



Objectives:

- Define infection control terms
- Define the chain of infection
- Describe how infections are spread
- List the In-home Aide's role in infection control

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References:

NCDHHS/DHSR/HCPEC | Home Care Aide Curriculum | July 2021 Module 7- Infection Control and Prevention in the Home

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Infection Control

The chain of infection is the foundation for *spreading and preventing an infection*. For an infection to *occur and spread*, each of the six links of the chain must be present. By breaking any link in the chain, a new infection can be prevented. Infection control practices such as hand washing, wearing gloves, cleaning equipment, and using masks, when performed properly, will break a link in the chain.

Each link and the actions that can be taken to break it:

- ✓ **Infectious agent-** To have an infection, there must be a germ that can cause an infection. This germ is called the infectious agent.
- ✓ **Reservoir-** The infectious agent (germ) must have a place to live or hide. This hideout is called a reservoir. Reservoirs are animals, insects, humans, objects, surfaces, equipment, or anything in the environment including food, water, and *even the air*.
- ✓ **Portal of Exit-** The germ needs a way to leave its home or hideout. This is called a portal of exit, or way to escape from the reservoir. Examples of how germs exit the human body are through blood from a wound, semen and vaginal secretions from the reproductive tract and genitalia, tears from tear ducts, urine from the urinary tract, feces from the gastrointestinal tract, mucous discharge from the respiratory tract, drainage from open wounds and across the mother's placenta to the fetus.
- ✓ **Mode of Transmission-** Once the germ exits its hideout (reservoir), it must find a way to move to its next victim. This is called the mode of transmission. *There are many routes for germs to be transmitted to another. The most common and frequent modes of transmission are direct contact, indirect contact, and droplet contact.*
 - Direct or physical contact occurs when the infected person transfers the germ causing the infection in another.
 - Indirect contact includes the spread of infection through eating or drinking contaminated foods, water, or beverages, touching contaminated care products and personal care equipment, utensils, pets, equipment, or feces, or any other inanimate object.
 - Droplet contact can happen when an infected person coughs, sneezes, or talks within three feet of another.
 - Germs can also be spread through contaminated blood as well as through the air. Infections can spread through the air by a person breathing air where germs have been suspended.
 - Insects such as ticks, fleas, or mosquitoes carry germs and pass them on when they bite someone.
- ✓ **Portal of Entry-** Once a germ leaves its hideout and finds a way to travel, a portal of entry is necessary. Germs can enter the body through breaks in the skin, through eyes, nose, or mouth, through the digestive tract, through the urinary and reproductive tracts, the respiratory system, and the circulatory system. *Points of exit and entry are the same.*

Chain of infection links and the actions that can be taken to break it continued:

- ✓ **Susceptible Host-** If the host's defenses are strong, it may stop the germ's invasion. If not, the host becomes susceptible to the infection, unable to fight off the germs, and the germs enter the body. The chain of infection now has the potential to continue to spread since the germ has found a new reservoir.

Breaking the chain of infection:

- As health care workers, you have a responsibility to protect yourself, your family, and your clients from danger and to practice infection control techniques. Many of the people you care for are older, frail, have chronic conditions and decreased immunity making them susceptible to diseases. If you can break any link in the chain of infection, you can prevent the occurrence of new infection. In-home aides have many chances in their work to break the chain of infection. Keeping clients' homes neat and clean helps to reduce the risk of infection. It is the role of the In-home aide to care for the person and their environment. These tasks are essential to good health. Also notify your supervisor if you are sick.
- If an infection occurs, the body takes steps to fight it off. When the body fights an infection, certain signs and symptoms occur. Signs and symptoms of infection can include:
 - Fever
 - Nausea, vomiting, and diarrhea
 - Rash
 - Loss of appetite
 - Local redness, swelling
 - Foul smelling drainage or urine
 - Urinary frequency
 - Pain or tenderness at the site of a wound or pimple-like area
 - Fatigue
 - Flu-like symptoms
- Individuals have different responses to infection and not every symptom will be experienced by all people. **Learn the usual health status of each person you are caring for so you will know when there is a change in his/her typical health status.** Report any signs or symptoms immediately to the nurse supervisor per your agency policy. The earlier an infection is found, the easier it may be to treat. There are also certain factors that contribute to increased illness susceptibility in clients/patients, including poor nutrition, advanced age, mental status, inactivity, and other factors such as catheters and feeding tubes.

