Centres as per Indian Public Health Standards (IPHS).
- * To engage 400,000 female Accredited Social Health Activists (ASHAs) across 1,330,000 Anganwadis

Framework for Implementation

1. National Level

Mission Steering Group (MSG) - Headed by Union minister of health and family welfare provides overall guidance.

* Empowered Programme Committee - Headed by Union secretary of health and family welfare, supports the MSG in implementing the mission.

* National Program Coordination Committee - Comprises of representatives of Ministry of health and family welfare, along with state governments. It is responsible for evaluate the state plans.

2. State Level

* State Health Mission - Chaired by Chief Minister and includes nominated public representatives (MPs, MLAs). Responsible for oversight at state level.

* State Health Society - Chaired by Chief Secretary and responsible for supporting the State health mission in implementation of the scheme at the state level. It is the executive arm of the state mission.

3. District Level

* District Health Mission: Headed by chairman, Zilaparishad and includes MPs, MLAs in the district and the Chief Medical Officer as the mission director, is responsible for oversight at the district level.

* District Health Society: Headed by the District Collector it is responsible for planning and managing all health programmes at the district level.

4. Village Level

* *Village Health Sanitation and Nutrition Committee*: Comprises of panchayat representatives, Anganwadi workers, accredited social health activists and auxiliary nurse midwives, and is responsible for planning and implementation at village level.

* *Rogi Kalyan Samiti*: Comprises of MPs, MLAs, panchayat representatives and health officials. It functions as an NGO and is responsible for management of day to day affairs of sub centres, primary health centres as well as community health centres

B. National Urban Health Mission (NUHM)

If urbanization continues at present rate in urban areas by 2030. While the National Rural Health Mission has primarily catered to rural areas, urban health issues need immediate attention, especially in the context of the urban poor.

The NUHM was launched on 20th January, 2014 in all cities/towns with a population of more than 50,000 to tackle the problem of deteriorating urban health.

Objectives

The National Urban Health Mission aims to improve the health status of the urban population with a focus on disadvantaged and poor population. The mission aims to provide equitable access to revamped public health system, partnerships (public expected outcomes of the program are:

- * Reduced Infant Mortality Rate (IMR) in urban areas by 40% to 20 per 1000 population
- * Reduce Maternal Mortality Rate (MMR) in urban areas
- * Achieve universal access to reproductive health include
- * Achieve Total Fertility Rate of 2.1
- * Achieve all targets of Disease Control Programmes (such as National Iodine Deficiency Disorders Control Programme, National Vector Borne Disease Control Programme, Revised, National TB Control Programme, etc.)

Framework for Implementation

National Level, State Level committees are same as those of National Rural Health Mission (NRHM)

1. City and Community Level

* States may either decide to constitute a separate City urban health mission and City urban health society or use

Life Skill Course - HEALTH & HYGIENE

the existing structure of the District health mission and District health society under the NRHM. The District health mission would be headed by the urban local body and would deal with policy related matters, whereas the District health society would be headed by the Municipal commissioner/ District collector and would be the executive wing of the District health mission.

2. Mahila Arogya Samiti - will act as a community group involved in awareness generation, community based monitoring and linkages with services comprising of 10-12 women and would function as a community group, preferably at the slum level. The mission seeks to achieve its goals through interventions at different levels-

3. Urban Social Health Activist (USHA) - Each slum/community will have on frontline community worker called USHA on the lines of ASHA under NRHM, for delivery of services at the doorstep. She will cover around 1000-2500 beneficiaries across 250-500 households. She should be a women resident of the slum, preferably in the age group of 25-45 years. She would be chosen through a community driven process involving urban local body counselors, self help groups, Anganwadi, etc. She would maintain interpersonal communication with beneficiary families and would serve as a link between the health facility (Urban Primary Health Centre) and the urban slum populations.

3. Auxiliary Nurse Midwife (ANM) (5 Marks) - 4-5 ANMs would be posted in each primary health center depending on the population. The ANM would be responsible for outreach sessions at the community level. The sessions will include check-ups, drug dispensing and counseling. Outreach sessions will be planned to focus special attention for reaching out to the vulnerable sections like slum population, rag pickers, sex workers, brick kiln workers, street children and rickshaw pullers.

4. Urban Primary Health Centre (U-PHC) - It may be located within a slum or near a slum within half a kilometer radius. At the U-PHC level, services provided will include Outpatient department (OPD) consultation, basic lab diagnosis, drug /contraceptive dispensing and distribution of health education material and counseling for all communicable and non communicable diseases. One U-PHC must be present for every 50,000 population.

5. Urban Community Health Centre (U-CHC) - It may be set up as a satellite hospital for every 4-5 U-PHCs. It would provide in patient services (30-50 bedded facility) and would be set up in cities with more than 5 lakh population. One U-CHC must be present for every 2,50,000 population.

Que11. What is RMNCH+A scheme? (5 Marks)

Ans. Reproductive, Maternal, Newborn, Child and Adolescent Health

Improving the maternal and child health and their survival are central to the achievement of national health goals under the National Health Mission (NHM). United

Nations sustainable Development Goal number 3 also includes the focus on reducing maternal, newborn and child mortality.

Following the Government of India's "Call to Action (CAT) Summit" in February, 2013, the Ministry of Health & Family Welfare launched Reproductive, Maternal, Newborn Child plus Adolescent Health (RMNCH+A) to influence the key interventions for reducing maternal and child morbidity and mortality.

The RMNCH+A strategy is built upon the reproductive, maternal, newborn, child, and adolescent health under a broad umbrella, and focusing on the strategic lifecycle approach.

The RMNCH+A strategy promotes links between various interventions across thematic areas to enhance coverage throughout the lifecycle to improve child survival in India. The "plus" within the strategy focuses on: Inclusion of adolescence as a distinct life stage within the overall strategy.

Linking maternal and child health to reproductive health and other components like family planning, adolescent health, HIV, gender, and preconception and prenatal diagnostic techniques. Linking home and community-based services to facility-based services.

Key features of RMNCH+A Strategy: **(5 Marks)**

The RMNCH+A strategy approaches include:

Health systems strengthening (HSS) focusing on infrastructure, human resources, supply chain management, and referral transport measures.

Prioritization of high-impact interventions for various lifecycle stages.

Increasing effectiveness of investments by prioritizing geographical areas based on evidence.

Integrated monitoring and accountability through good governance, use of available data sets, community involvement, and steps to address grievance.

Broad-based collaboration and partnerships with ministries, departments, development partners, civil society, and other stakeholders.

The RMNCH+A strategy provides a strong platform for delivery of services across the entire continuum of care, ranging from community to various level of health care system.

Que. What is Janani Shishu Suraksha Karyakaram (JSSK)

Objective

The scheme is estimated to benefit pregnant women who access Government health facilities for their delivery. The scheme was launched in June 2011 to eliminate out-of-pocket expenses for both pregnant women and sick infants.

