COMMUNICABLE DISEASES

TERMS

- ✓ **Communicable diseases -** An illness due to specific infections agent or its toxic product which arise through transmission of the agent or its toxin form a reservoir susceptible host either directly, indirectly as an infected animals or person or indirectly through the agency of intermediate plant or animals host vector or in animate environment.
- ✓ **Infection-**Invasion of the body by dx causing organism.
- ✓ **Cross infection –** Normally occurs in the hospital btn patient due to their cross proximity or carelessness of the staff.
- ✓ **Drop infection –**Organism are spread by minute particle of moisture especially in coughing or sneezing.
- ✓ **Mass infection-** Infection of the blood extremely large no. of the organism.
- ✓ **Secondary infection –**Prefers to the super-imposed second infection that occurs while one is already present i.e. re-infection
- ✓ **Incubation period –**Is the time taken from the time of infection 2 the time the signs and symptoms of illness appear.
- ✓ **Clinical infection –**Where the organism or agent produce signs & symptoms.
- ✓ **Sub-clinical infection (Asymptomatic)-**This is where the sign & symptoms are not showed up clear. There is no usual clinical diagnosis.
- ✓ **Health carrier –**A person carrying diseases, agent but is not affected but can transmit it to other person.
- ✓ **Susceptible host-**Refer to one who has no or has less resistance to disease or infection.
- ✓ **Host –** The organism, man or animals on which a parasite lives & multiplies.
- ✓ **Intermediate host-**One that shelter parasite during the non –productive period (larval stage)
- ✓ **Pandemic-**This is when a disease spread in many countries through the world.
- ✓ **Epidemic-**When a disease spreads out attacking a large no. of people. It's a rapid outbreak of diseases.
- ✓ **Endemic –** A term used to describe any disease prevalent in a particular area.
- ✓ **Sporadic –** Refers to a disease occurring here and there (scattered).
- ✓ **Incidence-** Refers to new cases occurring at a particular time in a place.
- ✓ **Fatality-** Death due to a certain disease.
- ✓ **……**

INTRODUCTION

Most of the common diseases in Africa are environmental diseases and are due to infection by living organisms which are viruses, bacteria, Chlamydia, ricketsiae, fungi, protozoa, metazoan or Helminthes. These are called communicable diseases because they spread from person to person or from animals to people. Together with malnutrition they are today the major cause of illness in Africa. The communicable diseases occur at all ages but are most serious in childhood due to an increased intensity of exposure and a poorly developed immunity. These diseases are to a great extent preventable.

In countries where they have been largely eliminated, other conditions such as degenerative and malignant diseases have taken place. This process is known as the **Epidemiological transition.**

Infections that have increased in incidence during the last couple of decades and whose incidence is predicted to increase in the near future have appeared. They are called “emerging infectious diseases”. The reasons behind these emerging infections are not known but likely factors include:-

1. Societal events
    - Economic impoverishment
    - War or civil conflicts
    - Population growth and migration
    - Urban decay
2. Health care
- New medical devices
- Organ or tissue transplantation
- Drugs causing immunosuppression
- Widespread use of antibiotics
3. Food production
- Globalization of food supplies
- Changes in food processing and packaging
4. Human behavior
- Sexual behavior
- Drug use
- Travel
- Diet
- Outdoor recreation
- Use of childcare facilities
5. Environmental changes
- Deforestation/reforestation
- Changes in water ecosystems
- Flood/drought
- Famine
- Global warming
6. Public health
- Curtailment or reduction in preventive programmes
- Infrastructure and communicable disease surveillance inadequate
- Lack of trained personnel
7. Microbial adaptation
- Changes in virulence and toxin production
- Development and change of drug resistance
- Microbes as co-factors in chronic diseases

More simplified, the factors to emerging and re-emerging of infections are:-

- Agricultural practices and consumption of exotic animals-genetic recombination
- Change of land use-forest land to agricultural land causing deforestation
- Rapid international travel
- Poverty and disease
- Urbanization
- Forced displacement due to war or civil strife
- Human morality and disease
- Overuse of antibiotics-resistance
- Biblical perspective-unclean animals, unclean environments, sexual immorality e.g. homosexual and lesbians and broken relationship with God.

Communicable diseases are very important in Africa because:-

1. Many of them are very common
2. Some of them are very serious and cause death and disability
3. Some come as widespread outbreaks, i.e epidemics
4. Many of them are fairly preventable by fairly simple means
5. Many are particularly serious (and more common) in infants and children.

