

Infection Prevention and Control

Chapter Two

Time Required: 3 hours

Chapter Two – Infection Prevention and Control

This chapter provides an overview of infection prevention and control protocols including how to protect residents, direct care staff, family members, and visitors from the spread of infection and communicable diseases. Infection Prevention and Control will be thoroughly described as well as procedures to implement these protocols. As care providers, direct care staff have a duty to help reduce infections by preventing the transmission of germs. Direct care staff spend a great deal of time with residents, so it is important to learn and recognize early signs of infection and report them to a supervisor. It's crucial for direct care staff to take precautions against any illnesses or diseases that can make it difficult for them to work or possibly transfer the infection to others.

2.1 Basic Definitions

2.2 Principles of Infection Prevention and Control

2.3 Infections and Communicable Diseases

2.4 Precautions, Hand Hygiene, and PPE

2.5 Environmental

2.6 Bloodborne Pathogens

Instructor Planning

1. Objectives and Expected Outcomes of Chapter

- a. To understand basic terminology associated with Infection Prevention and Control.
- b. To understand how infections and communicable diseases are spread.
- c. To understand direct care staff's role in the recognition, prevention, and control of infections and communicable diseases.
- d. To recognize signs of infections and communicable diseases.
- e. To understand the procedures regarding infection prevention and control. *Use facility policies if available.*
- f. To understand the importance of OSHA Standards and the required techniques of applying standard precautions.
- g. To understand how to properly handle and dispose of contaminated material.
- h. To understand and demonstrate proper hand hygiene and glove use.

2. Recommended Method of Instruction

- Lecture and class discussion (**Handouts #1, #2, #3, and #5**)
- Student Activities – Hand Hygiene (**Handout #4**), Personal Protective Equipment (**Handouts #6 #7 and #8**), Scenario (**Handout #9**), and Skills Checklists (**Handouts #10 and #11**)
- Student Review – Chapter Two

2.1 Basic Definitions

The purpose of this section is to provide you with a basic understanding of key terms used in the practice of infection prevention and control. Most of these terms will be discussed throughout this chapter.

Definitions

Bacteria – single-celled organisms that can live in air, soil, water, organic matter, and skin.

Bloodborne pathogens – infectious microorganisms in human blood that cause disease.

Contaminated – the presence or the reasonably anticipated presence of blood or other potentially infectious materials (e.g., bodily fluids and/or tissue) on an item or surface. Contaminated materials are considered “soiled.”

Fungi – microorganisms that live in moist, humid, and dark environments.

Germs – microorganisms that are everywhere. Microorganisms are inside and outside of the human body. Germs can be bacteria, viruses, fungi, or parasites. Germs can be found in the air, on any surface, and on the bodies of humans and animals. Some germs are good while others may cause infections and illnesses. In addition to being spread by eating or drinking contaminated food and beverages, germs can also travel by air, animals, insects, and human fluids. When germs cause illness, they are considered pathogens.

Infections – conditions or diseases that happen when germs enter the body and grow.

Infection Prevention and Control – any practical, evidence-based approach techniques used to prevent, or stop the spread of potential infections.

Microorganism – a tiny living thing that is only visible by microscope.

Parasites – an organism that lives in or on another organism because it cannot live on its own.

Pathogen – disease-causing microorganisms.

Personal Protective Equipment (PPE) – specialized clothing or equipment worn by direct care staff to minimize exposure to hazards that cause serious workplace injuries and illnesses. This equipment also protects residents from germs and infections the direct care staff may be carrying. PPE protects the skin since the skin is the first barrier of defense against infection.

Standard Precautions - the minimum infection prevention practices that apply to all resident care, regardless of infection status and ensure there is no direct contact with a resident's bodily fluids.

Transmission – the transfer of a disease or way a germ, infection, or disease is transferred or passed from one person to another person.

Transmission-Based Precautions - the second tier of basic infection control and are to be used in addition to Standard Precautions for residents who may be infected or colonized with certain infectious agents for which additional precautions are needed to prevent infection transmission.

Uncontaminated – no presence or anticipated presence of blood or other potentially infectious material on an item or surface. Uncontaminated materials are considered “clean.”

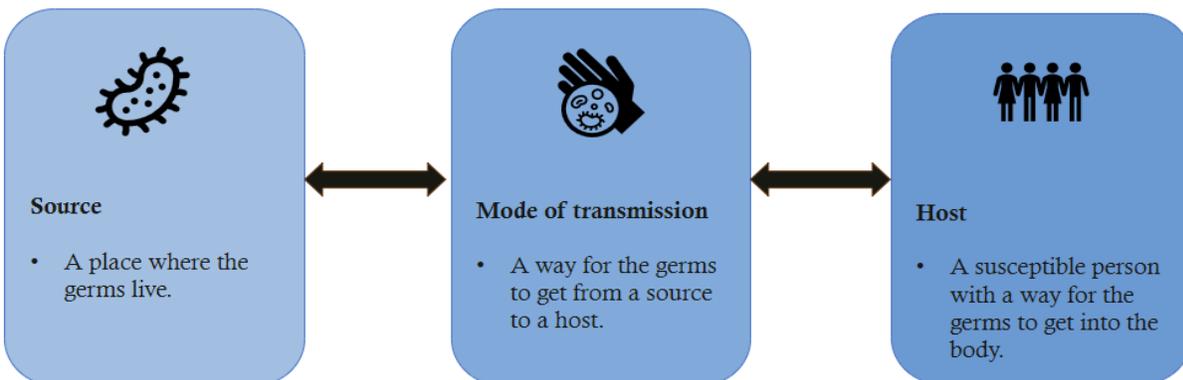
Virus – a germ smaller than bacteria and is only able to multiply within living cells of a host.

Waste Materials – any item that is contaminated with blood or other potentially infectious materials.

2.2 Principles of Infection Prevention and Control

In this section we will provide you with an overview of the principles of infection prevention and control. You will learn why it is important, how infections are spread, risk factors, and general signs of infection.

- Infection prevention prevents and/or controls the spread of infections.
- Importance of Infection Prevention
 - Identifying and controlling infections prevents the spread of infections.
 - For direct care staff to protect themselves and others from infections, it is important to know how infections are spread.
- An infection occurs when germs enter the body, then they multiply and cause the body to react.



- The following three things are necessary for an infection to occur and are sometimes referred to as the chain of transmission.
 - Source
 - Residents, facility staff, visitors, and household members.
 - The environment: dry and wet surfaces, indwelling medical devices, shared medical equipment, dust, and decomposing debris.
 - Host
 - The host may never exhibit signs of infection.
 - The host can transmit the infection to a new host.
 - Mode of Transmission
 - Contact - can be indirect or direct (e.g., touching someone with a germ or touching a surface that has germs on it)
 - Sprays and splashes - can travel short distances and land in a person's eyes, nose, or mouth.
 - Inhalation - breathing air that is contaminated with germs.

- Sharps injuries - a skin puncture by a needle or sharp instrument can transmit germs that are in the blood.
 - Some germs can also be acquired by consuming food or water.
- Risk factors for infection transmission
 - Incorrect hand hygiene techniques
 - Compromised immune systems
 - Improper nutrition and hydration
 - Fragile skin
 - Decreased functional status
 - Multiple chronic disease states
 - Frequent hospitalizations
 - Fatigue
 - Stress
 - Invasive devices (e.g., catheter)
 - Wounds, including pressure ulcers
 - Activities or places that involve crowding, skin-to-skin contact, and shared equipment or supplies.
- Infection Control Plan
 - § Each facility shall maintain a comprehensive infection prevention and control program designed to provide a safe, sanitary, and comfortable environment to prevent the development and transmission of communicable diseases and infections. Infection Prevention and Control Programs should include all staff, volunteers, visitors, contracted services, and residents as well as the entire physical plant and grounds. The facility's written infection control program, and policies and procedures regarding infection control, should be readily accessible to staff.
- Disease Surveillance
 - Surveillance is the collection of information that helps to identify the presence of communicable disease or infection.
- General Signs of Infections
 - Fever >100.4°F
 - Chills and sweats
 - Change in cough or new cough
 - Sore throat or new mouth sore
 - Shortness of breath
 - Nasal congestion

- Change in urination status; burning, pain, increase, decrease, change in appearance
- Warmth, redness, soreness, swelling, or fluid discharge in any area including wounds or ports
- Diarrhea
- Nausea or vomiting
- New onset or increased pain
- New onset or increased fatigue
- New onset or increased difficulty with activities of daily living (ADLs)
- Change in mental status, new onset or increased confusion, agitation, hallucinations, increased aggression, or disorientation, decreased memory
- Dizziness or falls



INSTRUCTOR: It is important to emphasize that changes in mental status can be the first sign in discovering an infection or communicable disease. Confusion, decreased memory, disorientation, and difficulty with ADLs should not be assumed to be a normal part of aging and must be addressed. Residents that may be disoriented in his or her normal state and show increased signs of confusion need to be thoroughly evaluated as well. It is crucial to stress that any change in condition should be immediately reported to a supervisor or person in charge.

