
# State-approved Curriculum
# NURSE AIDE I TRAINING PROGRAM
## July 2019
## Module B

North Carolina Department of Health and Human Services
Division of Health Service Regulation
Health Care Personnel Education and Credentialing Section

# Module B – Infection Prevention
# Teaching Guide

## Objectives

- Relate the chain of infection to the work of a nurse aide in long-term care facilities
- Explain the concept of breaking the chain of infection and its importance to infection prevention
- Compare Standard Precautions and Transmission-based Precautions
- Discuss the use of Personal Protective Equipment by the nurse aide
- Explain why residents in long-term care facilities are at risk for infection

## Supplies

- Construction Paper or a half-sheet of construction paper, and 2 or 3 markers (Activity #1B)
- Used tissue (tissue, course ground mustard or hot dog mustard) (Teaching Tip #2B)
- PPE devices – mask, gown, gloves, face shield, and goggles (Teaching Tip #10B)
- Sharps Container (Teaching Tip #11B)
- Scotch/cellophane tape, scissors (Teaching Tip #12B)

## Advance Preparation – In General

- Review curriculum and presentation materials
- Add examples or comments to Notes Section
- Set up computer/projector
- Establish Internet connection

## Advance Preparation – Teaching Tips

- **#2B Simulate Used Tissue:** Create a simulated used tissue using a tissue and course ground mustard or regular hot dog mustard. At the beginning of class, determine if any students have allergies to mustard.
- **#9B Website:** Familiarize self with health care-associated infections (HAIs) found at https://health.gov/hcq/prevent-hai.asp. Scroll down to Partnering to Heal to view online video-simulation training program. Prepare to discuss the implications of HAIs.
- **#10B Pass Around PPE:** Gather PPE devices (gloves, gown, mask, face shield, and goggles).
- **#11B Sharps Container:** Get a sharps container.
- **#12B 7-Day Hepatitis B Virus:** Cut out approximately 5 large Hepatitis B Viruses for the classroom and one small Hepatitis B Virus for each student.

Consider laminating large Hepatitis B Viruses. Cut tape. Decide placement of Hepatitis B Viruses in room beforehand, but do not place until directed to do so.

**Advance Preparation – Activities**

- **#1B Chain of Infection Project:** Decide how to divide students into groups of 2 to 3 students. Prepare supplies for each group – a sheet of construction paper or a half-sheet of poster paper, and 2 or 3 markers. Assign an infection prevention topic to each group and have them present to the entire class.
- **#2B Chain of Infection:** Duplicate student worksheet for each student. Decide if it will be homework or class work and if class work – decide if it will be individual or group.

## Module B – Infection Prevention
## Definition List

**Aerobic** – requires oxygen to survive

**Airborne Precautions** – a transmission-based precaution that prevents spread of harmful germs that travel in the air at a distance, using Standard Precautions, plus a respirator, depending on specific disease

**Anaerobic** – does not need oxygen to survive

**Aseptic** – clean

**Bloodborne Pathogens** – harmful germs found in human blood and can cause infection and disease

**Body Fluids** – blood, pus, liquid from sores, urine, stool, tears, spit, droplets from sneezes and coughs, and sputum

**Carriers** – people who have harmful germs living on or in their body, but are not visibly sick

**Centers for Disease Control and Prevention (CDC)** – an agency of the federal government oversees the control and prevention of disease, in our country

**Chain of Infection** – way to explain how infection is passed around from one host to another host by using a picture of a chain

**Contact Precautions** – a transmission-based precaution that prevents spread of harmful germs by direct contact, using Standard Precautions, plus gown and gloves

**Direct Contact** – mutual touching of two things, people, or organisms which may cause the spread of harmful germs

**Droplet Precautions** – a transmission-based precaution that prevents spread of harmful germs that travel by droplets in the air, using Standard Precautions, plus mask and gloves

**Droplets** – particles of liquids that are sprayed from the nose or mouth when a person sneezes, coughs, sings, talks, or laughs

**Goggles** – personal protective equipment used to protect eyes from harmful germs

**Gloves** – personal protective equipment used to protect skin on hands from harmful germs

**Gowns** – personal protective equipment used to protect skin and clothes from harmful germs

**Hand Hygiene** – washing hands with soap and water or alcohol-based hand rubs

**Healthcare-associated infection (HAI)** – an infection that a resident gets while staying or living in a health care setting

**Hepatitis B** – a disease of the liver caused by a virus

**Hepatitis C** – a disease of the liver caused by a virus

**Host** – an animal or a person

**Indirect Contact** – harmful germs spread by an object that has touched body fluids from infected person

**Infection** – a disease or condition of the body that occurs when harmful germs get into the body and grow in number

**Infection Prevention** – all the things that people do to control and prevent the spread of infection

**Infectious Agent** – a harmful germ that causes an infection

**Influenza (flu)** – a contagious respiratory illness

**Localized Infection** – an infection found in one part of the body with symptoms noted at that one part of the body

**Masks** – personal protective equipment used to protect mouth and nose from harmful germs

**Medical Asepsis (clean technique)** – practice used to remove or destroy germs and to prevent their spread from one person or place to another person or place

