[**INFECTION PREVENTION AND CONTROL**](https://www.cdc.gov/infectioncontrol/index.html) **(IPC)**

Infection prevention and control basically means to stop the spread of infections in healthcare settings.

The goals of these training are:

* To reduce the incidents of preventable infections in patients and staff and safely care for patients with infections
* To promote good practices through a better understanding of IPC
* To promote a greater awareness of potential infection hazards for healthcare workers (HCW)

1. Infections in health care facilities can occur through the transmission of germs from HCW to patient, from patient to HCW, from patient to patient, or from HCW to HCW.
2. Risk of transmitting infections is higher if basic IPC practices are not observed.
3. Effective measures must be developed to identify, prevent, and control infections.
4. Infections that are associated with health care not only increase diseases and deaths in patients, but also are responsible for prolonged hospital stays, long-term disabilities, and increased resistance of microorganisms to antimicrobials (different classes of drugs). This creates an additional financial burden for patients and their families, as well as an extra burden on health care services.
5. Adhering to IPC practices is the most cost-effective way to improve health outcomes, prevent diseases and deaths, decrease health care costs.
6. IPC is essential for the well- being and safety of patients, families, health care professionals, and the community.

Comprehensive IPC practices should be adhered to in all health care facilities and settings in the public, private, and faith-based health sectors:

* Hospitals
* Nursing homes
* Health centres
* Dispensaries
* Clinics
* Special-care facilities

Standard precautions should be implemented when contact with any of the following is anticipated:

* Blood
* All body fluids, secretions, and excretions (except sweat), regardless of whether they
* contain visible blood
* Nonintact skin
* Mucous membranes(e.g. mouth, nose and eyes)

**Health Care Workers**

Each HCW at the individual level is always responsible and accountable for effective and efficient implementation of the IPC policies and guidelines in her or his duty station.

**The Infectious Disease Process**

It is necessary to understand the infectious-disease process in order to comprehend the spread of infections in health care facilities. The spread of infection requires three (3) elements: a source of infecting organisms (germs), a susceptible host, and a means of transmitting the microorganism.

**Source** The source of the infecting agent (germs) might be a patient, a staff member, or a visitor. It could be a person with an active disease, a person in the incubation period of the disease, or someone who is having an infectious agent, but has no apparent symptoms (asymptomatic carrier). Other sources of infecting microorganisms can be on inanimate environmental objects, such as equipment and medications, that have become contaminated.

**Host** The susceptible host is the second element in the spread of infection. Persons lacking effective resistance to a microorganism are susceptible to infection by that microorganism. Resistance to microorganisms varies greatly among individuals.

Certain factors can render individuals more susceptible to infection:

* Extremes of age e. g. elderly
* Presence of an underlying disease, such as diabetes mellitus, or human immunodeficiency virus (HIV) infection
* Use of certain medications, such as cancer drugs (chemotherapeutic agents), or other immunosuppressive drugs
* Irradiation
* Breaks in the first line of defence mechanisms (skin is our first line of defence mechanisms) such as surgical operations, anaesthesia, indwelling catheters, and other procedures

**Transmission** Microorganisms are transmitted in health care facilities by several routes. The five (5) main modes of transmission—contact, droplet, air, common vehicle, and vector

***Contact Transmission*** This is the most important and most frequent mode of healthcare associated infections (HAI) transmission. It is divided into two subgroups: direct-contact transmission and indirect-contact transmission.

Direct-contact transmission involves a direct body-surface-to-body-surface contact and physical transfer of germs between a susceptible host e. g elderly person and an infected person. It can occur when HCW turns a patient, gives a patient a bath, or performs other activities that involve direct personal contact. Direct-contact transmission can also occur between two patients, with one serving as the source of the infectious microorganisms and the other as a susceptible host.

Indirect-contact transmission involves contact between a susceptible host and a contaminated intermediate object, usually inanimate, such as contaminated instruments e. g needles, dressings, contaminated and unwashed hands, or gloves that are not changed between patients.

***Droplet Transmission*** Droplet transmissions occur when droplets are propelled a short distance through the air and deposited on the host’s eyes, nose or mouth. The droplets are generated from the source person primarily through coughing, sneezing, and talking and during certain procedures such as suctioning. For transmission to occur, the source and the susceptible host must be within one meter (approximately three feet) of one another.

***Airborne Transmission*** Airborne transmission occurs by dissemination of either airborne droplet nuclei (small-particle residue) of evaporated droplets that contain microorganisms and remain suspended in the air for long periods of time, or dust particles that contain the infectious agent. Airborne microorganisms can be dispersed widely by air currents and can be inhaled by a susceptible host within the same room or some distance from the source patient, depending on environmental factors. Microorganisms transmitted by airborne transmission include *Mycobacterium tuberculosis*, measles, chicken pox. Control of airborne transmission is the most difficult, because it requires control of airflow through special ventilation systems.

***Common-Vehicle Transmission*** Common-vehicle transmission refers to the transmission of infection to multiple hosts by contaminated items (vehicles). This mode can result in explosive outbreaks. Vehicles for transmission include the following:

1. Foods,
2. Water
3. Medications and intravenous solutions
4. Blood, which can transmit hepatitis B (HBV) and hepatitis C (HCV) and HIV, for example
5. Equipment and devices

***Vector-Borne Transmission*** Vector-borne transmission refers to the transmission of microorganisms through vectors such as mosquitoes, flies, fleas, rats, and other vermin. This mode can be prevented by appropriate health care facility construction and maintenance, closed or screened windows, and proper housekeeping.