2.3 Infections and Communicable Diseases

In this section we will review some common infections and communicable diseases found in older adults, adults with disabilities, and persons living in congregate settings. Direct care staff must be able to identify the signs of infections and communicable diseases and know when to report their observations. Direct care staff are additionally responsible for knowledge of how to properly implement prevention and control measures to prevent infections from spreading. Section §32.1-37 of the *Code of Virginia* requires assisted living facilities to report the presence or suspected presence of an outbreak to the local health department and licensing office.

- If it is determined that a resident has a potential infection or communicable disease that could be contagious, the resident needs to be removed from the presence of other residents until the physician, or designee, is contacted and orders have been received.
- If it is determined that the resident has a contagious infection or communicable disease:
 - All areas in which the resident has been within the previous 24 hours must be properly cleaned and disinfected.
 - The resident's room shall be properly cleaned and disinfected using an approved disinfectant or bleach solution.
 - Any soiled laundry, linen clothes or linens, supplies, or equipment shall be transported to the proper/designated location for reprocessing.
- Gastrointestinal and Foodborne Illnesses
 - Foodborne diseases usually cause gastrointestinal illness (GI), meaning they affect your stomach or bowel.
 - Signs associated with GI and foodborne illnesses vary, depending upon several factors including the disease, the age and health status of the resident and how much of the pathogen was ingested (eaten).
 - Typical signs include nausea, vomiting, diarrheal illness, and abdominal pain.
 - Additional signs may include fever, headache, malaise (a general feeling of being unwell), myalgia (muscle ache), loss of appetite, weight loss, chills, and dehydration.
 - Certain signs are associated with diseases, such as jaundice (yellowing of the skin or eyes) with Hepatitis A and bloody diarrhea with *E. coli*.

- Common GI and foodborne illnesses found in assisted living settings include:
 - Hepatitis A
 - Norovirus
 - *E. coli*
 - Salmonellosis
 - *Salmonella typhi* (Typhoid)
 - Shigellosis
- In addition to common GI symptoms noted through the list above, *Clostridioides difficile* (*C. diff*) is also found in assisted living settings.
- Respiratory infections
 - Respiratory infections refer to an infection of the respiratory system (nose, sinuses, throat, or lungs) that is caused by either viral, bacterial, or fungal infections. These infections are often seasonal and can be controlled.
 - Signs associated with respiratory viruses may include cold-like, including sore throat, sneezing, runny nose, cough, headache, chills, or croup (barky cough) or bronchitis.
 - Additional signs may include fever, malaise, myalgia (muscle ache), loss of appetite, weight loss, chills, and dehydration.
 - Common respiratory infections found in assisted living settings include:
 - Influenza (Flu)
 - Covid-19
 - Respiratory Syncytial Virus (RSV)
 - Adenovirus and Rhinovirus (Common cold)
 - Pneumonia is a secondary infection of the lungs that is caused by viruses (including the common respiratory viruses mentioned above), bacteria, and fungi.
 - Signs may include those mentioned above as well as shortness of breath and chest pain when breathing or coughing.
 - Tuberculosis (TB) is a disease caused by germs that are spread from person to person through the air. TB usually affects the lungs, but it can also affect other parts of the body, such as the brain, the kidneys, or the spine. Tuberculosis is life-threatening if not treated.
 - The general signs of TB disease include feelings of sickness or weakness, weight loss, fever, and night sweats.
 - The signs of TB disease of the lungs also include coughing, chest pain, and the coughing up of blood.

- Signs of TB disease in other parts of the body depend on the area affected.



INSTRUCTOR: § *Inform students that within the VDSS Regulations there are several requirements regarding TB that apply to staff and residents. Students should be encouraged to review and familiarize themselves with these standards.*

- Skin & soft tissue infections
 - Older adults in assisted living facilities are at a greater risk for skin breakdown and infections due to the thinning and increased fragility of skin associated with aging. These changes in skin function also delay the healing process.
 - Direct care staff play a crucial role in maintaining and monitoring residents skin integrity.
 - Skin and soft tissue infections look like a wound or rash.
 - Signs associated with skin and soft tissue infections may include fever, pain, discoloration, warmth, rash, swelling, changes in skin appearance, texture and/or wound drainage.
 - Common causes of skin and soft tissue infections include:
 - Insect bites
 - Scabies – itchy skin rash caused by a mite
 - Diagnosis must be confirmed by a dermatologist using skin samples that are examined under a microscope.
 - Bed bugs
 - Pets – scratches, bites, contact with feces or infected saliva
- Urinary Tract Infections (UTI)
 - UTIs are the most common type of infection in older adults and can be extremely debilitating. UTIs can occur in residents with or without a catheter.
 - Signs associated with UTIs may include fever, pain or burning upon urination, increased frequency, or urgency, bloody urine, change in continence status, pain in pelvis, lower back or abdomen, and behavioral changes.
- Hepatitis B (HBV), Hepatitis C (HCV), and Human Immunodeficiency Virus (HIV)
 - HIV, HBV, and HCV are three of the most common bloodborne pathogens from which healthcare workers are at risk. Bloodborne pathogens are discussed in further detail later in this chapter.

- Healthcare workers are potentially exposed to these diseases in one of two ways:
 - A percutaneous injury – injury caused when a sharp object (e.g., needle) pierces the skin.
 - A mucocutaneous exposure - incident when a mucous membrane or non-intact skin comes in contact with blood, tissue, or other potentially infectious bodily fluids

2.4 Precautions, Hand Hygiene and PPE

In this section we will review standard precautions, hand hygiene, personal protective equipment (PPE), respiratory hygiene/cough etiquette, and transmission-based precautions. You will learn the importance of each, why and when to apply certain precautions, and how to implement them properly.

Standard Precautions

- Standard Precautions are the minimum infection prevention practices that apply to all resident care, and the environment, regardless of infection status to ensure there is no direct contact with a resident's bodily fluids.
- Implementing Standard Precautions when working with residents or potentially contaminated material limits the transmission of pathogens.
 - Applies to all bodily fluids, regardless of whether they contain visible blood. This includes blood, urine, feces, vomit, vaginal discharge, semen, saliva, sputum, nasal secretions and potentially, sweat. Since it is not always known if a person is carrying a bloodborne pathogen, all persons should be cared for as if the potential for exposure is present.
 - Designed to reduce the risk of transmission of micro-organisms from known and unknown sources of infections.
 - Applies to non-intact skin (e.g., skin tears, open wounds, cuts, scratches, and sores).

Hand Hygiene

- Hand hygiene is the act of cleaning your hands.
- The most simple and effective approach to infection control, since the most common mode of pathogen transmission is by contact.
- Hand hygiene is performed using one of two methods.
 - Alcohol-based hand sanitizer (ABHS) – preferred in most clinical situations.
 - Put product on hands and rub hands together.
 - Cover all surfaces until hands feel dry for at least 20 seconds.
 - Soap and water – must be used when hands are visibly dirty.
 - Wet hands and apply soap.
 - Vigorously rub hands together, covering all surfaces, for at least 15-20 seconds
 - Rinse hands with water, dry with a disposable towel and use towel to turn faucet off.

- Avoid using hot water, to prevent drying of the skin.
- Hand hygiene with ABHS (must include at least 60% alcohol) should be performed prior to and after engaging in any of the following activities:
 - Putting on make-up, or lip balm/Chapstick.
 - Touching a resident, co-worker, or visitor.
 - Handling any items given to or used by a resident or any resident's personal items (e.g., toothbrush, dentures, medications, lotions, creams, food/drinks, etc.).
 - Touching any part of your own body including mouth, nose, eyes, hair, face, and ears.
 - Sneezing, coughing, or blowing your nose.
 - Touching a surface that could have germs on it.
 - Handling garbage or waste materials.
 - Wearing gloves
- Hand hygiene with soap and water should be performed prior to and after engaging in any of the following activities:
 - Eating, drinking, touching, or serving food.
 - Touching contact lenses.
 - Using the restroom.
 - Smoking.
 - Providing any hands-on resident care (bathing, dressing, toileting, changing incontinence pads/undergarments, re-positioning, oral hygiene, etc.).
 - Providing care to a resident diagnosed with *C. difficile* or infectious diarrhea.
 - If gloves become punctured or torn
 - When any part of the body touches a potentially contaminated item or individual
 - Immediately after you have had an exposure to blood or bodily fluids.



