**Epidemiology of communicable diseases**

**Paper II**

**Paper code - EPH 102**

1. **Various channels of transmission of communicable diseases:**

Two broad modalities of transmission:

1. Direct Mode
2. Indirect Mode

**Direct mode of transmission:**

1. Person to person transmission: By close physical touch, sleeping together, kissing, STD (sexually transmitted diseases), AIDS, Ebola
2. Contact of skin/ mucus membrane with the infectious form of the agent contained in inanimate environment. Example: Transmission of Hookworm through soil.
3. Inoculation of the agent, directly from the reservoir of infection into the skin/ mucous membrane. Example: Rabies.
4. Vertical transmission: Mother to intrauterine embryo through placenta. Example: Syphilis, HIV.
5. Droplet infection: Droplets are very finely dispersed aerosol containing the infectious agent at the time of coughing, sneezing, and talking as the person harbouring the agent in his /her respiratory tract. When two persons are reasonable close distance (usually with in 1 meter), such infective droplets can be deposited directly (with any carrier) to the mucous covering of oral cavity or respiratory tract of the host.

TB, Influenza, Measles, Pertussis, Diphtheria, Leprosy.

**Indirect mode of transmission:**

1. Vehicle born transmission: Through food, water, blood, drinks from source of infection to the susceptible host, cholera, AIDS.
2. Fomites: Through inanimate objects of personal use by the infected person like toothbrush, pencil, linen.
3. Air: Droplet Soil Dry Agent survive Through air It spread

Ex: Respiratory anthrax, Q-fever.

1. Vector borne indirect transmission:

Vector = Living creature

Biological

Mechanical

Life cycle of agent is conducted in vehicle

Life cycle of agent is not conducted in vehicle

Malaria

Cholera

**2. Broad principals/ strategies of prevention and control of communicable diseases.**

**Three broad strategies:**

1. **Actions directed to wards the reservoir of infection:**
2. Early detection and treatment of cases.
3. Notification: The case should be reported to the health authority which helps in assessing the extent of occurrence of the disease.
4. Isolation: Separation or segregation of a person who has been infected with communicable disease for a period equal to the maximum “Period of communicability” of the disease.

Example: H1N1 influenza: Isolation for 7 days from the date of onset of infection.

1. Quarantine: Presumptive isolation, it is also separation or segregation of a person who may be potentially infected for a period equal to the maximum incubation period of the disease. If there is no manifestation of the disease with in that period, the patient is discharged. If the symptoms are noted, under treatment in isolation centre.
2. Control of animal reservoir: Control of diseases which are transmitted from animal to human, the animals are destroyed or vaccinated.
3. **Action directed towards the channels of transmission:**
4. Disinfection and sterilization: Vehicle, stools, urine, vomit
5. Food and water safety and safe disposal of excreta.
6. Control of insect vector.
7. Good housing and improved standards of living: Prevention of overcrowding, good ventilation.
8. Blood safety: Screening test before blood transfusion.
9. **Action directed towards protection of susceptible host.**
10. Immuno prophylaxis: Active and passive immunization plasma therapy.
11. Chemoprophylaxis: Administration of an anti-infective drug to prevent the development or the progression of an infection.
12. Personal protective measures: Masks, gowns, goggles, caps and shoe covers by health care workers, frequent hand washing.
13. Health education of community: IEC strategies covering causation, transmission and prevention.
14. Improvements in standards of living: Ventilation, good nutrition, safe water, sanitation improvement.

**Lockdown:** It is a procedure used when there is an immediate threat to leave the building than to stay within secured areas/ building.

**Lockdown may occur for various reasons:**

1. Hazardous chemical outside the building.
2. A weather related event.
3. Police action outside the building.
4. Communicable disease.

**Procedure:**

1. Remain clams.
2. Secure yourself in room.
3. Do not activate the fire alarm.
4. Do not leave the area until either the situation has been resolved.
5. No one will be allowed to enter or exit the building until the appropriate authorities have given an all-clear.
6. When the all-clear is given, follow the directions of emergency personnel as quickly as possible.

Hygiene mainly related with health i.e. preserve health and prevent disease. It is to do with personal habits for bodily cleanliness.

Sanitation is process facilitating hygiene with clean surrounding:

* Excreta disposal.
* Food sanitation.
* Industrial sanitation.