**Microorganisms** – also called germs that live almost everywhere and may cause problems or diseases

**Mode of Transmission** – how harmful germs travel or get around from place to place

**Mucus Membranes** – linings of natural body openings, such as mouth, nose, rectum, genitals and eyes

**Non-intact Skin** – cuts, scratches, and sores of the skin

**Norovirus** – a contagious gastrointestinal illness

**Outbreak** – more illness in more residents than what is expected or what is normal for the facility of a healthcare associated infection

**Personal Protective Equipment (PPE)** – a group of items used to block harmful germs from getting on skin and clothes

**Point of Care** – refers to the place where three (3) elements occur together: the resident, the nurse aide, and the care or treatment involving resident contact; most point of care occurs in resident's room

**Portal of Entry** – a body opening of a person that allows harmful germs to enter the body

**Portal of Exit** – any way that harmful germs escape from reservoir

**Reservoir** – place where harmful germs live, grow, and increase in numbers

**Sharps** – items that have corners, edges, or projections that can cut or pierce the skin, such as needles and razor blades

**Sharps Container (needle disposal container or sharps box)** – hard and leak-proof biohazard container used only for sharps

**Shields** – personal protective equipment used to protect the whole face from harmful germs

**Sputum** – mucous coughed up from lungs

**Standard Precautions** – the first of two levels to prevent/control infections; the basic tasks that health care workers must do to prevent and control spread of infection, whereby all body fluids, non-intact skin, and mucus membranes are treated as if they were infected

**Susceptible Host** – person who does not have an infection now, but is at risk for becoming infected from harmful germs

**Systemic Infection** – an infection that affects an entire body part, or entire body system

**Transmission Based Precautions** – the second of two levels to prevent/control infections; specific tasks and measures that health care workers must do when caring for residents who are infected or may be infected with specific types of infections

**World Health Organization (WHO)** – an organization within the United Nations whose purpose is to aid in the achievement of highest level of health for all the world's people

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| **(S-1) Title Slide**<br>**(S-2) Objectives**<br>1. Relate the chain of infection to the work of a nurse aide in long-term care facilities.<br>2. Explain the concept of breaking the chain of infection and its importance to infection prevention.<br>3. Compare Standard Precautions and Transmission-based Precautions.<br>4. Discuss the use of Personal Protective Equipment by the nurse aide.<br>5. Explain why residents in long-term care facilities are at risk for infection. | |
| **Content** | **Notes** |
| **(S-3) Infection Prevention**<br>• Ways to control and prevent the spread of infection | |
| **(S-4) Infection**<br>• A disease or condition of the body that occurs when harmful germs get into the body and grow in number<br>• Examples<br>o Urinary tract infection, including bladder infection and kidney infection<br>o Skin infection, including infected wounds and cuts<br>o Respiratory infection, including pneumonia, flu and the common cold<br>o Gastrointestinal infection, including stomach infection, intestinal infection, or food poisoning<br>• Two types of infection are localized and systemic | |
| **(S-5) Localized Infection**<br>• An infection found in one part of the body and symptoms are limited to that one part of the body<br>• Example – an infected finger (when a finger becomes infected, it may be red, painful, hot, puffy, with drainage) | |
| **(S-6) Systemic Infection**<br>• An infection that affects an entire body part or entire body system<br>• Different types of symptoms including fever, chills, confusion, feeling tired, nausea/vomiting, and possibly symptoms specific to the entire body part or entire body system<br>• Example – respiratory infection | |
| **TEACHING TIP #1B: Respiratory Infection Symptoms**<br><br>Ask students:<br><br>• What kind of symptoms do you think someone would have with a respiratory infection? | |

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| **(S-7) Symptoms of Respiratory Infection**<br>• Fever and chills<br>• Sniffling and snorting<br>• Coughing and sneezing<br>• Hacking up globs of green or yellow, slimy mucous | |
| **TEACHING TIP #2B: Simulated Used Tissue**<br><br>First, determine if anyone is allergic to mustard. If so, omit this teaching tip. Pass around a simulated used tissue.<br><br>• While the simulated used tissue is being passed around, go to slide 8. | |
| **TEACHING TIP #3B: Respiratory Infection Discussion**<br><br>Ask students:<br><br>• How do you feel when someone coughs or sneezes on you?<br>• How do you feel when someone hands you a moist, crumpled up, used tissue with yellow, thick, slimy globs of mucous on it, to throw away? | |
| **(S-8) TEACHING TIP #4B: Bladder Infection Symptoms**<br><br>After everyone has handled the simulated used tissue and it is discarded, ask students:<br><br>• What kind of symptoms do you think a female resident would have if she had a bladder infection? | |
| **(S-9) Symptoms of Bladder Infection**<br>• Fever and chills<br>• Pain during urination<br>• Bad or strong-smelling urine, with possible blood in it<br>• Resident states “my urine smells and it hurts when I use the bathroom” (may use a different word for urine) | |
| **(S-10) Stomach Infection**<br>• Person with a stomach infection will probably have stomach pains and may vomit | |
| **(S-11) TEACHING TIP #5B: Discussion About Vomit**<br><br>Ask students:<br><br>• Have you ever had someone vomit on you?<br>• Have you ever had to clean up after someone who has vomited? | |