I.BROAD CLASSIFICATION OF DISEASES

1. **Metabolic disorders**-Chemical and physical processes within the body-disordered biochemistry in the body i.e. cholesterol imbalance e.g. diabetes
2. **Congenital diseases**-Mental or physical abnormalities that are present at, and usually before birth, some may be medically insignificant and may not appear for some time. In other cases they may pose a direct threat to life and requires immediate attention. Examples are cataract, cleft palate, cretinism, down's syndrome, congenital heart disease, haemophilia, joints disorders, spina bifida. Blindness, deafness, hydrocephalus can also be due to congenital disorders.
3. **Hereditary diseases-**This is the transmission of mental and physical characteristics from parents to their children, and also the total genetic constitution of any individual. Examples are haemophilia, sickle cell anaemia, etc
4. **Allergy diseases**-A condition in which the body reacts with unusual sensitivity to a certain substance(s).These substances which are usually proteins are called antigens. They stimulate the body to produce antibodies which weaken or destroy the invading antigens. In some cases, when an antibody reacts with an antigen, the organic compound histamine is released from special body cells called mast cells. It is an excess of histamine that results in allergy symptoms e.g. hay fever, asthma.
5. **Traumatic diseases**-A medical term for an injury ,could be physical or psychological e.g. shock, Acccident
6. **Nutritional/deficiency diseases-**In adequate, lack of essential nutrients e.g.obesity, marasmus, kwashiorkor, nutritional anaemia etc
7. **Occupational diseases**-Diseases associated with one's occupation e.g. silicosis, asbestosis, Lung fibrosis etc
8. **Toxic diseases**-Due to contact with toxic substances e.g. poisoning, snake venom, etc

9. **Degenerative diseases**-Wear and tear of the body tissues e.g. arthritis, arteriosclerosis, rheumatism,etc
10. **Addictive diseases**-Due to desire/urge to use some substances e.g. alcoholism, smoking etc
11. **Mental disorders**-Refers to a broad range of psychiatric disorders that reflect a deviation from normal thought and behavior patterns e.g. psychosis, schizophrenia, etc
12. **Neoplastic disorders**-The medical name for any abnormal new growth commonly referred to as tumors e.g. cancers
13. **Psychosocial disorders**-Refers to a mental illness caused or influenced by life experiences as well as maladjusted cognitive and behavioral processes. They can be due to psychological and social factors that influence mental health. Social influences such as peer pressure, parental support, cultural and religious background, socioeconomic status and interpersonal relationship e.g. juvenile delinquency, rapists, stress etc
14. **Communicable diseases**-Diseases spread from one person to another or from animal to person

II.CLASSIFICATION OF COMMUNICABLE DISEASES (BASED ON HOW THE DISEASE IS TRANSMITTED)

1. **Contact diseases**-The means of transmission is through:-

- Skin to skin contact
- Direct touch of infected person
- Indirect-handling contaminated articles (fomites) e.g. clothing.

They tend to occur in places of:-

- Overcrowding
- Clusters within the family
- Children's playgrounds-schools,etc
- Work

Communicability occurs in the following situations:-

- High population density e.g. urban centers
- Overcrowding
- Poor housing
- Close personal contact including sexual contact
- Inadequate water supply

Examples are scabies, pediculosis, fungal skin infections, candidiasis, trachoma, etc

2. **Sexually transmitted diseases/infections**-Usually transmitted during sexual intercourse hence the name STDs/STIs.During sexual intercourse there is close body contact which is an ideal situation for transmission e.g. gonorrhea,etc
3. **Vector-borne diseases**-The insect vectors usually acquire the disease organisms by sucking blood from infected persons and later pass it on by the same route. There are other transmission routes however. Infection may enter skin cracks or abrasions either from

infected insect feces deposited when feeding or from body fluid when an insect is crushed. Examples are malaria,onchocerciasis ,etc

