

Reservoir

- A place within which microorganisms can reside, thrive and reproduce. For example microorganisms thrive in a human being, animals and inanimate objects such as water, table tops, toilet seat, elevator buttons, human faeces, respiratory secretions and doorknobs



Portal of Exit

- A place of exit provides a way for a microorganism to leave the reservoir. For example, the microorganism may leave the reservoir through the nose or mouth when someone sneezes or coughs. Microorganisms, carried away from the body by faeces, may also leave the reservoir of an infected bowel.



Mode of Transmission

- Transmission: It is the transfer of disease causing microorganisms from one environment to a susceptible individual. For example, from a portal of exit to a portal of entry, There are three general categories of transmission.
- (i) Contact
- (ii) Vehicle
- (iii) Vector

Contact transmission: is transmission by either



- (a) Direct Contact :(person to person) touching, kissing, sexual intercourse that the best way to prevent direct contact transmission, is through the use of barriers such as gloves, masks.
- (b) Indirect contact transmission: Transmission occurs from reservoir via., in animal objects. These objects generally referred as fomites.



Formities are basically almost anything pathogen typically it is more difficult to avoid indirect contact transmission that is to avoid the direct contact transmission.

The best way to prevent in direct contact transmission by:



- (i) Avoid contact with fomites
- (ii) Avoiding contact of hands with mucous membranes especially when handling or potentially handling fomites.
- (iii) The use of barriers when handling fomites.
- (iv) Disinfecting fomites before handling

Droplet Transmission: Transmission occurs by



Coughing, sneezing spitting. The mucous droplet must still be travelling with the velocity impaired on it upon leaving the mouth. Indirect contact transmission respiratory diseases are transmitted by droplets.

(d) Vehicle Transmission: Transmission is via., a medium such as air, food (or) liquid.



Airborne Transmission

Airborne transmission is a form of vehicle transmission particularly it is airborne transmission which occurs via., droplets (typically mucous droplets) where droplets are liquid that remain airborne whether as:

1. Aerosols(very small droplets)
2. Associated with dust particles



Food Borne Transmission

It is a form of vehicle transmission number of pathogenic that are found in food and not killed during processing may be transmitted via., food.



Waterborne Transmission

It is a form of vehicle transmission generally, this is via sewage(i.e. fecal) contaminated water supply.



Portal of entry

is an opening allowing the microorganism to enter the host. Portals include body orifices, mucus membranes, or breaks in the skin, open wounds, or tubes inserted in body cavities like urinary catheters or feeding n tubes or from punctures produced by invasive procedures such as intravenous fluid replacement.



Susceptible Host

is a person who is at risk for developing an infection from the disease. The host is susceptible to the disease, lacking immunity or physical resistance to overcome the invasion by the pathogenic microorganism.



The Process of Infection

These are the following stages where the infection process is carried down :

Incubation period: The time interval between the invasion of the pathogen into the body and the first signs and symptoms of infection (length of time varies).

Prodroma stage: The time interval between the onset of nonspecific signs and symptoms (malaise, achiness in joints) to more disease specific signs and symptoms. The disease is communicable and it is recommended that the patient take precautions to prevent the spread of the infection.



- Illness stage : The time during which the disease exhibits specific signs and symptoms.
- Convalescence: It is the time between the disappearance of the acute signs and symptoms of infection and full recovery.