***Think about this:
How do you help
break the links in
the chain of
infection?***



Coronavirus and COVID-19-

Please review your agency COVID-19 protocols for patient/client care and the appropriate personal protective equipment (PPE) such as masks to use:

According to the CDC: COVID-19 (coronavirus disease 2019) is a disease caused by a virus named SARS-CoV-2 and was discovered in December 2019 in Wuhan, China. It is very contagious and has quickly spread around the world. COVID-19 most often causes respiratory symptoms that can feel much like a cold, a flu, or pneumonia. COVID-19 may attack more than your lungs and respiratory system. Other parts of your body may also be affected by the disease. Most people with COVID-19 have mild symptoms, but some people become severely ill. Some people including those with minor or no symptoms may suffer from post-covid conditions — or “long COVID”. Older adults and people who have certain underlying medical conditions are at increased risk of severe illness from COVID-19. Hundreds of thousands of people have died from COVID-19 in the United States. Vaccines against COVID-19 are safe and effective. Vaccines teach our immune system to fight the virus that causes COVID-19. Please visit the CDC website on COVID-19 basics for more specific information at- <https://www.cdc.gov/coronavirus/2019-ncov/your-health/about-covid-19/basics-covid-19.html>

Bloodborne Pathogens- Bloodborne pathogens, such as HIV and Hepatitis B, C, and D, are a classification of microorganisms that cause disease. Bloodborne pathogens are found in blood. Bloodborne pathogens may be found in other fluids if contaminated by infected blood. These pathogens may be transmitted by:

- Contact with blood
- Sexual contact
- Sharing needles/needle sticks
- Mother to fetus during pregnancy or delivery

➤ Employers should have an occupational exposure plan in place for all employees. *Occupational Exposure* means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties. An occupational exposure includes:

- Needle sticks
- Skin exposure
- Mucous membrane exposure (e.g., eyes, nose, mouth)
- ✓ Other Potentially Infectious Materials includes the following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids.

➤ Your employer's occupational exposure plan may consist of a Hepatitis B vaccine program, use of personal protective equipment such as gloves, policies for reporting, evaluating, and handling exposures, and documentation procedures, **including employee review** of the plan. Know your agency's occupational exposure plan! *Exposure Incident* means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties. *Parenteral* means piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions. ***It is important to report any occupational exposure incident immediately! Discuss with your supervisor how to report.***

➤ Standard Precautions are used for all patient care. They're based on a risk assessment and make use of common sense practices and personal protective equipment (gloves, masks, gowns, etc.) use that protect healthcare providers from infection and prevent the spread of infection from patient to patient. Always wear gloves if you may come into contact with any blood or bodily fluids. ***Your agency is responsible for providing any necessary PPE that you need for client care and services. It is important to know your agency policies and procedures for infection control and attend bloodborne pathogen training that should be provided by your agency.***

Germes are everywhere. They are within and on our bodies and on every surface you touch. But not all germes are bad. We need some of these germes to keep us healthy and our immune system strong. Your hands have good germes on them that your body needs to stay healthy. These germes live under the deeper layers of the skin. *Your hands can also have bad germes on them that make you sick.* These germes live on the surface and are easily killed/wiped away by the alcohol-based hand sanitizer. Using an alcohol-based hand sanitizer is the preferred way to keep your hands clean. Alcohol-based hand sanitizers kill the good and bad germes, but the good germes quickly come back on your hands. **Washing with Soap and Water and Hand Sanitizer Use-** Wash your hands for at least 15 seconds, not specifically 15 seconds. The time it takes is less important than making sure you clean *all areas of your hands*. Alcohol-based hand sanitizers are the preferred way to clean your hands in healthcare facilities. An alcohol-based hand sanitizer is the preferred method for cleaning your hands *when they are not visibly dirty* because it is more effective at killing potentially deadly germes on hands than soap; is easier to use during the course of care, especially when moving from soiled to clean activities with the same patient or resident; when moving between patients or residents in shared rooms or common areas; improves skin condition with less irritation and dryness than soap and water. **Hand washing with soap and water should be performed at the following times:** when hands are visibly soiled; *after caring for a person with known or suspected infectious diarrhea; after known or suspected exposure to spores such as B. anthracis or C difficile outbreaks;* before shift begins; before eating and after using a restroom; before leaving the facility or person's house at the end of the shift and according to your agency's infection control policies.