Benefits

Free and Cashless Delivery, Free C-Section, Free diet during stay in the health institution - 3 days in case of normal delivery and 7 days in case of caesarean section. In 2014, the programme was extended to all antenatal & post-natal complications of pregnancy

Under JSSK pregnant women will get following Benefits:

Free and cashless delivery
Free C-Section
Free drugs and consumables
Free diagnostics
Free diet during stay in the health institutions
Free provision of blood
Exemption from user charges
Free transport from home to health institutions
Free transport between facilities in case of referral
Free drop back from Institutions to home after 48hrs stay

Under JSSK a newborn and sick child upto 1 year (infants) will get following Benefits:

Free drugs and consumables.
Free essential Diagnostic.
Free provision of Blood.
Free diet facilities.
Free transport facilities from home to health institutions, between health institutions in case of referral.
Free drop back facility from institution to home.
Exception from all kind of user charges.

Que. What is Rashtriya Bal Swasthya Karyakram (RBSK) (5 Marks)

Ans. Rashtriya Bal Swasthya Karyakram (RBSK) is a new initiative aiming at early identification and early intervention for children from birth to 18 years to cover 4 'D's viz. Defects at birth, Deficiencies, Diseases, Development delays including disability.

First level of screening is to be done at all delivery points through existing Medical Officers, Staff Nurses and ANMs. After 48 hours till 6 weeks the screening of newborns will be done by ASHA at home as a part of HBNC package. Outreach screening will be done by dedicated mobile block level teams for 6 weeks to 6 years at anganwadis centres and 6 - 18 years children at school.

Once the child is screened and referred from any of these points of identification, it would be ensured that the necessary treatment/intervention is delivered at zero cost to the family.

Target age group

The services aim to cover children of 0 -6 years of age in rural areas and urban slums in addition to children enrolled in classes I to XII in Government and Government aided Schools. It is expected that these services will reach to about 27 crores children in a phased manner.

Health conditions to be screened

Child Health Screening and Early Intervention Services under RBSK envisages to cover 30 selected health conditions for Screening, early detection and free management.

1. Neural tube defect 2. Down's Syndrome 3. Cleft Lip & Palate / Cleft palate alone 4. Talipes (club foot) 5. Developmental dysplasia of the hip 6. Congenital cataract 7. Congenital deafness 8. Congenital heart diseases 9. Retinopathy of Prematurity 10. Anaemia especially Severe anaemia 11. Vitamin A deficiency (Bitot spot) 12. Vitamin D Deficiency, (Rickets) 13. Severe Acute Malnutrition 14. Goiter 15. Skin conditions (Scabies, fungal infection and Eczema) 16. Otitis Media 17. Rheumatic heart disease 18. Reactive airway disease 19. Dental conditions 20. Convulsive disorders 21. Vision Impairment 22. Hearing Impairment 23. Neuro-motor Impairment 24. Motor delay 25. Cognitive delay 26. Language delay 27. Behavior disorder (Autism) 28. Learning disorder 29. Attention deficit hyperactivity disorder 30. Congenital Hypothyroidism, Sickle cell anemia, Beta thalassemia
(REMEMBER AT LEAST 10 CONDITIONS)

Mechanisms for screening at Community & Facility level:

Child screening under RBSK is at two levels community level and facility level. While facility based new born screening at public health facilities like PHCs / CHCs/ DH, by Medical Officers, Staff Nurses & ANMs,

The community level screening will be conducted by the Mobile health teams at Anganwadi Centres and Government and Government aided Schools.

Que. Write notes on India Newborn Action Plan (INAP)**India Newborn Action Plan**

India Newborn Action Plan (INAP) was launched in September 2014, for accelerating the reduction of preventable newborn deaths and stillbirths in the country - Currently, there are estimated 7.47 lakh neonatal deaths annually.

Snapshot of India Newborn Action Plan (INAP)

- Builds on existing commitments under the National Health Mission and 'Call to Action' for Child Survival and Development
- Aligns with the Global Every Newborn Action Plan (ENAP);
- Aims at attaining Single Digit Neonatal Mortality Rate by 2030. The NMR (per 1000 live births) for 2020 is 21 deaths. It is targeted for 2030 as below 10 single digit.
- Focuses on ending preventable newborn deaths, improving quality of care and care beyond survival
- Prioritizes those babies that are born too soon, too small, or sick—as they account for majority of all newborn deaths

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- Aspires towards ensuring equitable progress for girls and boys, rural and urban, rich and poor, and between districts and states
- Defines six pillars of interventions: Pre-conception and antenatal care; Care during labour and child birth; Immediate newborn care; Care of healthy newborn; Care of small and sick newborn; and Care beyond newborn survival

QNo. Write a shortnotes on Adolescent Health- Rashtriya Kishor Swasthya Karyakram (RKSK)

Ans. Rashtriya Kishor Swasthya Karyakram (RKSK)

The Ministry of Health & Family Welfare has launched a health programme for adolescents, in the age group of 10-19 years, which would target their nutrition, reproductive health and substance abuse, and other issues.

The Rashtriya Kishor Swasthya Karyakram was launched in 2014. The programme envisions enabling all adolescents in India to realize their full potential.

The Rashtriya Kishor Swasthya Karyakram (National Adolescent Health Programme), will comprehensively address the health needs of the 243 million adolescents.

Objectives

Improve nutrition

- Reduce the prevalence of malnutrition among adolescent girls and boys
- Reduce the prevalence of iron-deficiency anaemia (IDA) among adolescent girls and boys
- Improve sexual and reproductive health
- Improve knowledge, attitudes and behaviour
- Reduce teenage pregnancies
- Improve birth preparedness and parenting for adolescent parents
- Enhance mental health Address mental health concerns of adolescents
- Prevent injuries and violence
- Address NCDs (Non communicable diseases like hypertension, stroke, cardio-vascular diseases and diabetes)

Target Groups

The new adolescent health (AH) strategy focuses on age groups 10-14 years and 15-19 years with universal coverage, i.e. males and females; urban and rural; in school and out of school; married and unmarried; and vulnerable and under-served.

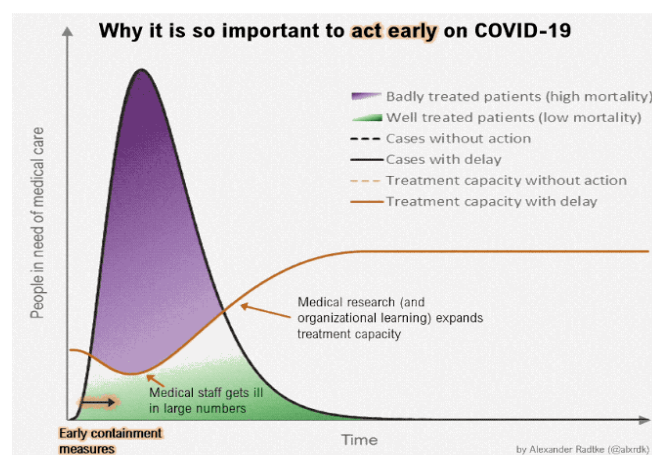
Strategies

- Peer Education (PE)
- Quarterly Adolescent Health Day (AHD)
- Weekly Iron and Folic Acid Supplementation Programme (WIFS)
- Menstrual Hygiene Scheme (MHS)
- Strengthening of Adolescent Friendly Health Clinics (AFHC)

QNo. 12 How to contain, control and prevent epidemics and pandemics ?