INSTRUCTOR: Review Handouts #1-3 and conduct Handout #4

Personal Protective Equipment (PPE)

- PPE refers to protective clothing or equipment designed to protect the wearer from physical harm such as injuries and exposure to chemicals or pathogens.

- PPE protects staff from contamination by pathogens and helps break the chain of transmission of infections.
- PPE protects staff from injury or contamination from hazardous materials (e.g., cleaning agents) that are used as part of their jobs.
- PPE includes gloves, masks, gowns, eye protection, and face shield.
- Hand hygiene is the first step in donning (putting on) PPE and the last step in doffing (taking off) PPE.
- Prior to leaving the work area, PPE must be removed and discarded (or placed in an appropriate location for reprocessing). For example, gloves worn during resident care should not then be worn while walking in the hallway.
- When moving from work on a contaminated body site to a clean body site (e.g., when transitioning from incontinent care to oral care), potentially contaminated PPE must be removed and discarded, hand hygiene performed, and fresh PPE put on.
- Disposable PPE must be discarded according to guidelines for disposal of regulated medical waste.
- Utility gloves may be decontaminated for reuse if their integrity is not compromised (there is no cracking, peeling, tearing, puncturing, or deterioration).
- Disposable PPE must never be washed or decontaminated for reuse.
 - Gloves
 - Protect direct care staff and other residents.
 - Must be worn in situations involving possible contact with blood or bodily fluids, mucous membranes, broken or open skin, or other potentially infectious materials, contact with contaminated or potentially contaminated environmental surfaces, laundry, equipment, or devices.
 - Select the appropriate type (e.g., reusable utility gloves, disposable gloves) and size for the task being performed (e.g., kitchen, housekeeping, or resident care duties)
 - Discard disposable gloves before leaving the care area.
 - Examples of when gloves should be worn:
 - Providing first aid.
 - Changing incontinence products.

- Caring for a resident with wounds or non-intact skin.
- Handling soiled or used laundry (clothes) and linens (bedding, towels).
- Cleaning blood or bodily fluids.
- Cleaning resident bathrooms.
- Providing toileting assistance including the use of bedpans or urinals, and when emptying catheters drainage bags.
- Gloves DOs and DON'Ts
 - Do remove gloves after providing resident care, prior to leaving that resident's room.
 - Do perform hand hygiene before and after wearing gloves. Gloves ARE NOT a replacement for hand hygiene.
 - Do remove gloves carefully to avoid contaminating yourself.
 - Do make sure gloves fit properly.
 - Don't reuse or wash disposable gloves.
 - Don't wear the same gloves for more than one resident.
 - Don't use gloves if damaged or visibly soiled.
 - Don't touch your face while wearing gloves.
- Masks
 - Limit the likelihood of transmission of infectious particle's by covering nose and mouth when speaking, sneezing, or coughing.
 - Protect the wearer from exposure to potentially infectious particles.
 - Should be worn during procedures and resident care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions.
 - Types of masks
 - Surgical masks
 - KN95
 - Mask wearing DOs and DON'Ts
 - Do practice hand hygiene after each time you touch the mask.
 - Don't touch the front of your mask with clean hands or clean gloves - it is contaminated.

- Don't reuse masks - they are designed for one-time use.
- Respirators
 - Users should be fit-tested to confirm that the fit of any respirator forms a tight seal on your face.
 - If worn properly, can provide a higher level of protection than a surgical mask.
 - Have better filtration.
 - Types of masks
 - N95 – most widely available
 - N99
 - N100
 - Respirator wearing DOs and DON'Ts
 - Do get fit tested annually and if your face shape changes significantly (e.g., weight changes)
 - Do wear properly – cover nose and mouth completely.
 - Do follow CDC recommendations for reuse and/or storage.
 - Don't wear with other masks or respirators
 - Don't wear if air leaks around the respirator's edges.
 - Don't wear if wet or dirty.
- Gowns
 - A gown must be worn when there is potential for the body or uniform to come into direct contact with blood, body fluids, secretions, or excretions (except sweat), non-intact skin (including rashes) and mucous membranes or potentially contaminated environmental surfaces or equipment.
 - Gown DOs and DON'Ts
 - Do secure all ties.
 - Do make sure the gown covers your clothing front and back.
 - Do make sure that gloves are pulled over cuffs of gown.
 - Don't push or roll up sleeves.
 - Don't reuse disposable gowns.
 - Don't wear the gown outside of the care area.
- Eye Protection and Face Shields

- Eye and/or face protection must be worn when performing tasks that could generate splashes or sprays of blood, body fluids or other potentially infectious materials.
- Face protection includes a face shield or a combination of both a fluid-resistant facemask and goggles.
 - Prescription glasses do not count as eye protection.
- Eye Protection and Face Shield DOs and DON'Ts
 - Do wear eye protection and/or face shields that fully cover eyes and face.
 - Do wear eye protection and/or face shield during the care of residents with respiratory signs (coughing/sneezing).
 - Do clean and disinfect eye protection and/or face shields after each use.
 - Don't touch eye protection or face shield with clean hands or clean gloves – the outside is contaminated.
- PPE Procedure
 - Identify the appropriate types of PPE for the task, according to anticipated exposure.
 - Identify when and how PPE should be donned and doffed before and after the task.
 - PPE should be put on before entering the area where the task is to be performed and removed before exiting that area.
 - Perform hand hygiene immediately prior to putting on PPE.
 - Follow CDC guidance for putting on PPE in the proper sequence to prevent contamination. Instructions are available at <https://www.cdc.gov/hai/pdfs/ppe/PPE-Sequence.pdf> or see included handout: Sequence for Putting on Personal Protective Equipment
 - Perform task.

- Follow CDC guidance for removing PPE in the proper sequence to prevent contamination. See link or handout referenced above.
- Dispose of PPE in a proper receptacle before leaving the work area.
- Immediately perform hand hygiene after removing PPE.



INSTRUCTOR: Review Handout #5 and conduct Handouts #6-8

- Respiratory Hygiene/Cough Etiquette
 - Designed to prevent the transmission of all respiratory infections in healthcare settings.
 - The following measures to contain respiratory secretions are recommended for staff and residents.
 - Cover your mouth and nose with a tissue when coughing or sneezing.
 - If a tissue is not available, cough or sneeze into your upper sleeve (above the elbow)
 - Use the nearest trash can to dispose of the tissue after use.
 - Perform hand hygiene (i.e., hand washing or alcohol-based hand rub) after having contact with respiratory secretions and contaminated objects/materials.
 - Staff and residents should wear masks if they have signs of a suspected respiratory infection.
 - During higher levels of community respiratory virus transmission, facilities should consider having everyone mask upon entry.

Transmission-Based Precautions (TBP)

- TBP are the second tier of basic infection control and are to be used in addition to Standard Precautions for residents who may be infected or colonized with certain infectious agents for which additional precautions are needed to prevent infection transmission.
 - Contact Precautions
 - Used for residents with known or suspected infections that represent an increased risk for contact (touch) transmission (e.g., *C. diff*, Norovirus).

- PPE - gloves and gown.
- Hand hygiene – ABHS or soap and water dependent on the type of infection or illness
- Environmental cleaning – products used will be dependent on the type of infection or illness, or specific facility policy.
- Residents should be limited to their rooms, while under TBP.
 - If affected resident is in a semi-private room, the unaffected resident should be moved to another room. If this is not an option, best efforts should be made to provide separation of the residents within the room.
- Use disposable equipment or dedicate the equipment to the resident. If equipment must be shared, make sure it is cleaned and disinfected before use on the next resident.
- Droplet Precautions
 - Used for residents known or suspected to be infected with pathogens transmitted by large respiratory droplets produced by coughing, sneezing, or talking (e.g., influenza, whooping cough).
 - PPE – Mask
 - Add other PPE (gloves, gowns, face shield, or goggles) per standard precautions if contact with blood/body fluids is possible (e.g., eye protection may be needed if resident is coughing or sneezing)
 - Hand hygiene – Alcohol-based hand rub or soap and water.
 - Environmental cleaning – EPA-registered disinfectants that have kill claims against the pathogen.
 - Residents should be limited to their rooms.
 - Private room preferred.
 - Resident should wear a mask when staff or visitors are in the room.
- Airborne Precautions
 - Used for residents known or suspected to be infected with pathogens transmitted by small respiratory aerosolized particles (e.g., COVID-19, tuberculosis, measles, chickenpox).
 - PPE – Eye protection, N95, gloves, and gown.
 - Hand hygiene – Alcohol-based hand rub or soap and water.
 - Environmental cleaning – EPA-registered disinfectants that have kill claims against the pathogen.
 - Residents should be limited to their rooms and the door should remain closed.