4. **Feacal contamination diseases-**The causative organisms of the diseases in this group are excreted in the stools of infected persons (or less commonly animals).The portal of entry for these diseases is the mouth. Therefore the causative organisms have to pass through the environment from the feces of an infected person to the gastrointestinal tract of a susceptible person. This is known as the faeco-oral transmission route which occurs mostly through contamination of food, water and hands with faeces.Examples are bacillary dysentery,amoebiasis,viral hepatitis,cholera,enteric fevers, food poisoning,poliomyelitis,etc
5. **Helminthic diseases**-Due to worms. Examples are ascariasis,enterobiasis,etc
6. **Airborne diseases**-Can be transmitted through the air. Examples are measles,mumps,chickenpox,whooping cough,meningitis,pneumonia,tuberculosis,common colds,influenza,etc
7. **Animals and their products contact diseases**. Examples are rabies,tetanus,anthrax,brucellosis,etc

CLASSIFICATION BASED ON CAUSATIVE/INFECTIOUS AGENTS

1. **Bacterial diseases-**bacillary dysentery(Shingellosis),cholera,enteric fevers,tetanus,anthrax,brucellosis,meningitis,tuberculosis,leprosy,plague,gonorrhea,etc
2. **Viral diseases-**yellow fever,rabies,measles,chickenpox,poliomyelitis,viral hepatitis,mumps,AIDS,etc
3. **Helminthic diseases-** Ascariasis,hydatidosis,filariasis,schistosomiasis,taeniasis,dracunculosis,etc
4. **Protozoan diseases-** malaria,leishmaniasis,trypanosomiasis,giardiasis,amoebiasis,trichomoniasis
5. **Chlamydiae diseases-**trachoma,non-gonococcal(non-specific)urethritis,etc
6. **Spirochetes diseases-**pinta,syphilis,relapsing fever,yaws,etc
7. **Ricketsiae diseases-**typhus fever,Q-fever,trench fever,scrub typhus,Dengue fever.
8. **Fungal diseases-**candidiasis,balanitis,Ringworm etc
9. **Mychotic diseases-**Otomychisis,Histoplasmosis,Aetinomycosis

ANOTHER CLASSIFICATION

1. Water washed diseases
- Diarrhea and dysenteries
- Scabies and other skin diseases
- Trachoma and other eye diseases
2. Water borne diseases
- Typhoid fever and paratyphoid fever
- Cholera
- Poliomyelitis
- Amoebiasis
- Hepatitis A
3. Water related diseases

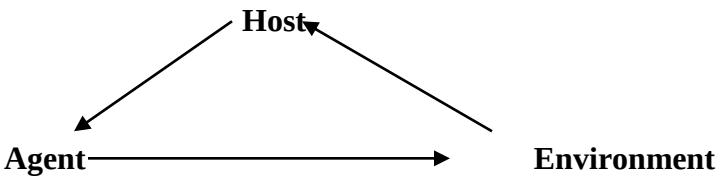
- Malaria
- Schistosomiasis
- Onchocerciasis
- Etc

FACTORS CONTRIBUTING TO SPREAD OF DISEASES (DETERMINANTS OF DISEASES)

HOST	ENVIRONMENT	AGENT
Age	Geographical factors	Pathogenicity
Race	High/low altitude	Infectivity
Genetic	Rainfall patterns	Virulence
Knowledge	Land fertility	Sensitivity
Nutrition	Vegetation	Morphology
Sex	Sanitation	Type of organism
Immunity	Water	Antigenicity
Occupation	Air	Stage of multiplication
Behavior	Vector	Degree of pathogenicity
Culture	Climate	Dosage
Religion	Housing	Toxicity
Customs	Communication	
Socio-economic	Radiation	
Concurrent illnesses	Urbanization	
	Industrialization	

PATTERN OF COMMUNICABLE DISEASES (EPIDEMIOLOGICAL TRIAD)

Different diseases are common in different places and at different times. To understand why this is so, we need to consider the living organism of disease (agent), the people they infect (host) and the surrounding in which they live (environment)



The agents need a suitable environment in which to grow and multiply and thus be able to spread and infect another host. If they are not successful in doing this they die out.

Hosts **(people)** are affected by their environment e.g. they may live in hot and wet climate in which there are many mosquitoes. But people can also change this environment by draining swamps, changing the vegetation and adding competing hosts such as animals. If the balance is shifted against the agent, the disease will be controlled and the number of cases will go down.

When the balance between the agent, the host and the environment is fairly constant, we tend to see approximately the same number of cases of the disease every month. When this happens the disease is said to be **ENDEMIC**.