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| • How did you feel if you got the vomited liquid on your hand?<br>• What did you do?<br>• Do you wish you had some gloves to put on when you were cleaning up the vomit? | |
| **(S-12) Microorganisms**<br>• Are also called germs<br>• Live almost everywhere – both inside and outside the body<br>• Some help and others cause problems or diseases<br>• Requirements to survive<br>o Warmth<br>o Moisture<br>o Some need oxygen to live (aerobic) and others do not (anaerobic)<br>o Tissue to feed on<br>• Examples – bacteria, viruses, parasites, fungi<br>• Cause infections | |
| **(S-13) Medical Asepsis**<br>• Also called clean technique<br>• Practices used to remove or destroy microorganisms and to prevent their spread from one person or place to another person or place | |
| **(S-14) Chain of Infection**<br>• Way to explain how infection is passed around from one host (person or animal) to another host by using picture of a chain<br>• Foundation for spreading and prevention of spreading an infection<br>• Has six (6) links<br>• Each link represents something (or someone) needed to pass on an infection from one to another<br>• For an infection to occur and spread, each of six links must be present<br>• As long as links are joined together, an infection will be passed from one person to another to another, and so on<br>• As long as links are joined together, an infection will be passed from one resident to another, to a staff member, to another resident, and so on<br>• Breaking any link in the chain of infection, can prevent a new infection<br>• Infection prevention practices such as hand washing, cleaning equipment, and using masks will break a link in the chain | |

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| • Will learn ways to break chain of infection and help keep you, your co-workers, and your residents infection-free; this is one time when breaking something is a good thing! | |
| **ACTIVITY #1B: Chain of Infection Project**<br>• **#1B Chain of Infection Project:**<br>• Provide each group with a sheet of construction paper or a half-sheet of poster paper, and 2 or 3 markers.<br>• Assign an infection prevention topic to each group and have them present to the entire class. | |
| **(S-15) Link #1 Causative Agent**<br>• A harmful germ that causes an infection<br>• Examples – bacteria, a virus, a fungus, or a parasite | |
| **(S-16) Link #2 Reservoir**<br>• Place where harmful germs live, grow, and increase in numbers (a home for germs)<br>• When reservoir is a person, harmful germs may live and multiply in:<br>o Blood<br>o The skin<br>o The digestive tract, such as the mouth, stomach, intestines<br>• The respiratory tract, such as the nose, throat or lungs<br>• Examples – a person, an animal, dirt, water, or other places in the environment<br>• Can you look at a person and **ALWAYS** tell if he has an infection that can be given to you, a co-worker, or another resident?<br>• The answer is “NO, not always.” | |
| **(S-17) Link #2 Reservoir**<br>• When you think about people being reservoirs for harmful germs, all human beings belong in one of three groups:<br>o 1st group – people not infected, are well and are not a current reservoir for germs<br>o 2nd group – people who are infected, are obviously sick, and you know these people might get you sick<br>o 3rd group – people who are carriers; have the harmful germs living on or in their body, but germs are not making them sick; because they are not sick, you do not know they have infections; are carriers of infection and do not show symptoms of infection, but can still infect others | |
| **(S-18) Link #2 Reservoir**<br>• NOW, think about infection in terms of an iceberg<br>• People we know who have infections and can infect us | |

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| are only the tip of the iceberg<br>• Think about the large number of people who ARE carriers, those we do not know, and who could possibly infect us!<br>• Key to preventing you, your co-workers, and your residents from getting infected is to treat EVERYONE as possible reservoirs or hiding places for harmful germs | |
| **TEACHING TIP #6B: Time to Ponder**<br><br>Allow participants time to ponder information. | |
| **(S-19) Link #3 Portal of Exit**<br>• Any way or route that harmful germs escape from the reservoir<br>• Examples<br>o The nose and mouth – harmful germs leave in mucous droplets and saliva (or spit)<br>o The gastrointestinal tract – harmful germs leave in stool or vomit<br>o Skin – harmful germs leave through direct contact or in blood, pus, or other liquids that come from inside of body | |
| **(S-20) Link #4 Mode of Transportation**<br>• How harmful germs travel or get around from place to place<br>• Number one way a harmful germ travels from place to place is by our hands<br>• How do our hands provide transportation for germs? | |
| **(S-21) Link #4 Mode of Transportation**<br>• *One way harmful germs travel is by <u>direct contact</u> with body fluids where germs live, such as<br>o Blood<br>o Sputum (mucous that is coughed up)<br>o Pus or wound fluid (from a cut or sore)<br>o Saliva (or spit)<br>o Stool (or bowel movement)<br>o Vomit<br>• Examples<br>o Needle sticks with blood on the needle<br>o Contact with skin that has a rash, cuts or scratches<br>o Splash or spray of body fluids to the mucus membranes of the eyes, nose and/or mouth | |
| **(S-22) Link #4 Mode of Transportation**<br>*Harmful germs travel by <u>indirect contact</u> with body fluids where germs live, such as: | |