- Private room preferred.
- Resident should wear a mask when staff or visitors are in the room.
- Terminal Cleaning
 - Terminal cleaning occurs after a resident leaves the facility or after transmission-based precautions are discontinued.
 - Disposable personal care items are discarded in the trash.
 - Resident care equipment is removed for cleaning.
 - All surfaces in the room are cleaned and disinfected.

2.5 Environmental Services

In this section we will review cleaning, disinfection, contact time, and cleaning techniques. Environmental Services is the responsibility of all staff. We will identify high-touch surfaces, review how to handle laundry and linen, and discuss management of medical waste.

- Cleaning
 - Removes dirt you can see so a disinfectant is able to get to the germs you can't see.
 - Uses detergents or enzymatic products that lift dirt away from surfaces.
 - May reduce the number of germs left behind but doesn't always kill them.
- Disinfection
 - Kills most germs on surfaces/objects after cleaning with the use of a chemical called a disinfectant.
 - One of the most reliable ways to lower risk of spreading germs from contaminated surfaces
 - Clean before disinfecting or use a product that does both.
- Contact time (dwell time, kill time)
 - The amount of time the surface needs to stay wet for adequate cleaning or disinfection.
 - Always check the cleaning agents used for correct contact time.
 - If it dries before time, then reapply.
- Cleaning techniques
 - Routine cleaning
 - Routine cleaning focuses on the resident's areas that are used daily. It includes cleaning high-touch surfaces, floors, sinks and toilets.
 - Performed daily and/or weekly dependent upon the area, need and surfaces.
 - Terminal cleaning (discussed under Transmission-Based Precautions section)
 - Environmental surfaces
 - Surfaces contaminated with microorganisms can serve as reservoirs of potential pathogens.
 - Microorganisms are continuously shed or spread by direct skin contact onto surrounding environment surfaces.

- Contamination of surfaces, including high-touch surfaces in the resident's room (e.g., bedrails, doorknobs, light switches, bedside tables, call-buttons, and remote controls) and reusable resident care equipment that is moved between rooms, can lead to: (1) transmission to the next resident who moves into the room or uses the same equipment, or (2) contamination of the hands or clothing of healthcare personnel with transmission to other residents.
 - Cleaning and disinfection of environmental surfaces is fundamental to reduce potential contribution to healthcare-associated infections.
 - Equipment, devices, and supplies
 - All multi-use medical equipment must be cleaned between residents.
 - NEVER reuse single-use items
 - Clean before disinfecting
 - Have a process to identify clean vs dirty.
 - Clean all surfaces, including crevices.
 - Use the right cleaning product and correctly – check the manufacturer's instructions.
 - Let surfaces stay wet for the appropriate amount of time.
- Identify high touch surfaces
 - Surfaces most likely to be touched by residents and staff.
 - Pose the highest risk for pathogen transmission.
 - Bedrails
 - Doorknobs
 - Light switches
 - Call buttons
 - Bedside tables
 - Remote controls
 - Surfaces in common areas and dining rooms
 - Time clocks
 - Computers
 - Phones
- Laundry and linen
 - The following protocol should be used when cleaning, and handling (includes transporting), soiled laundry (clothes) and linen (bedding, towels, washcloths):
 - Gloves and other personal protective equipment should be always used while handling soiled laundry and linen.

- Soiled laundry and linen should not be placed on surrounding furnishings including the floor, chairs, or counters.
 - As soon as the soiled items contact a new surface, that surface is now considered contaminated.
 - Any soiled laundry and linen should be bagged in a laundry bag or large trash bag while in resident rooms.
 - A non-porous bag should be used. Non-porous bags prevent fluids and infected material from leaking out of the bag.
 - The laundry and linen can be double bagged if necessary to prevent leaking during transportation to laundry services.
 - The bag should be tied prior to leaving a resident's room.
 - Do not attempt to "sanitize" or rinse out the laundry or linen in a resident's room.
 - Soiled laundry and linen should be handled with as little agitation as possible. This will help prevent the release of potentially contaminated aerosols in the area.
 - Soiled laundry and linen should be rolled up away from the body. The soiled areas should be rolled so they are inside the clean areas of the linen.
 - Label the laundry bag with the resident's name and room number. This can be accomplished by writing this information on a piece of paper and inserting it into the bag prior to transporting it to the laundry room.
 - Gloves used to handle the soiled linen should be removed prior to leaving the resident's room and placed in a trash can.
 - Perform hand hygiene then put on clean gloves prior to transporting soiled laundry or linen to the appropriate location.
- Contaminated laundry and linen should not be washed with non-contaminated items, even if it is for the same resident.
 - Contaminated laundry and linen should be washed at temperatures above 140°F with chlorine bleach or appropriate sanitizing agent and detergent.
 - Clean laundry and linen should be transported back to the resident's room in a manner that maintains cleanliness.

- Place laundry into bags or other appropriate closed containers during transport.
- Wear appropriate PPE when handling soiled laundry.
- Wash residents' clothes separately. Avoid mixing when possible.
- Keep dirty and clean areas separate.
- Managing medical waste
 - Any item containing blood or bodily fluids is considered medical waste.
 - Proper disposal of medical waste materials prevents the spread of infection.
 - Medical waste should be stored in a medical waste container. These containers are constructed to prevent the leakage of fluids when transporting or storing medical waste. Medical waste containers are labeled with a biohazard label and placed in a locked area inaccessible to residents and visitors.
 - When medical waste is present during an emergency, the following items must be used:
 - First aid kit (if needed)
 - Appropriate PPE: Gloves, gown, mask, eye protection
 - Spill kit
 - Detergent and water
 - EPA-approved disinfectant – may vary dependent on the type of medical waste
 - Paper towels
 - These can be used to clean up blood or bodily fluids or cover an area containing the spill until it can be properly cleaned.
 - Mop and bucket (if needed)
 - Red biohazard bags
 - A red biohazard bag is a trash bag that is red and marked with a biohazard symbol like the one below.



- Any item that comes in contact with medical waste shall be placed in the red bag. This includes gloves used during the incident.

- The red bags shall be tightly tied then transported to the biohazard area and placed in the medical waste container.
- Mop heads used to clean blood or bodily fluid should be placed in a red bag, tied, and placed in the contaminated materials container in the biohazard area for appropriate cleaning and disinfection or discarded according to facility protocol.
- The mop bucket used shall be cleaned according to the equipment protocol stated in this chapter.
- Resident's personal clothing and/or linens containing medical waste shall be placed in a red bag, tied thoroughly, labeled with the resident's name and room number, and placed in a location for appropriate cleaning and disinfection, or discarding, per facility protocol.
- All medical waste shall remain in the biohazard area in the contaminated materials container.

2.6 Bloodborne Pathogens

In this section we will review bloodborne pathogens, the Occupational Health and Safety Administration (OSHA) Bloodborne Pathogens Standard and staff responsibilities to prevent transmission of infections and communicable diseases.

- Bloodborne pathogens are infectious microorganisms in human blood that cause disease.
- Exposures to bloodborne pathogens can occur through:
 - Blood spills
 - Sharps injuries
 - Mucous membrane exposures (sprays, splashes, coughs that enter the nose, eyes, or mouth)
- § The Bloodborne Pathogens Standard (BBP) contains multiple components that are required by OSHA and therefore must be met by employers.
 - Exposure Control
 - This is a written document which is part of the Infection Prevention and Control Program.
 - It should describe who is covered under BBP, the different methodologies to reduce the risk of exposure, and procedures that must be followed if there is an occupational exposure.
 - Any staff member that could potentially encounter blood or bodily fluids is covered under BBP.
 - Work Practice Controls
 - Practices that the employees should follow to prevent exposure to bloodborne pathogens.
 - Techniques used as part of work practice controls practices include:
 - Hand hygiene
 - Personal hygiene practices
 - Standard Precautions – Previously discussed.
 - PPE – Previously discussed.
 - Housekeeping – Previously discussed.
 - Hepatitis B Vaccine
 - Must be offered to all employees that may be exposed to blood or bodily fluids while working.
 - Occupational Exposure Follow-Up