Infectious diseases are spread by either bacterial or viral agents and are ever-present in society. Usually infected cases are present in numbers below an expected threshold but every once in a while there may be an outbreak, a new strain or a new disease that has a significant impact at either a local or global level. The spread and rate of new cases can be classified as

A. Endemic - describes a disease that is present permanently in a region or population. It is used to describe a disease that is present within a society or country. Eg. Malaria is another infectious disease that is endemic to Africa.



B. Epidemic - is an outbreak that affects many people at one time and can spread to several communities. This term is used to describe a situation where a disease spreads rapidly to a large number of people in a given population over a short time period. A typical example of this is seasonal flu. Some times Obesity can also be epidemic. Over the last 3 decades, the United States has seen an increase in the number of people who have a BMI higher than the recommended average

C. Pandemic - is the term used to describe an epidemic when the spread is global. Once an epidemic becomes global and affects a large percent of the population it becomes known as a pandemic.

Significant features of a pandemic are listed below:

- Affects a wider geographical area, often global
- Infects a very large number of people
- Often caused by a new virus or a new strain of a virus that has been dormant for many years.
- Spreads quickly in humans as there is little to no existing immunity
- Can cause a high number of deaths

Example of Pandemic

A current example of this is the Coronavirus Disease (COVID-19). On 31 December 2019, a cluster of cases of pneumonia of unknown cause, in the city of Wuhan, Hubei province in China, was reported to the WHO. This was subsequently identified as a new virus in January 2020 and over the following months, the number of cases continued to rise worldwide. Due to the rapid

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global rise in cases, this was declared a pandemic on 9th December 2020, there have been 67,780,361 confirmed cases of COVID-19, including 1,551,214 deaths.

Preventing a Pandemic

It is important to try to prevent an epidemic from developing into a pandemic. This requires organisations and nations to act early and be prepared. A set of policies to try to limit the spread of an infectious agent beyond the initial individual cases and small clusters of infection are termed Containment. There are several measures that have proven effective in the control and containment of viruses:

Controls - limit/prevent movement of individuals to and from affected areas

Identify cases - educate the public on the symptoms and risk factors, Identify the cases and track contact with infected individuals

Trace contacts - The contacts of the infected persons are to be traced and quarantined.

Quarantine - separate an individual suspected of infection is to be separated from contact with others

Protect - use appropriate equipment to protect healthcare(PPE) workers who cannot avoid contact with infected individuals. **Trace, track and treat** is the motto for the prevention of pandemic

Managing a Pandemic

Once a pandemic is identified it is vital to take the appropriate action to **contain, manage and reduce** the spread of the virus. The key message at this stage is to **reduce the transmission rate**.

Actions targeted at reducing the transmission rate are termed **Mitigation** and can involve:

- **Social distancing** (cancel events, closing institutions, work from home etc.)
- **Education of the public** - to promote actions such as hand washing and avoiding groups etc.
- **Economic measures** - to provide relief to individuals and businesses and to increase compliance with social distancing related policies

All these measures aim to limit transmission rate which helps in flattening of the curve of cases over time. The greater the stress on the healthcare system the higher the likely mortality rate.

QNo. Explain briefly about the Epidemic Diseases (Amendment) Ordinance, 2020..

Ans. The Epidemic Diseases (Amendment) Ordinance, 2020 was | promulgated on April 22, 2020. The Ordinance amends the Epidemic Diseases Act, 1897. The Act provides for the prevention of the spread of dangerous epidemic diseases. The Ordinance – gives powers to the central government to prevent the spread of such diseases.

Key features of the Ordinance include :

* **Definitions** : The Ordinance defines healthcare service Personnel as a person who is at risk of contracting the epidemic disease while carrying out duties related to the epidemic.

They include: (i) public and clinical healthcare providers such as doctors and nurses, (ii) any person empowered under the Act to take measures to prevent the outbreak of the disease, and (iii) other persons designated as such by the state government.

* An 'act of violence' includes any of the following acts committed against a healthcare service personnel :

- (i) harassment impacting living or working conditions,
- (ii) harm, injury, hurt, or danger to life,
- (iii) obstruction in discharge of his duties, and
- (iv) loss or damage to the property or documents of the healthcare service personnel. Property

* Powers of the central government :

The Act specifies that the central government may regulate :

- (i) . The Ordinance expands the powers of the central government to regulate the inspection of any bus, train, goods vehicle, ship, vessel, or aircraft leaving or arriving at any land port, port or aerodrome. And
- (ii) the detention of any person intending to travel from the port, during an outbreak Further, the central government may regulate the detention of any person intending to travel by these means.

* **Protection for healthcare personnel and damage to property** : The Ordinance specifies that no person can : (i) commit an act of violence against a healthcare service personnel, or (ii) caused damage or loss to any property during an epidemic.

***Compensation** : Persons convicted of offences under the Ordinance will also be liable to pay a compensation to the healthcare service personnel whom they have hurt.

* **Investigation** : Cases registered under the Ordinance will be investigated by a police officer not below the rank of Inspector. The investigation must be completed within 30 days from the date of registration of the First Information Report. .

* **Trial** : The inquiry or trial should be concluded within one year. If it is not concluded within this time period, the Judge must record the reasons for the delay and extend the time period.

Q.No Write a short notes on the Role of Government and Public during pandemic

Ans: While all sectors of society are involved in pandemic preparedness and response, the national government is the natural leader for overall coordination and communication efforts. In its leadership role, the central government should:

• **identify, appoint, and lead** the coordinating body for pandemic preparedness and response; enact or modify legislation and policies required to sustain and optimize pandemic preparedness

• **prioritize and guide** the allocation and targeting of resources to achieve the goals as outlined in a country's Pandemic Influenza Preparedness Plan;

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- **provide additional resources** for national pandemic preparedness, capacity development; and
- **Health sector** : the health sector should be ready to: provide reliable information on the risk, severity, and progression of a pandemic and the effectiveness of interventions used during a pandemic; prioritize and continue the provision of health-care during pandemic;
- **Non-health sectors:** should see that no shortage of essential commodities, disruption of businesses or services like water, electricity etc. Business sector should be taken care of
- **Communities, individuals, and families:** Civil society organizations, families, individuals, and traditional leaders all have essential roles to play in mitigating the effects of an influenza pandemic. Non-governmental groups should be involved to help communities prepare for and respond to a pandemic.
- **Civil society organizations:** Groups that have a close and direct relationship with communities should provide accurate information, counter rumours, provide needed services, and liaise with the government during an emergency
- **Individuals and families:** During a pandemic, it is important that households take measures to ensure they have access to accurate information, food, water, and medicines.. Individuals, especially those who have recovered from pandemic, may consider volunteering with an organized group to assist others in the community.