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| o Germs on hands after coughing, sneezing, wiping nose, or using the restroom and then spreading the germs to someone else or to an object that someone else might touch<br>o Touching blood, infected wounds, stool, or vomit of infected person, and do not clean our hands properly before going to the next resident or before touching something that someone else might touch | |
| **(S-23) Link #4 Mode of Transportation**<br>• Other ways harmful germs get around<br>o Through animal and insect bites; an insect or animal bites an infected person or animal and then bites a new person or animal and shares the infection<br>o By eating or drinking food or water that is infected with harmful germs | |
| **(S-24) Link #5 Portal of Entry**<br>• Any opening on a person's body that allows harmful germs to enter<br>• Germs can usually get in the same way they got out<br>• Portals of entry are also portals of exit<br>• Examples of portals of entry include:<br>o Nose and mouth – person breathes in harmful germs<br>o Gastrointestinal tract – when person eats food or drinks liquids that have harmful germs in them<br>o Breaks in skin that allow harmful germs to enter, such as open sore, cut, needle stick, and cracked skin | |
| **(S-25) Link #6 Susceptible Host**<br>• Person who does not have an infection now, but is at risk for becoming next person to get infected from harmful germs<br>• Susceptible host is a person whose body for some reason cannot fight off infection<br>• Some of the reasons why a person's body cannot fight off an infection include<br>o Age<br>o Chronic illness<br>o Not having proper vaccinations<br>o Open cuts or skin breakdown<br>o Fatigue<br>o Poor nutrition<br>o Stress | |
| **(S-26) Link #6 Susceptible Host**<br>• Residents living in long-term care facilities more likely to get infection than other people who live in the community because | |

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| o Many have several things wrong with health, such as a resident who may have lung, heart, and kidney problems<br>o Many are elderly<br>More likely to come in contact with harmful germs because they live close together and because they share staff and medical equipment | |
| **(S-27) Chain of Infection**<br>• How does chain of infection relate to a nurse aide's work in long-term care?<br>o As a nurse aide, you will have a huge responsibility to protect self, family, and residents from harm because you will work in environment that encourages infection<br>o People who you care for generally are elderly, sickly, and/or susceptible to diseases<br>o What is just a cold to most people can be deadly to older adult<br>o If you break any link in chain of infection, the occurrence of new infection can be prevented<br>You will have many chances at work to break chain of infection | |
| **(S-28, 29) Breaking Chain of Infection at Each Link – Examples**<br>• If **YOU** can break any link in the Chain of Infection, **YOU** can prevent the occurrence of a new infection<br>• Examples of a very simple way that everyone can break each link of the chain<br>o Break 1st link, the infectious agent, by getting an immunization against flu<br>o Break 2nd link, the reservoir, by staying home from work when you are sick<br>o Break 3rd link, the portal of exit, by covering your mouth and nose when you sneeze<br>o Break 4th link, the mode of transmission, by washing your hands<br>o Break 5th link, the portal of entry, by covering an open sore with a bandage<br>o Break 6th link, the susceptible host, by eating a proper diet | |
| **(S-30) Healthcare-associated infection (HAI)**<br>• An infection that a resident gets while staying or living in a health care setting (nosocomial infection) | |
| **(S-31) Centers for Disease Control and Prevention - CDC**<br>• Centers for Disease Control and Prevention (CDC) is an agency of the federal government in charge of the control | |

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| and prevention of disease in our country<br>• Works to protect the public by helping keep members of the public healthy and safe by education<br>• Developed a two-tiered or two-level way to prevent and control infections in health care – Standard Precautions and Transmission-Based (Isolation) Precautions | |
| **(S-32) Standard Precautions**<br>• 1st level is to prevent and control infections<br>• Basic tasks that health care workers must do when caring for EACH and EVERY RESIDENT in order to prevent and control the spread of infection<br>• This means that **ALL** body fluids, non-intact skin, and mucus membranes are treated as if they were infected | |
| **(S-33) Review of Terms**<br>• Recall body fluids include blood, pus, liquid from sores, urine, stool, tears, saliva, droplets from sneezes and coughs, and sputum coughed up from lungs and emesis<br>• Non-intact skin includes cuts, scratches, sores that may be oozing infected fluids (reminder: non-intact skin is both a portal of exit and portal of entry)<br>• Mucus membranes are the linings of natural body openings, such as eyes, nose, mouth, rectum and genitals | |
| **(S-34) Importance of Standard Precautions**<br>• Why must Standard Precautions be used with every resident?<br>o Because there are residents you provide care for who have infections that no one knows about<br>o Yes, a resident may be infected and not show signs or symptoms of being sick<br>o Without practicing Standard Precautions, you can get the infection and pass it along to others<br>o Following Standard Precaution Rules prevents self, visitors, family, co-workers, residents and other members of the health team from getting infections | |
| **(S-35) Hand Hygiene**<br>• New term in health care<br>• CDC defines hand hygiene as washing hands with<br>o soap and water or<br>o alcohol-based hand rubs<br>• Washing hands with soap and water is probably a life-long habit but using alcohol-based hand rubs may not be<br>• Alcohol-based hand rubs may be gels, rinses, or foams that do not need water to use | |

