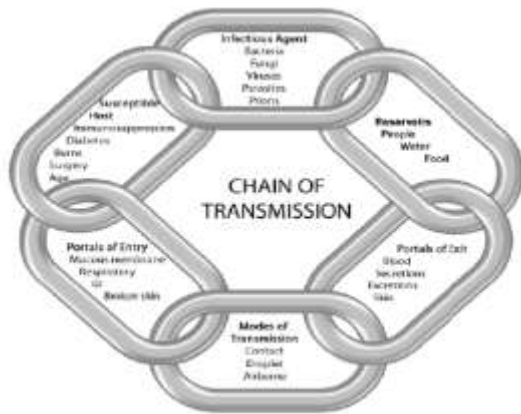


# Understanding the Spread of Infection

Infections are illnesses that are caused by microorganisms such as bacteria, viruses, fungi, and parasites. In order for an individual to get an infection, a process involving six components must occur. This process is called the chain of transmission. The goal of infection prevention and control practices is to break a LINK in the chain of transmission to prevent the transfer of microorganisms.

## Chain of Transmission Components



## Infectious Agent

- Any microorganism that is able to cause infection. Can be bacteria, virus, parasite, fungus, or prion.

## Reservoir

- Any place that an **infectious agent** can live and reproduce. Can include people, contaminated food or water, or animals.

## Portals of Exit

- The way the **infectious agent** leaves the **reservoir**. Can occur through: mouth and nose (e.g. coughing, sneezing), GI tract excretions (e.g. vomiting, diarrhea), blood, drainage from wounds.

## Modes of Transmission

- The way the **infectious agent** travels. Can be direct contact from one person to another (i.e. touching), or indirect contact (i.e. from one person to an object or surface and then to another person).
- Droplets when a person coughs or sneezes.

- Airborne when extremely small particles are released from one person and then inhaled by another person.

## Portals of Entry

- The way an **infectious agent** enters a **susceptible host**. The individual may breathe it in, touch their eyes, nose or mouth or eat or drink contaminated food or water. The infectious agent may also enter through breaks in the skin.

## Susceptible Host

- Any person who is at risk of developing an infection. The individual risk will depend on the **infectious agent** and personal factors such as age, immune system function, and vaccination history, among others.

## Breaking a Link in the Chain of Transmission

- Breaking any link in the chain of transmission will stop the transmission of the **infectious agent** and stop the spread of infection.

Ways to stop the spread of infection include:

- Frequent hand washing
- Ensure vaccinations are up-to-date
- Stay home when you are sick
- Cover your coughs and sneezes
- Environmental cleaning and disinfection
- Proper food storage
- Water treatment
- Proper waste disposal
- Treatment with antimicrobials, when appropriate

For more information contact the Communicable Disease Control Program staff at (705) 474-1400 or 1-800-563-2808, ext 5229.

References:

Provincial Infectious Disease Advisory Committee. (2012). *Routine Practices and Additional Precautions in All Health Care Settings*. Toronto, Canada: Queen's Printer for Ontario.

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