NC DEPARTMENT OF
HEALTH AND
HUMAN SERVICES
Division of Health Service Regulation

State-approved Curriculum
Nurse Aide I Training Program

MODULE B
Infection Prevention

Teaching Guide
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North Carolina Department of Health and Human Services
Division of Health Service Regulation
North Carolina 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

Advance Preparation – In General

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

Supplies

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

Handouts

- **#B2 Chain of Infection -** Duplicate for each student. Decide if it will be homework or class work and if class work – decide if it will be individual or group.

Instructional Resources/Guest Speakers- Optional

Advance Preparation – Teaching Tips

- **#B6: Respiratory Infection Symptoms**: Ask students: What kind of symptoms do you think someone would have with a respiratory infection?
- **#B7-1 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.
- **#B7-2: Respiratory Infection Discussion:** Ask students: How do you feel when someone coughs or sneezes on you? 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? How do you feel when you sit next to someone with fever and chills?
- **#B7-3: Bladder Infection Symptoms:** After everyone has handled the simulated used tissue and it is discarded, ask students: What kind of symptoms do you think a female resident would have if she had a bladder infection?

- **#B63-1: Pass Around PPE:** Gather PPE devices (gloves, gown, mask, face shield, and goggles).
- **#B63-2: Sharps Container:** Get a sharps container.
- **#B63-3: 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

- **#B14 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.

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 that 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

Health care-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 an 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 – An outbreak is defined as an increase of a disease/illness among the residents in the facility during a specific period of time.

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

Module B – Infection Prevention	
(S-1) Title Slide **(S-2) Objectives** 1. Relate the chain of infection to the work of a nurse aide in long-term care facilities 2. Explain the concept of breaking the chain of infection and its importance to infection prevention 3. Compare Standard Precautions and Transmission-based Precautions 4. Discuss the use of Personal Protective Equipment by the nurse aide 5. Explain why residents in long-term care facilities are at risk for infection	
Content	**Notes**
HANDOUT #B2 Chain of Infection - Duplicate for each student. Decide if it will be homework or class work and if class work – decide if it will be individual or group.	
(S-3) Infection Prevention Ways to control and prevent the spread of infection	
(S-4) Infection A disease or condition of the body that occurs when harmful germs get into the body and grow in number • Examples: — Urinary tract infection, including bladder infection and kidney infection — Skin infection, including infected wounds and cuts — Respiratory infection, including pneumonia, flu and the common cold — Gastrointestinal infection, including stomach infection, intestinal infection, or food poisoning • Two types of infection are localized and systemic	
(S-5) Localized Infection Localized infection is an infection found in one part of the body and symptoms are limited to that one part of the body • Example – an infected finger (when a finger becomes infected, it may be red, painful, hot, puffy, with drainage)	
(S-6) Systemic Infection Systemic infection is an infection that affects an entire body part or entire body system • 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 • Example – respiratory infection	
TEACHING #TIP B6: Respiratory Infection Symptoms Ask students: • What kind of symptoms do you think someone would have with a respiratory infection?	

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(S-7) Symptoms of Respiratory Infection • Fever and chills • Sniffling and snorting • Coughing and sneezing • Hacking up globs of green or yellow, slimy mucous	
TEACHING TIP #B7-1: Simulated Used Tissue First, determine if anyone is allergic to mustard. If so, omit this teaching tip. Pass around a simulated used tissue.	
TEACHING TIP #B7-2: Respiratory Infection Discussion Ask students: • How do you feel when someone coughs or sneezes on you? • 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? • How do you feel when you sit next to someone with fever and chills?	
(S-8) TEACHING TIP #B7-3: Bladder Infection Symptoms After everyone has handled the simulated used tissue and it is discarded, ask students: • What kind of symptoms do you think a female resident would have if she had a bladder infection?	
(S-9) Symptoms of Bladder Infection • Fever and chills • Pain during urination • Bad or strong-smelling urine, that may have blood in it • Resident states “my urine smells and it hurts when I use the bathroom” (may use a different word for urine)	
(S-10) Stomach Infection Person with a stomach infection will probably have stomach pains and may vomit	
(S-11) Discussion About Vomit Ask students: • Have you ever had someone vomit on you? • Have you ever had to clean up after someone who has vomited? • How did you feel if you got the vomited liquid on your hand? • What did you do? • Do you wish you had gloves to put on when you were cleaning up the vomit?	
(S-12) Microorganisms	