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| **(S-36) Hand Hygiene**<br>• Handwashing is the number one way to stop the transmission of infection!<br>• Therefore, performing hand hygiene is the single most important thing the nurse aide can do to prevent the spread of infection | |
| **(S-37) Hand Hygiene – Where? (Point of Care)**<br>• While at work, nurse aide should perform hand hygiene at point of care<br>• Point of care refers to the place where 3 elements occur together<br>o The resident<br>o The nurse aide<br>o The care or treatment involving resident contact<br>o Most point of care occurs in resident's room | |
| **(S-38) Hand Hygiene – When? (5 Essential Times)**<br>• World Health Organization (WHO) recommends that during health care delivery, at the point of care, there are 5 essential times or moments that nurse aide must perform hand hygiene<br>1. Before touching a resident (examples – helping resident move around, helping resident with a.m. or p.m. care, taking vital signs)<br>2. Before performing a clean or aseptic procedure (examples – before brushing resident's teeth or cleaning dentures, preparing meal tray, feeding resident, getting clean linen)<br>3. After any body fluid exposure risk (examples – after brushing resident's teeth or providing denture care, feeding resident, caring for skin lesions, cleaning up urine, stool, vomit, blood, and handling soiled linen, urinal, bedpan)<br>4. After touching a resident (examples – after helping resident move around, helping resident with a.m. or p.m. care, taking vital signs)<br>5. After touching resident surroundings (examples – after changing bed linen with resident out of bed, raising or lowering bed rail, leaning against a bed or night table, clearing bedside table or over-bed table) | |
| **(S-39) Hand Hygiene**<br>• Arrival at work<br>• After using restroom<br>• Before and after eating<br>• Before and after gloving<br>• Before touching clean linen | |

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| • When your hands are soiled<br>• After handling trash<br>• Touching objects/people | |
| **(S-40) Hand Hygiene**<br>• After cleaning a spill of blood or other body fluids<br>• Before and after using shared medical equipment<br>• After changing adult briefs<br>• Leaving work<br>• Returning home<br>• Blowing nose<br>• Sneezing in hand<br>• Touching hair<br>• Touching other body parts<br>• After handling trash | |
| **(S-41)**<br>**When to Hand Wash**<br>• There are times when nurse aide should use soap and water, instead of alcohol-based hand rub<br>o If hands are visibly dirty<br>o After using restroom<br>o After blowing nose<br>o After sneezing in hands<br>**When to Hand Rub**<br>• There are times when alcohol-based hand rubs are acceptable choice in hand hygiene<br>o Before and after eating<br>o Before and after handling food<br>o Before and after routine resident care | |
| **TEACHING TIP #7B: Self-reflection**<br><br>Remind students:<br><br>• About the feelings expressed earlier when someone sneezes or vomits on them | |
| **(S-42) Personal Protective Equipment (PPE)**<br>• A group of items used by a nurse aide to block harmful germs from getting on skin and clothes<br>• This is what nurse aide puts on at work to keep blood, urine, stool, saliva, and other body liquids off skin and clothes<br>• Type of PPE nurse aide wears depends on<br>o What is being done<br>o What kind of contact there will be with blood, body fluids, non-intact skin, and mucus membranes | |

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| • Whether the person is on Transmission-Based Precautions (will be talking more about later) | |
| **(S-43) Personal Protective Equipment (PPE)**<br>• PPE includes gloves that protect skin on hands | |
| **(S-44) Personal Protective Equipment (PPE)**<br>• PPE includes gown that protects skin and clothes | |
| **(S-45) Personal Protective Equipment (PPE)**<br>• Masks that protect mouth and nose, goggles that protect eyes, face shields that protect whole face | |
| **(S-46, 47, 48) Sharps**<br>• Items that have corners, edges, or projections that can cut or pierce the skin, such as needles, needles with syringes, needles with attached tubing, and razor blades<br>• **SAFETY, SAFETY, SAFETY**<br>o Wear gloves and be careful when using or handling anything sharp that could have touched blood or body fluids<br>o Be careful not to cut self or resident during shaves<br>o Be careful not to jab yourself with a sharp<br>• **NEVER, EVER** re-cap a needle or other sharp object because you may jab yourself<br>• **NEVER, EVER** put anything sharp in a regular trashcan | |
| **(S-49) Disposal of Sharps**<br>• **ALWAYS** put anything sharp that has been used on a resident in a sharps container (also called – needle disposal container or sharps box),<br>o A special biohazard container used for disposal of sharps<br>o Is hard and leak-proof<br>o Labeled with warning that contents of container are harmful<br>• **SAFETY, SAFETY, SAFETY**<br>o **NEVER, EVER** stick your hand or fingers into a sharps container<br>o **NEVER, EVER** try to cram just one more needle in the sharps container<br>o **NEVER, EVER** over fill a needle disposal box – it should only be filled ¾ full, and then disposed of | |
| **(S-50) Spills on Floor**<br>• Clean up spills based on procedures listed in facility's infection prevention policy or notify housekeeping, if necessary (and available)<br>• In general<br>o Put on gloves | |

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| o Absorb spill<br>o Clean area with correct product, following directions on the product label<br>o Discard waste in appropriate container (a biohazard bag if spill involves body fluids)<br>o Apply disinfectant to area, following directions of product<br>o Place warning cone or sign to warn others if there is wet surface | |
| **(S-51) Spills on Floor**<br>• Why are spills on the floor involving body fluids especially dangerous in a long-term care facility?<br>• Spills that involve body fluids are a safety threat in the long-term care facility for two (2) reasons<br>o Falls<br>o Risk of infection | |
| **(S-52) Spills on Surfaces**<br>• Any time blood or body fluids get on any surface, you must clean surface with whatever product is provided at the facility<br>• You must follow facility procedures and product instructions very closely<br>• Examples of surfaces that may need to be cleaned include over-bed tables, wheelchairs, counter tops in utility rooms, and shower chairs | |
| **(S-53) Transmission-Based Precautions**<br>• 2nd level to prevent and control infections<br>• Specific tasks and measures must be taken when caring for residents who are infected or may be infected with specific types of infections<br>• Nurse aides must follow Standard Precaution rules to protect self, co-workers, and residents from getting infections<br>• 3 types of Transmission-Based Precautions<br>o Contact Precautions<br>o Droplet Precautions<br>o Airborne Precautions | |
| **(S-54) Contact Precautions**<br>• Purpose – prevent spread of harmful germs spread by direct contact<br>• PPE – follow Standard Precautions, plus wear gown and gloves<br>• Examples – Methicillin-Resistant Staphylococcus Aureus (MRSA) infection (is the bacteria known for causing skin infections in addition to many other types of infections) | |