When the balance is shifted in favour of the agent **(organism)**, e.g. when many non-immune children have been born in an area since the last measles epidemic, a large number of cases of measles may occur in a short time. This is called an **EPIDEMIC**. Epidemic diseases occur during certain periods or seasons and cause sudden deaths and much suffering in the community.

In some parts of the country, some disease outbreaks occur only occasionally without a regular pattern. Such diseases are said to be **SPORADIC** in their occurrence.

- Predisposing factors are factors which create a state of susceptibility, so that the host becomes vulnerable to the agent or to necessary cause, e.g. age, sex, previous illness.
- Enabling factors are those which assist in the development of(or in recovery from)the disease, e.g. housing conditions, socio-economic status
- Precipitating factors are those which are associated with immediate exposure to the disease agent or onset of disease, e.g. drinking contaminated water, close contact with open case of pulmonary TB
- Reinforcing factors are those which aggravate an already existing disease e.g. malnutrition, repeated exposures, etc
- Risk factor is a condition, quality or attribute, the presence of which increases the chances of an individual to have, develop or be adversely affected by a disease process. A risk factor is thus not necessarily the cause of a disease but does increase the probability that a person exposed to the factor may get the disease.

WHAT HAPPENS ONCE AN INFECTING ORGANISM ENTERS A PERSON'S BODY AND CAUSE DISEASE-THE HOST AND INFECTION

A person who is invaded by a disease causing micro-organism is called a **HOST**. An infection occurs when this microorganism begins to reproduce (multiply) and grow. When an organism infects a person, there are three possible stages to consider:-

- Incubation period
- Clinical infection
- Sub-clinical infection

INCUBATION PERIOD

Is the time between infection and appearance of signs and symptoms of an illness.During the incubation period the host does not realize that she/he has an infection until several days later when detectable signs and symptoms of the illness occur.

CLINICAL INFECTION

This is the period when the host develops detectable signs and symptoms of an illness.

SUB-CLINICAL INFECTION

At this stage, infection does not produce clear signs and symptoms.

It is important for you to understand these stages because people with signs and symptoms are easier to find as they come to our health facilities for treatment. But people with subclinical infections do not know they are infected and hence are a danger to other people. They are also difficult to detect in the general population without special tests. Individuals who suffer from this stage are also likely to infect others as in the case of HIV infection which leads to AIDS after a long period. They are therefore known as **CARRIERS**.

An individual who develops a clinical or subclinical infection is said to be **susceptible** to the disease. A susceptible individual is one whose body lacks resistance to the disease. Resistance of the body to a disease occurs due to various immunity mechanisms.

DISEASE TRANSMISSION CYCLE

Disease causing organisms are living things. Living things need somewhere to live and reproduce. This place may be an animal, insect or the human body and is known as the **RESERVOIR** of infection. The human being is the main reservoir of most of the communicable diseases that affect man. When an infection spread to a new host, the place, animal or human from which the organisms come from is called the **source** of infection. The way in which an organism leaves the source (the infected host) and passes to a new susceptible host is called the **route** of transmission. Each disease causing organism has particular routes which play a large part in how these organisms spread in the community. For example, some organisms are spread through water and food, while others are spread by vectors like mosquitoes and snails. The cycle through which an organism grows, multiplies and spread is called **transmission cycle**. In some cases, the human beings may be the only host, in which cases the infection spreads directly from person to person e.g. measles. Transmission cycle is made up of:-

- **The source**
- **Transmission route**
- **Susceptible host**

SOURCE

This is where the disease causing organisms spread from. It could be an infected person, animal place or object. The reservoir is the source of infection.

TRANSMISSION ROUTE

The main routes of transmission are:-

- ✓ Direct contact e.g. sexual contact, contact with skin or mucous membranes
- ✓ Vectors i.e onchocerciasis , malaria
- ✓ Faecal-oral ,i.e. ingesting food or water contaminated with feces
- ✓ Airborne

Examples are

- Measles
- Smallpox
- Common cold
- Streptococci
- Tons line
- Diphtheria
- Whooping cough
- Tuberculosis
- Meningitis
- Influenza
- Chickenpox
- Mumps

- ✓ Tran placental (mother to fetus)
- ✓ Blood e.g. .transfusion, surgery, injection
- ✓ Contact with animals or their products

SUSCEPTIBLE HOST

An individual who has low resistance to a particular disease is said to be a susceptible host to that host. There are a number of factors which lower the body's resistance to a disease. Some of the factors are:-