- Are also called germs
- Live almost everywhere – both inside and outside the body
- Some help and others cause problems or diseases
- Requirements to survive
  - Warmth
  - Moisture
  - Some need oxygen to live (aerobic) and others do not (anaerobic)
  - Tissue to feed on
- Examples – bacteria, viruses, parasites, fungi
- Cause infections

(S-13) Medical Asepsis

Medical asepsis is also called clean technique

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

Chain of infection is a way to explain how infection is passed around from one host (person or animal) to another host by using a picture of a chain

- Foundation for spreading and prevention of spreading an infection
- Has six (6) links
- Each link represents something (or someone) needed to pass on an infection from one to another
- For an infection to occur and spread, each of six links must be present
- As long as links are joined together, an infection will be passed from one person to another to another, and so on
- 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
- Breaking any link in the chain of infection, can prevent a new infection
- Infection prevention practices such as hand washing, cleaning equipment, and using masks will break a link in the chain
- Learning ways to break the chain of infection will help keep you, your co-workers, and your residents infection-free; this is one time when breaking something is a good thing!

ACTIVITY #B14: Chain of Infection Project

- Provide each group with a sheet of construction paper or a half-sheet of poster paper, and 2 or 3 markers.

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• Assign an infection prevention topic to each group and have them present to the entire class.	
(S-15) Link #1 Causative Agent A causative agent is a harmful germ that causes an infection • Examples – bacteria, a virus, a fungus, or a parasite	
(S-16) Link #2 Reservoir (1) A reservoir is a place where harmful germs live, grow, and increase in numbers (a home for germs) • When reservoir is a person, harmful germs may live and multiply in: — Blood — The skin — The digestive tract, such as the mouth, stomach, intestines • The respiratory tract, such as the nose, throat or lungs • Other examples of reservoirs could be, an animal, dirt, water, or other places in the environment • Can you look at a person and **ALWAYS** tell if he has an infection that can be spread to you, a co-worker, or another resident? • The answer is “No, not always.”	
(S-17) Link #2 Reservoir (2) • When you think about people being reservoirs for harmful germs, all human beings belong in one of three groups: — 1st group – people not infected, are well and are not a current reservoir for germs — 2nd group – people who are infected, are obviously sick, and you know these people might get you sick — 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 (3) • NOW, think about infection in terms of an iceberg • People we know who have infections and can infect us are only the tip of the iceberg • Think about the large number of people who ARE carriers, those we do not know, and who could possibly infect us! • Key to preventing you, your co-workers, and your residents from becoming infected is to treat EVERYONE as possible reservoirs or hiding places for harmful germs	

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(S-19) Link #3 Portal of Exit Port of exit is any way or route that harmful germs escape from the reservoir • Examples — The nose and mouth – harmful germs leave in mucous droplets and saliva (or spit) — The gastrointestinal tract – harmful germs leave in stool or vomit — 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 (1) Mode of transportation is how harmful germs travel or get around from place to place • Number one way a harmful germ travels from place to place is by our hands • How do our hands provide transportation for germs?	
(S-21) Link #4 Mode of Transportation (2) • One way harmful germs travel is by <u>direct contact</u> with body fluids where germs live, such as — Blood — Sputum (mucous that is coughed up) — Pus or wound fluid (from a cut or sore) — Saliva (or spit) — Stool (or bowel movement) — Vomit • Examples — Needle sticks with blood on the needle — Contact with skin that has a rash, cuts or scratches — Splash or spray of body fluids to the mucus membranes of the eyes, nose and/or mouth	
(S-22) Link #4 Mode of Transportation (3) • Harmful germs travel by <u>indirect contact</u> with body fluids where germs live, such as: — 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 — 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 • Other ways harmful germs travel: 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 • By eating or drinking food or water that is infected with harmful germs	
(S-24) Link #5 Portal of Entry Portal of entry is any opening on a person's body that allows harmful germs to enter • Germs can usually get in the same way they got out • Portals of entry are also portals of exit • Examples of portals of entry include: — Nose and mouth – person breathes in harmful germs — Gastrointestinal tract – when person eats food or drinks liquids that have harmful germs in them — 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 Susceptible host is a person who does not have an infection now, but is at risk for becoming next person to get infected from harmful germs • Susceptible host is a person whose body for some reason cannot fight off infection • Some of the reasons why a person's body cannot fight off an infection include: — Age — Chronic illness — Not having proper vaccinations — Open cuts or skin breakdown — Fatigue — Poor nutrition — Stress	
(S-26) Link #6 Susceptible Host (continued) • Residents living in long-term care facilities more likely to get infection than other people who live in the community because — Many have several things wrong with their health, (also known as comorbidities) such as a resident who may have lung, heart, and kidney problems — Many are elderly o 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 How does chain of infection relate to a nurse aide's work in long-term care?	

