**Course: Epidemiology and Public Health**

**Epidemiology of communicable diseases**

**Paper II**

**Paper code - EPH 102**

1. **What is secondary Attack Rate (SAR)?**

SAR is used to measure the infertility of an organism.

**SAR =**

No. of individuals who develop the disease out of susceptible exposed to index case with in the duration of maximum incubation period of that disease.

Total No. of susceptible exposed to the index care

× 100

= 10/70 × 100 = 14.2%

Index case that is the first case that brings in the infection.

1. **Barrier Nursing and Reverse Barrier Nursing:**

**Barrier Nursing:** It is strict infection control technique used in nursing.

**Aims:** To protect the medical stuff against infection from patients, particularly those with highly infectious diseases. It includes observance of Universal precautions including –

* Meticulous hand washing.
* Use of mask, cap, gloves, eye-shield.
* Gowns by health care stuff.

**Reverse barrier nursing:** It is also called protective isolation and it is reverse step of barrier nursing i.e. protecting a highly vulnerable (such as immuno compromised) patient against infection by medical stuff or visitors.

* The patient is moved to a single room with washbasin and toilet exclusive for that patient.
* The door of this room should be kept closed and opened only for absolute necessary.
* The patient may have to be advised to put on a protective mask to avoid contracting droplet infection from others.
* The number of stuff accessing the room should be kept to bare minimum.
* Stuffs who are themselves having an infection should not be permitted into the room.
* Visitors are not allowed unless very necessary.
* Health care workers entering the room should ware disinfected cloves, masks, gowns and scrub their hands with 70% isopropyl alcohol before and after touching the patients.
* They should remove the shoes before entering or put on disposable shoe covers.

1. **Difference between subclinical infection and latent infection:**

Both of them have no outwardly manifestation of the disease.

**In subclinical infection:** The infected person continuous to discharge the infectious agent and hence is an important source of infections for others in the community. Example – Infectious with hepatitis-A, poliovirus.

**Latent infection:** The infected person unable to discharge the infectious agent, the agent remains in dormant stage inside the body, reactive at some later time to produce the same disease. Chicken pox virus may become latent and cause Herpes Zoster many years later.

1. **What is a dead-end infection?**

A communicable disease which cannot be further transmitted to another human being or animal from the infected human being. Example: Tetanus, Rabies.

1. **Chemical disinfectant:**

Generally room, OT are disinfected by using mixture of KMno4 and 40% concentrated formaldehyde i.e. formalin. For 1000 cubic feet 150 gram KMno4 and 300 ml of 40% formalin is used to spray. Then all the doors and windows are closed for two hours or for overnight.

**Non chlorine chemical disinfectants:**

1. 70% ethyl alcohol or isopropyl alcohol – 3-5 minutes contact period.
2. Glutaraldehyde 2% - contact period 30 minutes.
3. Cresol – 2.5-5% - contact period 30 minutes.
4. Savlon – 5% - contact period 30 minutes.

**Chorinated chemical disinfectant:**

1. Bleaching powder: 25 gm stabilized bleach with 1 liter water i.e. 5000 ppm chorine.
2. Sodium hypochoride: 100 ml of it is mixed with 900ml water = 5000 ppm chorine.
3. **Transmission through biological vector:**
4. **Propagative transmission:** Only multiplication of the agent is noted in vector but no development change or morphological change of the agent is noted in vector. Example – Plaque bacilli in rat flea.
5. **Developmental transmission:** Only developmental or morphological changes of the agent are noted in the body of the vector but no multiplication is noted. Example – Microphyleria in female Culex.
6. **Cyclo propagative transmission:** Both multiplication and developmental changes of the agent are noted with in the body of the vector. Example: Plasmodium vivex in female anopheles.