- Not having met the disease causing organisms before and therefore not having any immunity to it. For example passive immunity against measles is lost at the age of 6-12 months. Therefore if a child comes into contact with the measles virus after this age ,he or she may develop the disease
- Having a serious illness which suppresses a person's immunity. Such people have a high risk of developing tuberculosis
- Malnutrition.
- Certain drugs such as those used to treat cancer can lower one's resistance to disease
-

METHODS OF COMMUNICABLE DISEASES CONTROL/PRINCIPLES OF CONTROLLING COMMUNICABLE DISEASES IN THE COMMUNITY

Communicable diseases can be controlled and eradicated from the community. When thinking about the control of diseases it is always good to think of all the possible methods. Very often, one or two methods are more important and sometimes one or other method does not apply at all to a particular disease. The aim of control is to tip the balance against the agent. The control and eradication can be done by:-

- Attacking the source of the disease causing organism
- Interrupting the transmission route

- Protecting the susceptible host

a. ATTACKING THE SOURCE

There are various specific measures which can be used to attack the source of the infecting organism with the aim of eliminating the organism. They include:-

➢ **Treatment of cases**

- Treating the infected person or animal with the appropriate antibiotics that destroy the disease causing organism.
- Treating the carriers and subclinical cases after carrying on screening tests among suspected individuals or groups.

➢ **Mass treatment**

- When a high % age of the people is known to have a diseases. It is sometime advisable to treat everybody without checking whether individuals have the disease or not.
- Treating specific groups of persons who are at high risks of being infected(mass treatment).This is called **chemoprophylaxis**

➢ **Isolation**

- Isolating those persons who are infected with highly infectious diseases such as Ebola, Marburg fever, Lassa fever, so as to prevent the spread of the organism to other healthy people.

➢ **Reservoir control**

- Treating sick animals such as cattle suffering from brucellosis, immunizing animals such as cows from anthrax and dogs from rabies, killing animals such as rats to control plague and dogs to prevent rabies, separating humans from animals.

➢ **Notification & reports**

- Although these do not directly affect the source. Notification is an essential means of keeping a watch (Surveillance) on the no. of new cases & thereby monitoring the effectiveness of the control programme.
- Notifying the local health authorities immediately you suspect a patient is suffering from an infectious disease. Though this does not directly affect the source, it is an essential way of keeping watch on the number of new cases and thereby monitoring the effectiveness of the control programme. (WHO) International notification diseases is Cholera ,Teller fever, plague, Ebola e.t.c
- National ministries of Health also require notification of certain diseases in their own countries e.g. meningococcal meningitis & acute polio.

All these are methods of controlling the reservoir.

If cases can be treated with drugs that destroy the organism, then fewer (or none) are available to spread to new hosts. The effectiveness of treatment as a control measure depends on how many of the cases in the area can be reached and whether the treatment affects the agent's capacity to reproduce.

Treatment is an important method in the control of tuberculosis and leprosy and most sexually transmitted infections.

For treatment to be effective subclinical cases and carriers must also be treated. However, special efforts have to be made to find them first as they do not usually present with any apparent illness, e.g. subclinical infections of cholera, or asymptomatic sexually transmitted infections.

Where a high percentage of the population is known to have a disease, it is sometimes advisable to treat everybody without checking whether individuals have the disease or not. This is called mass treatment and has been used for example, in the treatment of schistosomiasis in children.

Isolation means that the person with the disease is not allowed to come into close contact with other people except those who are looking after him. Therefore the organisms cannot spread. Isolation is used to control highly infectious and serious conditions such as Ebola. (Tuberculosis cases used to be isolated but not anymore, why?).Isolation is very difficult to enforce, and has a number of disadvantages. In particular, people are frightened of being isolated and this stops them coming for treatment and so increases the spread of the disease.

b. INTERRUPTING THE TRANSMISSION ROUTE

A number of methods are used to interrupt the transmission cycle. They include:-

- Personal hygiene & behavioral changes
- Environmental sanitation
- Water and sanitation
- Vector control
- Good and adequate housing
- Food handling
- Sterilization of medical equipments and the use of sterile surgical equipments**(disinfection & sterilization)**