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• 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 • People who you care for generally are elderly, sickly, and/or susceptible to diseases • What is just a cold to most people can be deadly to older adult • If you break any link in chain of infection, the occurrence of new infection can be prevented You will have many chances at work to break chain of infection.	
(S-28, 29) Breaking Chain of Infection at Each Link – Examples • If **YOU** can break any link in the Chain of Infection, **YOU** can prevent the occurrence of a new infection • Examples of a very simple way that everyone can break each link of the chain — Break 1st link, the infectious agent, by getting an immunization against flu — Break 2nd link, the reservoir, by staying home from work when you are sick — Break 3rd link, the portal of exit, by covering your mouth and nose when you sneeze — Break 4th link, the mode of transmission, by washing your hands — Break 5th link, the portal of entry, by covering an open sore with a bandage — Break 6th link, the susceptible host, by eating a proper diet	
(S-30) Health care-associated infection (HAI) Health care-associated infection is 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 • Centers for Disease Control and Prevention (CDC) is an agency of the federal government in charge of the control and prevention of disease in our country • Works to protect the public by helping keep members of the public healthy and safe by education • 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	

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Standard precautions are the 1st level is to prevent and control infections • 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 This means that **ALL** body fluids, non-intact skin, and mucus membranes are treated as if they were infected.	
(S-33) Review of Terms • 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 • 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) • Mucus membranes are the linings of natural body openings, such as eyes, nose, mouth, rectum and genitals	
(S-34) Importance of Standard Precautions Why must Standard Precautions be used with every resident? • Because there are residents you provide care for who have infections that no one knows about • Yes, a resident may be infected and not show signs or symptoms of being sick • Without practicing Standard Precautions, you can get the infection and pass it along to others • 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 The Centers for Disease Control and Prevention (CDC) defines hand hygiene as washing your hands with: • Soap and water, which is the best way to remove all types of germs and chemicals • If soap and water are not available, use an alcohol-based hand sanitizer (hand rub) with at least 60% alcohol	
(S-36) Hand Hygiene (continued) • Handwashing is the number one way to stop the transmission of infection! • 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)	

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While at work, nurse aide should perform hand hygiene at point of care • Point of care refers to the place where 3 elements occur together — The resident — The nurse aide — The care or treatment involving resident contact — Most point of care occurs in resident's room	
(S-38) Hand Hygiene – CDC Recommendations The CDC recommends health care personnel use an alcohol-based hand rub or wash with soap and water for the following clinical indications: 1. Immediately before touching a resident 2. Before performing an aseptic task or handling invasive medical devices 3. Before moving from work on a soiled body site to a clean body site on the same resident 4. After touching a resident or the resident's immediate environment 5. After contact with blood, body fluids, or contaminated surfaces 6. Immediately after glove removal	
(S-39) Hand Hygiene – When? (Point of Care) • Arrival at work • After using restroom • Before and after eating • Before and after gloving • Before touching clean linen • When your hands are soiled • After handling trash • Touching objects/people	
(S-40) Hand Hygiene – When? (Point of Care) • After cleaning a spill of blood or other body fluids • Before and after using shared medical equipment • After changing adult briefs • Leaving work • Returning home • Blowing nose • Sneezing in hand • Touching hair • Touching other body parts • After handling trash	
(S-41) When to Hand Wash	

