

Lecture 4 : Fundamentals of Nursing

Breaking the Chain of Infection :

■ Etiologic agent (Infectious agent)

- Correctly cleaning, disinfecting or sterilizing materials before use
- Educating clients and support persons about appropriate methods to clean, disinfect, and sterilize materials .

■ Reservoir (source)

- Changing dressings and bandages when soiled or wet .
- Appropriate skin and oral hygiene.
- Disposing of Humidity, soiled linens appropriately.
- Disposing of feces and urine in appropriate methods.
- Ensuring that all fluid containers are covered or capped.
- Emptying suction and drainage bottles at end of each shift or before full or according to agency policy .

■ Portal of exit :

- Avoiding talking, coughing, or sneezing over open wounds or sterile fields.
- Covering the mouth and nose when coughing or sneezing .

■ Method of transmission :

- Proper hand hygiene.
- Instructing clients and support persons to perform hand hygiene before handling food, eating, after eliminating and after touching infectious material.
- Wearing gloves when handling secretions and excretions.

- Wearing gowns if there is danger of soiling clothing with body substances .
- Placing the contaminated materials in especial bags.
- Disposing of urine and feces in appropriate methods.
- Initiating and implementing aseptic precautions for all clients.
- Wearing masks and eye protection when in close contact with clients who have infections transmitted by droplets from the respiratory tract.

■ **Portal of entry :**

- Using sterile technique procedures, when exposing open wounds or handling dressings .
- Placing used disposable needles and syringes in puncture-resistant containers for disposal .
- Providing all clients with own personal care items .

■ **Susceptible host**

- Maintaining the integrity of the client's skin and mucous membranes.
- Ensuring that the client receives a balanced diet .
- Educating the public about the importance of immunizations.

Stages of Infection :

An infection progresses through the following phases:

1. incubation period
2. prodromal stage
3. full stage of illness

4. convalescent period

1. **Incubation:** the time between initial contact with an infectious agent until the first signs of symptoms the incubation period varies from different pathogens; microorganisms are growing and multiplying during this stage
2. **Prodromal Stage:** the time period from the onset of nonspecific symptoms to the appearance of specific symptoms related to the causative pathogen symptoms range from being fatigued to having a low-grade fever with malaise; during this phase it is still possible to transmit the pathogen to another host.
3. **Full Stage:** manifestations of specific signs & symptoms of infectious agent; referred to as the acute stage; during this stage, it may be possible to transmit the infectious agent to another, depending on the severity of the infectious agent
4. **Convalescence:** time period that the host takes to return to the pre-illness stage; also called the recovery period; the host defense mechanisms have responded to the infectious agent and the signs and symptoms of the disease disappear; the host, however, is more exposing to other pathogens at this time .

The body's defense against infection:

1. Body's normal flora
2. Inflammatory response
3. Immune response
 - **Body's normal flora:** Bacterial that normally cause no problem but, with certain factors, may potentially be harmful are referred to as opportunists. For example .one type of Escherichia coli normally resides in the intestinal tract and causes no harm. However, if it migrates to the urinary tract ,it can lead to UTI.

- **Inflammatory response:**

The inflammatory response is a productive mechanism that eliminates the invading pathogen and allows for tissue repair to occur. The inflammatory response also occurs in response to injury .it is either an acute or chronic process. Signs of inflammation (redness , heat, swelling, pain, and loss of function) .

- **Immune response:**

The foreign material is called an antigen, and the body responds to the antigen by producing an antibody.

Increase the number of lymphocytes (white blood cell),Help to defend the body specifically against bacterial, viral , and fungal infections.