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| and Norovirus (the virus that causes diarrhea and vomiting) | |
| **(S-55) Droplet Precautions**<br>• Purpose – prevent spread of harmful germs that travel by droplets in the air<br>• Some harmful germs (like the flu) can be spread or travel by way of droplets<br>  o Droplets spread after being sprayed from nose or mouth when infected person sneezes, coughs, sings, talks, or laughs<br>• Droplets might land on another person (direct contact), or might land on doorknob, railing, or other surface that another person might touch (indirect contact)<br>• Droplets<br>  o Usually do not go farther than three feet, but could travel farther<br>  o Spread when an infected resident cough, sings, sneezes, or laughs<br>• PPE – follow Standard Precautions, plus wear a mask and gloves<br>• Examples – influenza, meningitis, and whooping cough | |
| **(S-56) Airborne Precautions**<br>• Purpose – prevent spread of harmful germs that travel in the air at a distance<br>• Harmful germs<br>  o Float around for a while<br>  o Can be carried by moisture, air currents and dust<br>• PPE – Standard Precautions, plus wear a respirator, depending on specific disease<br>• Examples – tuberculosis (or TB), chicken pox, measles | |
| **(S-57) Outbreaks**<br>• More illness in more residents than what is expected or what is normal for the facility<br>• Is a healthcare associated infection<br>• Examples – respiratory illness, such as influenza (flu); and gastrointestinal illness, such as norovirus<br>• Influenza and norovirus are very dangerous for people aged 65 and older | |
| **(S-58) Flu**<br>• Respiratory infection<br>• Risky for people 65 years and older<br>  o People 65 years and older are at greater risk of serious complications and death from the flu compared with young, healthy adults | |

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| o 90 percent of flu-related deaths and more than half of flu-related hospitalizations each year occur in people 65 years and older<br>• Yearly flu vaccination is the first and most important step in protecting against flu<br>• Healthy adults may be able to infect others 1 day before showing flu symptoms and then 5 to 7 days after becoming sick<br>• Employees with fever and respiratory symptoms (such as cough or sore throat) should not come to work until fever has been gone for at least 24 hours without the use of fever-reducing medicines like Tylenol or ibuprofen<br>• Encourage EVERYONE (employees, residents, and visitors) to practice good hand hygiene and to cover mouth and nose when coughing or sneezing<br>• Follow Standard Precautions and Transmission-Based Precautions | |
| **(S-59) Norovirus**<br>• Gastrointestinal infection<br>• Dehydration can be problem and elderly must replace fluids, when able (sometimes intravenous fluids are needed)<br>• Most people get well in 1 to 2 days, but are contagious until at least 3 days after vomiting and diarrhea have stopped<br>• Nurse aides who have symptoms of norovirus should stay home from work until at least 2 days after symptoms have resolved<br>• Follow hand-hygiene guidelines, and carefully <u>wash hands with soap and water</u> after contact with residents with diarrhea or vomiting<br>• Alcohol-based hand sanitizers are not as effective against norovirus<br>• No vaccination available or specific drug available to prevent or treat norovirus<br>• Follow Standard Precautions and Transmission-Based Precautions | |
| **(S-60) Bloodborne Infections**<br>• Harmful germs found in human blood that can cause infection and disease<br>• Three most common bloodborne pathogens are Hepatitis B Virus, Hepatitis C Virus, and the Human Immunodeficiency Virus, or HIV<br>• Resident can get an infection from bloodborne pathogens | |

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| by<br>o Sharing contaminated needles<br>o Sharing contaminated fingerstick devices<br>o Direct contact with blood from infected person<br>• Nurse aide can get an infection from bloodborne pathogens by<br>o Accidental puncture wounds (jabs) from contaminated sharps<br>o Direct contact with blood from an infected person | |
| **(S-61) Bloodborne Pathogens**<br>• Causes Hepatitis B (HBV), a disease of the liver<br>• About 1/3rd of persons infected with Hepatitis B Virus do not show symptoms<br>• Can live outside body on equipment and on surfaces like table tops or blood glucose meters for **7 days**; can infect others during that time<br>• Vaccine is available to prevent you from getting the disease | |
| **(S-62) Bloodborne Pathogens**<br>• Causes Hepatitis C (HCV), also transmitted through blood or body fluids<br>• There is no vaccine for hepatitis C | |
| **(S-63) Bloodborne Pathogens – Protect Yourself and Others**<br>• Always wear gloves when there is a chance of exposure to blood<br>• Handle used sharps carefully and discard appropriately<br>• Follow facility's exposure plan if any part of body is exposed to blood or stuck with contaminated sharp<br>• Post-exposure<br>o Wash area immediately<br>o Report exposure to nurse<br>o Complete an incident report<br>o Follow procedures for testing and treatment | |
| **TEACHING TIP #8B: Reasons Body Cannot Fight Infection**<br>Ask students:<br><br>• Think about and share some reasons why a person's body cannot fight off an infection. | |
| **TEACHING TIP #9B: Partnering to Heal video**<br><br>Go to website, https://health.gov/hcq/prevent-hai.asp. Scroll down to *Partnering to Heal* and view online video-simulation | |