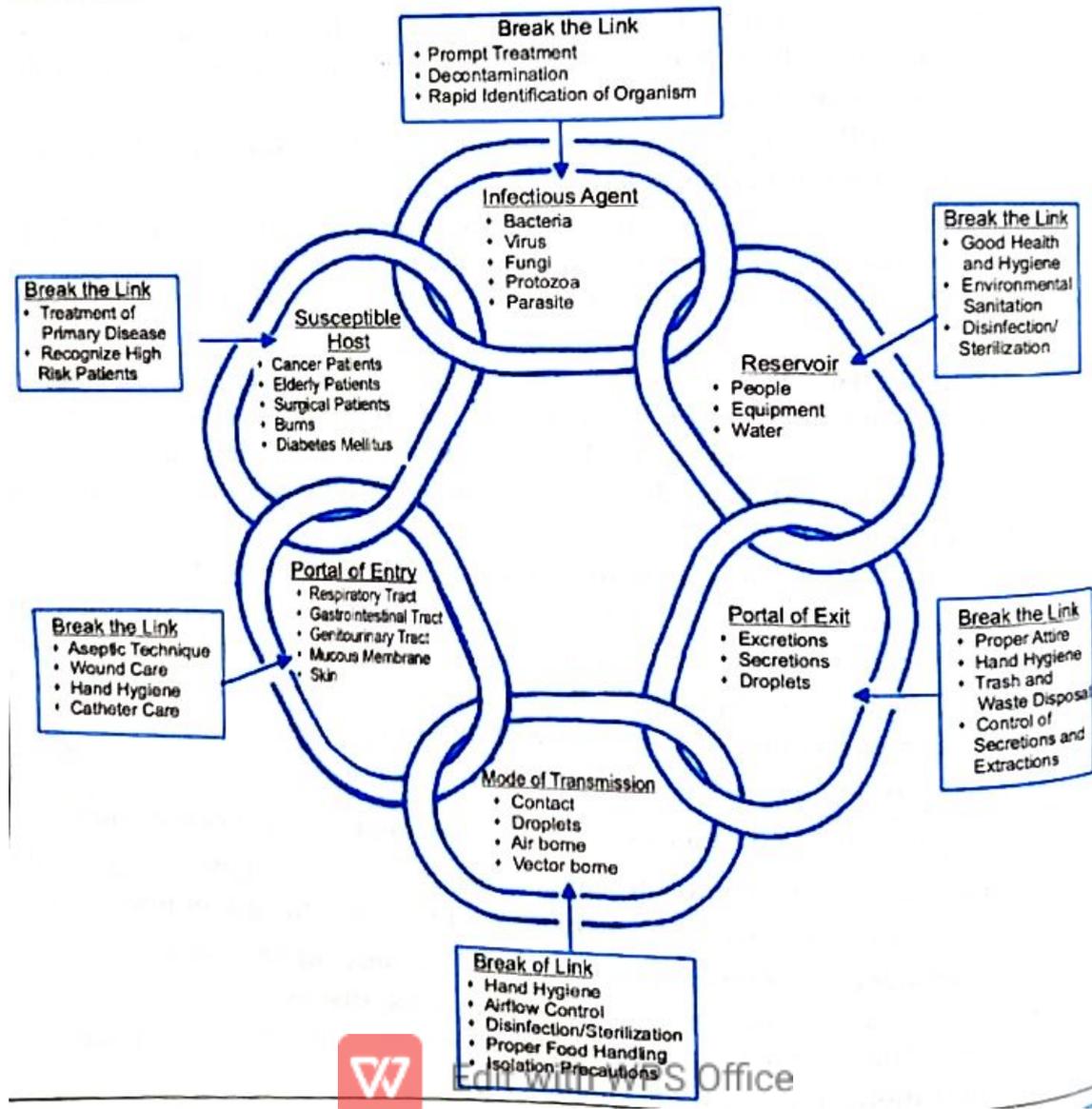
Infection can be of two types, Localized or systemic.



- A Localized infection develops only in one place on the body. A systemic infection is spread throughout the body through bloodstream.



Breaking the Chain of Infection



Control or elimination of infectious agent

Cleaning, disinfection & sterilization of contaminated objects significantly reduce & often eliminate microorganism.

It includes 4 steps.

- Cleaning- It is removal of all soil from object & surface.
- Asepsis- It is absence of pathogenic microorganism. It is of 2 type's medical & surgical asepsis.



- Disinfection- It is process of killing microorganisms, spores are not involved.
- Sterilization- It is process of killing microorganisms & their spores.
- Clean contaminated objects (reduces the number of organisms)
- Perform disinfection and sterilization (kills or inactivates organisms)
- Use antiseptics to inhibit growth.
- Use antiseptic agents/ antimicrobial agents.



Controls or Elimination of Reservoir

It includes following measures:

- Eliminate sources of body fluids and drainage.
- Take Bath with soap; and water.
- Change soiled dressings
- Remove standing water on bedside tables
- Cover bottles of used solutions.
- Maintain patency of surgical wound drains.



- Empty and rinse suction bottles.
- an Empty drainage bags every shift.
- Place syringes and uncapped needles in moisture-resistant, puncture-proof containers.
- Limit contact with persons with infection or exposed to infection



Control of Portal of exit

- Practice hygienic measures like covering mouth and nose while coughing and sneezing.
- Dispose the used items in the bin.
- Use glove
- Use mask whenever and wherever necessary.