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There are times when nurse aide should use soap and water, instead of alcohol-based hand rub — If hands are visibly dirty — After using restroom — After blowing nose — After sneezing in hands **When to Hand Rub** There are times when alcohol-based hand rubs are an acceptable choice in hand hygiene — Before and after eating — Before and after handling food — Before and after routine resident care	
(S-42) Personal Protective Equipment (PPE) Personal protective equipment is a group of items used by a nurse aide to block harmful germs from getting on skin and clothes • This is what nurse aide puts on at work to keep blood, urine, stool, saliva, and other body liquids off skin and clothes • Type of PPE nurse aide wears depends on — What is being done — What kind of contact there will be with blood, body fluids, non-intact skin, and mucus membranes • Whether the person is on Transmission-Based Precautions (will be talking more about later)	
(S-43) Personal Protective Equipment (PPE) • PPE includes gloves that protect skin on hands	
(S-44) Personal Protective Equipment (PPE) • PPE includes gown that protects skin and clothes	
(S-45) Personal Protective Equipment (PPE) • Masks that protect mouth and nose, goggles that protect eyes, face shields that protect whole face	
(S-46, 47, 48) Sharps Sharps are 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 • **SAFETY, SAFETY, SAFETY** — Wear gloves and be careful when using or handling anything sharp that could have touched blood or body fluids — Be careful not to cut self or resident during shaves — Be careful not to jab yourself with a sharp • **NEVER, EVER** re-cap a needle or other sharp object because you may jab yourself	

• **NEVER, EVER** put anything sharp in a regular trash can	
(S-49) Disposal of Sharps • **ALWAYS** put anything sharp that has been used on a resident in a sharps container (also called – needle disposal container or sharps box), — A special biohazard container used for disposal of sharps — Is hard and leak-proof — Labeled with warning that contents of container are harmful • **SAFETY, SAFETY, SAFETY** — **NEVER, EVER** stick your hand or fingers into a sharps container — **NEVER, EVER** try to cram just one more needle in the sharps container — **NEVER, EVER** over fill a needle disposal box – it should only be filled ¾ full, and then disposed	
(S-50) Spills on Floor Clean up spills based on procedures listed in facility's infection prevention policy or notify housekeeping, if necessary (and available) • In general — Put on gloves — Absorb spill — Clean area with correct product, following directions on the product label — Discard waste in appropriate container (a biohazard bag if spill involves body fluids) — Apply disinfectant to area, following directions of product — Place warning cone or sign to warn others if there is wet surface	
(S-51) Spills on Floor Why are spills on the floor involving body fluids especially dangerous in a long-term care facility? • Spills that involve body fluids are a safety threat in the long-term care facility for two (2) reasons — Falls — Risk of infection	
(S-52) Spills on Surfaces Spills on surfaces include any time blood or body fluids get on any surface, and you must clean surface with whatever product is provided at the facility • You must follow facility procedures and product instructions very closely	

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• 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 Transmission-based precautions is the 2nd level to prevent and control infections • Specific tasks and measures must be taken when caring for residents who are infected or may be infected with specific types of infections • Nurse aides must follow Standard Precaution rules to protect selves, co-workers, and residents from getting infections • 3 types of Transmission-Based Precautions — Contact Precautions — Droplet Precautions — Airborne Precautions	
(S-54) Contact Precautions Purpose – prevent spread of harmful germs by direct contact • PPE – follow Standard Precautions, plus wear gown and gloves • Examples – Methicillin-Resistant Staphylococcus Aureus (MRSA) infection (is the bacteria known for causing skin infections in addition to many other types of infections) and Norovirus (the virus that causes diarrhea and vomiting)	
(S-55) Droplet Precautions Purpose – prevent spread of harmful germs that travel by droplets in the air • Some harmful germs (like the flu) can be spread or travel by way of droplets — Droplets spread after being sprayed from nose or mouth when infected person sneezes, coughs, sings, talks, or laughs • Droplets might land on another person (direct contact), or might land on doorknob, railing, or other surface that another person might touch (indirect contact) • Droplets — Usually do not go farther than three feet, but could travel further — Spread when an infected resident cough, sings, sneezes, or laughs • PPE – follow Standard Precautions, plus wear a mask and gloves • Examples – influenza, meningitis, and whooping cough	

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(S-56) Airborne Precautions Purpose – prevent spread of harmful germs that travel in the air at a distance • Harmful germs — Float around for a while — Can be carried by moisture, air currents and dust • PPE – Standard Precautions, plus wear a respirator, depending on specific disease • Examples – tuberculosis (or TB), chicken pox, measles	
(S-57) Outbreaks • An outbreak is defined as an increase of a disease/illness among the residents in the facility during a specific period of time. Is a health care associated infection • Examples – respiratory illness, such as influenza (flu); and gastrointestinal illness, such as norovirus • Influenza and norovirus are very dangerous for people aged 65 and older	
(S-58) Flu The flu is a respiratory infection • Risky for people 65 years and older — People 65 years and older are at greater risk of serious complications and death from the flu compared with younger, healthy adults — 90 percent of flu-related deaths and more than half of flu-related hospitalizations each year occur in people 65 years and older • Yearly flu vaccination is the first and most important step in protecting against flu • Healthy adults may be able to infect others 1 day before showing flu symptoms and then 5 to 7 days after becoming sick • 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 acetaminophen or ibuprofen • Encourage EVERYONE (employees, residents, and visitors) to practice good hand hygiene and to cover mouth and nose when coughing or sneezing • Follow Standard Precautions and Transmission-Based Precautions	
(S-59) Norovirus Norovirus is a gastrointestinal infection	