- In the event of an exposure, the area on the staff member should be washed immediately. If the area is the eyes or mucous membranes, flush with water only, or use the facility eye wash station for a minimum of 15 minutes. All other areas should be washed with soap and water for a minimum of 10 minutes.
 - Report the incident to a supervisor so that immediate medical treatment may be sought, if necessary.
 - Follow facility protocol regarding documentation of injuries and Worker's Compensation claims.
- Staff Responsibilities
 - Apply the appropriate precautions to residents daily to prevent infection:
 - Make sure the resident is well-hydrated (fluid intake).
 - Make sure the resident has proper nutrition (well-balanced meals).
 - Make sure the resident is engaging in proper hygiene.
 - Make sure you and the resident are using the good appropriate hand hygiene techniques.
 - Use Standard Precautions when emptying bedpans, bedside commodes, Foley catheter drainage bags, and changing incontinence pads products. Use Standard Precautions when emptying bedpans, bedside commodes, Foley catheter drainage bags, and changing incontinence pads products.
 - Encourage residents to rest.
 - Make sure residents' personal items such as (e.g., glasses, scooters, wheelchairs, walkers, canes etc.) are clean and free of food particles, bodily fluids, and other contaminants.
 - Report any signs of infection or communicable disease you are experiencing to your healthcare provider and a supervisor.
 - Report any incidents of contact with known cases of a communicable disease or infection to your supervisor.
 - Complete training on resident-specific communicable diseases and infections states/illnesses discussed in this Chapter.
 - Receive training on proper transmission-based precautions prior to caring for any resident needing isolation.



INSTRUCTOR: *Conduct Handouts #9-11*
 Have the student complete the Student Review at the end of the chapter.



Student Activity

Instructor Notes:

The purpose of this activity is for each student to recognize the importance of adhering to proper hand hygiene techniques.

Activity Procedures:

- 1. Have each student open to and complete **Handout #4** – Hand Hygiene*
- 2. The instructor should ensure each student participates in the hand washing portion of the activity.*
- 3. The instructor should ask the students to provide feedback on and discuss the outcome of the findings from the activity.*



Student Activities

Instructor Notes:

The purpose of this activity is for each student to demonstrate how to properly don (put on) and doff (remove) Personal Protective Equipment.

Activity Procedures:

- 1. Have each student open to **Handouts #6, #7 and #8** – PPE*
- 2. The instructor should ensure each student participates in the PPE portion of the activity.*
- 3. The instructor should ask the students to provide feedback on and discuss the outcome of the findings from the activity.*



INSTRUCTOR: *It is important to emphasize that when masks are not in use, they should not hang around neck or off ear or worn below the nose.*



Student Activity

Instructor Notes:

The purpose of this activity is to allow direct care staff to identify potential infection control issues and discuss methods of risk reduction behavior.

Activity Procedures:

- 1. Have the students read the scenario on **Handout #9** and answer the corresponding questions.*
- 2. The instructor should ask the students to provide responses to each question and discuss the answers provided.*
- 3. The instructor should also discuss any answers missed. The discussion should not last longer than 15 minutes.*



Final Skills Checklist

Instructor Notes:

- 1. Conduct final skills assessment using **Handouts #10 and #11***
- 2. The instructor should sign off on each line item after the student has demonstrated
proper technique.*
- 3. The student should be provided the opportunity to repeat the skills checklist if the
student does not properly demonstrate technique.*

Standards for Licensed Assisted Living Facilities Effective October 13, 2021

22VAC40-73-100__ Infection control program
22VAC40-73-70__ Incident reports
22VAC40-73-250__ Staff records and health requirements
22VAC40-73-320__ Physical examination and report
22VAC40-73-840__ Pets living in the assisted living facility
22VAC40-73-850__ Pets visiting the assisted living facility
22VAC40-73-870__ Maintenance of buildings and grounds

***Standard numbers are subject to change when the Standards for Licensed Assisted Living Facilities are updated. Please be sure to reference the current Standards for Licensed Assisted Living Facilities when teaching this curriculum.**

Bibliography and References

At-A-Glance OSHA

<https://www.osha.gov/Publications/3439at-a-glance.pdf>

Bloodborne Pathogens | OSHA

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030>

Bloodborne Pathogens - Worker protections against infectious diseases | OSHA

<https://www.osha.gov/bloodborne-pathogens/worker-protections>

***Clostridioides difficile* (C. diff) | CDC**

<https://www.cdc.gov/cdiff/index.html>

Code of Virginia

<https://law.lis.virginia.gov/vacode/>

Disinfection & Sterilization Guidelines | CDC

<https://www.cdc.gov/infectioncontrol/guidelines/disinfection/index.html>

EPA Registered Disinfectants

<https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants>

***Escherichia coli* (E. coli) | CDC**

<https://www.cdc.gov/ecoli/index.html>

Environmental Cleaning Procedures | CDC

<https://www.cdc.gov/hai/prevent/resource-limited/cleaning-procedures.html>

Environmental Cleaning & Disinfection | VDH HAI/AR

<https://www.vdh.virginia.gov/haiar/ip/environmental-cleaning-disinfection/>

Environmental Cleaning Supplies and Equipment HAI | CDC

<https://www.cdc.gov/hai/prevent/resource-limited/supplies-equipment.html>

Foodborne Disease FAQ | VDH

<https://www.vdh.virginia.gov/environmental-health/food-safety-in-virginia/foodborne-diseases-and-outbreaks/foodborne-disease-faq/>

Hand Hygiene Guidance | Hand Hygiene | CDC

<https://www.cdc.gov/handhygiene/providers/guideline.html>

https://www.cdc.gov/HandHygiene/download/hand_hygiene_core.ppt

https://www.cdc.gov/HandHygiene/download/hand_hygiene_supplement.ppt

Hand Hygiene | VDH HAIAR

<https://www.vdh.virginia.gov/haiar/ip/standard-precautions/hand-hygiene/>

Hand Washing Activity | Glo Germ | CDC

https://www.cdc.gov/healthyschools/bam/teachers/documents/epi_4_hand_wash.pdf

Healthcare Providers | Hand Hygiene | CDC

<https://www.cdc.gov/handhygiene/providers/index.html>

How to Hand Rub | Patient Safety | World Health Organization

https://cdn.who.int/media/docs/default-source/patient-safety/how-to-handrub-poster.pdf?sfvrsn=9d2f6e89_11

How to Handwash | Patient Safety | World Health Organization

https://www.who.int/docs/default-source/patient-safety/how-to-handwash-poster.pdf?sfvrsn=7004a09d_2

What is Hepatitis A – FAQ | CDC

<https://www.cdc.gov/hepatitis/hav/afaq.htm>

Hepatitis A Vaccination: For Healthcare Providers | CDC

<https://www.cdc.gov/vaccines/vpd/hepa/hcp/index.html>

Hepatitis A - FAQs, Statistics, Data, & Guidelines | CDC

<https://www.cdc.gov/hepatitis/hav/index.htm>

Hepatitis B - FAQs, Statistics, Data, & Guidelines | CDC

<https://www.cdc.gov/hepatitis/hbv/index.htm>

Hepatitis C - FAQs, Statistics, Data, & Guidelines | CDC

<https://www.cdc.gov/hepatitis/hcv/index.htm>

How Infections Spread | CDC

<https://www.cdc.gov/infectioncontrol/spread/index.html>

Infection Prevention in Long-Term Care Settings | VDH HAI/AR

<https://www.vdh.virginia.gov/haiar/ip/infection-prevention-resources-by-setting/long-term-care-settings/>

Influenza (Flu) | CDC

<https://www.cdc.gov/Flu/Index.htm>

Infrastructure and Routine Practices | CDC

<https://www.cdc.gov/infectioncontrol/guidelines/healthcare-personnel/infrastructure.html>

Isolation Precautions | CDC

<https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>

Laundry | CDC

<https://www.cdc.gov/infectioncontrol/guidelines/environmental/background/laundry.html>

Norovirus | CDC

<https://www.cdc.gov/infectioncontrol/guidelines/norovirus/index.html>

Outbreak Reporting | VDH

<https://www.vdh.virginia.gov/epidemiology/epidemiology-fact-sheets/outbreak-reporting/>

Personal Protective Equipment (PPE) | VDH HAI/AR

<https://www.vdh.virginia.gov/haiar/ip/ppe/>

Personal Protective Equipment | CDC

<https://wwwn.cdc.gov/ppeinfo>

Pneumonia | CDC

<https://www.cdc.gov/pneumonia/index.html>

Pneumonia | MedlinePlus

<https://medlineplus.gov/pneumonia.html>

Sharps Injuries | CDC

<https://www.cdc.gov/nora/councils/hcsa/stopsticks/bloodborne.html>

Standards for Licensed Assisted Living Facilities | VDSS

https://www.dss.virginia.gov/files/division/licensing/alf/intro_page/code_regulations/regulations/final_alf_reg.pdf

Standard Precautions for All Patient Care | CDC

<https://www.cdc.gov/infectioncontrol/basics/standard-precautions.html>

Tuberculosis (TB) in Healthcare Settings | CDC

<https://www.cdc.gov/hai/organisms/tb.html>

Screening and Testing for Tuberculosis | VDH

https://www.vdh.virginia.gov/content/uploads/sites/175/2023/03/Screening-and-Testing-for-Tuberculosis-2023_Final.pdf

Student Review – Chapter Two

1. **Name and provide definitions for five (5) of the basic terminology described in this chapter.**

Bacteria – single-celled organisms that can live in air, soil, water, organic matter, and skin.