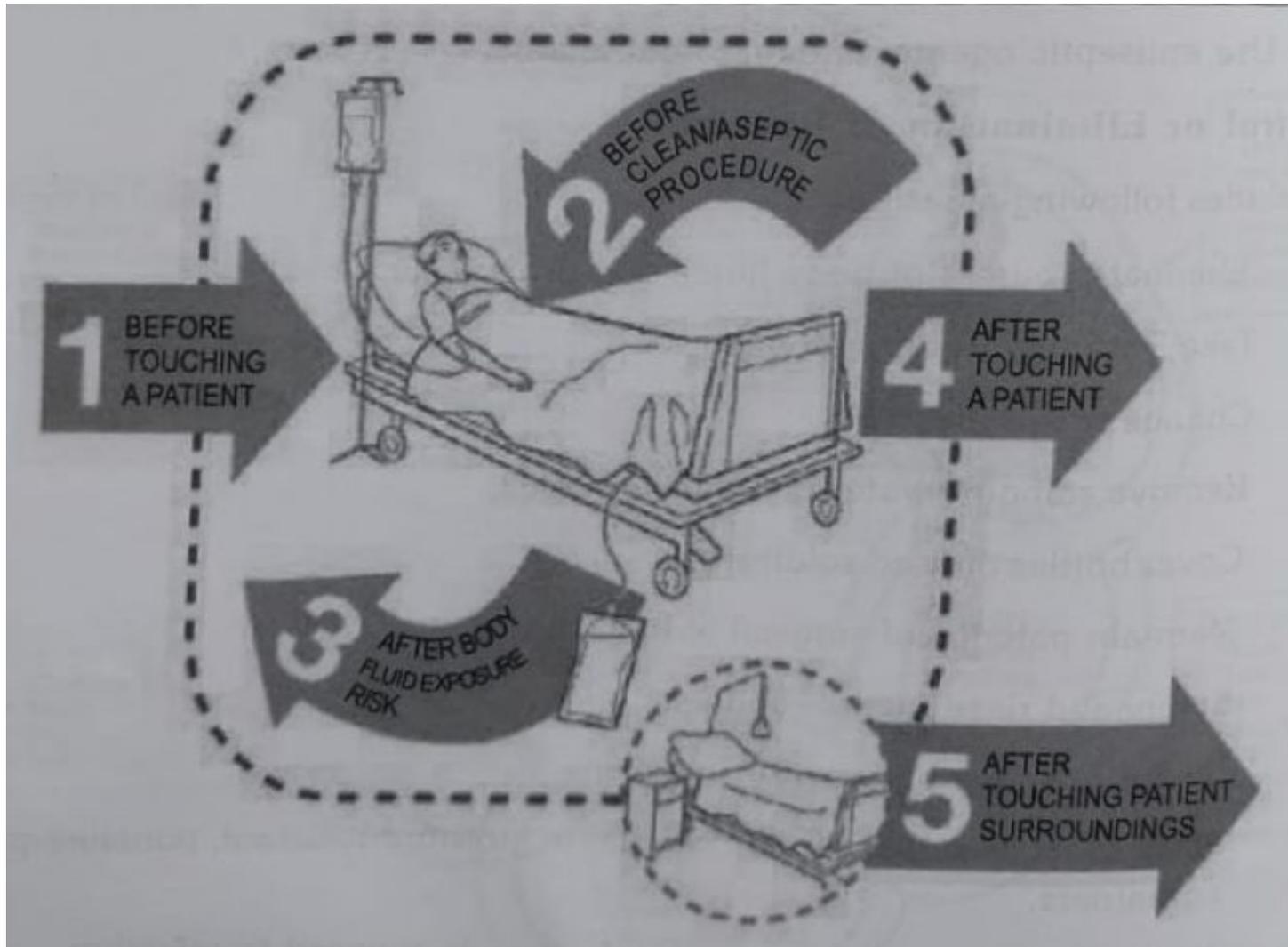


Control of Transmission

- Reduce microorganisms spread.
- Wash hands.
- Use personal set of care items for each client.
- Avoid shaking bed linens or clothes.
- Discard any item that touches the floor.



Hand Hygienic Measures



Steps of Hand Washing

7 STEPS OF HAND WASHING



1 Rub Palms together



2 Rub the back of both hands



3 Interlock fingers and rub hands together



4 Interlock fingers and rub the back of fingers of both hands



5 Rub thumb in a rotating manner followed by the area between index finger and thumb for both hands



6 Rub fingertips on palm for both hands



7 Rub both wrists in a rotating manner



Control of Portal of Entry

- Skin and mucous membranes - Maintain skin and mucous membrane integrity. Use proper hygiene measures.
- Clean wound sites thoroughly. Dispose of used needles in proper receptacles.
- Urinary catheters are to be kept closed and intact.
- Discard facial tissues, wound dressings, and other body excreta without touching



Protection of Susceptible host

- Provide adequate nutrition.
- Ensure adequate rest.
- Promote body defenses against infection.
- Provide immunizations.
- Maintenance of hygiene.
- Use of personal protective equipment's like gloves, gown, Shoe cover, masks & cap.

