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PROACTIVE
MEDICAL REVIEW

Infection Control and Prevention Basics

Competencies for the Post Acute Provider

for all staff and volunteers

What is Infection?

- Infectious diseases are caused by microscopic organisms that penetrate the body's natural barriers and multiply to create symptoms that can range from mild to deadly.

  Although progress has been made to eradicate or control many infectious diseases, humankind remains vulnerable to a wide array of new and resurgent organisms.

How Do Infections Occur?

An infection occurs when germs enter the body, increase in number, and cause a reaction of the body.

Three things are necessary for an infection to occur:

1. **Source**: places where infectious agents (germs) live (e.g., sinks, surfaces, human skin)
2. **Susceptible Person:** a person with a way for germs to enter the body
3. **Transmission**: a way germs are moved to the susceptible person

Modes of Infection

Common ways in which infectious agents enter the body are through:

- skin contact
- inhalation of airborne microbes
- ingestion of contaminated food or water
- bites from vectors such as ticks or mosquitoes that carry and transmit organisms
- sexual contact and transmission from mothers to their unborn children via the birth canal and placenta.

Obstacles in Infection Treatment

- New, potentially dangerous bacteria, viruses, fungi and parasites such as severe acute respiratory syndrome (SARS) emerge every year.
- Previously recognized pathogens can evolve to become resistant to available antibiotics and other treatments.
- Population crowding and easy travel also make us more vulnerable to the spread of infectious agents.
- Concerns about bioterrorism have focused new attention on eradicated or rare infectious diseases such as smallpox and anthrax.

What Can We Do?

Every year, lives are lost because of the spread of infections in health care settings. Health care workers can take steps to prevent the spread of infectious diseases.

These steps are part of infection prevention and control.

Proper hand hygiene is the most effective way to prevent the spread of infections.

Don't be afraid to remind visitors, family and other health care providers to wash their hands before getting close to a resident.

Hand Hygiene

- **Hand Washing**
  Cleansing hands with soap and water

- **Hand Sanitizing**
  Rubbing hands with alcohol-based hand rub

Proper Handwashing Technique

1. Wet hands with clean, warm water and apply soap
2. Lather hands
3. Scrub hands for a minimum of **20 seconds**
4. Rinse hands
5. Dry hands with a clean, disposable towel
6. Turn water off with a disposable towel

When Should You Wash Your Hands?

BEFORE

- Before **eating**
- Before having direct contact with a **patient's intact skin** (taking a pulse or blood pressure, performing physical examinations, lifting the patient in bed)

AFTER

- After having direct contact with a **patient's intact skin** (taking a pulse or blood pressure, performing physical examinations, lifting the patient in bed)
- After contact with **blood, body fluids or excretions, mucous membranes, non-intact skin or wound dressings**
- After contact with **inanimate objects** (including medical equipment) in the immediate vicinity of the patient
- If hands will be moving from a **contaminated-body site** to a clean-body site during patient care
- After **glove removal**
- After using a **restroom**

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Proper Application of Hand Sanitizer

1. Apply enough handrub to cover both hands
2. Rub hands together
3. Continue rubbing until hands are dry

When Hand Sanitizer Will Not Work

1. **Hand sanitizer is not effective for hands that are visibly soiled.** If you look at your hands and are able to see that they are dirty, you will need to wash your hands with soap and water.

2. **If you are interacting with an individual who has clostridium difficile,** commonly known as C. Diff, you will need to wash your hands with soap and water, as hand sanitizer does not remove the bacteria from hands effectively.
   - The same is true of cryptosporidium and norovirus.
   - After exposure to any of the three of these infections, hand washing is the best practice and should be done as soon as possible.

Other Steps

Other steps health care workers can take to prevent infections include:

- Covering coughs and sneezes
- Staying up-to-date with immunizations
- Using gloves, masks and protective clothing
- Making tissues and hand cleaners readily available
- Following facility policies and procedures when dealing with blood or contaminated items

Cleaning

- Germs from a person may be found on any object the person touched or on equipment that was used during the person's care. *Some germs can live up to **5 months** on a dry surface.*
- Germs on any surface can pass to you or another person. Cleaning helps prevent the spread of germs.
- Refer to facility policies about how to clean:
  - Patient rooms, Spills or contamination, Supplies and equipment that are reusable

Soiled Linens

When you remove soiled linens such as bed sheets and towels:

- Hold them **away** from your body and DO NOT shake them.
- Watch for needles and other sharps.
- **DO NOT** put the soiled linens down on another surface in the room. Place them in a bag or approved container.
- Items that are wet or moist should go into a container that will not leak.

Standard Precautions

- Follow standard precautions with all patients.
- When you are close to or handling blood, bodily fluid, bodily tissues, mucous membranes, or areas of open skin, you must use personal protective equipment (PPE).

Depending on the anticipated exposure, types of PPE required include:

- Gloves
- Masks and goggles
- Aprons, gowns, and shoe covers

It is also important to properly clean up afterward.