Unit III:

13. Hygiene – Definition; Personal, Community, Medical and Culinary hygiene; WASH (WATER, Sanitation and Hygiene) programme
14. Rural Community Health: Village health sanitation & Nutritional committee (Roles & Responsibilities); About Accredited Social Health Activist (ASHA); Village Health Nutrition Day, Ragi Kalyan Samitis
15. Community & Personal Hygiene: Environmental Sanitation and Sanitation in Public places
16. Public Awareness through Digital Media - An Introduction to Mobile Apps of Government of India: NHP, Swasth Bharat, No More Tension, Pradhan Mantri Surakshit Mantriva Abhiyan (PM Suman Yojana), My Hospital (Mera aspaatal), India fights Dengue, JSK Helpline, Ayushman Bhava, Arogya Setu, Covid 19AP

Q.No1. Define Hygiene and write an essay on various concepts like Personal, Community, Medical and Culinary hygiene;

Ans. Definition: Hygiene is a series of practices performed to preserve health. According to the World Health Organization (WHO), “**Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases.**”

Many people equate hygiene with ‘cleanliness,’ but hygiene is a broad term. Regular hygiene practices

may be considered good habits by the society, while the neglect of hygiene can be considered disgusting, disrespectful, or bad habits

Hygiene, the science of preserving health. It should be observed at different stages like Personal, Community, Medical and Culinary hygiene

I. Personal Hygiene (5 Marks)

Definition

Personal hygiene refers to maintaining cleanliness of one's body and clothing to preserve overall health and well-being. It includes a number of different activities related to the following general areas of self-care: washing or bathing, including cleansing oneself after using the toilet; taking proper care of the mouth; grooming and dressing; and keeping clothing clean. Bathing, dressing and undressing, and using the toilet are considered activities of daily living (**ADLs**), while doing one's laundry is considered an instrumental activity of daily living or **IADL**.

Benefits

- Germs are removed from body
- Removes bad smell of body
- Personal relaxation, decrease in muscular tension
- Increases skin health
- Better appearance
- More self confidence

Cleaning the Head

Head bath to be taken once or twice in a week with shampoo or any other cleansing agent (like shikakai).

Cleaning of Eyes, Ears and Nose

1. Wash your eyes with clean water everyday.
2. Wax get formed in ears. This causes pain. Hence clean the ears once a week with cotton buds.
3. Nose secretions get dried and forms a crust which block the nose. Hence clean the nose whenever needed.

Cleaning the Mouth

1. Brush twice a day –morning, as soon as you get up from the bed and at night before going to bed.
2. Wash your mouth with clean water after eating any food. This prevents food particles from settling between the teeth which produces bad smell, spoil the gums and leads to tooth decay.
3. When you see signs of tooth decay consult a dentist immediately.
4. Regular and proper brushing methods help you prevent tartar settling on the teeth.

Skin Care

1. Skin covers the whole body, protects organs and helps to maintain body temperature.
2. In a defective skin, the sweat glands gets blocked and as a result, sores, boils and acne develop. Take bath every day using soap and clean water to keep your skin clean.

Washing Hands

1. We perform all the activities such as eating food, cleaning after passing motion, cleaning the nose, removing waste materials etc. with our hands. During these

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activities, many disease-causing germs remain under the nails and over the skin. Washing the hands (above the wrist, in between the fingers and nails) with soap after completion of the activity and especially before cooking and eating food helps to prevent many diseases.

2. Cut your nails regularly. Avoid biting nails and nose picking.

3. Children play in the mud. Teach them to practice washing hands before eating.

4. Avoid contact with blood, faeces, urine and vomit and body solutions.

5. Keep the toilets, bathrooms and surroundings clean. Avoid open air defecation

Cleanliness of the reproductive organs

Both men and women are to keep their reproductive organs always clean.

- Women, during menstruation should use clean, soft cloth or sanitary napkins. Change the napkins at least twice a day.

- Use condoms for safe sex. Clean the reproductive parts before and after the sexual activity.

II. Community Hygiene (5 Marks)

Community hygiene is the cooperative effort to bring greater health and prevention of disease to a group of people living together.

Community hygiene influences the health and efficiency of that population.

Some health measures can be undertaken only by the community as a whole. These include:

1. Water source protection: Families and communities can protect their water supply by:

- Keeping wells covered and installing a hand-pump
- Disposing of faeces and waste water well away from any water source used for cooking, drinking and washing
- Building latrines at least 15 metres away from a water source
- Keeping buckets, ropes and jars used to collect and store water as clean as possible by storing them in a clean place rather than on the ground
- Keeping animals away from drinking water sources and family living areas
- Avoiding the use of pesticides or chemicals anywhere near a water source
- Families may need to treat water to make it safe for drinking and other uses.

2. Proper disposal of solid waste and excreta: Solid waste is defined as any waste that is dry in form and is discarded by people as unwanted. The waste or by product that is obtained from human digestion is called human excreta.

- the solid waste from general housekeeping as residential waste,

- Waste produced in other areas is defined as industrial, commercial, institutional or agricultural waste, or street sweepings, depending on its source.

- Source of solid waste may be domestic refuse, Street waste, Market refuse, Industrial refuse

- The solid refuse is collectee collected by house to house collection by municipality/village van and its transport to disposal place

- The methods of solid waste management are like – Sanitary Landfill, Composting, Incineration, Manurepits, Burial, Biogas plant etc.

- Human Excreta is disposed through Pit Latrine, Composting latrine, Biogas plant etc.

3. Wastewater drainage: Wastewater is any water that is discharged by domestic residences, commercial properties and industry that encompasses contaminants and Wastes

- Drainage is the natural or artificial removal of surface and sub-surface water from an area.

- **Waste water drainage:** “Waste Water” produced out of washing, bathing, cleansing, flushing etc. in households, business premises etc.) which is discharged in the directly to the drainage.

- **Rain water disposal:** Pipes discharge into open gutters. Rainwater from streets and other impervious surfaces enters storm-water outlets which discharge into the sea or, sewers by gullies.

- **House drain:** Underground pipe Receives discharges from soil pipe, rainwater and waste water from baths and sinks

- **Sewer:** a sewer is an underground pipe for conveyance of rainwater and sewage. It conveys household effluents and trade effluents

- **Septic tank:** A septic tank is a water-tight receptacle used to break down sewage by the action of anaerobic bacteria. In this the human excreta is converted into manure/humus in it.

4. Controlling animal rearing: Animal rearing is a means of generating food high in protein content and nutritional value, and for generating additional income. Animals can also provide many other products, such as leather and fuel that improve the quality of life. However, if it is not practiced safely, animal rearing can have negative effects on the health of the community.

