

MANUAL INTRODUCTION

1.0 PURPOSE

The Manual has been prepared to assist healthcare providers in implementing infection prevention and control best practice strategies across the continuum of care. The principles and guidelines set out in the Manual are based on published best practices, national and international, which have been modified to reflect the specific needs of Interior Health (IH). The Manual will be updated as best practices evolve, and the most current edition will be posted on the web.

[INFECTION PREVENTION AND CONTROL MANUAL](#)

This document covers acute, residential, and community care settings and programs. **Note: In this document the term “patient” is inclusive of patient, resident & client.** The implementation of routine infection control principles applies to all healthcare providers and patients in all healthcare settings all the time.

The goal of infection control practices is to reduce the risk of transmission of infectious microorganisms in all healthcare settings by:

- Understanding the concepts of the chain of transmission;
- Understanding the concepts and application of Routine Practices (RP);
- Knowing why and when to use Additional Precautions (AP); and
- Appropriately using, applying and removing personal protective equipment (PPE) when indicated for the protection of the patient or the healthcare provider.

2.0 DEFINITIONS

Aseptic Technique – refers to practices designed to render the patient’s skin, supplies and surfaces maximally free from microorganisms. Such practices are required when performing procedures that expose the patient’s normally sterile sites e.g., intravascular system, spinal canal, subdural space, and urinary tract, in such a manner to keep them free of microorganisms.

Community- Acquired Infections – infections present or incubating at the time of admission to a healthcare facility or program with no association to a recent hospitalization.

Health Care Associated Infection (HAI) – an infection that is not present or incubating at the time of admission to a healthcare facility or program but is associated with admission to or a procedure performed in a the facility or program.

Infection – occurs when microorganisms invade a body site, multiply in tissue and cause clinical manifestations of local or systemic inflammation (e.g. fever, redness, heat, swelling, pain, etc.)

PPE – personal protective equipment are barriers used by healthcare providers to protect mucous membranes, airways, skin and clothing from exposure to blood and body fluids.