- Dehydration can be problem and elderly must replace fluids, when able (sometimes intravenous fluids are needed)
- Most people get well in 1 to 2 days, but are contagious until at least 3 days after vomiting and diarrhea have stopped
- Nurse aides who have symptoms of norovirus should stay home from work until at least 2 days after symptoms have resolved
- Follow hand-hygiene guidelines, and carefully wash hands with soap and water after contact with residents with diarrhea or vomiting
- Alcohol-based hand sanitizers are not as effective against norovirus
- No vaccination available or specific drug available to prevent or treat norovirus
- Follow Standard Precautions and Transmission-Based Precautions

(S-60) Bloodborne Infections

Bloodborne infections are harmful germs found in human blood that can cause infection and disease

- Three most common bloodborne pathogens are Hepatitis B Virus, Hepatitis C Virus, and the Human Immunodeficiency Virus, or HIV
- Residents can get an infection from bloodborne pathogens by
  - Sharing contaminated needles
  - Sharing contaminated fingerstick devices
  - Direct contact with blood from an infected person

The nurse aide can get an infection from bloodborne pathogens by:

- Accidental puncture wounds (jabs) from contaminated sharps
- Direct contact with blood from an infected person

(S-61) Bloodborne Pathogens

- Causes Hepatitis B (HBV), a disease of the liver
- About 1/3rd of people infected with Hepatitis B Virus do not show symptoms
- Can live outside body on equipment or surfaces like table tops or blood glucose meters for **7 days**; can infect others during that time
- Vaccine is available to prevent you from getting the disease

(S-62) Bloodborne Pathogens

- Causes Hepatitis C (HCV), also transmitted through blood or body fluids
- There is no vaccine for hepatitis C

(S-63) Bloodborne Pathogens – Protect Yourself and Others

- Always wear gloves when there is a chance of exposure to blood
- Handle used sharps carefully and discard appropriately
- Follow facility's exposure plan if any part of body is exposed to blood or stuck with contaminated sharp
- Post-exposure
  - Wash area immediately
  - Report exposure to nurse
  - Complete an incident report
  - Follow procedures for testing and treatment

TEACHING TIP #B63-1: Pass Around PPE
Show and then pass around – gloves, gown, mask, face shield (if available) and goggles.

TEACHING TIP #B63-2: Sharps Container
Show a sharps container.

TEACHING TIP #B63-3: 7-Day Hepatitis B Virus
Place and tape several cut out Hepatitis B Viruses around the room on various surfaces. Tell students:

- 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.
- 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.
- 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.

Distribute small Hepatitis B Viruses and tape to students and tell them:

- Please take a smaller version of the Hepatitis B Virus and tape it on your book, notebook, or folder.
- 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.

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) What is Wrong with this Picture? Tell students: • I am going to show you some pictures and I want you to figure out what is wrong with each picture. • When you figure out what is wrong, I want you to shout out. • Let's show some excitement!	
(S-65) What is Wrong with this Picture? Tell students: • 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) What is Wrong with this Picture? Tell students: • 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) What is Wrong with this Picture? Tell students: • 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) What is Wrong with this Picture? Tell students: • The health care worker is touching his face with a dirty glove. You must change your gloves immediately if they 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. • You did very well identifying what was wrong with the examples of poor health care practices. Just so you	

Module B – Infection Prevention	
know, the pictures I just showed you were simulated and the blood was fake stage blood.	

Activity #B14 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.