- Animals should always be kept away from households, particularly cooking areas and drinking-water sources, since their excreta contains pathogens that can contaminate food and water

- Animals should be kept in compounds at least 100 metres from water sources and 10 metres from houses.

- It is also best that animals are slaughtered away from households and water sources, since the offal and wastes may introduce contamination.

- Animal waste should be disposed of properly, away from homes and water sources, or be used as a fertilizer.

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- Some animals transmit diseases like dogs can be reservoirs of leishmaniasis, Cattle transmit Foot and mouth diseases to humans sometimes.

5. Market hygiene: Foodstuffs sold at the market should also be clean and hygienic.

- This is particularly important for meat and fish, which should be thoroughly inspected before sale to ensure that they do not contain pathogens or other contaminants.
- Markets usually generate a lot of solid waste and it is important that it is disposed off properly, to prevent vermin such as rats and insects from feeding and breeding among it.
- Solid waste should be collected and disposed off daily. Market areas should also be properly drained to prevent flooding and insect breeding.

III. Medical Hygiene (5 Marks)

Medical Hygiene is related to the administration of medicine and medical care that prevents or minimizes the spread of disease. The following are some of the points to be considered in this category

According to the WHO (World Health Organisation) medical hygiene refers to the specific practice of hygiene in order to preserve health and prevent the spread of disease, for example the sterilisation of equipment, safe disposal of medical waste, hand hygiene and water sanitation.

Hygiene services in a medical environment will include the following:

- 1. Continuous optimal washroom facilities** – This includes the regular cleaning of washrooms, emptying of bins, restocking of towelling and soaps.
- 2. Hand sanitizers** and sterilizers at various points of the medical facility – These should be available when entering each ward or room, at the entrance to the hospital and outside theatres.
- 3. Safe medical waste disposal** – Medical wastes are usually extremely hazardous and have to be disposed of in the correct, law abiding manner. It is vitally important to train the personnel involved in medical waste removal process as they play a vital role.
- 4. Continuous optimal cleaning** of rooms and wards – hospitals unfortunately are a breeding ground for harsh and violent viruses. It is therefore of utmost importance to keep these in check by regular sterilising of rooms, wards and bathroom facilities with a reliable hygiene services company.
- 5. Disinfection of re-usables** – For example this includes bed linen, uniforms, gowns and towels. These need to be washed and sterilised after each use.

Medical hygiene is very much important as the lives of many are at stake if this is not done correctly. .

Que. Explain about Culinary hygiene (food hygiene) and its importance

Ans. Food Hygiene, otherwise known as Food Safety can be defined as handling, preparing and storing food or drink in a way that best reduces the risk of consumers becoming sick from the food-borne disease. The principles of food safety aim to prevent food from becoming contaminated and causing food poisoning. The following are some of the ways for culinary hygiene.

- 1. Practice Good Personal Hygiene :** It is important to always wash your hands with soap and water before handling food to prepare.
- 2. Clean Utensils and Cooking Equipment :** All cooking equipment like utensils, crockery, cutting boards, mixers should be properly cleaned and sanitised before starting any preparation
- 3. Keep Foods That Need to be kept Cold in the Fridge:** Raw meats, dairy and others need to be kept cold (4°C – 39°F) in order to prevent bacteria from growing.
- 4. Separate Raw and Ready to Eat Foods :** Raw foods like meat or fish have bacteria present in them. One should not keep cooked foods together with the raw. They should be kept in a different compartment of the fridge to avoid cross-contamination.
- 5. Wash Fruits and Vegetables Before Use :** Most fruits and vegetables contain soil, insects and chemical residues in them, it is very important to rinse vegetables and fruit with water, salt or vinegar before storing them in the food rack.
- 6. Keep Dry Foods Separate From Liquids :** Dry foods like Grains, powdered, baked, and canned or dry fruits should be properly stored away from liquid, as moulds can easily grow on them causing illness, allergy and food poisoning to both adults and kids.
- 7. Cook Food to an Appropriate Temperature:** Cooking food to the required temperature is an important food safety practice, as raw foods like pork, chicken, beef should be cooked longer until there are no traces of pink on the flesh and joints which may contain bacteria.
- 8. Keep Insects and Pests Away From Food Areas :** Insects and pests control is another important food hygiene tip to be taken into consideration. Cockroaches, flies and rodents as we know are very terrible insects and pests; they can carry pathogens from one surface to another, which can lead to food-borne illness,
- 9. Always Use Clean Water to Prepare Food :** Food hygiene is also an important practice to be carried out when washing

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mixing and cooking food. Water has many ways of affecting our systems and our general health. Foods that are prepared with unsafe water can easily lead to vomiting, diarrhoeas and stomach upsets.

10. **Clean the Kitchen** and Mop the Floor After Each Food Preparation

11. **Keep Kitchen Towels**, Sponges and Cleaning Cloths Clean and Replace Regularly 12. Keep the food **premises a pleasant**, safe place to eat

13. **Reduce food wastage** by using the food items before expiry date, storing them at proper temperature etc.

14. Cleaning, Chilling, Cooking, Cross Contamination are referred as **4 Cs** of food hygiene.

Q.No. Write an essay on WASH (Water, Sanitation and Hygiene) programme

Ans. The WASH (Water, Sanitation and Hygiene) initiative has been taken by various countries in order to provide safe drinking water, proper sanitation facilities and a hygienic environment and to its people.

This is a World Health Organisation (WHO) initiative considering the health and hygiene of people across the world. Global facts and data collected have suggested that:

Some 8,27,000 people in low and middle-income countries die as a result of inadequate water, sanitation, and hygiene each year, representing 60% of total diarrhoeal deaths. Of these, 4,32,000 people die because of poor sanitation

Better water, sanitation, and hygiene could prevent the deaths of 2,97,000 children aged under 5 years each year

In 2017, over 220 million people required preventive treatment for schistosomiasis – an acute and chronic disease caused by parasitic worms contracted through exposure to infested water

As of 2020, 2.2 billion people lack access to safely managed drinking water services and 4.2 billion people lack safely managed sanitation services

The above-mentioned information points towards the alarming condition of water and hygiene across the globe and the importance of WASH. It is estimated that if the conditions do not improve, by 2025, half of the world's population will be living in water-stressed areas

Objectives of WASH

WHO has strategised a 2018-2025 plan for the improvement in the condition of sanitation and hygiene for the people across the globe and provide them with sufficient and clean water for the purpose of a healthy life. Given below are the key objectives of the WASH initiative:

- Improving the quality of drinking
- Improving the safety of sanitation and wastewater management