3.0 GUIDING PRINCIPLES

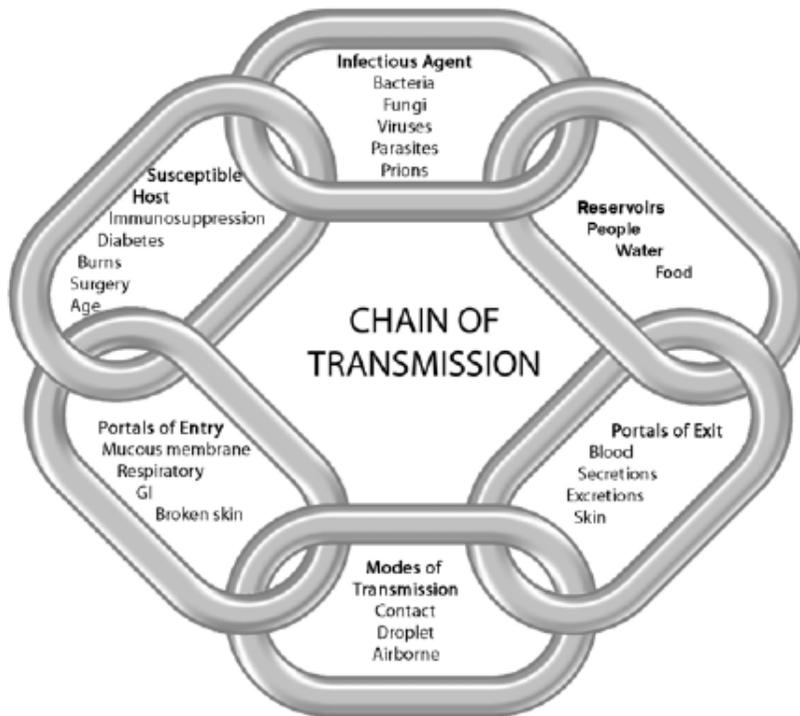


FIGURE 1 - The Chain of Infection – How Microorganisms are Spread

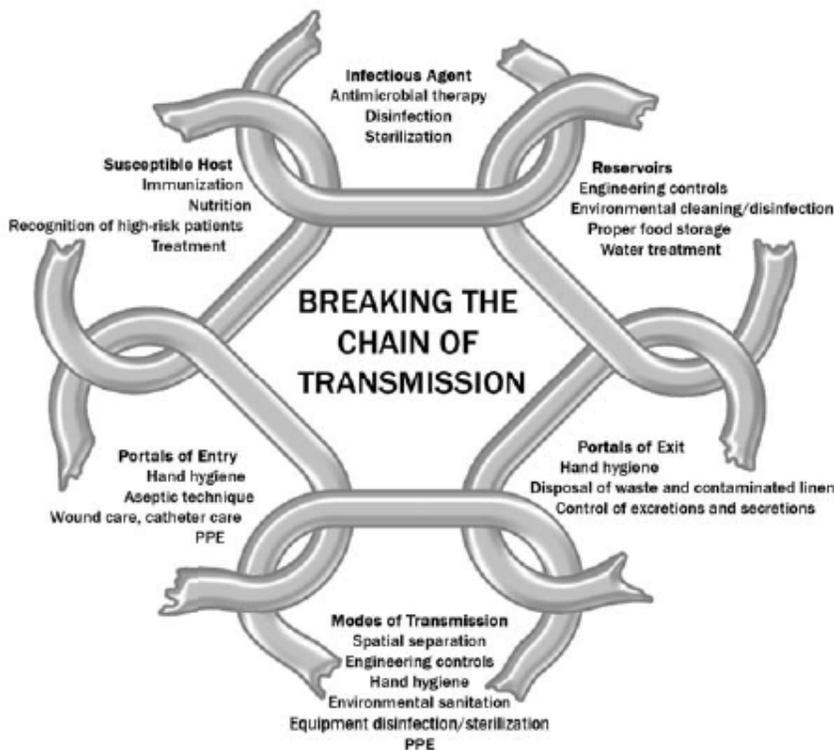


FIGURE 2 - An infection can be prevented by breaking any link in the chain of infection. Infection control measures are designed to break the links and thereby prevent an infection from occurring.

Disclaimer for Figure 1 and 2

This was developed by the Provincial Infectious Diseases Advisory Committee (PIDAC). PIDAC is a multidisciplinary scientific advisory body who provide to the Chief Medical Officer of Health evidence-based advice regarding multiple aspects of infectious disease identification, prevention and control. PIDAC's work is guided by the best available evidence and updated as required. Best Practice documents and tools produced by PIDAC reflect consensus positions on what the committee deems prudent practice and are made available as a resource to the public health and health care providers.

Here are the six links in the chain of infection and how these links can be broken so an infection does not occur:

1. **Causative (infectious) agent** including bacteria, viruses, fungi, prions and parasites
 - **Break the link** by eliminating or inactivating the agent, preventing the agent from exiting the reservoir, sterilizing surgical instruments, safe food practices, safe drinking water, vaccinations, treating infectious individuals, practicing good hand hygiene.
2. **Reservoir or “home”** of the infectious agent including the human body, animals and the environment (water, food)
 - **Break the link** by treating infectious individuals, vaccination, handling and disposing of body fluids appropriately, safe food practices, monitoring water for contamination.
3. **Portal of exit** is the path by which an infectious agent leaves the reservoir or “home” including any break in the skin or any bodily fluid such as secretions, excretions and blood.
 - **Break the link** by implementing safe practices such as covering coughs and sneezes, handling body fluids with gloves, performing appropriate hand hygiene, and containing draining wounds. Healthcare providers should not work if they have exudative (wet) lesions or weeping dermatitis.
4. **Mode of transmission** – how the infectious agent travels from one place to another; the mechanism for transfer of an infectious agent from a reservoir to a susceptible host. “Vector-borne” diseases are spread by insects, rodents, birds and animals. Common vehicle transmission refers to a single contaminated source such as food, multi-dose vials, intravenous fluid or equipment which serves to transmit infection to multiple hosts. The primary modes of transmission in healthcare include:
 - **Contact** – **direct contact** which is person to person spread or **indirect contact** which is contact with a contaminated surface or inanimate object to person spread.
 - **Droplet** – where large particles are produced when an infected person sneezes, talks or coughs and settle out on horizontal surfaces leading to indirect contact transmission or direct contact onto another person’s mucous membranes; droplets can travel 1 - 2 metres.
 - **Airborne** – where organisms are contained within droplet nuclei (five microns or smaller in size) or dust particles in the air and the infectious agent is widely dispersed by air currents and inhaled by a susceptible host (e.g. Tuberculosis).
 - **Break the link** by ensuring transmission between objects or people does not occur; use appropriate barriers, safe practices, spatial separation, engineering controls, hand hygiene, environmental sanitation, and equipment disinfection/sterilization.
5. **Portal of entry** into a susceptible host via mucous membrane, GI, respiratory or broken skin. All portals of entry have natural protective barriers. These barriers are normally effective but may allow micro organisms to enter if the barriers are damaged or if they have been compromised by invasive medical devices (e.g. catheters).
 - **Break the link** by performing appropriate hand hygiene, using aseptic technique when required, applying best practice techniques with wound and catheter care, wearing appropriate PPE, eliminating invasive devices when safe to do so and providing safe food and water.
6. **Susceptible Host** occurs when the normal balance between microorganisms and their host may be disturbed by chronic diseases that cause an altered immune status e.g. diabetes, infancy, old age, invasive procedures, drug therapy, poor nutrition, radiation, chemotherapy, burns, etc
 - **Break the link** by ensuring hosts are not susceptible including measures such as immunizations, good nutrition, recognition and treatment of high risk patients



BY UNDERSTANDING THE CHAIN OF INFECTION, THE PROCEDURES DESCRIBED IN THIS MANUAL CAN BE APPLIED TO INTERRUPT MICROBIAL TRANSMISSION BETWEEN PATIENTS/RESIDENTS, VISITORS, AND HEALTHCARE PROVIDERS.

2.0 REFERENCE

- 2.1** [Routine Practices and Additional Precautions In all Healthcare Settings. Provincial Infectious Diseases Advisory Committee \(PIDAC\), Ontario; November 2012.](#)
- 2.2** Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Health Care Settings; Public Health Agency of Canada; 2013.
- 2.3** [Infection Prevention and Control Manual. Vancouver Island Health Authority \(VIHA\); 2009.](#)
- 2.4** APIC Text 2012.