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| training program.<br><br>Ask students to share their reactions to the video. Explain the importance of effective communication and decisions that can help prevent HAIs. | |
| **TEACHING TIP #10 B: Pass Around PPE**<br><br>Show and then pass around – gloves, gown, mask, face shield (if available) and goggle. | |
| **TEACHING TIP #11 B: Sharps Container**<br><br>Show a sharps container. | |
| **TEACHING TIP #12B: 7-Day Hepatitis B Virus**<br><br>Place and tape several cut out Hepatitis B Viruses around the room on various surfaces. Tell students:<br><br>• I am placing several Hepatitis B Viruses around the room. Remember that the Hepatitis B Virus can live outside the body on equipment and surfaces for 7 days.<br>• Between now and 7 days from now, notice the Hepatitis B Viruses when you enter the classroom and think about the significance of their presence and infection prevention principles.<br>• Pay attention when getting close to the Hepatitis B Viruses as you do your average day-to-day activities in the classroom during the 7-day time period.<br><br>Distribute small Hepatitis B Viruses and tape to students and tell them:<br>• Please take a smaller version of the Hepatitis B Virus and tape it on your book, notebook, or folder.<br>• Between now 7 days from now, notice your Hepatitis B Virus when you open/close/carry your book, notebook or folder and think about the significance of its presence and infection prevention principles.<br><br>Remember to remove the cut-outs after 7 days. Remind students that the Hepatitis B Viruses have died. Discuss importance of infection prevention principles to prevent the spread of infection. | |
| **(S-64) TEACHING TIP # 13B What is Wrong with this Picture?**<br><br>Tell students: | |

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| • I am going to show you some pictures and I want you to figure out what is wrong with each picture.<br>• When you figure out what is wrong, I want you to shout it out.<br>• Let's show some excitement! | |
| **(S-65) TEACHING TIP # 13B What is Wrong with this Picture?**<br><br>Tell students:<br><br>• The health care worker is throwing a sharp in the trashcan. Sharps are never discarded in a trashcan. Sharps must always be discarded in a biohazard container designed for disposal of sharps. | |
| **(S-66) TEACHING TIP # 13B What is Wrong with this Picture?**<br>Tell students:<br><br>• The health care worker is recapping a used needle and syringe. Never, ever recap a needle that has been used on a resident. You could jab yourself and then be exposed to a bloodborne pathogen. | |
| **(S-67) TEACHING TIP # 13B What is Wrong with this Picture?**<br><br>Tell students:<br><br>The health care worker is opening a door using the door handle while wearing soiled gloves. First, you must change your gloves immediately if they become dirty. I think we must all agree that the gloves are dirty. Another rule that the health care worker violated is moving from an area that is contaminated to an area that is not contaminated without changing or removing gloves. Third, you must never touch anything with dirty gloves that people may touch without wearing gloves. Typically, people do not put on gloves to open a door. | |
| **(S-68) TEACHING TIP # 13B What is Wrong with this Picture?**<br><br>Tell students:<br><br>• The health care worker is touching his face with a dirty glove. You must change your gloves immediately if they | |

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| become dirty. Another rule that the health care worker violated is moving from an area that is contaminated to a body part that is not contaminated without changing or removing gloves. Finally, you must never, ever touch your skin with a dirty glove.<br>• You did very well identifying what was wrong with the examples of poor health care practices. Just so you know, the pictures I just showed you were simulated and the blood was fake stage blood. | |

## Activity #1B Instructor's Guide
## Chain of Infection Project

### Preparation

- Before class, decide how to divide students into groups of 2 to 3 students. Prepare supplies for each group – a sheet of construction paper or a half-sheet of poster paper, and 2 or 3 markers. Assign an infection prevention topic to each group and have them present to the entire class.

## ACTIVITY #2B CHAIN OF INFECTION

### INFECTIOUS AGENT

1. _____
2. _____
3. _____
4. _____

→

↓

### SUSCEPTIBLE HOST

1. _____
2. _____
3. _____
4. _____

### RESERVOIR

1. _____
2. _____
3. _____
4. _____

↑

↓

### PORTAL OF ENTRY

1. _____
2. _____
3. _____
4. _____

### PORTAL OF EXIT

1. _____
2. _____
3. _____
4. _____

↑

←

### MODE OF TRANSMISSION

1. _____
2. _____
3. _____
4. _____

Bacteria
Parasite
Dirt
Person with diabetes
Person with sores
Unwashed Hands
Ticks
Vomit
Respiratory tract
Virus
Skin Tear
Door Knob

Nose (sneezing)
GI tract (vomiting)
Person with poor nutrition
89-year-old person
Skin puncture
Nose (breathing)
Fungi
Mouth (coughing)
Wound (drainage)
Mouth (eating)
GI tract
Sneeze droplets