HANDOUT #B2 CHAIN OF INFECTION

INFECTIOUS AGENT

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

→

↓

SUSCEPTIBLE HOST

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

RESERVOIR

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

↑

↓

PORTAL OF ENTRY

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

PORTAL OF EXIT

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

MODE OF TRANSMISSION

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

↑

←

HANDOUT #B2
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

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

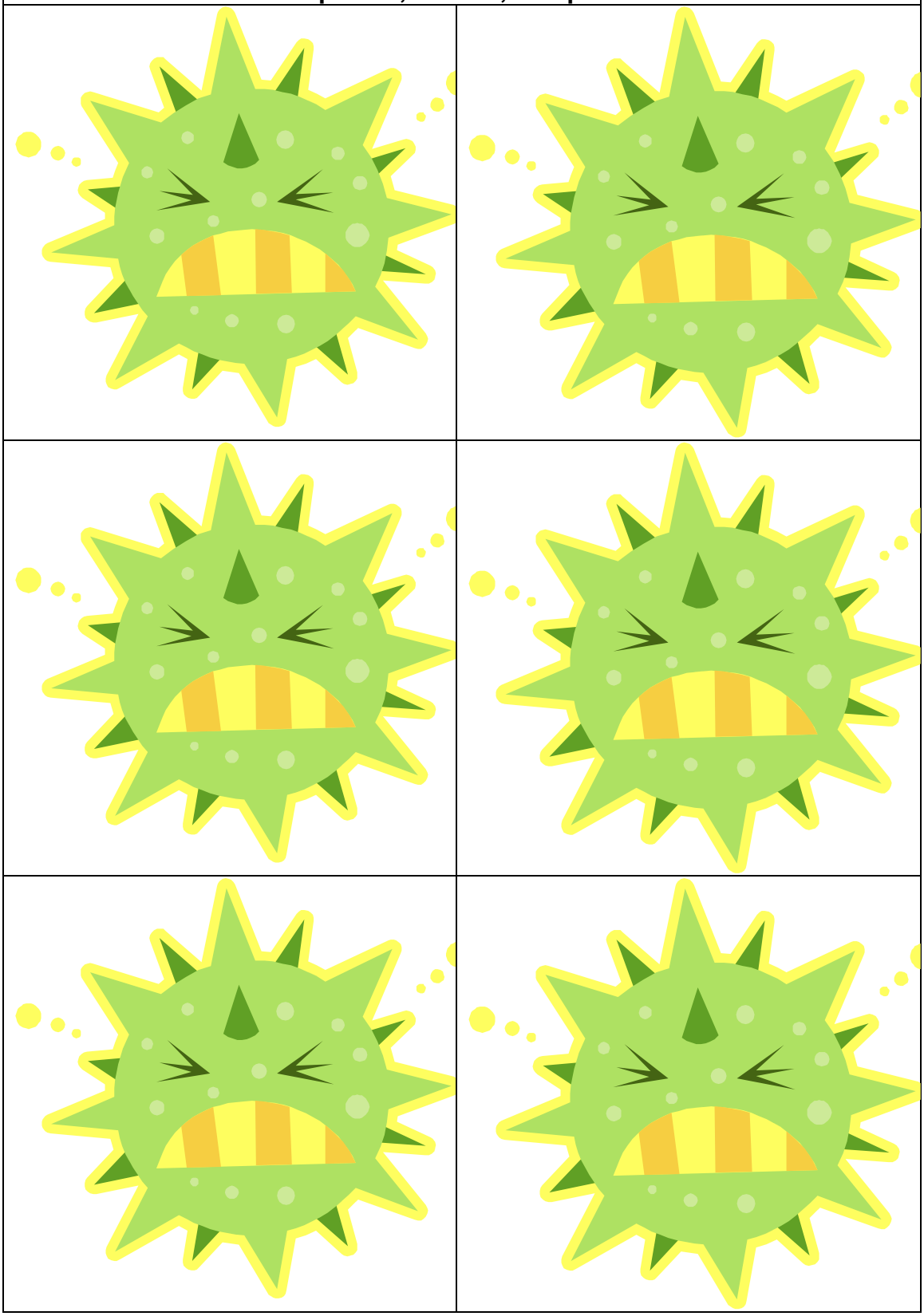
Bacteria
Parasite
Dirt
Person with diabetes
Person with sores
Unwashed Hands
Ticks
Vomit
Respiratory tract
Virus
Skin Tear
Door Knob
Nose (sneezing)
GI tract (vomiting)
Person with poor nutrition
89-year-old person
Skin puncture
Nose (breathing)
Fungi
Mouth (coughing)
Wound (drainage)
Mouth (eating)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

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

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

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

Teaching Tip #B63-3 Hepatitis B Viruses for the classroom
Duplicate, cut-out, and place.



Teaching Tip #B63-3 Hepatitis B Viruses for students
Duplicate, cut-out, and distribute to students.