C. PROTECTING THE HOST

This is the third principle of controlling the spread of communicable diseases in the community. Any person who is not yet infected by a specific disease-causing organism is known as a **susceptible host**. This is because they are at risk of contracting the infection. All susceptible hosts must be protected from contracting the infection. There are various specific and general measures for protecting the host:-

Specific measures:-

- **Immunization using vaccines** such as the **KEPI** vaccines
    - ❖ Immunization increases host resistance by strengthening the internal defenses- antibodies, killer cells, etc. It is one of the most effective methods of control for some communicable diseases. Immunization plays a critical role in the control of many diseases in Africa. For example, it was responsible for the worldwide eradication of smallpox. Diseases in Africa which are now being controlled through immunization include measles, polio, whooping cough, diphtheria, tuberculosis, tetanus, hepatitis B and influenza.

- **Better Nutrition**
    - ❖ Malnourished children get infections more easily and suffer more severe complications e.g.diarrhoea. Also, infections occur during famine where people crowd together for assistance making it easy for the disease to spread and result in epidemics. .
- **Chemoprophylaxis use** Drugs that protect the host be used to suppress infection. e.g.paludrine to suppress malaria parasites, tetracycline during cholera outbreaks, and cotrimazole during plague outbreaks.
- **Personal protection (PPDs)**
    - ❖ The spread of some diseases may be limited by use of barrier against infection e.g shoes to prevent dust & hookworms from soils , use of nets & insect repellant 2 prevent bites e.t.c

General measures:-

- Use of bed nets and insect repellants to prevent mosquito bites.
- Wearing shoes to prevent penetration of hookworm larvae from the soil.
- Adequate space/housing to reduce overcrowding.
- Improved nutrition.
- Adequate lighting and ventilation.
- Health education.

The most effective way of controlling communicable diseases is to use a combination of methods.

OTHER CONTROL MEASURES

There are other useful measures that can be taken to control spread of communicable diseases. Among the measures is the notification of diseases. Notification requires you to keep watch (surveillance) on the number of new cases in your area of work and to immediately inform the local health authority when you come across a patient suffering from an infectious disease. One of the main reasons for notification is to help the health authorities take measures to confirm your suspicion and to control the spread of the disease. Notification of the infectious communicable diseases is the responsibility of all health care workers. It is also a legal requirement according to the Public Health Act cap.242 sec.8 of the laws of Kenya. Some notification diseases in Kenya include:-

- Plague
- Poliomyelitis
- Anthrax
- Whooping cough(Pertusis)
- Cholera
- Diphtheria
- Trypanosomiasis
- Meningococcal meningitis
- Measles
- Tuberculosis

- Typhoid fever
- Yellow fever
- Etc

Some diseases spread so quickly that they need international control measures, they include cholera, plague and yellow fever. These diseases are reported by the Ministry of Health (MOH) to the World Health Organization (WHO).

APPLICATION OF COMMUNICABLE DISEASE CONTROL NMEASURES

The actual application of the control methods we have just discussed can be undertaken by different groups of people. These are individual and villages, dispensaries and health centers and the district and central ministry.

CONTROL MEASURES AT INDIVIDUAL AND VILLAGE LEVEL

- Completing the immunizations
- Personal hygiene
- Food hygiene and adequate nutrition
- Using bed nets and protective wear
- Abstaining from casual sex ,being faithful to one sexual partner or using condoms
- Protecting water supply and using clean water
- Digging and using pit latrines
- Controlling vectors

CONTROL MEASURES AT DISPENSARY AND HEALTH CENTRE LEVEL

The healthcare workers should support and encourage their clients and community to establish and sustain community based disease control programmes. In addition the healthcare workers should:-

- Increase immunization coverage
- Participate in vector and reservoir control
- Emphasize water protection and purification
- Inspect food ,markets and eating places
- Encourage sanitation and refuse disposal
- Promote health and prevent diseases using information ,education and communication(IEC)
- Notify diseases

CONTROL MEASURES AT DISTRICT, REGIONAL AND NATIONAL LEVEL

At this higher level, healthcare workers are responsible for:-

- Vector control schemes
- Mass communication campaigns
- Mass treatment and chemoprophylaxis

- Mass media IEC programmes
- Health registration research on disease control methods
- Emergency ,epidemiology and control teams
- Manpower training and continuing education for staff

VARIOUS METHODS OF PREVENTING DISEASES (VARIOUS LEVELS OF PREVENTING DISEASES)