Bloodborne pathogens – infectious microorganisms in human blood that cause disease.

Contaminated – the presence or the reasonably anticipated presence of blood or other potentially infectious materials (e.g., bodily fluids and/or tissue) on an item or surface. Contaminated materials are considered “soiled.”

Fungi – microorganisms that live in moist, humid, and dark environments.

Germs – micro-organisms that are everywhere. Micro-organisms are inside and outside of the human body. Germs can be bacteria, viruses, fungi, or parasites. Germs can be found in the air, on any surface, and on the bodies of humans and animals. Some germs are good while others may cause infections and illnesses. In addition to being spread by eating or drinking contaminated food and beverages, germs can also travel by air, animals, insects, and human fluids. When germs cause illness, they are considered pathogens.

Infections – conditions or diseases that happen when germs enter the body and grow.

Infection Prevention and Control – any practical, evidence-based approach techniques used to prevent, or stop the spread of potential infections.

Microorganism – a tiny living thing that is only visible by microscope.

Parasites – an organism that lives in or on another organism because it cannot live on its own.

Pathogen – disease-causing microorganisms.

Personal Protective Equipment (PPE) – specialized clothing or equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses. This equipment also protects residents from germs

and infections the direct care staff may be carrying. PPE protects the skin since the skin is the first barrier of defense against infection.

Standard Precautions - the minimum infection prevention practices that apply to all resident care, regardless of infection status and ensure there is no direct contact with a resident's bodily fluids.

Transmission – the transfer of a disease or way a germ, infection, or disease is transferred or passed from one person to another person.

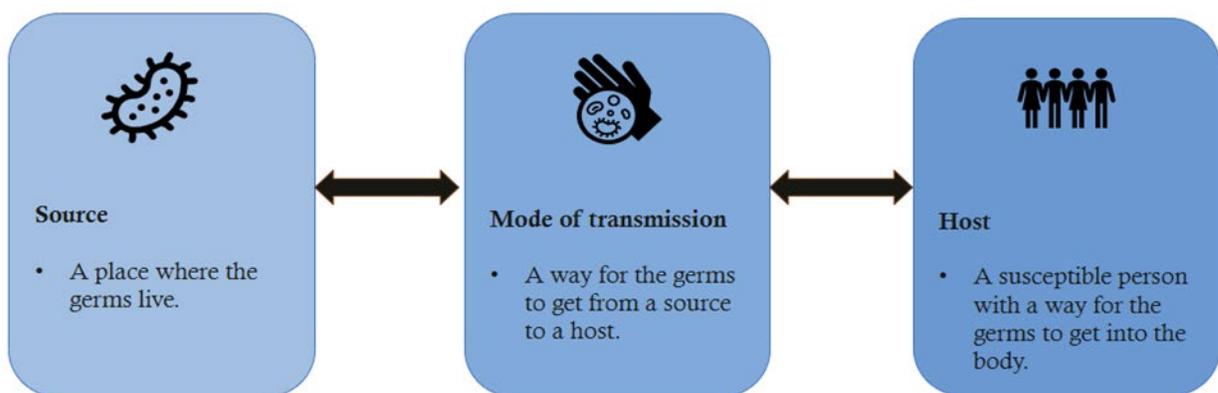
Transmission Based Precautions - the second tier of basic infection control and are to be used in addition to Standard Precautions for residents who may be infected or colonized with certain infectious agents for which additional precautions are needed to prevent infection transmission.

Uncontaminated – no presence or anticipated presence of blood or other potentially infectious material on an item or surface. Uncontaminated materials are considered “clean.”

Viruses – a germ smaller than bacteria and is only able to multiply within living cells of a host.

Waste Materials – any item that is contaminated with blood or other potentially infectious materials.

2. Describe the Chain of Transmission



3. Name three (3) risk factors for infection transmission.

- Incorrect hand hygiene techniques
- Compromised immune systems
- Improper nutrition and hydration

- Fragile skin
- Decreased functional status
- Multiple chronic disease states
- Frequent hospitalizations
- Fatigue
- Stress
- Invasive devices (e.g., catheter)
- Wounds, including pressure ulcers
- Activities or places that involve crowding, skin-to-skin contact, and shared equipment or supplies.

4. Identify four (4) signs of infection

- Fever >100.4°F
- Chills and sweats
- Change in cough or new cough
- Sore throat or new mouth sore
- Shortness of breath
- Nasal congestion
- Change in urination status; burning, pain, increase, decrease, change in appearance
- Warmth, redness, soreness, swelling, or fluid discharge in any area including wounds or ports
- Diarrhea
- Nausea or vomiting
- New onset or increased pain
- New onset or increased fatigue
- New onset or increased difficulty with ADLs
- Change in mental status, new onset or increased confusion, agitation, hallucinations, increased aggression or disorientation, decreased memory
- Dizziness or falls

5. What does PPE protect staff from?

- PPE protects staff from coming into contact with pathogens and helps break the chain of transmission of infections.
- PPE protects staff from injury or contamination from hazardous materials (e.g., cleaning agents) that are used as part of their jobs.

6. What is included in PPE?

- PPE includes gloves, masks, gowns, eye protection, and face shields

Hand Hygiene

Direct care staff should be sanitizing and/or washing/sanitizing their hands while performing job duties and engaging in various activities. Refer to the Hand Hygiene section in this chapter for a more thorough list of which method to use and when. Below is a description of proper hand hygiene techniques:

Alcohol-Based Hand Sanitizer (ABHS)

1. Apply sanitizer to the palm of one hand (you may read the product label to learn the correct amount). The amount should be enough to cover all the surfaces of the hands and fingers.
2. Rub hands together, including all surfaces of hands and fingers. Don't forget the backs of hands, between fingers, on fingertips and fingernails.
3. Continue rubbing until hands feel dry, which should take at least 20 seconds.

Reminder: *Alcohol Based Hand Sanitizer (ABHS) is preferred in most clinical situations.*

Soap and Water

1. Get a clean paper towel and use it to turn on the warm or cold water. Discard paper towel.
2. Get your hands wet and point fingertips down.
3. Apply liquid soap on your hands. If using bar soap, rinse the bar soap and hold it throughout lathering.
4. Lather all surfaces, including the back of your hands, palms, between fingers, on fingertips and under fingernails.
5. Vigorously scrub your hands for 15-20 seconds. This is about the same amount of time it would take you to sing "Happy Birthday" two times. Clean nails by rubbing them into the palm of your other hand.
6. Rinse thoroughly under running water.
7. Get a clean disposable/ paper towel and dry your hands.
8. Discard paper towel
9. Get a clean paper towel to turn off water.
10. Discard paper towel in trashcan.

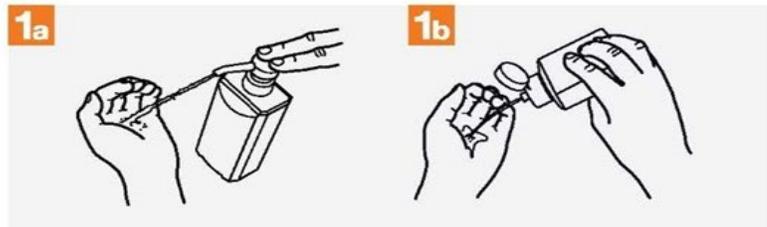
Reminder: *If at any time you touch the faucet or sink with your bare hands, you must wash your hands again.*

Tip: Use skin lotion if frequent washing irritates your skin. Chapped skin can lead to the potential for increased infection.

