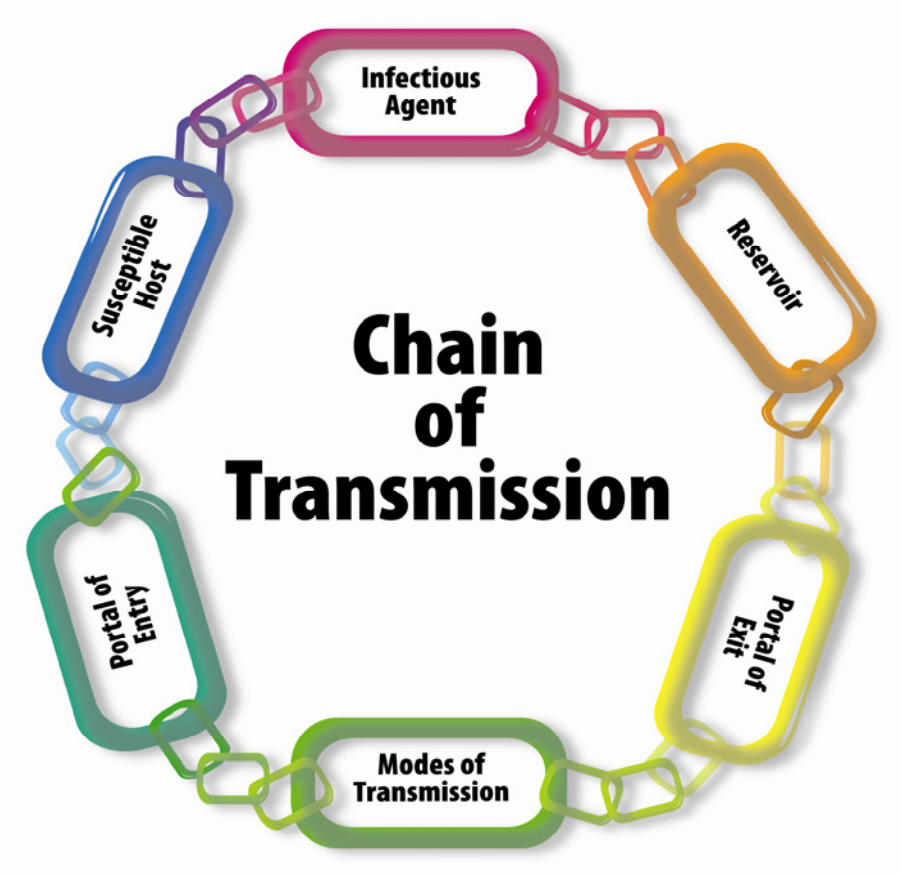


UNDERSTANDING THE CHAIN OF TRANSMISSION

Exposure to an infectious disease does not always result in acquiring the disease. The efficient spread of diseases or organisms relies on several elements. The relationship between these elements is illustrated in the diagram below as links in a chain. If the chain is broken at ANY of the links, the disease or organism will not be spread to another person.



Infectious Agent

- An agent capable of causing disease such as a bacterium, virus, or fungus.

This link can be broken by:

- Antimicrobial therapy e.g., taking antibiotics or antiviral medication when appropriate
- Disinfection
- Sterilization

Reservoir

- The place where an infectious agent can survive, and may or may not multiply (e.g., contaminated environmental surfaces/equipment, contaminated hands, humans/animals/insects).

This link can be broken by:

- Engineering controls (e.g., a negative pressure room)
- Environmental cleaning/disinfection
- Proper food storage
- Water treatment (e.g., chlorine in water)

Portal of Exit

- The path by which the infectious agent leaves the source (e.g., respiratory tract, urinary tract, gastrointestinal tract).

This link can be broken by:

- Hand hygiene
- Proper disposal of waste and contaminated linen (e.g., contain in a sealed bag, and handle in a way that prevents further spread of the organisms)
- Control of excretions and secretions (e.g., use incontinence briefs if needed, and cover open wounds)

Modes of transmission

- The mechanism for the transfer of an infectious agent from a reservoir to a susceptible host.

This link can be broken by:

- Spatial separation (e.g., two metres between patients, privacy curtains)
- Engineering controls (e.g., motion detected hand sinks, automatic soap/hand sanitizer dispensers, and automatic paper towel dispensers)
- Hand hygiene
- Environmental sanitation
- Equipment disinfection/sterilization
- Personal protective equipment (PPE)

Portal of Entry

- The path by which an infectious agent enters the susceptible host (e.g., eyes, ears, nose, a skin break and respiratory tract).

This link can be broken by:

- Hand hygiene
- Aseptic technique
- Wound care, catheter care
- PPE

Susceptible Host

- A host must be susceptible due to a lack of immunity or a lack of effective resistance to the infectious agent. Characteristics that may influence susceptibility to infections include: age, underlying disease, lifestyle factors (smoking, nutritional status), a weakened immune system, trauma, prior infection and immunization status.

This link can be broken by:

- Immunization
- Nutrition
- Recognition of high-risk patients
- Treatment