WASH in India

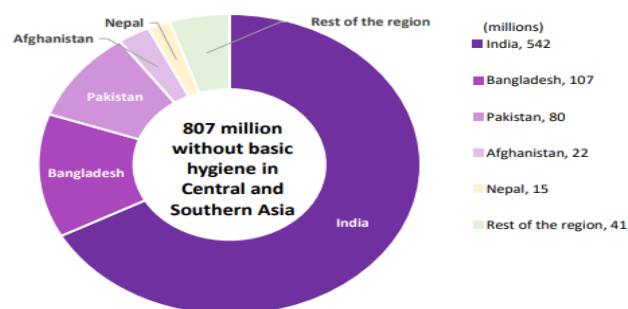
Due to the limited access to functioning, safe toilets as recently 2014, 40% of the population defecated in the

open, contaminating water and leading to India having the world's highest number of diarrhoea-related deaths in children under five

Achievements by WASH- India

- Government officials identify specific issues related to sanitation in 73 cities of India
- 300,000 more people now have access to household toilets
- 25,000 communities are open defecation free and healthier
- 175,000 more people now have access to safe drinking water
- Secured more than \$5 million funding from the private sector to implement WASH solutions
- 42,000 toilets have been located on Google Maps

In Central and Southern Asia, two thirds of the population without a basic handwashing facility with soap and water at home live in India



The above image shows the alarming situation of hygiene and sanitation. It shows the distribution of the population without basic hygiene facilities at home, Central and Southern Asia, 2017.

Q.No.14 Explain the Roles & Responsibilities of the Village health sanitation & Nutritional committee (VHSNC).

Ans. One of the key elements of the National Rural Health Mission is the Village Health , Sanitation and Nutrition committee (VHSNC). A Village health and sanitation and Nutrition committee will be constituted in every gram panchayat level. It should have a minimum of 15 members which should comprise of elected member of the Panchayat. ASHA residing in the village shall be the member secretary and convener of the committee.

Every village Panchayat is the population of up to 1500 confirm village health, water sanitation and nutrition committee.

Roles and Responsibilities

- Create awareness about nutritional issues and significance of nutrition as an important determinant of health.
- Carry out survey on nutritional status and nutritional deficiencies in the village especially among women and children.
- Identify locally available food stuffs of high nutrient value as well as disseminate and promote best practices to make use of them.
- Inclusion of Nutritional needs in the Village Health Plan – The committee will do an in-depth analysis

Life Skill Course - HEALTH & HYGIENE

of causes of malnutrition at the community and household levels, by involving the health workers.

- Monitoring and Supervision of Village Health and Nutrition Day to ensure that it is organized every month in the village with the active participation of the whole village.
- Facilitate early detection of malnourished children in the community; tie up referral to the nearest Nutritional Rehabilitation Centre (NRC) as well as follow up for sustained outcome.
- Supervise the functioning of Anganwadi Centre (AWC) in the village and facilitate its working in improving nutritional status of women and children.
- Act as a grievances redressal forum on health and nutrition issues.
- The committee may, preferably, act as a sub-committee of Gram Panchayat and function under the overall supervision of Gram Panchayat.

Que. Explain briefly about Accredited Social Health Activist (ASHA).

Ans. One of the key components of the National Rural Health Mission is to provide every village in the country with a trained female health activist **ASHA or Accredited Social Health Activist**. Selected from the village itself and will be trained to work as an interface between the community and the public health system.

Accredited Social Health Activist (ASHA) is a trained female community health activist. Selected from the community itself and accountable to it, the ASHA will be trained to work as an interface between the community and the public health system.

At present there are over 9 Lakh ASHAs. The ASHA scheme is presently in place in 33 states (except Goa, Chandigarh & Puducherry).

Following are **the key components of ASHA** :

- ASHA must primarily be a woman resident of the village married/ widowed/ divorced, preferably in the age group of 25 to 45 years.
- She should be a literate woman with due preference in selection to those who are qualified up to 10 standard.
- The ASHAs will receive performance-based incentives for promoting universal immunization, for Reproductive & Child Health (RCH) and other healthcare programmes, and construction of household toilet
- Every ASHA is expected to be a facilitator in the community participation in public health programmes in her village.
- ASHA will be the first person to call for any health related problems especially women and children.
- She would be a promoter of good health practices
- ASHA will provide information to the community about nutrition, basic sanitation, hygienic practices, healthy living and enlightening them about the existing Schemes and services of the government for various people.

- She will counsel women on birth preparedness, importance of safe delivery, breast-feeding and , immunization, contraception and prevention of common infections including Reproductive Tract Infection/ Sexually Transmitted Infections (RTIS/STIs) and care of the young child.

- She will act as a depot for essential provisions being made available to all habitations like Oral Rehydration Therapy (ORS), Iron Folic Acid Tablet (IFA), chloroquine, Disposable Delivery Kits (DDK), Oral Pills & Condoms, etc.

- At the village level ASHA worker will work with the support of other workers like ANMs, Anganwadi workers, sanitation committee etc.

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Roles and Responsibilities of ACCREDITED SOCIAL HEALTH ACTIVIST (ASHA).

- An ASHA will be a health activist in the village who will create awareness on health
- She would be a promoter of good health practices.
- ASHA will provide information to the community on nutrition, basic sanitation & hygienic practices, healthy living and working conditions,
- She will counsel women on birth preparedness, importance of safe delivery, breast-feeding and complementary feeding immunization, contraception and prevention of common infections including Reproductive Tract Infection/Sexually Transmitted Infection (RTIS/STIs) and care of the young child.
- She will work with the Village Health & Sanitation Committee of the Gram Panchayat to develop a comprehensive village health plan
- She will escort/accompany pregnant women & children requiring treatment/ admission to the nearest PHC or referral unit
- ASHA will provide primary medical care for minor ailments such as diarrhoea, fevers, and first aid for minor injuries.
- She will also act as a depot holder for essential provisions like Oral Rehydration Therapy (ORS), Iron Folic Acid Tablet (IFA), chloroquine, Disposable Delivery Kits (DDK), Oral Pills & Condoms, etc
- She will inform about the births and deaths in her village to the Primary Health Centre
- She will promote construction of household toilets under Total Sanitation Campaign.
- She has to undergo trainings to update latest development, schemes, and services of the Government

Q.No. Explain the Village Health and Nutrition Day (VHND) and its activities.

Ans. The VHND is to be organized once every month (preferably on Wednesdays) at the Anganwadi Centre in the village. This will ensure uniformity in organizing the VHND. The AWC is identified as the hub for interfacing between the community and the health system.

Life Skill Course - HEALTH & HYGIENE

Anganwadi Worker and ASHA will ensure their presence on Saturday (as per Schedule) and will coordinate

On the appointed day, ASHAs, AWWs, and other will mobilize the villagers, especially women and children, to assemble at the nearest AWC. On the VHND, the villagers can interact freely with the health personnel and obtain basic services and information. They can also learn about the preventive and promotive aspects of health care. The basic objective of organizing Village Health and Nutrition Day in AWCs is to

Increase pregnancy early registration, ANC (Antenatal care of Pregnant), checkups, counseling on deliveries, counseling on breastfeeding, family planning, immunization, menstrual hygiene etc. leading to better maternal and child health.