How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

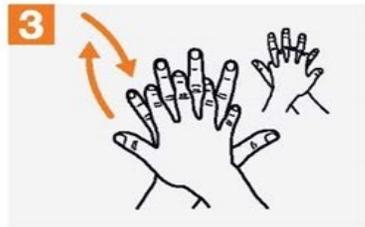
⌚ Duration of the entire procedure: 20-30 seconds



1a Apply a palmful of the product in a cupped hand, covering all surfaces;



2 Rub hands palm to palm;



3 Right palm over left dorsum with interlaced fingers and vice versa;



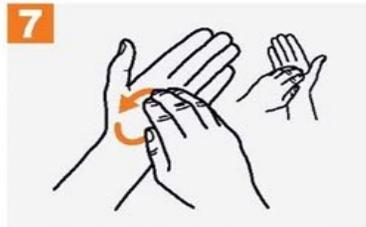
4 Palm to palm with fingers interlaced;



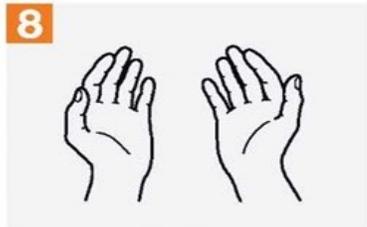
5 Backs of fingers to opposing palms with fingers interlocked;



6 Rotational rubbing of left thumb clasped in right palm and vice versa;



7 Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



8 Once dry, your hands are safe.

 **World Health Organization** | **Patient Safety**
A World Alliance for Safer Health Care | **SAVE LIVES**
Clean Your Hands

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this document. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use. WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

May 2009

How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

 **Duration of the entire procedure: 40-60 seconds**



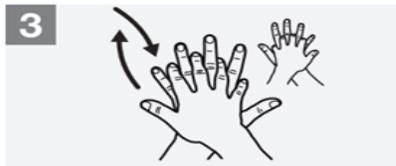
0 Wet hands with water;



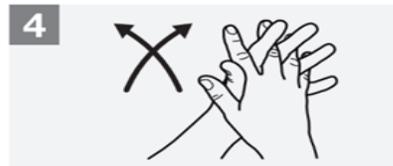
1 Apply enough soap to cover all hand surfaces;



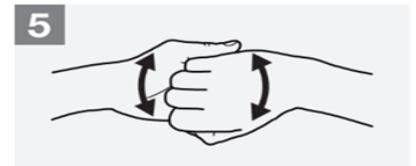
2 Rub hands palm to palm;



3 Right palm over left dorsum with interlaced fingers and vice versa;



4 Palm to palm with fingers interlaced;



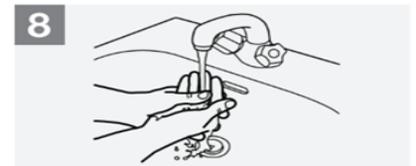
5 Backs of fingers to opposing palms with fingers interlocked;



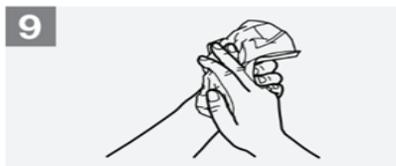
6 Rotational rubbing of left thumb clasped in right palm and vice versa;



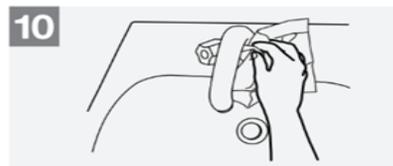
7 Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



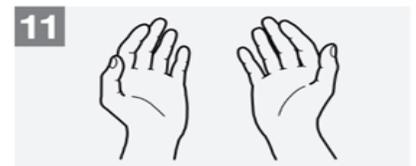
8 Rinse hands with water;



9 Dry hands thoroughly with a single use towel;



10 Use towel to turn off faucet;



11 Your hands are now safe.



World Health
Organization

Patient Safety

A World Alliance for Safer Health Care

SAVE LIVES

Clean Your Hands

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this document. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use. WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

May 2009



Hand Hygiene Student Activity

Materials

- Powder or gel that simulates the presence of germs on staff hands. The following products are commercially available:
 - Glo Germ (<http://www.glogerm.com>)
 - GlitterBug (Brevis) (<http://www.brevis.com>)
- Black light or ultraviolet light
- Sink/Warm Water/Soap
- Paper Towels
- Pens
- Paper

Procedure

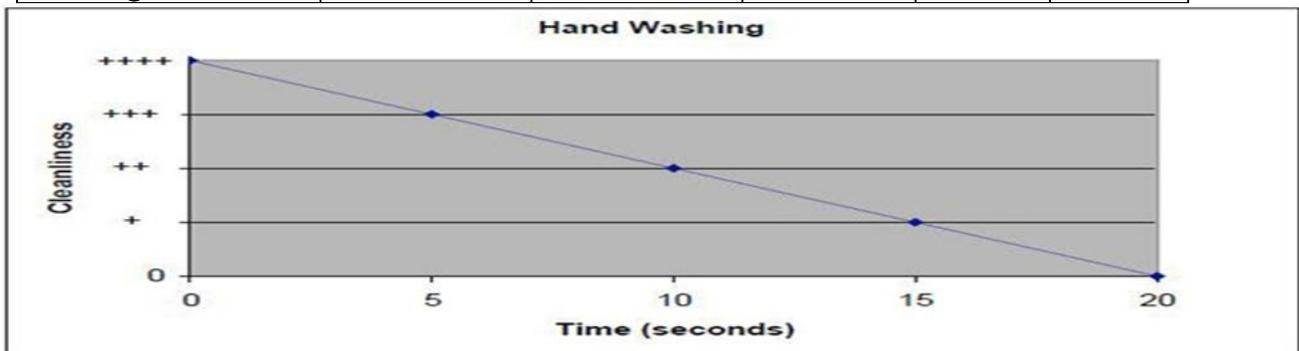
1. For consistency, choose one or two students to act as the judge and recorder.
2. Develop a chart that will help the students score how clean their hands are using the labels below to document the cleanliness of their hands.
 - Completely Dirty Hands = ++++
 - Very Dirty Hands = +++
 - Dirty = ++
 - Slightly Dirty = +
 - Completely clean = -
3. Construct a data table using the information below to record the results.

Washer	Washing Time (Seconds)				
Participant 1	0	5	10	15	20
Participant 2					
Participant 3					
Participant 4					
Average					

4. Spread some of the germ-simulating powder or gel on student's hands. Spread it evenly over both hands, including the backs of the hands and the skin next to and under the fingernails. Allow hands to dry completely (this should take a minute or two). Then place their hands under the black or UV light.
5. Under the light, the "germs" will show up. The judge uses the chart to determine the cleanliness of the washer's hands and the recorder enters it in the data table. Label this "0 seconds."
6. Have students wash hands for five seconds. Stop and check the cleanliness of the hands under the black or UV light. Record this as "5 seconds."
7. Have students wash hands for five additional seconds. Stop and check under the black or UV light. Record this as "10 seconds."
8. Repeat the procedure twice more, for 15 and 20 seconds. Each time, record the level of cleanliness.
9. Change roles and repeat the activity until everyone (including the judges) has had a turn being the hand washer.
10. Have students graph their results. Put the time on a horizontal line going across the page. Mark every number between 0 and 20 seconds. Put the average cleanliness scores on the vertical line.

Sample of Data Table & Graph:

Washer	Washing Time in Seconds				
	0	5	10	15	20
Amanda	++++	+++	++	+	-
Erin	++++	+++	++	+	-
Brenett	++++	++++	+++	++	+
Emily	++++	+++	++	+	-
Nuhamé	++++	+++	++	+	-
Average	++++	+++	++	+	-



Donning (putting on) and Doffing (removing) Disposable Gloves

Donning (putting on) Gloves:

1. Perform hand hygiene according to protocol previously described in this chapter.
2. Remove the gloves from the box and check for holes or tears. Discard glove(s) if any holes or tears are found, regardless of the size of the hole or tear.
3. Put the gloves on immediately prior to entering the resident's room or providing any type of resident care. Do not put on gloves prior to arriving at resident's room (e.g., putting gloves on at nurses' station and walking down hallway)
4. Put one glove on.
5. Use your gloved hand to hold the other glove near the wrist portion of the glove. Do not touch bare skin with gloved hand.
6. Pull glove up as far up on wrist as it will go.

Doffing (removing) Gloves:

1. Grab the outside of one glove near the wrist. Do not touch bare skin.
2. Point hands down and peel glove straight down from the wrist, so the glove turns inside out as it is removed.
3. Hold the removed glove in your gloved hand.
4. Put two fingers inside your gloved hand. Do not touch the outside of the glove with your bare hand.
5. Point hands down and pull glove straight down so that the glove is peeled off inside out and covers the glove you are holding.
6. Discard gloves in the closest trashcan.
7. Perform hand hygiene according to protocol previously described in this chapter.