# ACTIVITY #2B CHAIN OF INFECTION ANSWERS

## INFECTIOUS AGENT

1. Bacteria
2. Parasite
3. Virus
4. Fungi

## SUSCEPTIBLE HOST

1. Person with diabetes
2. Person with sores
3. Person with poor nutrition
4. 89-year-old person

## RESERVOIR

1. GI tract
2. Dirt
3. Ticks
4. Respiratory Tract

## PORTAL OF ENTRY

1. Nose (breathing)
2. Mouth (eating)
3. Skin puncture
4. Skin tear

## PORTAL OF EXIT

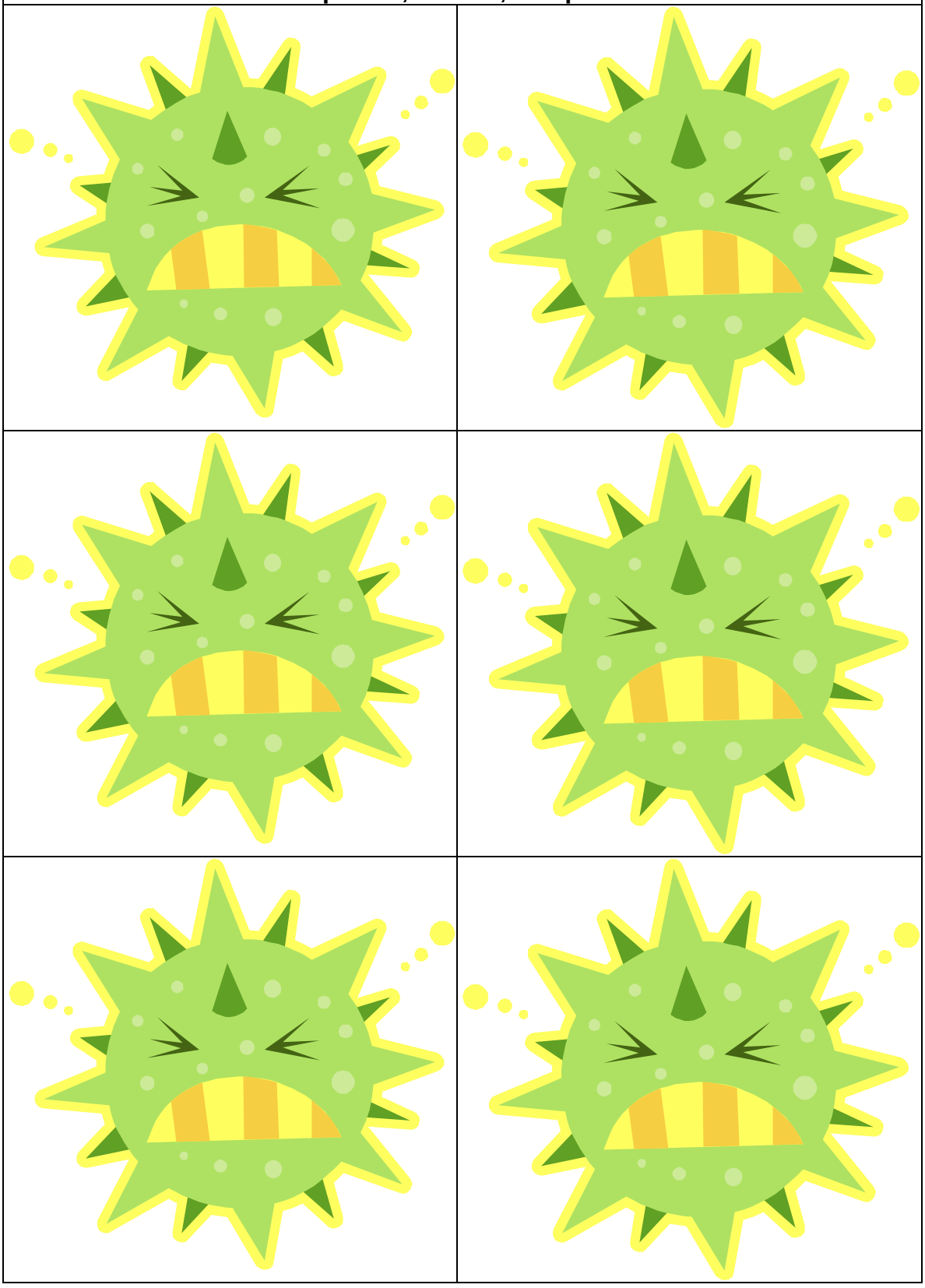
1. Nose (sneezing)
2. GI tract (vomiting)
3. Mouth (coughing)
4. Wound (drainage)

Bacteria
Parasite
Dirt
Person with diabetes
Person with sores
Unwashed Hands
Ticks
Vomit
Respiratory tract
Virus
Skin Tear
Door Knob
Nose (sneezing)
GI tract (vomiting)
Person with poor nutrition
89-year-old person
Skin puncture
Nose (breathing)
Fungi
Mouth (coughing)
Wound (drainage)
Mouth (eating)
GI tract

## MODE OF TRANSMISSION

1. Unwashed hands
2. Vomit
3. Door knob
4. Sneeze drops

**Teaching Tip #12B Hepatitis B Viruses for the classroom**
**Duplicate, cut-out, and place.**



**Teaching Tip #12B Hepatitis B Viruses for students**
**Duplicate, cut-out, and distribute to students.**