Activities :

- ANC checkup of expectant mother to identify complications weight, hemoglobin test, BP etc., and timely referral of high risk pregnancy.
- Counselling of expectant mothers for ANC, Safe and Institutional Delivery, PNC and Nutrition.
- Counselling on menstrual hygiene and use of safe sanitary pads.
- Counselling of expectant mother for HIV testing in health institution, if required ANM will refer to ICTC.
- Counselling on early and exclusive Breastfeeding to expectant mother
- Counselling supplementary feeding to above four month child and Child Immunization
- Counselling of Family Planning methods.
- Awareness on Safe Drinking Water and Clean Environment
- ANM & AWW will be responsible for referral / treatment of malnutrition children of respective Anganwadi centre to area wise PHC/CHC.
- Other aspects are also discussed related to overall health of the individual- like age at marriage; care during pregnancy; Importance of nutrition; breast feeding; care of new born; contraception; Immunization doses; vitamin A doses; family planning; awareness on sexually transmitted diseases like HIV etc.; communicable diseases like TB, Covid19; bad habits like smoking, drinking etc.

Q.No. Define the term Rogi Kalyan Samitis (RKS). Explain its objectives and a basic structure.

Ans. Rogi Kalyan Samiti (RKS)

Introduction

In most developing countries, provision of basic medical services is a major concern of the Government and decision makers.

Upgradation of Community Health Centers (CHCs) to Indian Public Health Standards (IPHS) to provide quality care with accountability and people's participation along with total transparency.

Concept

Rogi Kalyan Samiti (**Patient Welfare Committee**) / Hospital Management Committee is a management structure. This committee, acts as a group of trustees for the hospitals to manage the affairs of the hospital. It consists of members from local Panchayati Raj Institutions (PRIs), NGOs, local elected representatives and officials from Government sector who are responsible for proper functioning and management of the hospital / Community Health Centre / Hospital

Objectives/Activities of the RKS / HMS

The following are the broad objectives of the HMS :

- Ensure that hospital follows the protocols of treatment as issued by the Government.
 - Ensure accountability of the public health providers to the community;
 - Introduce transparency with regard to management of funds;
 - Upgrade and modernize the health services provided by the hospital
 - Supervise the implementation of National Health Programmes at the hospital and other health institutions
 - Organize outreach services / health camps at facilities under the jurisdiction of the hospital;
 - Display a Citizens Charter in the Health facility and ensure its compliance through operationalisation of a Grievance Redressal Mechanism;
 - Generate resources locally through donations, user fees and other means;
 - Establish affiliations with private institutions to upgrade services;
 - Undertake construction and expansion in the hospital building;
 - Ensure optimal use of hospital land as per govt. guidelines;
 - Improve participation of the Society in the running of the hospital;
 - Ensure scientific disposal of hospital waste;
 - Ensure proper training for doctors and staff;
 - Ensure subsidized food, medicines and drinking water and cleanliness to the patients and their attendants;
 - Ensure proper use, timely maintenance and repair of hospital building equipment and machinery;
- Basic Structure

The basic structure of RKS / HMS is as follows:

- RKS / HMS would be a registered society set up in all District Hospitals / Sub District Hospitals / CHCs / FRUs (First Referral Unit) / PHCs. It may consist of the following members:-

1. People's representatives MLA / MP
2. Health officials (including an Ayush doctor)
3. Local district officials
4. Leading members of the community
5. Local CHC/ FRU in-charge
6. Representatives of Indian Medical Association
7. Members of the local bodies and Panchayati Raj representative

8. Leading donors

The RKS/HMS will not function as a Government agency, but as an NGO as far as functioning is concerned. It may utilize all Government assets and services to impose user charges and shall be free to determine the quantum of charges on the basis of local circumstances. It may also raise funds additionally through donations, loans from financial institutions, grants from government as well as other donor agencies.

Private organizations offering high tech services like pathology, MRI, CAT SCAN, Sonography etc. could be permitted to set up their units within the hospital premises in return for providing their services at a rate fixed by the RKS/ HMS.

Q.No. 15 Define Environmental sanitation and explain its elements.

Ans. Environmental sanitation aims to protect and promote human health and well-being by providing a clean environment with less exposure to diseases. Environmental sanitation is more than just building latrines. It includes human and animal excreta management, solid waste management, vector control, domestic wastewater management and stormwater drainage.

The World Health Organization (WHO) defines environmental sanitation as “the control of all those factors in man's physical environment, which exercise or may exercise a deleterious effect on his physical development, health and survival.” Elements of sustainable environmental sanitation development a

The basic rules for sanitisation in public places

Where a large number of people are using one area, such as a bus station or school, especially when they are eating food from the same source, there is a greater risk of the spread of diseases such as cholera, hepatitis A, typhoid and other diarrhoea diseases.

These places vary in the number of people using them, the amount of time that people spend there and the type of activity that occurs in the area, but all public places need to have adequate sanitation and hygiene facilities.

Special attention should be paid to the adequacy of facilities, their availability to the public, and the conditions of their operation.

There are several **basic rules for sanitation in public places** :

- There should be sufficient toilet facilities for the maximum number of people using the area during the day.
- This normally means one toilet compartment for every 20 users. The toilet facilities should be arranged in separate blocks for men and women.
- Toilet facilities should not be connected directly to kitchens. It is important that people using the toilet facilities cannot pass directly through the kitchen.
- There must be a hand washing basin with clean water and 1 soap close to, the toilet facilities.

- There must be a clean and reliable water supply for hand washing personal hygiene and flushing of toilet facilities
- Refuse must be disposed of properly and not allowed to build up, as it will attract flies and vermin.
- Responsibilities for cleaning sanitation facilities should be very clearly defined. Dirty facilities make it more likely that people will continue to use the facilities badly or not at all.
- It is important to make sure that information about health is available in public places.
- Health and hygiene messages may be passed on to the public using such posters in public places. These messages should include the promotion of :
 - Hand washing. .
 - Use of refuse bins.
 - Care of toilet facilities.
 - Protection of water supplies.

Q.No.16 Define the following terms a) NHP b) Swasth Bharat App c) No more Tension App d) Pradhan Mantri Surakshit Matritva Abhiyan App e) My Hospital (Mera Aspataal) App A India fights dengue app g) JSK helpline h) Ayushman Bharat App i) Aarogya Setu app j) Covid 19 AP

Ans. NHP: The National Health Portal

It aims to establish a single point access for authenticated health information for citizens, students, healthcare professionals and researchers. Users can get detailed information pertaining to health related issues. The information related to diseases, health services, tips for healthy living, health programmes, insurance schemes, health apps and widgets. Users can also get helpline numbers, blood banks details, etc.

The Centre for Health Informatics (CHI) of NHP has undertaken various activities for transformation of Health Sector with help of various IT initiatives for improving the efficiency and effectiveness of healthcare system. The CHI is progressively planning several new initiatives to be implemented in the near future for promotion of healthcare system across the country.