Transmission-Based Precautions

Transmission-based precautions are extra steps to follow for illnesses that are caused by certain germs. Transmission-based precautions are followed in addition to standard precautions. Some infections require more than 1 type of transmission-based precaution.

- Follow transmission-based precautions when an illness is first suspected. Stop following these precautions only when that illness has been treated or ruled out and the room has been cleaned.
- Patients should stay in their rooms as much as possible while these precautions are in place. They may need to wear a mask when they leave their rooms.

Airborne Precautions

"Airborne precautions" Actions taken to prevent or minimize the transmission of infectious agents/ organisms that remain infectious over long distances when suspended in the air. These infectious particles can remain suspended in the air for prolonged periods of time and can be carried on normal air currents in a room or beyond, to adjacent spaces or areas receiving exhaust air.

- Airborne precautions may be needed for germs that are so small they can float in the air and travel long distances.
- Airborne precautions help keep staff, visitors, and other people from breathing in these germs and getting sick.
- Germs that warrant airborne precautions include chickenpox, measles, and tuberculosis (TB) bacteria.
- People who have these germs should be in special rooms where the air is gently sucked out and not allowed to flow into the hallway. This is called a negative pressure room.
- Anyone who goes into the room should put on a well-fitted respirator mask before they enter.

Contact Precautions

"Contact precautions" Measures that are intended to prevent transmission of infectious agents which are spread by direct or indirect contact with the resident or the resident's environment.

- Contact precautions may be needed for germs that are spread by touching.
- Contact precautions help keep staff and visitors from spreading the germs after touching a person or an object the person has touched.
- Some of the germs that contact precautions protect from are C. difficile and norovirus. These germs can cause serious infection in the intestines.
- Anyone entering the room who may touch the person or objects in the room should wear a gown and gloves.

Droplet Precautions

"Droplet precautions" Actions designed to reduce/prevent the transmission of pathogens spread through close respiratory or mucous membrane contact with respiratory secretions.

- Droplet precautions are used to prevent contact with mucus and other secretions from the nose and sinuses, throat, airways, and lungs.
- When a person talks, sneezes, or coughs, droplets that contain germs can travel about 3 feet (90 centimeters).
- Illnesses that require droplet precautions include influenza (flu), pertussis (whooping cough), and mumps.
- Anyone who goes into the room should wear a surgical mask.

Personal Protective Equipment (PPE)

- Personal protective equipment is special equipment you wear to create a barrier between you and germs. This barrier reduces the chance of touching, being exposed to, and spreading germs.
- Personal protective equipment (PPE) helps prevent the spread of germs in the hospital. This can protect people and health care workers from infections.

All facility staff, patients, and visitors should use PPE when there will be contact with blood or other bodily fluids.

Personal Protective Equipment (PPE)

Gloves

- Wearing gloves protects your hands from germs and helps reduce the spread of germs.

Masks

- Masks cover your mouth and nose.
- Some masks have a see-through plastic part (face shield) that covers your eyes.
- A surgical mask helps stop germs in your nose and mouth from spreading. It can also keep you from breathing in some germs.
- A special respiratory mask (respirator) forms a tight seal around your nose and mouth. It may be needed so that you do not breathe in small germs like tuberculosis bacteria.

Goggles

- Eye protection includes face shields and goggles. These protect the mucous membranes in your eyes from blood and other bodily fluids. If these fluids make contact with the eyes, germs in the fluid can enter the body through the mucous membranes.

Choose the Right PPE

You may need to use different types of PPE for different people. Your facility has written instructions about when to wear PPE and what type to use. You need PPE when you care for people who are in isolation as well as other patients.

At times, you may also need to wear shoe covers and special gloves.

After Using PPE

Remove and dispose of PPE safely to protect others from being exposed to germs. Before leaving your work area, remove all PPE and put it in the right place.

This may include:

- Special laundry containers that can be reused after cleaning
- Special waste containers that are different from other waste containers
- Specially marked bags for cytotoxic PPE

Donning & Doffing PPE

PPE should be put on and removed in a specific order:

Donning	Doffing
1. Gown	1. Gloves
2. Mask	2. Goggles or Face Shield
3. Goggles or Face Shield	3. Gown
4. Gloves	4. Mask

“Peak Season”

During times of increased prevalence of respiratory infections in the community, facilities must have facemasks available and should offer facemasks to coughing or sneezing visitors and other symptomatic persons (e.g., family who accompany ill residents upon entry to the facility).

Symptomatic (e.g., coughing) visitors should wear a facemask or maintain at least a three foot separation from others in common areas (e.g., admitting office).

“Peak Season”

In addition, the facility should consider posting signs in the facility with instructions to family/visitors with symptoms of respiratory infection to cover their mouth/nose when coughing or sneezing; use and dispose of tissues; perform hand hygiene after contact with respiratory secretions; and to take appropriate precautions if they are having symptoms of respiratory infection or other communicable diseases.

Tools and Resources

- https://medlineplus.gov/infectioncontrol.html
- http://www.idsociety.org/Facts_About_ID/
- https://www.cdc.gov/infectioncontrol/spread/index.html