1. PRIMARY PREVENTION (PRIMARY LEVEL)

a) Personal methods

i.Immunization

ii. Chemoprophylaxis

iii. Nutrition

Iv. Personal hygiene

V.Good health behavior

Vi. Child spacing

b) Environmental methods

I.Safe water supply

II. Food hygiene

III.Excreta and refuse disposal

IV.Disinfection and sterilization

V.Reservoir and vector control

Vi.Good living and working conditions

SECONDARY PREVENTION (SECONDARY LEVEL)

I. Early detection of disease by screening

Ii. Contact tracing followed by prompt and effective treatment

iii. Surveillance

TERTIARY PREVENTION (TERTIARY LEVEL)

i. Diagnosis

ii. Treatment

iii. Management

iv. Rehabilitation

DISEASE DESCRIPTION FORMAT

- Identify the disease (definition)
- Aetiological agent (causative agent)
- Incubation period
- Predisposing factors
- Occurrence – epidemic, endemic, sporadic form
- Distribution – where found localized /cosmopolitan
- Reservoir of service
- Susceptibility of resistance
- Mode of transmission
- Chemical manifestation (signs & symptoms)
- Prognosis-severely (fatal) possible outcome
- Management of individual
- Prevention

MALARIA

Def: An acute infection of the blood with plasmodium parasite characterized by chills fever, pyrexia, nausea and anorexis.

Aetiological agent- A protozoan of genus plasmodium

4 species are implicated ; these are

- P. falciparum-12 days
- P. vivax-14days
- P.ovale-14 days
- P.malariae-30 days

NB Incubation period is reduced if transmission is by inoculation through blood transfusion.

Occurrence: Appear either as hypo endemic (low transmission) especially during the day season hyper endemic (some incidents) throughout.
Distribution: Equatorial & humid tropical region with low activities (16^0c-21^0c)
Susceptibility & Resistance: All susceptible through people living in endemic region tend 2 acquire partial immunity (tolerance due to development of antibodies)
Reservoir: Man
Source: Infected female anopheline mosquito.

Pathogencity: Occurs in two phases i.e

- Schizogony (sexual)
- Sporogony (a sexual) forms in the blood cell

1. SEXUAL FORM (schizogony)

The mosquito picks gametocytes from the human blood during its feeding process fertilization of female & male gametocytes take place 2 form zygote they penetrate mosquito stomach wall & change into cyst which multiply & change into cyst which multiply into sporozoite , that burst through the wall enter the salivary gland.

2. A SEXUAL FORM (Sporogony)

Sporozoites are introduced into the body by a bite of a mosquito. They enter into the liver, multiply, develop R.B.C which multiply by binary fission and burst the rest cells realizing them as gametocytes.

CLINICAL PICTURE:

1.COLD STAGE

Temp rises but the patient shivers red B.C are bursting (lasts for 1-2 hours)

2. HOT STAGE

48^0c the skin is dough and not there be severe headache, nausea and vomiting (lasts for 3hrs)

3. SWEATING STAGE

Temp. goes down , patient sweat profusely (lasts for 1-3 days)

4. THERE IS GENERAL MALAISE, JOINT PAINS, JAUNDICE & ANAEMIA

COMPLICATION

- Anaemia
- Obstruction of capillaries
  - ✓ Brain psychosis (insanity/ meningitis) ikesign
  - ✓ Kidney tubular, necrosis leading to anaemia & uremia.
  - ✓ Spleen –spleenomegaly-prognosis(p1ossible outcome) –fatality rate are high –death

MANAGEMENT

1) Chloroquin is one of the drug of choice – 4 tabs start, 2 after 6 hrs, the 2 for 3 days (however MOH kicked it out since malaria responding to it very well.
2) Comaquin
3) Fansider
4) Metakelfin
5) Quinine & Tabs

6) Amodlaquin
7) Altan
8) Dual cortex each
9) Intravascular injection
10) Coaxtem
11) Coartefam
12) AL
13) ……

PREVENTION

- Health education on mode of spread, clinical picture & control.
- Physical measure by destruction of vectors e.g. draining stagnant water e.t.c
- Mechanical methods by screening houses & use of nets.
- Chemicals – Application of larvacide & insecticides
- Chemoprophysis –Taking 2 tabs of of coatem or any suitable drugs a weak before visiting Malaria prone area.
- Biological method- use of natural predator to destroy vector.