Swasth Bharat App:

Swasth Bharat is a Mobile Application The access to authenticate health information is the primary right of the citizen. Providing authentic Health information to the society is arguably one of the most important factors in improving health outcomes. Inadequate or poor health information can increase the risk of hospitalization or even disease burden.

MOHFW (Ministry of Health and Family Welfare) through its e-governance initiatives is launching a mobile application “Swasth Bharat Mobile Application” to empower the citizens to find reliable and relevant health information. The application provides detailed information regarding healthy lifestyle, disease conditions (A-Z), symptoms, treatment options, first aid and public health alerts

No more Tension App :

Stress is an inseparable part of human existence. It affects all individuals rich and poor, literate and illiterate, both men and women and young and the old alike across the developed and developing nations. Stress is perceived today as one of the very important factor affecting physical and mental health. People due to their hectic lifestyle do not realize being effected by Stress and considered it as a part of their daily lifestyle

The stress management application not only provides you information about stress but also helps you to know your stress levels and how to reduce them. No-More Tension' provides information about effects, symptoms and management of stress. The application allows the user to measure their stress level and learn various techniques like yoga and meditation to reduce the stress from their lives.

Currently, the application is available for download on Google play store and App store and will be available on the Windows platform soon.

Once downloaded, a person registers his/her vitals (name, age, weight, height). It also has a stress meter, a list of indicators of stress and solutions of how to get rid of it.

Pradhan Mantri Surakshit Mantritva Abhiyan (PM Suman Yojana) App:

As India strives towards achieving the Sustainable Development Goals (SDGs) and looks ahead to the post - 2015 era, progress in reducing maternal mortality becomes an important frontier. Every pregnancy is special and every pregnant woman must receive special care.

Any pregnant woman can develop lifethreatening complications with little or no advance warning, so all pregnant women need access to quality antenatal services to detect and prevent life-threatening complications during childbirth. With the objective to provide quality ANC to every pregnant woman the Government of India has launched the Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA), a fixed day ANCs given every month across the country. This is to be given in addition of the routine ANC at the health facility.

Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)

It is a fixed day strategy, every month across the country during which maternal health services are envisaged to be provided as part of Antenatal Care.

Under the campaign, a minimum package of antenatal care services is to be provided to the beneficiaries on the 9th day of every month at the Pradhan Mantri Surakshit Matritva Clinics to ensure that every pregnant woman receives at least one checkup in the 2nd/3rd trimester of pregnancy.

If the 9th day of the month is a Sunday/a holiday, then the Clinic should be organized on the next working day. The programme aims to reach out to all Pregnant women who are in the 2nd & 3rd Trimesters of pregnancy.

My Hospital(Mera Aspataal)App : Mera Aspataal (My Hospital) is a Ministry of Health and Family Welfare, Government of India (GOI) initiative to capture patient

feedback on the services received from both public and empanelled private health facilities. It works through multiple communication channels, including Short Message Service (SMS), Outbound Dialling (OBD), a mobile application, and a web portal.

The application allows feedback to be consolidated, analysed. Analysed data will be used to improve quality of services in healthcare facilities. My Hospital) will help the government to take appropriate decisions for enhancing the quality of healthcare delivery across public facilities which will improve the patient's experience. The patient will be able to receive effective and appropriate care (My Hospital) will ultimately help establish a patientdriven, responsive and accountable healthcare system

India fights Dengue App:

A mobile application 'India Fights Dengue', Shri J P Nadda said that this application will find wide use. As the fight against Vector Borne Diseases, especially dengue, can be won only with effective community participation, this App empowers the community members how to contribute towards prevention of Dengue.

JSK Helpline :

Jansankhya Sthirata Kosh(JSK) has been registered as an autonomous society of the Ministry of Health and Family Welfare. JSK has to use the interest on the Corpus and also raise contributions from organisations and individuals that support population stabilisation. Jansankhya SthirataKosh (JSK), an autonomous body under Ministry of Health and Family Welfare, implemented the following schemes :

- Prerna Scheme (for delaying marriage, childbirth and spacing),
- Santushti Scheme (Public Private Partnership for sterilization services), and
- National Helpline (for information on family planning).

Ayushman Bharat App :

Ayushmann Bharat is National Health Protection scheme, which will cover over 10 crore poor and vulnerable families (approximately 50 crore beneficiaries) providing coverage upto 5 lakh rupees per family per year for secondary and tertiary care hospitalization.

Benefits of the scheme are portable across the country and a beneficiary covered under the scheme will be allowed to take cashless benefits from any public/private empanelled hospitals across the country.

The beneficiaries can avail benefits in both public and empanelled private facilities. To control costs, the payments for treatment will be done on package rate (to be defined by the Government in advance) basis.

One of the core principles of Ayushman Bharat - National Health Protection Mission is to co-operative federalism and flexibility to states. For giving policy directions and fostering coordination between Centre and States, it is proposed to set up Ayushman Bharat National Health Protection Mission Council (AB-NHPMC) at apex

level Chaired by Union Health and Family Welfare Minister.

Aarogya Setu App :

Arogya Setu uses contact tracing to record details of all the people you may have come in contact with, as you go about your normal activities. If any one of them, at a later point in time, tests positive for COVID-19, you are immediately informed and proactive medical intervention is arranged for you. For registration of Aarogya Setu, the individual needs an Indian mobile number operated in India.

The App is aimed at augmenting the initiatives of the Government of India, particularly the Department of Health, in proactively reaching out to and informing the users of the app regarding risks, best practices and relevant advisories pertaining to the containment of COVID-19.

Covid 19 AP App: COVID 19 Andhra Pradesh"

It is a mobile application developed by the Department of Health, Medical & Family Welfare Department, Government of Andhra Pradesh.

This will enable citizens to connect with all essential health services in the fight against COVID 19. The application is aimed at removing physical barriers resulting in the speed of access and delivery of services to the citizens of Andhra Pradesh. The application also aims to reach out to the citizens with information regarding the status of their District/ Mandal/Village, do's and don'ts, announcements, and media bulletins



Model Paper Health and Hygiene

Time 1:30 mins

Marks 50

Section A (4x5=20 marks)

Answer any four questions. Each question carry 5 marks

1. Write a brief note National Health Policy
2. NIN (National Institute of Nutrition)
3. Explain briefly about Culinary hygiene (food hygiene)
4. Roles and Responsibilities of Accredited Social Health Activist (ASHA)
5. Write a short notes on lipids
6. National Rural Health Mission (NRHM)
7. What is Janani Shishu Suraksha Karyakaram (JSSK)
8. Write briefly on Personal Hygiene

Section B (3x10=30 marks)

Answer any three questions. Each question carry 10 marks

9. Brief account of Vitamins- functions, food sources, effects of deficiency
10. What are the determinants of health and Key health Indicators
11. What is balanced diet and Explain Meal Planning
12. Explain briefly the following- (each carry 5 marks)
 - a) WASH
 - b) Rashtriya Kishor Swasthya Karyakram (RKSK)