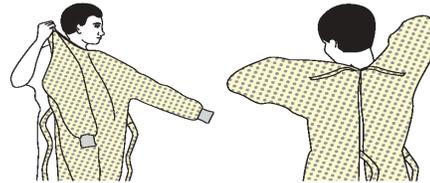
Donning (putting on) PPE Activity

SEQUENCE FOR **PUTTING ON** PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

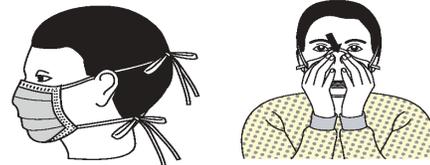
1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



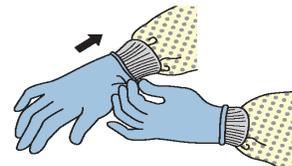
3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



4. GLOVES

- Extend to cover wrist of isolation gown



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene



CS250672-E

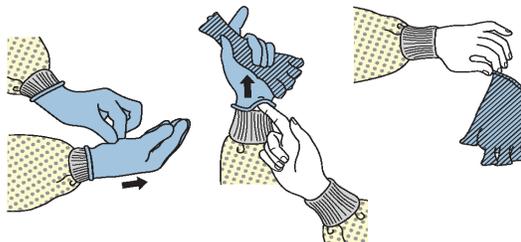
Doffing (removing) PPE Activity

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container



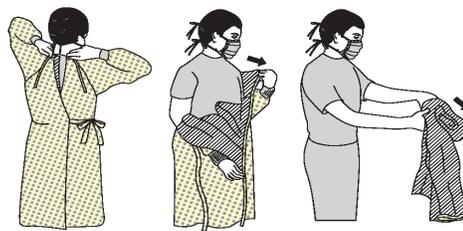
2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container



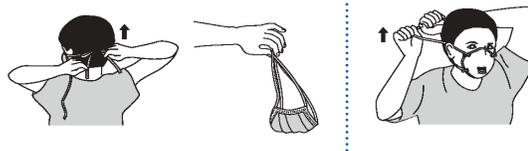
3. GOWN

- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

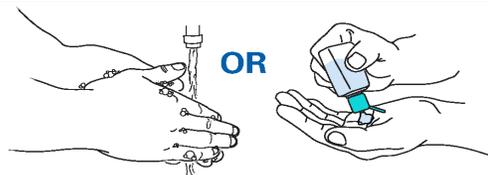


4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — **DO NOT TOUCH!**
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE



Doffing (removing) PPE Activity

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 2

Here is another way to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GOWN AND GLOVES

- Gown front and sleeves and the outside of gloves are contaminated!
- If your hands get contaminated during gown or glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands
- While removing the gown, fold or roll the gown inside-out into a bundle
- As you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands. Place the gown and gloves into a waste container



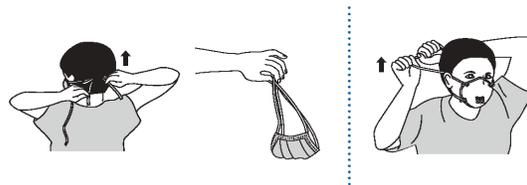
2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band and without touching the front of the goggles or face shield
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

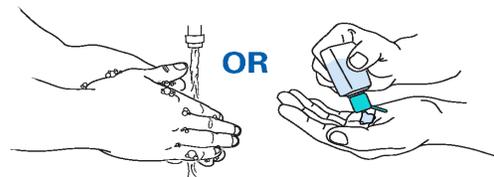


3. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



4. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE



Chapter Two Scenario – Infection Control Facility Tour

Mrs. Mathers just completed her initial paperwork in the Marketing Office. A direct care staff member entered the office to escort Mrs. Mathers to her room. The staff member noticed that the facility wheelchair was dirty and needed to be cleaned. It had food and other particles in the seat, on the sides, on the brake levers, and in other areas. There were no gloves in the office for the direct care staff member to use; so, she grabbed the handles of the wheelchair and proceeded down the hall to take Mrs. Mathers to her room. On the way down the hallway, a resident stopped to introduce herself to Mrs. Mathers. They chatted briefly and the direct care staff member gave the resident a hug. Before reaching Mrs. Mathers' room, the direct care staff member noticed a tissue on the floor. She picked it up and put it in her pocket. Once they arrived at Mrs. Mathers' room, the direct care staff member grabbed the door handle and opened the door to the room. Upon entering the room, the direct care staff member opened the blinds and turned on the television using the remote control. She also showed the resident how to use the lights by turning them on and off and welcomed her to the facility. The direct care staff member took the tissue out of her pocket and threw it in the resident's trashcan that did not contain a trash bag. Before exiting, she asked the resident if she needed anything else. When Mrs. Mathers said no, the direct care staff member rubbed her back and left the room grabbing the door handle and closing the door as she left.

1. How many times did the direct care staff member potentially spread infection?
 - Potential Contamination Sites: 8
2. Name the locations of the potential contamination sites.
 - Wheelchair handles
 - Hugging the resident in the hallway
 - Her pocket (Picking the tissue up with her hand and putting it in her pocket).
 - Resident's door handle
 - The blinds
 - The light switch
 - Remote control
 - Trashcan (No trash bag)



INSTRUCTOR: It is important to reinforce that hugging is not a violation of good infection control practices. In this case, the direct care staff member could have been contaminated from the wheelchair handles and spread those germs to the individual she hugged.

3. Describe what the staff member should have done to avoid these potential contaminations.
 - Make sure gloves are available in or near the Marketing Office
 - Put on gloves and properly clean and disinfect the wheelchair before use
 - Properly remove gloves after cleaning and disinfecting the wheelchair.
 - Properly putting on new gloves prior to escorting Mrs. Mathers to her room
 - Not hugging the resident with gloves on
 - Properly clean and disinfect the wheelchair after Mrs. Mathers use.
 - Adding a trash bag to Mrs. Mathers trashcan
 - Properly putting on new gloves, picking up tissue and placing it in the closest bagged trashcan.
 - Properly removing gloves and placing them in the trashcan
4. When should the staff member have performed hand hygiene during the process above?
 - After cleaning and disinfecting the wheelchair
 - After adding the trash bag to Mrs. Mathers trashcan
 - After removing gloves and placing them in the trashcan



Hand Hygiene Techniques – Skills Checklist

	Technique - Alcohol-Based Hand Sanitizer (ABHS)	Properly Demonstrated Yes/No	Instructor Initials	Comments
1.	Apply enough hand sanitizer to cover all surfaces on hands and fingers			
2.	Rub hands together including the backs of hands, between fingers and fingertips			
3.	Continue rubbing until hands feel dry. This should take around 20 seconds			
	Technique - Soap and Water	Properly Demonstrated Yes/No	Instructor Initials	Comments
1.	Thoroughly wet hands pointing fingertips downward			
2.	Put liquid hand soap on hands and lather			
3.	Scrub hands, for 15-20 seconds			
4.	Clean nails by rubbing them into the palm of opposite hand			
5.	Rinse hands thoroughly with water			
6.	Use a clean disposable/paper towel to dry hands			
7.	Discard paper towel			
8.	Use clean paper towel to turn off water			
9.	Discard paper towel in trashcan prior to exiting hand washing area			



Donning (putting on) and Doffing (removing) of Disposable Gloves - Skills Checklist

	Technique – Donning (putting on) Gloves	Properly Demonstrated Yes/No	Instructor Initials	Comments
1.	Perform hand hygiene according to protocol previously described in this chapter			
2.	Remove the gloves from the box and check for holes or tears. Discard glove(s) if any holes or tears are found, regardless of the size			
3.	Put one glove on			
4.	Use gloved hand to hold the other glove near the wrist portion of the glove. Do not touch bare skin with gloved hand			
5.	Pull glove up as far up on wrist as it will go			
	Technique – Doffing (removing) Gloves	Properly Demonstrated Yes/No	Instructor Initials	Comments
1.	Grab the outside of one glove near the wrist. Do not touch bare skin.			
2.	Point hands down and peel-glove straight down from the wrist, so the glove turns inside out as it is removed			
3.	Place removed glove into your gloved hand			
4.	Put two fingers inside your gloved hand. Do not touch the outside of the glove with your bare hand			
5.	Point hands down and pull glove straight down so that the glove is peeled off inside out and covers the glove you are holding			
6.	Discard gloves in the closest trashcan			
7.	Perform hand hygiene according to protocol previously described in this chapter			

**THIS PAGE IS
INTENTIONALLY
BLANK**

**THIS PAGE IS
INTENTIONALLY
BLANK**

**THIS PAGE IS
INTENTIONALLY
BLANK**

**THIS PAGE IS
INTENTIONALLY
BLANK**